Grade 10 Geographic Issues of the 21st Century (20F)

A Course for Independent Study

Field Validation Version



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Any websites referenced in this resource are subject to change without notice.

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Available in alternate formats upon request.

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INTRODUCTION

Overview

Welcome to Grade 10 Geographic Issues of the 21st Century. This course is organized as a question for inquiry,

"What is where, why there, and why care?"*

Geography plays a significant role in our daily lives. Throughout this course, you will develop an understanding of how geography influences humans as they use and attempt to manage the world's natural resources and supply food in a global marketplace. You will also come to understand the relationship between geography and industry, and issues such as urbanization. The use of maps and mapping will enhance your understanding of the world.

As a student enrolled in an independent study course, you have taken on a dual role—that of a student and a teacher. As a student, you are responsible for mastering the lessons and completing the learning activities and assignments. As a teacher, you are responsible for checking your work carefully, noting areas in which you need to improve, and motivating yourself to succeed.

What Will You Learn in This Course?

In this course, you will learn how geography influences humans and you will come to understand the relationship among geography, industry, and urbanization.

How Is This Course Organized?

The Grade 10 Geographic Issues of the 21st Century course consists of the following five modules:

- Module 1: Geographic Literacy
- Module 2: Natural Resources
- Module 3: Food from the Land
- Module 4: Industry and Trade
- Module 5: Urban Places

^{*} Gritzner, Charles F. "What is Where, Why There, and Why Care?" Journal of Geography 101 no. 1 (Jan./Feb. 2002): 38-40.

Each module in this course consists of several lessons, which contain the following components:

- Lesson Focus: The Lesson Focus at the beginning of each lesson identifies one or more specific learning outcomes (SLOs) that are addressed in the lesson. The SLOs identify the knowledge and skills you should have achieved by the end of the lesson.
- **Introduction:** Each lesson begins with an explanation of what you will be learning in that lesson.
- **Lesson:** The main body of the lesson is made up of the content that you need to learn. It contains explanations, diagrams, and maps.
- Learning Activities: Most lessons include one or more learning activities that will help you learn about the lesson topics and prepare you for the assignments, the midterm examination, and the final examination. Once you complete a learning activity, check your responses against those provided in the Learning Activity Answer Key found at the end of each applicable module. You will not submit the completed learning activities to the Distance Learning Unit.
- Assignments: Assignments are found at the end of each module. Module 1 also has an assignment in the middle of the module. You will mail or electronically submit all your completed assignments to the Distance Learning Unit for assessment at the end of each module. In total, all assignments are worth fifty percent (50%) of your final course mark.
- **Glossary Terms:** This list identifies the important words that are used in the lesson. The words are highlighted in bold within the text. They are defined in the Glossary at the end of the course.
- **Summary:** Each lesson ends with a brief review of what you just learned.

This course also includes the following sections:

- **Appendices:** At the end of the course, you will find an appendix that contains tips on writing an essay.
- **Glossary:** The Glossary at the end of the course provides definitions for an alphabetical list of the terms identified in **bold** throughout the course. You can use the Glossary to review terms used in the course.
- **References:** At the end of the course, you will also find a list of references used to develop this course.

What Resources Will You Need for This Course?

You do not need a textbook for this course, but it would be beneficial if you had access to a current atlas. All the content is provided directly within the course. There are some lessons where website links are offered as sources of information or for supplementary reference and reading; however, if you do not have access to a computer, you can still complete the course. You will need a notebook to answer questions for the learning activities where insufficient space has been provided for the answers.

Optional Resources

It would be helpful if you had access to the following resources:

- Photocopier/scanner: With access to a photocopier/scanner, you could make a copy of your assignments before submitting them so that if your tutor/marker wants to discuss an assignment with you over the phone, each of you will have a copy. It would also allow you to continue studying or to complete further lessons while your original work is with the tutor/marker. Photocopying or scanning your assignments will also ensure that you keep a copy in case the originals are lost.
- **Resource people:** Access to local resource people, such as teachers, school counsellors, and librarians, would help you complete the course.
- A computer with word processing software: Access to word processing software (e.g., Microsoft Word) would help you complete some assignments.
- A computer with Internet access: Some lessons suggest website links as sources of information or for supplementary reference and reading. If you do not have Internet access, you will still be able to complete the course, but you will need to find different ways of accessing information.

Internet Safety

If you choose to use the Internet to do research, be safe. The Internet is a valuable source of information and should be used responsibly. Talk to your parents/guardians about Internet safety, and use the following guidelines when going online:

- Choose a user name that does not tell your name, gender, age, or other personal details.
- Never give anyone private information.
- Do not answer emails from strangers.
- If someone asks you to keep your relationship with them a secret, stop talking to the person and immediately tell your parent/guardian.
- Do not email or post pictures or files.

The above is **not** a complete list because no list can possibly cover all dangerous situations. Use your common sense and be careful.

A Note about Maps

This document contains a number of maps you will need to complete the course. These maps are not as accurate as those found in an atlas; however, they are adequate for the purposes for which they are used in this course. A colour version of these maps is available for download in the learning management system (LMS). If you do not have access to the Internet to view the coloured maps, please contact the Distance Learning Unit at 1-800-465-9915. If you want to see any map in greater detail, please consult an atlas.

Who Can Help You with This Course?

Taking an independent study course is different from taking a course in a classroom. Instead of relying on the teacher to tell you to complete a learning activity or an assignment, you must tell yourself to be responsible for your learning and for meeting deadlines. There are, however, two people who can help you be successful in your course: your tutor/marker and your learning partner.

Your Tutor/Marker



Tutor/markers are experienced educators who tutor independent students and mark assignments and examinations. When you are having difficulty with something in this course, be sure to contact your tutor/marker, who is there to help you. Your tutor/marker's name and contact information were sent to you with this course. Your tutor/marker information is also available in the learning management system (LMS).

Your Learning Partner



A learning partner is someone **you choose** who will help you learn. It may be someone who knows something about geography, but it doesn't have to be. A learning partner could be someone else who is taking this course, a teacher, a parent or guardian, a sibling, a friend, or anybody else who can help you. Most importantly, a learning partner should be someone with whom you feel comfortable, and who will support you as you work through this course.

Your learning partner can help you keep on schedule with your course work, read the course with you, check your work, look at and respond to your learning activities, or help you make sense of assignments. You may even study for your examinations with your learning partner. If you and your learning partner are taking the same course, however, your assignment work should not be identical.

Plagiarism

Plagiarism IS a big deal with serious consequences, so it's important that you understand what it is and how to avoid it.

What is plagiarism?

In brief, plagiarism is taking someone's ideas or words and presenting them as if they are your own.

How can you avoid plagiarism?

- Begin early. Research takes time. Allow enough time to search for, evaluate, and read sources, and to get help if you need it. Always document your sources immediately.
- Present your research by quoting and paraphrasing.
 - When you use a quote, you use the exact same words with quotation marks, and you indicate exactly where it came from.
 - When you paraphrase, you rewrite an author's idea using your own words and you do not use quotation marks (but you also make sure to state clearly whose idea it is).
- Learn how to use different citation styles.
- Give credit where credit is due. Never pretend someone else's idea is your own.

How Will You Know How Well You Are Learning?

You will know how well you are learning in this course by how well you complete the learning activities, assignments, and examinations.

Learning Activities



The learning activities in this course will help you to review and practise what you have learned in the lessons. You will not submit the completed learning activities to the Distance Learning Unit. Instead, you will complete the learning activities and compare your responses to those provided in the Learning Activity Answer Key found at the end of each module.

Make sure you complete the learning activities. Doing so will not only help you to practise what you have learned, but will also prepare you to complete your assignments and the examination(s) successfully. Many of the questions on the examination(s) will be similar to the questions in the learning activities. Remember that you will not submit learning activities to the Distance Learning Unit.

Assignments



Each module in this course contains assignments, which you will complete and submit to the Distance Learning Unit for assessment. The assignments are worth a total of 50 percent of your final course mark.

The tutor/marker will mark your assignments and return them to you. Remember to keep all marked assignments until you have finished the course so that you can use them to study for your examinations.

Midterm and Final Examinations



This course contains a midterm examination and a final examination.

- The midterm examination is based on Modules 1 and 2, and is worth 25 percent of your final mark in this course. You will write the midterm examination when you have completed Module 2.
- The **final examination** is based on Modules 3, 4, and 5, and is worth 25 percent of your final mark in this course. You will write the final examination when you have completed Module 5.

The two examinations are worth a total of 50 percent of your final course mark. You will write both examinations under supervision.

To do well on each examination, you should review all the work you have completed from the modules, including all learning activities and assignments.

Practice Examinations and Answer Keys

To help you succeed in your examinations, you will have an opportunity to complete a Midterm Practice Examination and a Final Practice Examination. These examinations, along with the answer keys, are found in the learning management system (LMS). If you do not have access to the Internet, contact the Distance Learning Unit at 1-800-465-9915 to obtain a copy of the practice examinations.

These practice examinations are similar to the actual examinations you will be writing. The answer keys enable you to check your answers. This will give you the confidence you need to do well on your examinations.

Requesting Your Examination(s)

You are responsible for making arrangements to have the examinations sent to your proctor from the Distance Learning Unit. Please make arrangements before you finish Module 2 to write the midterm examination. Likewise, you should begin arranging for your final examination before you finish Module 5.

To write your examinations, you need to make the following arrangements:

- If you are attending school, your examination will be sent to your school as soon as all the applicable assignments have been submitted. You should make arrangements with your school's Independent Study Option (ISO) school facilitator to determine a date, time, and location to write the examination.
- If you are not attending school, check the Examination Request Form for options available to you. Examination Request Forms can be found on the Distance Learning Unit's website, or look for information in the learning management system (LMS). Two weeks before you are ready to write the examination, fill in the Examination Request Form and mail, fax, or email it to

Distance Learning Unit 500–555 Main Street P.O. Box 2020 Winkler, MB R6W 4B8

Fax: 204-325-1719

Toll-Free Telephone: 1-800-465-9915 Email: distance.learning@gov.mb.ca

How Much Time Will You Need to Complete This Course?

Learning through independent study has several advantages over learning in the classroom. You are in charge of how you learn and you can choose how quickly you will complete the course. You can read as many lessons as you wish in a single session. You do not have to wait for your teacher or classmates.

From the date of your registration, you have a maximum of **12 months** to complete this course, but the pace at which you proceed is up to you. Read the following charts for suggestions on how to pace yourself.

Chart A: Semester 1

If you want to start the course in September and complete it in January, you can follow the timeline suggested below.

Module	Completion Date
Module 1	End of September
Module 2	End of October
Midterm Examination	Middle of November
Module 3	End of November
Module 4	End of December
Module 5	Middle of January
Final Examination	End of January

Chart B: Semester 2

If you want to start the course in February and compete it in May, you can follow the timeline suggested below.

Module	Completion Date
Module 1	Middle of February
Module 2	End of February
Midterm Examination	Middle of March
Module 3	End of March
Module 4	Middle of April
Module 5	End of April
Final Examination	Middle of May

Chart C: Full School Year (Not Semestered)

If you want to start the course in September and compete it in May, you can follow the timeline suggested below.

Module	Completion Date
Module 1	End of September
Module 2	End of October
Midterm Examination	End of November
Module 3	End of January
Module 4	Beginning of March
Module 5	Middle of April
Final Examination	Middle of May

Timelines

Do not wait until the last minute to complete your work, since your tutor/marker may not be available to mark it immediately. It may take a few weeks for your tutor/marker to assess your work and return it to you.



If you need this course to graduate this school year, all coursework must be received by the Distance Learning Unit on or before the first Friday in May, and all examinations must be received by the Distance Learning Unit on or before the last Friday in May. Any coursework or examinations received after these deadlines may not be processed in time for a June graduation. Assignments or examinations submitted after these recommended deadlines will be processed and marked as they are received.

When and How Will You Submit Completed Assignments?

When to Submit Assignments

While working on this course, you will submit completed assignments to the Distance Learning Unit five times. The following chart shows you exactly what assignments you will be submitting at the end of each module.

Submission of Assignments		
Submission	Assignments You Will Submit	
1	Module 1: Geographic Literacy	
	Module 1 Cover Sheet	
	Assignment 1.1: Branches of Geography, Place and Identity	
	Assignment 1.2: Environmental Types and Environmental Responsibility	
2	Module 2: Natural Resources	
	Module 2 Cover Sheet	
	Assignment 2.1: Natural Resources	
3	Module 3: Food from the Land	
	Module 3 Cover Sheet	
	Assignment 3.1: Food from the Land	
4	Module 4: Industry and Trade	
	Module 4 Cover Sheet	
	Assignment 4.1: Industry and Trade	
5	Module 5: Urban Places	
	Module 5 Cover Sheet	
	Assignment 5.1: Urban Places	

How to Submit Assignments

In this course, you have the choice of submitting your assignments either by mail or electronically.

- **Mail:** Each time you **mail** something, you must include the print version of the applicable Cover Sheet (found at the end of this Introduction). Complete the information at the top of each Cover Sheet before submitting it along with your assignments.
- **Electronic submission:** You do not need to include a cover sheet when submitting assignments electronically.

Submitting Your Assignments by Mail



If you choose to mail your completed assignments, please photocopy all the materials first so that you will have a copy of your work in case your package goes missing. You will need to place the applicable module Cover Sheet and assignment(s) in an envelope, and address it to

Distance Learning Unit 500–555 Main Street P.O. Box 2020 Winkler MB R6W 4B8

Your tutor/marker will mark your work and return it to you by mail.

Submitting Your Assignments Electronically



Assignment submission options vary by course. Sometimes assignments can be submitted electronically and sometimes they must be submitted by mail. Specific instructions on how to submit assignments were sent to you with this course. In addition, this information is available in the learning management system (LMS).

If you are submitting assignments electronically, make sure you have saved copies of them before you send them. That way, you can refer to your assignments when you discuss them with your tutor/marker. Also, if the original hand-in assignments are lost, you are able to resubmit them.

Your tutor/marker will mark your work and return it to you electronically.



The Distance Learning Unit does not provide technical support for hardware-related issues. If troubleshooting is required, consult a professional computer technician.

What Are the Guide Graphics For?

Guide graphics are used throughout this course to identify and guide you in specific tasks. Each graphic has a specific purpose, as described below.



Assignment: Complete an assignment. You will submit your completed assignments to the Distance Learning Unit for assessment. You will be submitting your assignments at the end of every module.



Examination: Write your midterm or final examination at this time.



Internet: Use the Internet, if you have access to it, to obtain more information. Internet access is optional for this course.



Check Your Work: Check your responses against those provided in the Learning Activity Answer Key found at the end of the applicable module.



Learning Activity: Complete a learning activity. This will help you to review or practise what you have learned and to prepare for an assignment or an examination. You will not submit learning activities to the Distance Learning Unit. Instead, you will compare your responses to the Learning Activity Answer Keys found at the end of the applicable module.



Learning Partner: Ask your learning partner to help you with this task.



Mail or Electronic Submission: Mail or electronically submit your completed assignment(s) to the Distance Learning Unit for assessment at this time.



Note: Take note of and remember this important information or reminder.



Phone Your Tutor/Marker: Telephone your tutor/marker.

Remember: If you have questions or need help at any point during this course, contact your tutor/marker or ask your learning partner for help.

Good luck with the course!

Notes

Module 1 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address

Distance Learning Unit 555 Main Street Winkler MB R6W 1C4

Mailing Address

Distance Learning Unit 500–555 Main Street PO Box 2020 Winkler MB R6W 4B8

Legal Name:		Preferred Na	ame:	
Phone:		Email:		
Mailing Address:				
City/Town:			_ Postal Code:	
Attending School:	☐ No ☐ Yes			
School Name:				
Has your contact inf	formation changed since	you registere	d for this course?	☐ No ☐ Yes
Note: Please keep a copy o	of your assignments so that you can	refer to them who	en you discuss them wit	h your tutor/marker.
	For Student Use		For Office	Use Only
Module 1 Assignme	nts		Attempt 1	Attempt 2
	are completed and enclosed pplicable boxes below.	?		
.,,			Date Received	Date Received
	Branches of Geography, and Pidentity	lace and	/50	/50
	Global Environmental Types a Environmental Responsibility	nd	/30	/30
			Total: /80	Total: /80
	For Tutor	/Marker Use		
Remarks:				

Module 2 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address

Distance Learning Unit 555 Main Street Winkler MB R6W 1C4

Mailing Address

Distance Learning Unit 500–555 Main Street PO Box 2020 Winkler MB R6W 4B8

Legal Name:	Preferred Na	ame:			
Phone:	Email:				
Mailing Address:					
City/Town:		_ Postal	Code:		
Attending School: 🔲 No 🔲 Yes					
School Name:					
Has your contact information changed since	you registere	d for this	course?	☐ No ☐	Yes
Note: Please keep a copy of your assignments so that you car	refer to them wh	en you discus	s them wit	th your tutor/r	narker.
For Student Use		Fo	r Office	Use Only	
Module 2 Assignment		Attem	pt 1	Attemp	ot 2
Which of the following are completed and enclosed Please check (✓) all applicable boxes below.	?				
Trease effects (v) all applicable boxes below.		Date Rec	eived	Date Rece	eived
☐ Assignment 2.1: Natural Resources			/81		/81
		Total: _	/81	Total: _	/81
For Tutor,	Marker Use				
Remarks:					

Module 3 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address

Distance Learning Unit 555 Main Street Winkler MB R6W 1C4

Mailing Address

Distance Learning Unit 500–555 Main Street PO Box 2020 Winkler MB R6W 4B8

Legal Name:	Preferred Na	ame:			
Phone:	Email:				
Mailing Address:					
City/Town:		_ Postal	Code:		
Attending School: 🔲 No 🔲 Yes					
School Name:					
Has your contact information changed since	you registere	d for this	course?	☐ No ☐] Yes
Note: Please keep a copy of your assignments so that you can	n refer to them wh	en you discus	s them wit	h your tutor/r	narker.
For Student Use		Fo	or Office	Use Only	
Module 3 Assignment		Attem	pt 1	Attemp	ot 2
Which of the following are completed and enclosed Please check (\checkmark) all applicable boxes below.	?				
Thease effect (v , all applicable solices selection		Date Received		Date Received	
☐ Assignment 3.1: Food from the Land			/50		/50
		Total: _	/50	Total:	/50
	/Marker Use				
Remarks:					

Module 4 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address

Distance Learning Unit 555 Main Street Winkler MB R6W 1C4

Mailing Address

Distance Learning Unit 500–555 Main Street PO Box 2020 Winkler MB R6W 4B8

Legal Name:	Preferred Na	ame:			
Phone:	Email:				
Mailing Address:					
City/Town:		_ Postal	Code: .		
Attending School: 🔲 No 🔲 Yes					
School Name:					
Has your contact information changed since	you registere	d for this	course?	☐ No ☐] Yes
Note: Please keep a copy of your assignments so that you can	n refer to them wh	en you discus	s them wit	:h your tutor/r	narker.
For Student Use		Fo	r Office	Use Only	
Module 4 Assignment		Attem	pt 1	Attem	pt 2
Which of the following are completed and enclosed Please check (\checkmark) all applicable boxes below.	l?				
Trease effect (v) all applicable boxes below.		Date Received		Date Received	
☐ Assignment 4.1: Industry and Trade			/45		/45
		Total: _	/45	Total: _	/45
	/Marker Use				
Remarks:					

Module 5 Cover Sheet

Please complete this sheet and place it on top of your assignments to assist in proper recording of your work. Submit the package to:

Drop-off/Courier Address

Distance Learning Unit 555 Main Street Winkler MB R6W 1C4

Mailing Address

Distance Learning Unit 500–555 Main Street PO Box 2020 Winkler MB R6W 4B8

Legal Name:	Preferred N	ame:			
Phone:	Email:				
Mailing Address:					
City/Town:		_ Postal	Code:		
Attending School:					
School Name:					
Has your contact information changed since y	, ,				_
For Student Use	. reter to tricin wi			Use Only	TIGIT NOT
Module 5 Assignment		Attem		Attemp	ot 2
Which of the following are completed and enclosed Please check (\checkmark) all applicable boxes below.	?				
		Date Rec	eived	Date Rece	eived
Assignment 5.1: Urban Places			/55		/55
		Total: _	/55	Total:	/55
	/Marker Use				
Remarks:					



GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 1 Geographic Literacy

MODULE 1: GEOGRAPHIC LITERACY

Introduction

Welcome to Module 1 and the beginning of your Geography course. This module will help you gain an understanding of the discipline of geography and its importance.

In this module, you will

- define the term geography and identify its various fields
- make connections between place and identity
- investigate global environmental types
- consider the complexity of the global environment
- consider the importance of stewardship in the preservation of the environment
- be challenged to develop positive values about the importance of geography and your role in environmental stewardship

Module 1 consists of five lessons. Each lesson has learning activities to help you practise, review, and reflect upon what you have learned. At the end of the module, you will find an answer key for the learning activities in this module.



As you work through this course, remember that your learning partner and your tutor/marker are available to help you if you have questions or need assistance with any aspect of the course.



Assignments

When you have completed the assignments for Module 1, submit your completed assignments to the Distance Learning Unit either by mail or electronically through the learning management system (LMS). The staff will forward your work to your tutor/marker.

Lesson	Assignment	Marks
3	Assignment 1.1: Branches of Geography, and Place and Identity	50
5	Assignment 1.2: Global Environmental Types and Environmental Responsibility	30

Notes

LESSON 1: WHAT IS GEOGRAPHY?

Lesson Focus
By the end of this lesson, you will be able to define the term geography
give examples of how geographic knowledge helps in decision making
understand the importance of geographic knowledge and you will know that geography knowledge may be found in a variety of sources
draw conclusions about geography and make decisions based on evidence

Introduction

Geography plays a significant role in our everyday lives. Do you know what geography is and why it is important to understand it? In this lesson, you will learn the answer to that question. You will look at some definitions and develop some of your own, as well as gain an understanding of how knowledge of geography is necessary for making all kinds of decisions. This lesson will also be a starting point for developing a number of important geographic skills.

Defining Geography

You might think that geography is simply another subject in school and that, once you have completed the course and obtained the credit, you will never need geography again. The truth is that you use geography every day. Geography helps you find your way around, and determine what the weather will be like and what kind of clothing you should wear each day. It also helps you understand natural disasters such as floods, tornadoes, and earthquakes.

Geographic knowledge and skills are useful in a variety of exciting professions (for example, airline pilots, urban planners, geologists, and specialists working in the forestry or agricultural industry). As well, geographic knowledge and skills are useful in professions that work with technology, computer software, and global positioning systems used for data collection and the creation of maps. A quick online search of jobs related to

geography showed almost one hundred different results. Geography is, as you can see, definitely much more than just another school subject!



If you have access to the Internet, browse the Canadian Geographic Education website at www.ccge.org.



What do you think when you hear the term *geography*? How would you define it? If geography is not just a subject in school, then what is it? Although we often talk about geography, many of us are unsure what the term really means. You might think that geography is just studying **maps** and **globes**, and memorizing names and locations of places. These may include towns and cities, landforms, vegetation and climate types, natural resources, and industries around the world. Although map skills and knowledge of locations are important parts of geography, geography is much more than that.

Many people, including geographers, have tried to provide a clear and easily understood definition of the term geography. Dr. Charles F. Gritzner, a geography professor, has collected almost 200 definitions from various geography books and journals!

One way of defining a term is to look at the root words that make it up. Can you identify the two root words in geography? The prefix *geo* means Earth and the suffix *graphy* means pictures or descriptive writing. Putting these two Greek root words together, we could define geography as the study of Earth using pictures and writing. This definition suggests that geography is little more than describing and visualizing Earth.

Modern definitions of geography suggest that it is more than just a description and a visualization of Earth. A good definition of geography includes not only where things are, but also possible **patterns** and **relationships** between different things. **Geography is the study of Earth's physical and human systems, and the relationships between them.**

There is another definition that has received considerable attention recently because it is short and precise, and it rhymes! What is where, why there, and why care?* This definition by Dr. Gritzner not only refers to locations of features, but also to why they are where they are and why this is important to us. This is a great definition and we will refer to it several times throughout this course. Let's take a brief look at the components of this definition.

^{*} Gritzner, Charles F. "What is Where, Why There, and Why Care?" Journal of Geography 101 no. 1 (Jan./Feb. 2002): 38–40.

Geography: What Is Where, Why There, and Why Care?

■ What?

This part of the definition refers to various features, both physical and human, found on Earth that you may be interested in studying. Examples might be your house or school as a human feature, and a hill or river as a physical feature.

■ Where?



This part refers to the location of the feature you are studying. Location can be absolute or relative. **Absolute** refers to an exact location anywhere on Earth. It is described by a coordinate system such as latitude and longitude, or by an exact address. For example, if your house is in Winnipeg it will be located near 50°N; 97°W. It will also have a specific street address. **Relative** location refers to where something is in relation to other known features. For example, your house may be located two blocks north of a well-known local school. Location is a central theme in geography.

Why There?

This part refers to the fact that geographers not only want to know the location of things, but also the **reasons** why they are located where they are located. This helps us understand both the physical and human factors that influence where things are located. For example, if you live in a town or city, your house is probably in a residential area. The area may have been designated residential as part of the city plan. Perhaps it was in a quiet part of the city, located on higher ground so it would not be in danger of flooding. Your parents may have purchased the house because they liked the neighbourhood and it was near a school that would be easy for you to get to. In a similar way, geographers try to understand the reasons why other features, both human and physical, are located where they are located.

Why Care?

This part of the definition refers to the reasons why this knowledge is important. It puts meaning into knowing where things are and why they are located where they are located. Geographers might ask several questions. Has the feature always been where it is today? Has it changed over time? If so, how has it changed? How is it connected with or influenced by its surroundings? Perhaps your house was constructed along with many others of similar design when the subdivision was built. It may be located near a school and a playground reflecting the presence of families with children. Perhaps houses on the edge of the subdivision near a major street were converted to businesses as the commercial area expanded. All of this information would be of importance to the geographer.

Why Is it Important to Know about Geography?

Whether you are a geographer working as an urban planner or resource developer, or whether you are a student trying to finish high school, we all use geographic skills and knowledge throughout our lives.

Geographic knowledge helps us make informed decisions. For example, if you know the streets in your area well and you know the traffic patterns during the morning rush hour, you can determine the easiest way to get to school or to your part-time job. If you live on a farm, in order to determine what crops to grow, you require information about soil **fertility**, precipitation amounts, and the number of frost-free days. It may also be helpful to know whether you can sell your crop or not and whether the selling price will make it worthwhile or not. If you hunt, you will need to know the migration patterns of the birds or animals you are hunting and you will also need to be familiar with the landscape as well as know how to find your way through the bush. You will also require information about the weather forecast to decide what supplies you might need or whether or not you should wait and go hunting later. These are all examples of how geographic knowledge helps us make decisions. Imagine what might happen if people in these circumstances did not use geographic knowledge before they made their decisions!



As individuals, we also use geographic knowledge on a daily basis. We all have images, or **mental maps**, of where things are around us. Finding your way to school or your friend's house requires geographic knowledge of locations and geographic skills to determine the best way to get there. You also need geographic knowledge if you want to have a reasonably intelligent discussion with your friends about an event or natural disaster in your community or elsewhere in the world. If you think about it carefully, you may be able to list many other examples of how you use geographic knowledge.

Geographic Issues and Analysis

Specialists in different fields of geography often use their knowledge and skills to analyze issues and make recommendations for action. These might include issues such as deciding whether or not a new road should be built, determining if water is safe to drink, identifying the best location for a new airstrip, or determining the environmental impact of a new industry. There may be controversial issues in your community or region debated by citizens, politicians, and the media. Your job, as a geographer, is to use your knowledge and skills to study issues objectively and to suggest the best course of action.



Note:

- Do NOT send the learning activities to you tutor/marker.
- Learning activities are meant to help you understand the content and prepare for the assignments as well as the midterm and final examinations.
- Once you have completed a learning activity, you can check your answers in the answer key at the end of the module.
 - If you answered most of the questions correctly, then you should continue on in the course.
 - If you did not answer most of the questions correctly, then you most likely did not fully understand that part of the module. You will need to go back and review that part of the module again. You can also ask your learning partner to help you review the parts of the module you did not understand.
- Make sure that you understand the answers in the answer key, and that your answers include those important points.
- Some learning activity questions do not have simple, straightforward answers. The answer key for these questions will only contain elements of a good answer.



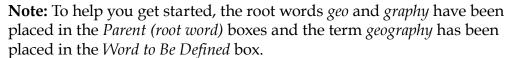
This may be a good time to ask your learning partner for help. Remember, your learning partner is anybody whom you choose to help you with your course.



Learning Activity 1.1

Defining Geography and Using Geographic Knowledge in Decision Making

1. This is a good time for you to review the definition of geography. Fill in the appropriate boxes in the graphic organizer that follows.



Follow these steps to complete the graphic organizer:

Step 1: In the *Meaning* box below the *Parent (root word)* box for geo, fill in the meaning of the term geo. In the *Meaning* box below the *Parent (root word)* box for graphy, fill in the meaning of the term graphy.

Step 2: Using the root words and the information in the lesson so far, write your own definition of geography in the *Your Definition* box.

Step 3: In the *Characteristics and Examples* box, located below the *Your Definition* box, write at least two words or phrases that describe the characteristics or give examples of geography. An example is provided to help you get started.

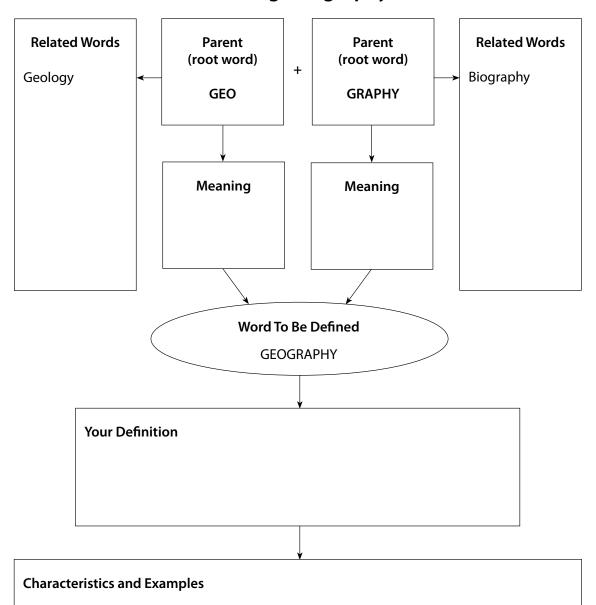
Step 4: In the *Related Words* box to the left of the *Parent (root word)* for geo, write at least two words that also have the root geo. An example is provided to help you get started. Feel free to use a dictionary if you need help.

Step 5: In the *Related Words* box to the right of the *Parent (root word)* for graphy, write at least two words that also have the root graphy. An example is included to help you get started. Feel free to use a dictionary if you need help.



Learning Activity 1.1: Defining Geography and Using Geographic Knowledge in Decision Making (continued)

Defining Geography



• deals with physical and human elements on or near the surface of Earth

Learning Activity 1.1: Defining Geography and Using Geographic Knowledge in Decision Making (continued)



2. Think of ways you use geographic skills and knowledge in your everyday life and list them in the box below. It might be a good idea to talk with your learning partner, parents, relatives, or neighbours to determine how they use geographic skills and knowledge in their jobs. Once you have brainstormed some examples, list them. Be sure to provide at least three examples that describe how you use geographic skills and knowledge in your everyday life. An example is provided to help you get started.

	How I use geographic skills and knowledge in my everyday life
•	Finding the best route to school in the morning

3. Find a local or regional issue with geographic implications that is discussed in the media (newspapers, television, radio, podcasts, and website articles). Possible issues could include a land use debate, a transportation issue, an environmental concern, a construction site, or a weather phenomenon. Choose an article about this issue and carefully read it. After reading and understanding the message in the article, fill out the article analysis graphic organizer that follows.

Learning Activity 1.1: Defining Geography and Using Geographic Knowledge in Decision Making (continued)

Article Analysis Grap	hic Organizer
Name of the article:	
Source:	
Describe the main issue in the article in one sentence.	Briefly discuss the opinion of the <i>author</i> . Support your response with at least one example from the article.
Summarize the ideas and opinions in the article in three to five sentences.	
	Briefly discuss <i>your</i> opinion on the issue in the article. Justify your opinion with at least one example
Represent the issues and/or ideas in the article with a drawing.	from the article.
How is this relevant to geography?	



You can now assess your learning activity by consulting the answer key at the end of this module.

Summary

There are many ways to define the term geography. It can be defined as the study of Earth's physical and human systems, and the relationships between them. It can also be defined as "what is where, why there, and why care." Even though you may not be aware of it, you use geographic knowledge and skills every day. Geographic knowledge and skills are required in many different professions and are important in making informed decisions.

LESSON 2: PHYSICAL AND HUMAN GEOGRAPHY

Lesson Focus
By the end of this lesson, you will be able to identify elements of physical and human geography describe the relationship between physical and human geography
☐ locate provinces, territories, and capital cities on a map of Canada ☐ locate major physical features and political divisions on a map of North America
select, use, and interpret appropriate atlas maps in order to label your own maps

Introduction

In this lesson, you will extend the definition of geography to include its two major fields: physical geography and human geography. You will learn that there are many connections or links between the physical and human aspects of the world. Finally, you will also review and extend your map knowledge of both human and physical elements of Canada and North America.

The Fields of Geography

In the previous section on definitions, you learned that geography is made up of physical and human elements. These elements are sometimes called the **fields** of geography.

Physical Geography



Physical geography refers to features that make up the natural **environment** or exist within it. Examples include landforms, natural vegetation, soils, weather, climate, rivers, lakes, and natural resources. These features exist without human presence.

Human Geography

Human geography refers to features created by people. These include settlements, farms, transportation networks, stores, schools, and many other human-made things.

Methods and Tools



Sometimes, a third field of geography is identified—that of the methods and tools of the geographer. This includes the development of maps, air photos, and satellite images. Geographers also make use of technology, like computers and **Global Positioning Systems (GPS)**, as well as software such as **Geographic Information Systems (GIS)** to do their work. The development and use of instruments to measure weather and climate, or the strength of earthquakes, is also part of this field. Many of these tools and methods are used to study aspects of both physical and human geography.

The Relationship between Physical and Human Elements

The relationship between physical and human geography helps explain the "why there" part of the definition of geography. Physical geography has a big influence on human geography. It influences where people live, what they do for a living, and what changes they make to the landscape. For example, much of the Canadian prairie is used for agriculture because it has good soils, warm summers, and appropriate amounts of rainfall—all aspects of the physical environment. Farming, however, is not possible in mountainous or cold regions because of the physical conditions. The discovery of a mineral resource, such as a large nickel deposit (physical factor), may attract people to open a mine and perhaps start a settlement (human factor) in a northern location. Mining communities, such as Flin Flon and Thompson, are examples. In a similar way, the physical environment may determine where a building or road is constructed in your community. It may also determine the kind of house you have or the kinds of clothes you wear. As these examples show, the physical environment has a big influence on human activities.

It is important to realize that this relationship also works the other way around. Human activities can affect the physical environment. In order for humans to survive, they have to rely on the physical environment and change it in some way. Whether humans live in temporary shelters and survive by hunting and fishing, live on a farm and plant crops, or live in a large city and drive to work, they change their physical surroundings. Some human activities, however, may change the environment in a long-term negative way. Large-scale clearing of **forests**, and air and water pollution are examples of such changes. As the title of this course suggests, *Grade 10 Geographic Issues of the 21st Century: A Course for Independent Study* will deal with some of the challenges resulting from the human impact on the physical environment.



Learning Activity 1.2

Sorting the Fields of Geography



- 1. How well do you know the fields of geography?
 - a) Using the terms in the provided word bank, sort the terms into the three labelled columns provided in the following chart. Some terms may fit in more than one column.
 - b) There are two terms that do not correspond to any of the three categories provided. Identify these terms and place them in the fourth column. Be sure to give this column an appropriate title.

		Word Bank		
landforms settlements map-making earthquakes	urban studies GIS software rock types GPS units	transportation networks natural resources land use planning air photo interpretation	satellite images population study natural vegetation changes over time	soils industry spreadsheets past events

Physical Geography	Human Geography	Methods and Tools	



Our Mental Maps



Knowing the locations of features is an important part of geography. You know the locations of familiar places in your neighbourhood or in the region where you live. You have fairly accurate **mental maps** that direct you to these locations or help you describe where they are situated. You may have general ideas of the locations of major features in Canada or North America, depending on your travel experiences or general knowledge from previous learning. Your mental maps about the location, size, or shape of features further away from home may not be very accurate and you might have trouble describing them to your friends or locating them on a map. In this case, you rely on an atlas, a road map, or perhaps a globe to locate and describe the locations of features that are not familiar to you.

Some years ago, a university professor in British Columbia asked his first year geography students to draw a freehand map of Canada (their mental maps) from memory. They could not refer to a map or atlas while they were producing their mental maps. As you would expect, most students were able to draw their home provinces reasonably well, including the main towns, cities, and major physical features; however, many students, despite thinking that they knew Canada fairly well, had a lot of trouble creating accurate mental maps of Canada. After doing this with his first year classes for a number of years, he wrote about the project in a geographical journal (*Canadian Geographic*, April/May, 1981).



Learning Activity 1.3

Mapping Canada



- 1. Without looking at a map or a globe, draw your mental map of Canada on a sheet of paper labelled "My Mental Map of Canada." Your map should include the following:
 - an outline of Canada and the provincial and territorial boundaries
 - the major water bodies and physical features
 - the provincial and territorial capital cities as well as the capital city of Canada
 - a title (My Mental Map of Canada)

Learning Activity 1.3: Mapping Canada (continued)

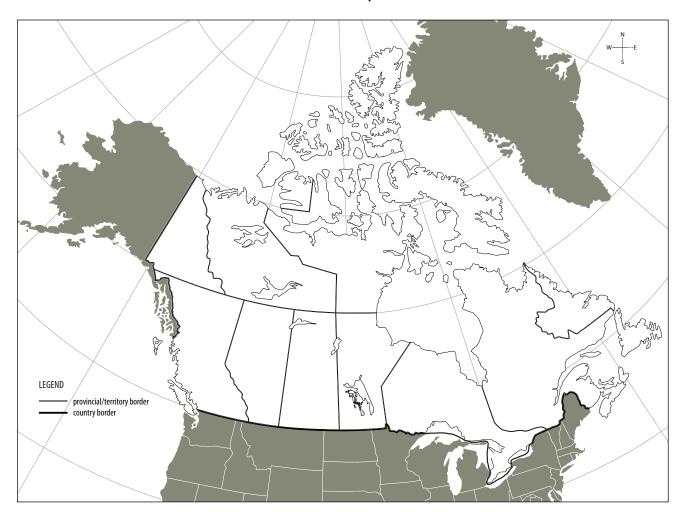
Don't feel bad if you have some trouble, but give it a try! Once you have completed the map, refer to a map of Canada in an atlas to see how you did. Good luck and hopefully your mental image will have at least a vague resemblance to a real map of Canada!

- 2. Use the outline map of Canada on the following page to improve your knowledge of places and locations. Refer to an atlas or a map on the Internet to help you locate and label the following:
 - Locate the *capital cities* of all the Canadian provinces and territories. Clearly identify the location with a large dot. Then, using uniform, small-size letters, print the city name beside each dot.
 - Locate and label the *national capital*.
 - Label all the *provinces and territories*, using larger letters.
 - Label the *Pacific, Atlantic,* and *Arctic Oceans,* as well as *Hudson Bay.*
 - Below is a list of all the provinces, territories, capital cities, and bodies of water that you will need to identify. Please note that the following is a list of all the terms you need to label. They are not organized into categories. They are only there to help you get started.



Northwest	Quebec City	British Columbia	Saskatchewan
Territories	Winnipeg	Ottawa	Halifax
Charlottetown	Victoria	Pacific Ocean	New Brunswick
Alberta	Iqaluit	Ontario	Edmonton
Yukon	Newfoundland/	Hudson Bay	Nova Scotia
Regina	Labrador	Fredericton	Whitehorse
Manitoba	St. John's	Quebec	Arctic Ocean
Atlantic Ocean	Yellowknife	Toronto	
Nunavut	Prince Edward Island		

Political Map of Canada



Canada and North America

You are probably able to recognize Canada on a map of North America or of the world. You know its approximate shape as well as where it is located. You are probably also able to recognize the provinces and territories that make up the country. Likewise, you might also know the location of North America and its approximate shape. Canada occupies the northern part of North America. But how far south does North America extend? Where is the southern boundary of North America? What countries are included in North America? Does North America include any islands?

Political Divisions

Many students think that North America has only three countries: Canada, the United States of America, and Mexico. Some think that Central America, the countries from Mexico to Panama, is also part of North America. Others think that the island nations of the Caribbean are also part of North America. What do you think?

If you are in the last group, you are correct. North America stretches from Canada to Panama and includes the island nations in the Caribbean Sea. There are 23 countries in North America, in addition to a number of overseas territories of European countries.

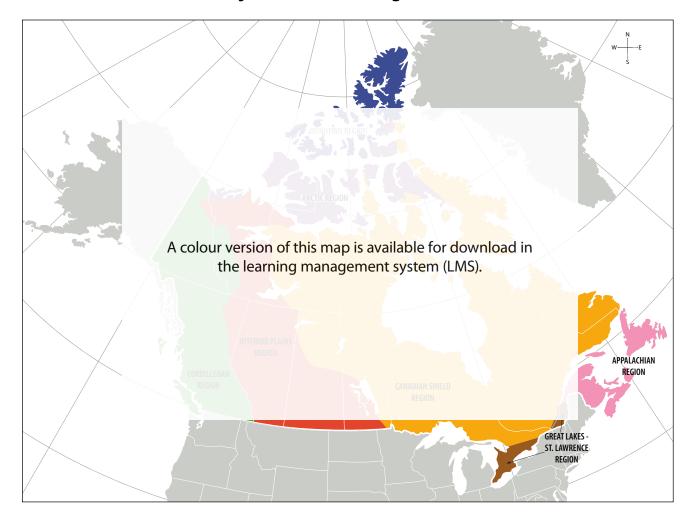
Many Canadians would be surprised to learn that the closest foreign territory to Canada, other than the United States of America, is France. The islands of St. Pierre and Miquelon belong to France and are only 20 kilometres off the southern shore of Newfoundland! Greenland, a territory of Denmark, is less than 50 kilometres from Canada's Ellesmere Island in the Arctic.

As you probably know, the boundary between Canada and the United States of America is mainly along the 49th parallel (line of latitude) in western Canada and the Great Lakes in eastern Canada. In a few locations, the boundary follows rivers, other lines of latitude, or topographical features. Much of the boundary between the United States of America and Mexico follows the Rio Grande River flowing into the Gulf of Mexico.

Physical Features

In addition to the political divisions, you also need to know the major physical features of North America and their locations. These include major landform regions, lakes and rivers, as well as major seas, bays, and oceans. You may be familiar with the major landform regions of Canada including the Cordilleran Region (also known as the Western Cordillera), Interior Plains, Canadian Shield (also known as the Precambrian Shield), Great Lakes–St. Lawrence Lowlands, Appalachian Region, Arctic Region, and Innuitian Region.

Major Landform Regions in Canada



A number of these regions extend across the boundary into the United States of America. One of these regions, the Cordilleran Region, goes all the way through Mexico and Central America. In Central America, the Cordilleran Region is known as the Central American Highlands. The Interior Plains extend southward to the Texas-Mexico border. The Appalachians extend to the southeastern states of Alabama and Georgia. Even the Canadian Shield, properly known as the Precambrian Shield, extends across the border into the northern states of Minnesota, Wisconsin, Michigan, and a small part of upper New York State.

A number of the North American landform regions do not extend into Canada at all. The eastern Coastal Lowlands extend from the original New England states (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut) south around the Gulf of Mexico into Central America. The Caribbean Islands are a separate physical region by the same name. They consist of volcanic mountains, plateaus, hills, and small areas of coastal lowlands.



Learning Activity 1.4

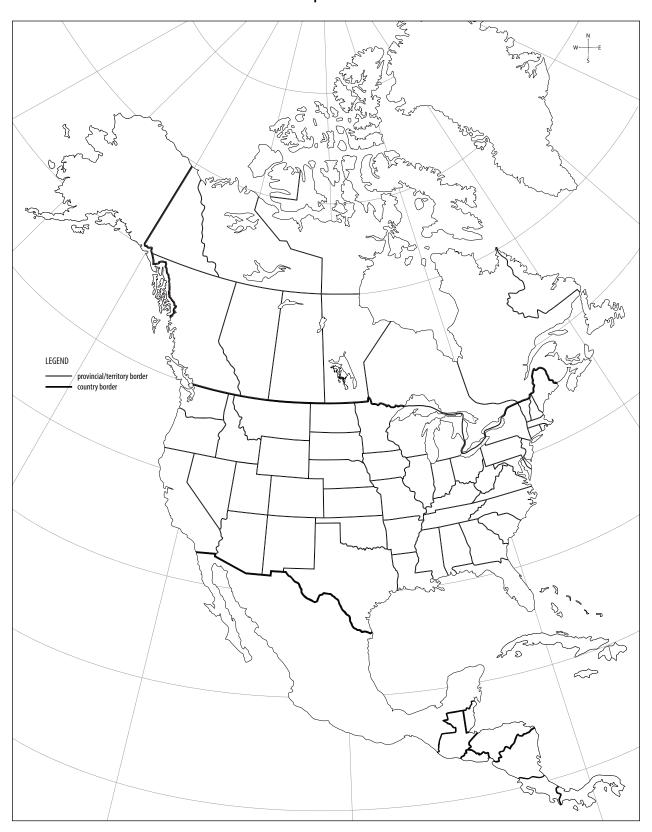
Mapping North America



1. Use the outline map that follows, titled "Political Map of North America," to label the countries of North America. Refer to the Internet or your atlas for information. Be sure to label each country with lettering that is clear and uniform in size. The following list of countries is provided to help you get started.

Canada	Belize	Honduras	Cuba	Dominican Republic
United States	Guatemala	Nicaragua	Haiti	Jamaica
of America	El Salvador	Costa Rica	Panama	Bahamas
Mexico				

Political Map of North America



Learning Activity 1.4: Mapping North America (continued)

2. Use the outline map titled "Major Landform Regions of North America" on the following page to label the major landform regions and major water bodies in North America. Refer to your atlas for information. A list of the regions is provided to help you get started.

Major Landform Regions	Water Bodies
Cordilleran Region Interior Plains (includes Great Lakes—St. Lawrence Lowlands) Canadian Shield Arctic Region (includes the Innuitian Region) Western Plateaus and Basins Coastal Lowlands Central American Highlands Caribbean Islands Appalachian Region	Arctic Ocean Atlantic Ocean Pacific Ocean Hudson Bay Gulf of Mexico Caribbean Sea Rio Grande River Lake Superior Lake Michigan Lake Huron Lake Ontario Lake Erie



Major Landform Regions in North America



Asking Geographic Questions



You are probably starting to realize that geographers have a certain way of looking at the world. Sometimes, we call this the **geographic viewpoint**. The geographic way of thinking involves asking questions about your surroundings that many people might not think about. Some of these questions are reflected in the definition of geography. Knowing the kinds of geographic questions to ask is important in order to learn as much about our surroundings as possible.



Geographic questions usually begin with **location**. For example, geographers want to know where the feature of interest is located and how large it is. Further questions deal with **distribution** and **patterns** of features. Geographers want to know how these features are linked to other features nearby. Geographers are also interested in learning whether features have always been there or not, how they change through time, and what factors influence these changes. Being able to ask geographic questions is not only important for geographers; it is also important for you. It will help you achieve a number of learning outcomes later in this course.

Summary

Geography is the study of the physical and human environments of Earth and the relationship between them. We all have mental maps that help us find our way around on a daily basis. We can improve our mental maps of a country or continent by studying atlases and labelling maps. Geography students need to know the locations of both human and physical features of Canada and North America. The geographic viewpoint involves not only knowing the locations of features, but also the reasons for their location and why this is important. Asking the right geographic questions leads to a better understanding of our communities and our world.

Notes

LESSON 3: PLACE AND IDENTITY

Lesson Focus
By the end of this lesson, you will be able to
explain the relationship between place and personal identity
☐ recognize that geography includes the study of change over time
describe ways in which various globes, maps, and map projections may influence perceptions (e.g., relative size and position, power, sovereignty)
recognize and interpret various types of map projections
express informed and reasoned opinions
present information and ideas in a variety of formats appropriate for audience and purpose
articulate your perspectives on issues

Introduction

If you live in a town or city, for example, you will be familiar with your street, the kinds of houses on it and the people who live there, the flow of traffic, the trees, and the playgrounds. You might even, perhaps, be familiar with the noises such as dogs barking or the sound of a nearby train. You will know your way to the school and community centre, you will know where the nearest stores and services are located, and you might know many of the people who live there, while others will seem familiar to you.

You will be familiar with the daily routine in your community. Parents going to work, children going to school, seniors going out for a walk, buses and delivery vehicles going down the street, birds chirping in the trees, friends waiting for you after school or on the weekend, and the sounds of lawn mowers on a Saturday morning when you want to sleep in. This is where you live and it is home. It is part of who you are. Similarly, if you live in a small rural community, on a farm, or in a remote northern community, you will also be familiar with the place around you. You may be more aware than urban dwellers (people from a city) of the physical environment around you. Perhaps the land is flat, there may be some hills nearby, you may live in a valley near a river, or your home may be near a lake or surrounded by woodland. You will also be familiar with the human environment around you and know the sights, activities, sounds, and even smells that are part of

that place. Often, we take these things for granted because we know them so well, but they are part of us because this is where we live and it is our home. Place is part of our personal identity.

Place and Identity



In geography, the term **place** refers to a location on Earth's surface such as a community, town, or region. A place is defined by specific physical and human characteristics that make it different from any other place. Usually, the place we are most familiar with is the one where we grew up or where we lived for a length of time.



The connection between place and **identity** refers to the way in which geography helps define who we are, both as individuals and as members of communities. We may not have a conscious understanding of this idea; however, our immediate surroundings such as the landscape, the buildings, and the people around us (*place*) are familiar to us and become a part of who we are (*our identity*).

Place Attachment



This strong personal connection to a familiar place is an example of **place attachment**. This means that you have come to know and feel comfortable with the place where you live. It has become part of your personal identity. You might take this for granted; however, when you travel to other places or you move to another location, you realize the depth of your attachment. The new place may seem strange; you do not feel at home. The streets, buildings, people, school, landscapes, and even sounds and smells may be different from those that were familiar to you. You might even experience a sense of homesickness. It may take some time for you to get to know a new place and for it to become a part of who you are.

Just as individuals identify themselves with the place around them, a community, town, or city may do the same. A town, for example, may identify itself in relation to a landform, cultural characteristic, seasonal event, or major economic activity—all characteristics of place. Many towns describe these characteristics in a positive way to attract tourists or new residents. Some towns may even construct a roadside monument to draw attention to an important aspect of that place. The model Viking ship at Erickson, the trapper in The Pas, and the Rolls Royce car in Steinbach are examples of such monuments. You may know of other monuments that help identify different communities. Larger centres may have buildings or other features that reflect their identity. The Golden Boy on the Manitoba Legislative building in Winnipeg and the Eiffel Tower in Paris are other examples.

What's in a Name?

Even the name and logo of a sports team may reflect a specific geographic location or feature, major economic activity, or common bird or animal of the place where the team is located. The name and logo become an important part of the team's identity. They encourage local citizens to identify with the team and provide support. In this context, the term place also brings associations and feelings that are important for the team and its fans. Local sporting teams, identified by their name and logo, are often a great source of pride. They bring members of the community together in a common identity and show of support. An example of this is the Winnipeg Goldeyes baseball team named after a common fish found in the Red River. The Thompson King Miners hockey team and the Virden Oilers baseball team are both examples of teams named after the main economic activities in their respective towns. Can you think of names of other sports teams that reflect aspects of local place and identity?



Learning Activity 1.5

Place and Identity



1. Think about communities, towns, and cities that have promoted their identity by creating roadside monuments or catchy sayings. These can be in Manitoba or other familiar places in North America. Try to explain the origin or reason for the choice of monument or saying. Record your examples in a chart similar to the following. Examples are provided to help you get started.

Name of Community	Monument or Saying	Explanation
Brandon	"The Wheat City"	Crop for which Brandon became well-known
Steinbach	Rolls Royce Car and/or "The Automobile City"	Known for its many car dealerships, to attract customers from nearby Winnipeg

Learning Activity 1.5: Place and Identity (continued)

2. Think about sports teams in Manitoba, Canada, or North America, with names and logos that reflect specific geographic locations or features, major economic activities, or common birds and animals. Record your examples and provide an explanation for each. Examples are provided to help you get started.

Name of	Town/	Explanation
Sports Team	Community	
Goldeyes (baseball)	Winnipeg	Named after common fish in local waterways
King Miners (hockey)	Thompson	Named for the main economic activity: mining



Change over Time

Geographers want to know if features of interest have always been there. They want to know how features change through time and what factors influence these changes. This knowledge is important in order to gain a better understanding of both physical and human elements in our surroundings. Knowing how things change and what causes them to change can help us solve problems and make plans for the future.

Physical Changes



Physical geographers are interested in changes in the natural environment around us. They may study how the process of **erosion** gradually reduces topsoil, changes slopes, and washes out roads and bridges. This knowledge helps them develop **conservation** practices and ways of improving drainage. As such, physical geographers may study changes in natural vegetation. Cultivation of grasslands or clearing of forests may result in increased erosion and local **climate change**. In recent years, many people have become concerned about climate change. Geographers are interested in learning about the causes and speed of climate change, as well as the possible impacts on the environment and on human life. This knowledge will help society find ways to slow climate change and prepare for life in a future of changing climates.

Human Changes

Geographers are also interested in changes in the human environment over time. They may be interested in studying the growth of a town or city. This knowledge can help them predict future growth and manage changes through wise urban planning. To that end, geographers may study the development of transportation networks and make recommendations for changes and improvements. Geographers may also be interested in studying the impact of industry on air and water quality. They may develop ways of testing water and air for pollution, and recommend changes to reduce further pollution. They may also study the impact of burning **fossil fuels** on the world climates. Geographers are also interested in studying the impact of human activities in rural and remote regions. Increased tourism and resource development may threaten natural habitats and endanger wildlife. Agricultural practices such as overgrazing and excessive use of chemicals may have a negative impact on the environment.

As a student of geography, you may have observed changes in your community or region such as the construction of a new street or road and the building of a new house or business. Clearing land for cultivation, the demolition of an old farm building, and the changing use of farmland are examples of changes over time in rural areas. If you live in a remote community, you may notice clearing of nearby forests, construction of new homes and roads, or environmental changes brought about by hydro and mining developments. When you begin to see your surroundings from a geographic viewpoint, you will notice many changes over time, in both human and physical elements.

Map Projections and Perceptions

A **map** is a representation of all or part of Earth drawn on a flat surface to a specific scale. Maps allow us to visualize areas of Earth on a manageably sized sheet of paper. This might be in the form of a road or street map, or an atlas map. It is important that maps be to scale in order to give us an accurate perception of the shape and size of Earth. Globes are also representations of Earth; however, they are not as easy to handle and there is a limit to how large they can be to provide adequate detail. Humans have been creating maps for a very long time. The first maps may have been scratches in the sand or dirt made by prehistoric humans to represent features and locations of places where they lived.



Although maps are very useful to everyone, it is important to be aware of their limitations. Maps are flat, two-dimensional representations of a round, three-dimensional surface. This means that it is not possible to show Earth on a flat surface without some kind of **distortion**. You can see how this happens by peeling large sections of an orange and then trying to flatten out the peel. You cannot do this without the peel splitting apart around the edges. If you draw an outline of a province (or a face) on an orange before you peel it, you will see what happens to its shape when you flatten the peel. In other words, all maps show distortion of some kind. The larger the area of Earth they show, the greater will be the distortion.







Map Projections

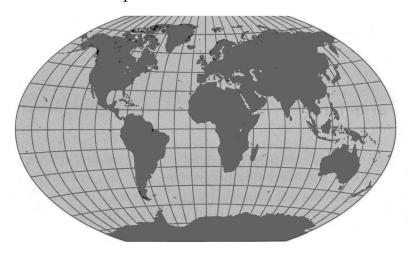




Note: Your atlas should have a page that explains and provides examples of map projections. Refer to this page for visuals as you read through this section. If your atlas does not have this page, go to one of the following websites: http://atlas.nrcan.gc.ca/site/english/learningresources/carto_corner/map_projections.html or www.colorado.edu/geography/gcraft/notes/mapproj/mapproj_f.html. You can also use a search engine such as www.google.ca to find similar websites.



Mapmakers are called **cartographers** and use a variety of methods to represent Earth on a flat surface. Originally, they did this with the use of a light inside a wire globe. The light projected the outlines of the continents and the Earth grid (lines of **latitude** and **longitude**) as shadows onto a flat piece of paper. Although cartographers now use computer models and mathematical calculations, they still refer to the method as **projection**. There are many different map projections in use today. Cartographers select the particular projection that shows the least distortion for the kind of map they want to produce. It is important for you, as a student of geography, to be aware of distortion when you use maps. The following diagram shows a typical projection method for a map of the world.



Clark, Bruce W., and John K. Wallace. *Geographic Issues of the Twenty-first Century*. Don Mills, ON: Pearson Education Canada Inc., 2005. 20.



Note: If you are not sure about the terms latitude and longitude, study the section "Reviewing Latitude and Longitude" at the end of this lesson. You can also consult the glossary for definitions of these terms. The terms latitude and longitude have slightly different meanings than the terms lines of latitude and lines of longitude.

Mercator Projection



Gerhardus **Mercator**, a Dutch geographer, developed this projection in 1569. He wrapped a sheet of paper around a globe like a cylinder. Inside the globe was a light that projected the continents and grid lines as shadows onto the paper. After tracing these lines, he unrolled the paper to create a map. Maps made by this method are **cylindrical** projection maps. Mercator's map was very useful for ocean navigation because it showed constant compass bearings.

Cartographers still use the Mercator projection when making maps that show the entire world. Look in your atlas or on one of the previously recommended websites for a Mercator projection map. Study the map carefully and try to determine the kind of distortion it shows. An easy clue is to look at the lines of latitude and longitude. On a globe, the lines of latitude circle around Earth. The latitude circles become smaller toward the north and south poles. The lines of **longitude** come together and meet at the poles. In other words, the lines are furthest apart at the equator and converge to meet at the north and south poles.

What pattern do these lines have on the Mercator projection? How do you think this affects the accuracy of the map? How does this affect your perceptions of the size of continents and countries?

You will notice that the lines of latitude become further apart as you move away from the equator. The result is an exaggeration in the north-south distance as you move away from the equator. You will also notice that the lines of longitude are parallel to each other instead of converging as they do on the globe. This results in an increasing exaggeration in the east-west distances as you move toward the poles. In other words, there is great exaggeration in the areas of continents and countries in the mid- and high-latitudes in comparison to those near the equator. For example, in this projection, the island of Greenland appears larger than the continent of South America but, in fact, it is much smaller in area. The Mercator projection does not show the size or area of countries accurately; however, it shows their shapes relatively accurately.

Due to the false perception of the size of mid- and high-latitude countries, many people criticize the Mercator projection. Political leaders of countries near the equator believed that this false perception was unfair to them. It showed the **colonizing** powers, such as England and other European countries in the mid-latitudes, as being much larger than the equatorial areas they colonized. Many of the world's poorest countries are in the equatorial region. Their leaders feel that this map distortion and false perception puts them at a further disadvantage. A number of aid agencies, including the United Nations, are also critical of this projection.

Peters Projection

The criticisms of the Mercator projection led to the development of the **Peters** projection in 1974 by Dr. Arno Peters. This projection, referred to as an equal area projection, shows the areas of countries and continents accurately. As a compromise, however, it distorts the shapes. This projection is also known as the Gall-Peters projection. Many developmental agencies, including the Canadian International Development Agency, used the Peters projection for a while when it was first developed. Although commonly used in other parts of the world, at present, not many people use the Peters projection in North America.

Robinson Projection

Cartographers sometimes refer to the projection developed by Dr. Arthur **Robinson** in 1972 as a compromise projection. It tries to show shapes relatively accurately without too much distortion of size or area. The lines of latitude are equally spaced, and the lines of longitude are curved somewhat like they are on a globe. The National Geographic Society used this projection in their magazines and map publications for many years.

Purpose of Maps

The shape and size distortions described above are most obvious on maps of the entire world. The smaller the area shown on the map, the less distortion is present. This means that maps of a small region, such as a province, will have very little distortion. You would not likely be aware of any distortion if you used such a map. The distortion on maps of the world, however, is obvious and influences the readers' perceptions of the size and importance of countries. It may even give you a false impression of the amount of political or economic power a country may have.

Aside from determining an appropriate projection, cartographers use a variety of techniques to interest the reader and express the purpose of maps. Prominent titles, colour schemes, selective symbols, and even variation in the scale help attract the readers' attention. For example, a map created to show the location of a new store highlights its immediate location but does not give much detail about other features in the map area. A unique symbol in bright colours may also be used to draw the readers' eyes to the location of the store. Dull colours may be used to show other features to reduce their perceived importance. **Thematic** or special-purpose maps make frequent use of these kinds of techniques. Thematic maps show only one major theme, usually in considerable detail.

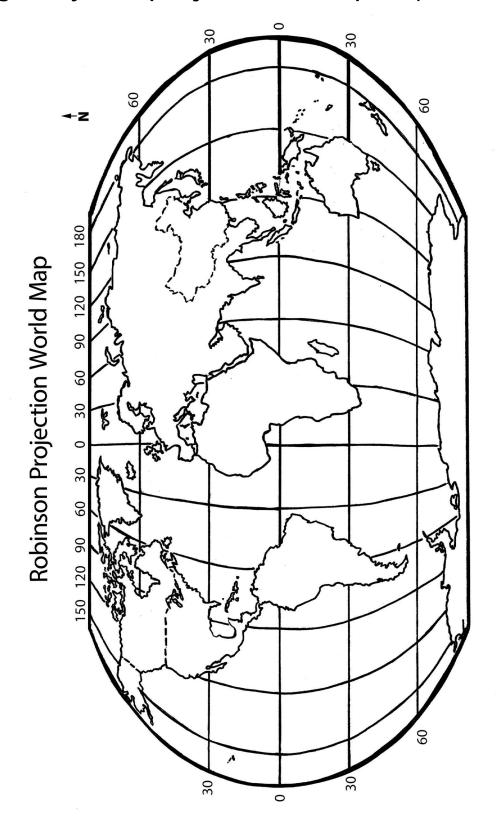


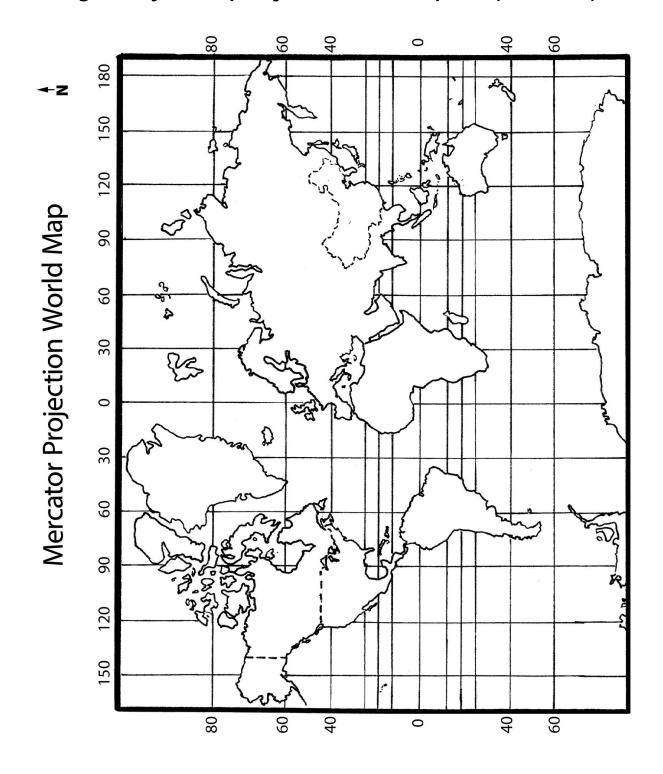
Learning Activity 1.6

Map Projections and Perceptions



- 1. Refer to the Robinson Projection World Map and the Mercator Projection World Map that follow.
- a) On each map, observe the following pairs of countries and continents. For each pair, determine which one appears to be larger. Record your findings in the following table.
 - i) Greenland and South America
 - ii) China and Canada
 - iii) North America and Africa





	Mercator Projection World Map			Robinson Projection World Map		orld Map
	Greenland or South America	China or Canada	North America or Africa	Greenland or South America	China or Canada	North America or Africa
Appears Larger						

- b) Using either your atlas or the Internet, search the total land area for each of the following countries and continents. For each pair, determine the country or continent that has the larger total land area. Record your findings in the following table.
 - i) Greenland and South America
 - ii) China and Canada
 - iii) North America and Africa



Note: Be aware of the units of measurement used when researching the total land area. You may need to convert some numbers so that they all have the same unit of measurement.

	Greenland or South America	China or Canada	North America or Africa
Larger by Total Land Area			

- c) For each country or continent pair, determine which country or continent is closer to the equator. Based on the Mercator Projection World Map and actual total land area, do the countries or continents closest to the equator only appear to be smaller, or are they in fact smaller? Record your findings in the following table.
 - i) Greenland and South America
 - ii) China and Canada
 - iii) North America and Africa

Greenland or		China or		North America	
South America		Canada		or Africa	
Country/ Appears Continent Smaller or Closer to the Is Equator Smaller		Country/	Appears	Country/	Appears
		Continent	Smaller or	Continent	Smaller or
		Closer to the	Is	Closer to the	Is
		Equator	Smaller	Equator	Smaller



Reviewing Latitude and Longitude

	Lines of Latitude (Parallels)	Lines of Longitude (Meridians)
Appearance	 Lines going across a map from side to side (east to west) 	Lines going up and down a map from top to bottom (north to south)
	They are parallel to each other	■ They converge at the poles
Purpose To measure distances north and south of the Equator		To measure distances east and west of the Prime Meridian
Size Latitude lines are all different lengths The longest is the Equator The shortest are the North and South Poles, which are both points		■ Longitude lines are all the same length
Numbering	■ From 0° (the Equator) to 90°N (the North Pole) and from 0° to 90°S (the South Pole)	 From 0° (the Prime Meridian) to 180°W and from 0° to 180°E The two 180° lines are the same line—also designated as the International Date Line



Note: For further information, check the glossary for definitions of latitude and longitude.

Summary

The study of place is an important part of geography. Place refers to a location with unique physical and human characteristics. When we get to know a place well, it becomes part of our personal identity and we define ourselves in relation to that place. Geography also involves the study of change over time. Geographers are interested in how the physical and human elements around us change. They also want to know the factors that bring about change and the impact these changes have on our lives. Globes and maps are representations of Earth. Maps are flat representations of a spherical surface; consequently, they show distortion to some degree. These distortions can influence our perceptions of the size, position, and power of various countries.

Notes



1.

Branches of Geography, and Place and Identity (50 marks)

Review the material from the beginning of this module up to this point (including the module lessons and learning activities) in order to complete this assignment. Be sure to read the questions carefully and provide answers in complete sentences. Please remember that you must write answers in your own words. Do not copy information directly from any of your sources. Keep the mark value of each question in mind as you do the assignment and develop your answers accordingly.

Co	nsider the many definitions of geography.
a)	Identify and define the root words that make up the term <i>geography</i> . (2 <i>marks</i>)
b)	In modern terms, the definition of geography includes many additional components. Identify at least two additional components of the modern definition of geography. (2 marks)
c)	Write out Dr. Charles Gritzner's definition of geography and briefly explain at least two components of the definition. (3 marks)

2.	tw	eographic knowledge and skills are important in our everyday lives. Give at least o reasons why geographic knowledge and skills are important and provide an ample for each. (2 marks)
3.	Ge	eography is a broad field of study.
		List the three fields or branches of geography. (3 marks)
	b)	Choose <i>two</i> of the branches or fields of geography. For <i>one</i> of these branches or fields, provide a brief description and two examples. (6 marks)

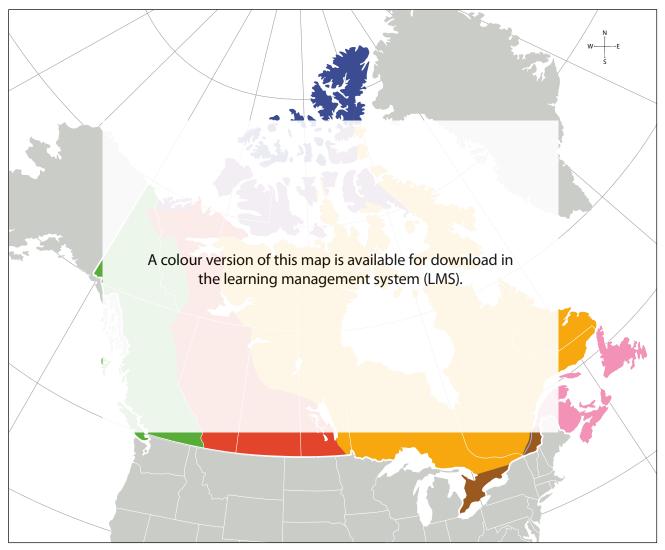
4. Physical and human geography are not isolated from each other. Many elements from one branch interact and have an influence on elements in the other branch. Briefly describe the relationship between the physical and human branches of geography as you answer the following question:

How does the environment have an impact on human activity and how do humans have an impact on the environment?

Include at least two supporting examples for your description of the relationship. (4 marks)		

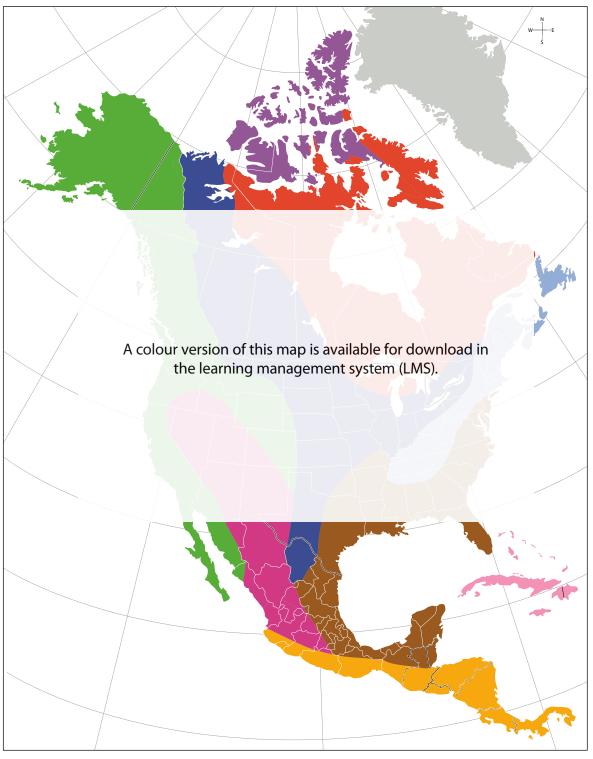
- 5. On the map of Canada included with this assignment, locate and label the following features.
 - a) Locate (with a dot) and label the capital cities of the following Canadian provinces and territories: (0.5 mark each for a total of 3.5 marks)
 - i) British Columbia's capital city
 - ii) Northwest Territories' capital city
 - iii) Prince Edward Island's capital city
 - iv) Ontario's capital city
 - v) Manitoba's capital city
 - vi) Yukon's capital city
 - vii) Alberta's capital city
 - b) Based on the list of provincial and territorial capitals below, identify and label the provinces and territories in which the capital cities are located. (0.5 mark each for a total of 3 marks)
 - i) Quebec City
 - ii) Regina
 - iii) Fredericton
 - iv) St. John's
 - v) Iqaluit
 - vi) Halifax
 - c) Locate and label the national capital (0.5 mark)
 - d) Locate and label the three oceans that border Canada and the large body of water that is bordered by Nunavut, Manitoba, Ontario, and Quebec. (0.5 mark each for a total of 2 marks)
 - e) Locate and label the following major landform regions of Canada that are described below. (1 mark each for a total of 3 marks)
 - i) The largest landform region in Canada
 - ii) The landform region in which mostly the Yukon and British Columbia are located
 - iii) The most easterly landform region in Canada

Political and Major Landform Features in Canada



- 6. On the map of North America included with this assignment, locate and label the following features.
 - a) Label the countries referred to in the following descriptions. (0.5 mark each for a total of 4 marks)
 - i) The country furthest north in North America
 - ii) The country furthest south in North America
 - iii) The country just south of the United States of America
 - iv) The country you must travel through to get to Panama when you are travelling from North America.
 - v) The country that is bordered by Mexico and Guatemala
 - vi) The country that shares an island with Haiti
 - vii) The country that consists of many small islands just south of Florida
 - viii) The country that separates Honduras and Costa Rica
 - b) Identify and label the major landform regions that do not extend into Canada. (1 mark each for a total of 4 marks)

Political and Major Landform Features in North America



7.	Define the terms <i>place</i> and <i>place attachment</i> as they apply to geography. Explain how they relate to identity and support your explanation with at least one example. (3 <i>marks</i>)			
8.	Why is it important for geographers to recognize that features of Earth change over time? (2 <i>marks</i>)			

9.	Choose <i>one</i> of the three map projections introduced in this module and discuss the major use of this type of map projection, one advantage , and one disadvantage . (3 <i>marks</i>)				
	i) Mercator				
	ii) Peters				
	iii) Robinson				

Notes

LESSON 4: GLOBAL ENVIRONMENTAL TYPES

Lesson Focus
By the end of this lesson, you will be able to
☐ explain the concept of global environmental types
identify global environmental types on a map of the world
locate global environmental types on a map of Manitoba
 identify major population clusters on a map of the world and explain the relationship between population and global environmental types
select, use, and interpret various types of maps
 observe patterns and make generalizations based on geographic inquiry
express informed and reasoned opinions

Introduction

In this lesson, you will learn about global environmental types as a way of classifying physical factors that influence human activities. You will identify the major environmental types on a world map and locate those found in Manitoba. You will also learn about and analyze relationships between global environmental types and major world population clusters.

Global Environmental Types

Earth has many different landforms, vegetation and soil types, and climatic regions. One region may be mountainous with coniferous forests and limited soils, and have a moist, moderate climate, while another region may be hot and dry, with only a few hardy plants growing in sandy soils. Yet another region may have flat fertile plains, grassland vegetation, and warm, humid summers. If you have travelled between the prairie region and the Canadian Shield in Manitoba, you will have noted some of these changes. The vegetation in one region is grassland while, in the other, it is **boreal forests**. The landscape is relatively flat with fertile soils in one region and rugged with rock outcrops and lakes in another region. These regions are different **global environmental types** found in Manitoba.



A global environmental type is a large area that has certain landforms, as well as plant and animal communities. Global environmental types are named after the main vegetation type found in the region.

The global environmental types are:

GRASSLANDS TUNDRA FORESTS DESERTS

Global environmental types are determined mainly by their climate, soils, and landforms. The plants and animals in an environmental region are closely linked to their specific environment, as they depend on the other living and non-living things around them.



Some authors use the terms **ecosystems** or **biomes** to mean the same thing as global environmental types. You may see these words used in an atlas or on the Internet. Since environmental types are named after the main vegetation type found in the region, they are almost identical to vegetation regions. If an atlas does not have a separate environmental type or biome map, you can just refer to the vegetation maps.

Global environmental types are classified in different ways depending on the criteria used. This may result in some confusion because different sources may use different names and list a different number of environmental types.

The following outline represents a common classification of major environmental types (biomes) and their respective subcategories:

Forest Biomes Desert Biomes

Boreal (Taiga) Arid

Temperate Semi-arid
Tropical Coastal
Cold

Grasslands Biomes Tundra Biomes

Prairie (Temperate) Arctic
Steppe Alpine

Savannah



Note: If you have access to the Internet, you can check the University of California Paleontology Museum website for information and descriptions of the world's major biomes at www.ucmp.berkeley.edu/glossary/gloss5/biome/index.html. You can also use a search engine such as www.google.ca/ to search for similar information.

Environmental Types in Manitoba



As mentioned before, some atlases simply show environmental types as vegetation maps. A vegetation map of Manitoba or of Canada may look very detailed if it shows the subcategories of environmental types. In this course, we are mainly concerned with the four major environmental types listed previously (forest biomes, desert biomes, grassland biomes, and tundra biomes).

As you can probably guess, the plains or prairie region of Manitoba is part of the Prairie (temperate) Grassland biome. In much of this region, the grassland has been cultivated for agriculture. Most of the Canadian Shield region of Manitoba is part of the Boreal (Taiga) Forest biome. The region around Churchill is part of the Arctic Tundra biome. Thus, three of the four major global environmental types are found in Manitoba.

Since environmental types reflect vegetation and are mainly determined by climate and geography, they also influence the human geography of the region. Temperate grasslands with flat land, rich soils, and favourable climates can support a much larger population than the boreal forest or tundra. Similarly, temperate forests such as those in the Great Lakes–St. Lawrence Lowlands are able to support many people. These regions have a favourable climate, rich soils, and relatively flat land. Most of the temperate forests were cleared long ago for settlement, farming, and industry.

Characteristics of Manitoba Environmental Types				
	Temperate Grasslands	Boreal Forest	Arctic Tundra	
Location	Southern Manitoba from the Red River to the Saskatchewan boundary	Most of Manitoba, north of the grasslands, south of the tundra	Narrow strip along coast of Hudson Bay in northern Manitoba	
Landforms	Flat plains, some river valleys	Rugged, rocky outcrops; rivers and lakes	Relatively flat, swampy, rocky areas	
Vegetation	Grasses, some woodlands in river valleys and hills	Mostly boreal forest, some aspen and mixed forest in the south	Shrubs, mosses, and lichens	
Climate	Short, warm summer and long, cool winter; summer precipitation	Short, cool summer and long, cold winter; summer precipitation	Very short, cool summer; long, very cold winter; generally dry	
Population Patterns	Moderate rural density, many towns and several cities	A few isolated resource towns, many places not populated	Several coastal communities, otherwise not populated	
Economic Activities	Agriculture, some forestry, manufacturing, some oil wells	Forestry, mining, hydro development, tourism, hunting, fishing, and trapping	Some hunting, fishing, and trapping; tourism and shipping port (Churchill)	



Learning Activity 1.7

Manitoba Environmental Types



1. The following map shows the location and extent of environmental types in Manitoba. Look through magazines or do an image search online for pictures of the three environmental types and attach them near the appropriate regions on the map. If you already have photographs of these three environmental types in your personal collection, feel free to use those instead.

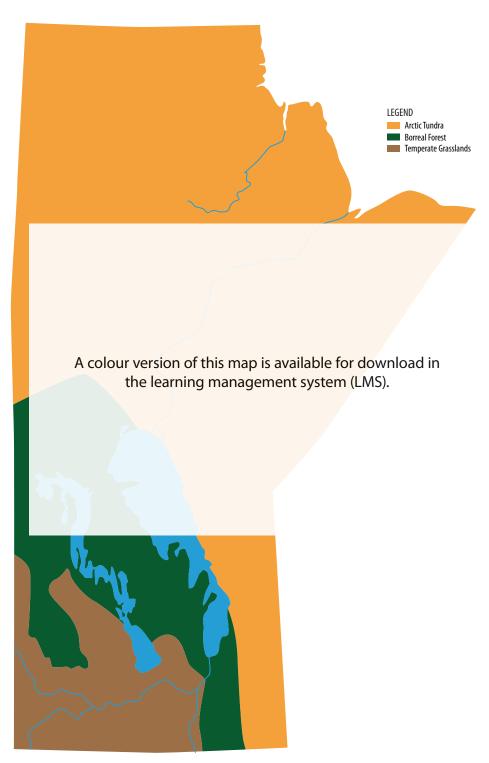


Note: Appropriate pictures could include a grassland scene (could show a farming region); a forest scene with coniferous trees, rocky outcrops, and rivers; and a tundra scene with barren landscape and, perhaps, a polar bear.

- 2. Refer to a population density map of Manitoba in your atlas or from an Internet source and compare it to the map of environmental types in Manitoba.
 - a) Where does most of Manitoba's population reside?
 - b) With respect to the environmental types in Manitoba, why do you think Manitoba's settlement pattern is the way it is?

Learning Activity 1.7: Manitoba Environmental Types (continued)

Environmental Types in Manitoba





Environmental Types around the World

As we have just done with Manitoba, we can look at environmental types around the world to see if there is any relationship between environmental type and population. Things will be a little more complicated because we are now dealing with many environmental types instead of just three. Unless you have a book that shows environmental types around the world, it is best to use a world vegetation map from your atlas or the Internet.



The vegetation map of the world is very complex. If you look carefully, however, you can identify a number of patterns. **Tropical** vegetation such as **desert**, tropical rainforest, and tropical grassland are located in the hot areas near the equator (between the Tropics of Cancer and Capricorn). **Temperate** environmental types, such as the temperate grasslands, **deciduous** and mixed forests, and cold deserts are located in the mid-latitude regions between the tropics and the sub-arctic regions. Boreal forests, tundra, and ice caps are located in **sub-arctic** and **polar** areas of the world. Temperate and arctic conditions also occur at high elevations in mountainous regions in tropical and temperate areas of the world. These are sometimes referred to as **alpine** conditions.

As with Manitoba, there are differences in the number of people the environmental types are able to support in the rest of the world. Deserts, tundra, and high elevation areas are too hot, too dry, too cold, or do not have quality soil to support large numbers of people. On the other hand, a number of the environmental types in the temperate regions of the world support high populations.

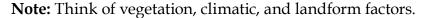


Learning Activity 1.8

World Environmental Types and Population



- 1. The following map, "Global Environmental Types," shows the approximate boundaries of the four main environmental types and some of the subcategories throughout the world. Refer to a population density or distribution map of the world in your atlas or from an Internet source and compare it to the map of global environmental types.
 - a) Name the environmental types that support very few if any people. In which parts of the world are they located? Why do so few people live there?

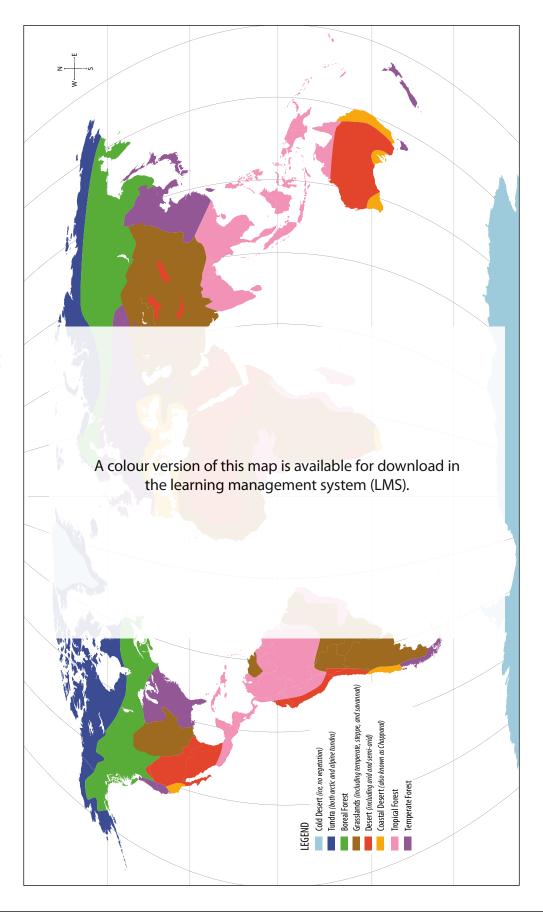


- b) Name the environmental types that support the highest population densities in the world. Where are they located? Describe the conditions that support high populations in these regions.
- 2. According to population growth estimates, some of the countries with the fastest population growths are located in less developed regions of the world. Many of these countries are located in environmental types that cannot support higher populations. What might be the impact of this trend on life in these regions?





Global Environmental Types



Global Environmental Types: What is Where, Why There, and Why Care?

Do you remember the definition of geography? Do you remember the meaning of the geographic viewpoint? As you work through the modules and learning activities in this course, remember to approach things from the geographic perspective and to ask geographic questions. The following exercise will enable you to analyze global environmental types by using the definition of geography.



Learning Activity 1.9

Analyzing Environmental Types Based on the Definition of Geography



- 1. Recall Gritzner's definition of geography, "What is Where, Why There, and Why Care?"
 - a) Select one environmental type that is *not* found in Manitoba.
 - b) Gather information about this different environmental type and record the appropriate information in the following table. Sources may include an atlas and Internet websites.

Learning Activity 1.9: Analyzing Environmental Types Based on the Definition of Geography (continued)

	Name of Environmental Type	
	Location(s) on Earth	
e?	Major Landforms Associated with Environmental Type	
What is Where?	Main Vegetation Types Associated with Environmental Type	
	Climatic Conditions Associated with Environmental Type	
	Distribution and Type of Human Settlement and Economic Activities Associated with Environmental Type	
Wh	y There?	
	y Care? at are some issues relating to	
this	s biome?	
act Hov reg	at human and economic ivities take place in this biome? w is it interrelated with other ions? y is this important?	
	,	



Summary

Global environmental types, also known as biomes or ecosystems, are geographic regions based on the major vegetation types and influenced by climate and landforms. There are four major environmental types: forest, grassland, desert, and tundra. Each of these can be further divided into subcategories. Three of the major environmental types (grassland, forest, and tundra) are found in Manitoba. Several environmental types in the temperate regions of the world have fertile soils, flat or rolling plains, and a good climate. They are also able to support large populations. Other types, such as desert, tundra, and some tropical rainforest regions are not able to support many people.

Notes

LESSON 5: WHY CARE?

Introduction

This lesson will emphasize the "why care" component of geography. You will learn about the importance of looking after Earth's complex environment and you will be encouraged to consider the impact of your individual actions on the environment. When you are aware of and care about the impact of your actions on the environment, you can take positive action and do your part to contribute to the well-being of the planet.

Why Care?

You will recall that the term "why care" is the last part of the definition of geography. This part of the definition refers to the reasons why geographic knowledge and skills are important for the geographer or for you as a student and a citizen of Manitoba, Canada, and the World. It also provides meaning for knowing where things are and why they are located there.



As the title suggests, this course deals with a number of important issues that Earth is facing in the twenty-first century. Some of these issues include global climate change, as well as pollution of the air, water, and soils. Other issues relate to the use and depletion of non-renewable natural resources and sustainable farming practices. Sustainable farming practices are farming methods that do not have a harmful impact on the environment and that can be used for a long time. Population growth, **urbanization**, and demands for food are also serious issues. Your community may be facing issues relating to recycling programs, the use of pesticides in farming or yard care, or public transportation and the reduction of fossil fuel use. You may be aware of other economic and environmental issues faced by your community or others in Canada.

Taking Action

It would be easy to feel helpless and become discouraged about problems facing the world. After all, as a young person trying to finish school, what can you do to make a difference? Will anyone listen to your voice? Will your actions change anything? You may even wonder if taking action as an individual will affect anyone else. These are all good questions.

Most people agree that the actions of an individual do make a difference. If there are many individuals who take action or lobby for change, they are sure to make a difference. If a politician receives letters about an issue from dozens of individuals, he or she will know that people are concerned and that action should be taken. Studies show that for every person who feels strongly enough about issues to write or call their elected leaders, there are at least ten more people who also feel strongly about the issue. Individuals with the same interests often get together and join forces to work for change. Group action happens only if there are like-minded individuals who decide to work together.

Our actions toward the environment and use of resources today will affect people in the future just as past actions affect us today. We would not likely need to worry about the extinction of plant and animal species if previous generations had been more careful in protecting natural habitats. What kind of impact will our actions have on generations that come after us? What kinds of decisions do we make today that will affect the health of Earth tomorrow?



It is important for all of us as **global citizens** to ask how our actions today will impact Earth tomorrow. We should be willing to look at the successes and mistakes of the past and use that information to help us make good decisions for the future. This is what is meant by the term **stewardship**, which means to look after something or someone else. In this context, it means that we need to look after Earth and keep it in good shape for future generations. This is particularly important in the use of non-renewable resources, such as oil and gas. We need to develop more renewable sources of energy such as water, wind, and solar power. We also have to ensure that our use of resources and our agricultural and economic activities are **sustainable**. This means that our activities should have limited impact on the environment without long-term, negative consequences. As individuals, we all have responsibilities to ensure that our lifestyles are sustainable and that we are good stewards of Earth's resources.



Learning Activity 1.10

Environmental Responsibility



 Brainstorm some environmental issues and concerns in your community or region. Use a variety of resources to collect a number of articles that deal with environmental concerns. Use the following table to summarize the issues reflected in at least three articles.

Write the headline and source of the article	Summarize the issue or problem discussed in the article	Summarize the suggested action that should be taken to solve the issue or problem. If no action is suggested, provide a recommendation for action.

Learning Activity 1.10: Environmental Responsibility (continued)

2. Reflect upon actions that you, as an individual, and other groups such as businesses and corporations can take to demonstrate environmental responsibilities. Identify at least two recommendations for action that you and other groups can take. Record your recommendations in the following table. Examples are provided to help you get started.

Suggestions for individual action
Examples:
■ riding a bicycle instead of driving a car to school or work
participating in local recycling programs
Suggestions for business/corporate action
Examples:
following suggested environmental guidelines that government has made into
law
enforcing the reduction of chemicals and pesticides in a corporation



Summary

The "why care" component of geography can be considered the most important component of all. It is important to learn how Earth functions and how humans have an impact on it, but it is much more important to use this information and apply it in a meaningful way. One way to do this is to encourage and pursue environmental stewardship and sustainability. In this way, we are protecting the fragile balance of Earth, ensuring that it is safe for future generations.

Notes



Global Environmental Types and Environmental Responsibility (30 marks)

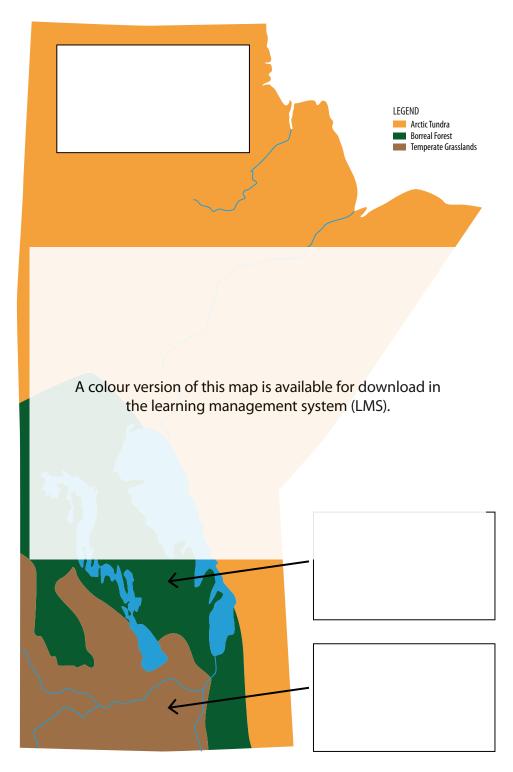
Review the material from Lesson 4 and Lesson 5 of this module (including the module lessons and learning activities) in order to complete this assignment. Be sure to read the questions carefully and provide answers in complete sentences. Please remember that you must write answers in your own words. Do not copy information directly from any of your sources. Keep the mark value of each question in mind as you do the assignment and develop your answers accordingly.

l.	Write a definition of the term <i>global environmental type</i> and list the four main global environmental types. (5 <i>marks</i>)

- 2. Refer to the following map of Manitoba's environmental types.
 - a) Label the three major environmental types found in Manitoba. (3 marks)
 - b) In the box provided, for each environmental type label, write a short descriptive statement about the landform, soils, and climate found in each type. (3 marks each for a total of 9 marks)

Assignment 1.2: Global Environmental Types and Environmental Responsibility (continued)

Environmental Types in Manitoba



Assignment 1.2: Global Environmental Types and Environmental Responsibility (continued)

.]	Ηι	ıman settlement patterns and environmental types are closely related.
â	a)	Identify at least two environmental types where large and dense population clusters are found. (2 <i>marks</i>)
1)	Describe the relationship between population and environmental types. (3 marks

Assignment 1.2: Global Environmental Types and Environmental Responsibility (continued)

It is important that humans recognize their impact on Earth.				
a)	Define the term stewardship. (2 marks)			
b)	Define the term sustainability. (2 marks)			
c)	Why are stewardship and sustainability important when looking after the environment? Give at least two examples to support your thinking. (4 marks)			

4.

MODULE 1 SUMMARY

Congratulations, you have completed Module 1!

Module 1 introduced you to the meaning of geography and its importance in decision making as it pertains to things ranging from urban planning to environmental impact studies. You also learned about the two major fields of geography—physical geography and human geography—and how these two fields are linked.

As you progressed through the module, you looked at place and identity from a geographic perspective and studied how the physical and human elements around the world change and how that change affects people's lives. You also looked at global environmental types and their relationship to world population clusters.

In this module, you were introduced to geography and how it impacts your world. This introduction to geography has helped you begin to understand what is meant by, and the impact of, the very powerful question, "What is where, why there, and why care?"



Submitting Your Assignments

It is now time for you to submit Assignments 1.1 and 1.2 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 1 assignments and organize your material in the following order:

=	
Module 1 Cover	Sheet (found at the end of the course Introduction)
Assignment 1.1:	Branches of Geography, and Place and Identity
Assignment 1.2:	Global Environmental Types and Environmental
	Responsibility

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Notes

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 1 Geographic Literacy

Learning Activity Answer Key

MODULE 1: GEOGRAPHIC LITERACY

Learning Activity 1.1: Defining Geography and Using Geographic Knowledge in Decision Making

1. This is a good time for you to review the definition of geography. Fill in the appropriate boxes in the graphic organizer that follows.



Note: To help you get started, the root words *geo* and *graphy* have been placed in the *Parent (root word)* boxes and the term *geography* has been placed in the *Word to Be Defined* box.

Follow these steps to complete the graphic organizer:

Step 1: In the *Meaning* box below the *Parent (root word)* box for geo, fill in the meaning of the term geo. In the *Meaning* box below the *Parent (root word)* box for graphy, fill in the meaning of the term graphy.

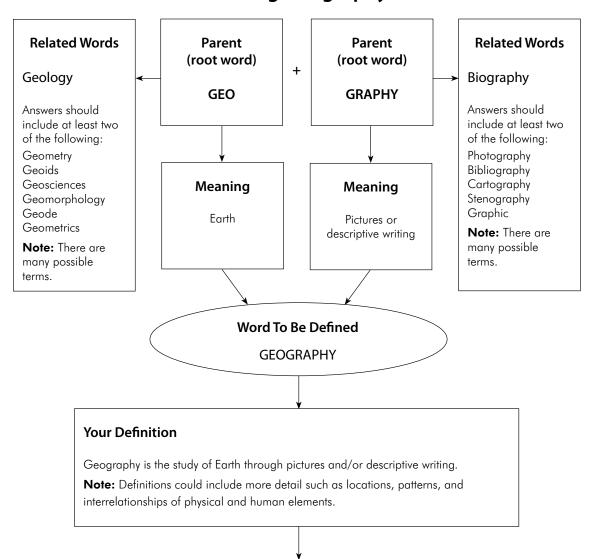
Step 2: Using the root words and the information in the lesson so far, write your own definition of geography in the *Your Definition* box.

Step 3: In the *Characteristics and Examples* box, located below the *Your Definition* box, write at least two words or phrases that describe the characteristics or give examples of geography. An example is provided to help you get started.

Step 4: In the *Related Words* box to the left of the *Parent (root word)* for geo, write at least two words that also have the root geo. An example is provided to help you get started. Feel free to use a dictionary if you need help.

Step 5: In the *Related Words* box to the right of the *Parent (root word)* for graphy, write at least two words that also have the root graphy. An example is included to help you get started. Feel free to use a dictionary if you need help.

Defining Geography



Characteristics and Examples

deals with physical and human elements on or near the surface of Earth

Answers should include at least two of the following:

- emphasizes the location of features
- makes use of maps to show locations
- physical elements include landforms, vegetation, soils, weather, etc.
- human elements include settlements, land use, transportation, etc.
- analyzes relationships between physical and human elements



2. Think of ways you use geographic skills and knowledge in your everyday life and list them in the box below. It might be a good idea to talk with your learning partner, parents, relatives, or neighbours to determine how they use geographic skills and knowledge in their jobs. Once you have brainstormed some examples, list them. Be sure to provide at least three examples that describe how you use geographic skills and knowledge in your everyday life. An example is provided to help you get started.

How I use geographic skills and knowledge in my everyday life . . .

Finding the best route to school in the morning

The following answers are just examples of a good answer. Responses should include at least three of the following.

- Deciding how to dress for the weather
- Locating a street address in town
- Determining how long it will take to get to a destination
- Checking the weather forecast to plan an outdoor activity
- Planning a trip
- Determining the local broadcast time of a live event in another time zone
- Discussing with your friends the location and details of a natural disaster or major event
- Converting imperial temperature or distance heard on a US television/radio station to the metric system
- Deciding when to start planting your crops
- Determining the best location for a trapline
- Locating your clients' homes on a business trip

Note: There are many possible answers.

3. Find a local or regional issue with geographic implications that is discussed in the media (newspapers, television, radio, podcasts, and website articles). Possible issues could include a land use debate, a transportation issue, an environmental concern, a construction site, or a weather phenomenon. Choose an article about this issue and carefully read it. After reading and understanding the message in the article, fill out the article analysis graphic organizer that follows.

The response for this question is dependent on the article chosen. Responses will vary.

Article Analysis Graphic Organizer		
Name of the article:		
Source:		
Describe the main issue in the article in one sentence.	Briefly discuss the opinion of the <i>author</i> . Support your response with at least one example from the article.	
Summarize the ideas and opinions in the article in three to five sentences.		
	Briefly discuss <i>your</i> opinion on the issue in the article. Justify your opinion with at least one example	
Represent the issues and/or ideas in the article with a drawing.	from the article.	
How is this relevant to geography?		

Learning Activity 1.2: Sorting the Fields of Geography

- 1. How well do you know the fields of geography?
 - a) Using the terms in the provided word bank, sort the terms into the three labelled columns provided in the following chart. Some terms may fit in more than one column.
 - b) There are two terms that do not correspond to any of the three categories provided. Identify these terms and place them in the fourth column. Be sure to give this column an appropriate title.

		Word Bank		
landforms settlements map-making earthquakes	urban studies GIS software rock types GPS units	transportation networks natural resources land use planning	satellite images population study natural vegetation	soils industry spreadsheets past events
		air photo interpretation	changes over time	

Physical Geography	Human Geography	Methods and Tools	History
landforms	settlements	map-making	past events
earthquakes	industry	GIS software	changes over time
soils	urban studies	spreadsheets	
rock types	transportation	GPS units	
natural vegetation weather and climate natural resources	land use planning agriculture population study environmental lobby	air photo interpretation satellite images	

Learning Activity 1.3: Mapping Canada

- 1. Without looking at a map or a globe, draw your mental map of Canada on a sheet of paper labelled "My Mental Map of Canada." Your map should include the following:
 - an outline of Canada and the provincial and territorial boundaries
 - the major water bodies and physical features
 - the provincial and territorial capital cities as well as the capital city of Canada
 - a title (My Mental Map of Canada)

Don't feel bad if you have some trouble, but give it a try! Once you have completed the map, refer to a map of Canada in an atlas to see how you did. Good luck and hopefully your mental image will have at least a vague resemblance to a real map of Canada!

- 2. Use the outline map of Canada on the following page to improve your knowledge of places and locations. Refer to an atlas or a map on the Internet to help you locate and label the following:
 - Locate the *capital cities* of all the Canadian provinces and territories. Clearly identify the location with a large dot. Then, using uniform, small-size lettering, print the city name beside each dot.
 - Locate and label the *national capital*.
 - Label all the *provinces and territories*, using larger letters.
 - Label the *Pacific, Atlantic,* and *Arctic Oceans,* as well as *Hudson Bay.*
 - Below is a list of all the provinces, territories, capital cities, and bodies of water that you will need to identify. Please note that the following is a list of all the terms you need to label. They are not organized into categories. They are only there to help you get started.



Northwest Territories Charlottetown Alberta Yukon Regina Manitoba Atlantic Ocean Nunavut	Quebec City Winnipeg Victoria Iqaluit Newfoundland/ Labrador St. John's Yellowknife Prince Edward Island	British Columbia Ottawa Pacific Ocean Ontario Hudson Bay Fredericton Quebec Toronto	Saskatchewan Halifax New Brunswick Edmonton Nova Scotia Whitehorse Arctic Ocean
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Political Map of Canada—Answer Key



Learning Activity 1.4: Mapping North America

1. Use the outline map that follows, titled "Political Map of North America," to label the countries of North America. Refer to the Internet or your atlas for information. Be sure to label each country with lettering that is clear and uniform in size. The following list of countries is provided to help you get started.

Canada	Belize	Honduras	Cuba	Dominican Republic
United States	Guatemala	Nicaragua	Haiti	Jamaica
of America	El Salvador	Costa Rica	Panama	Bahamas
Mexico				

See map entitled Political Map of North America—Answer Key.

2. Use the outline map titled "Major Landform Regions of North America" on the following page to label the major landform regions and major water bodies in North America. Refer to your atlas for information. A list of the regions is provided to help you get started.

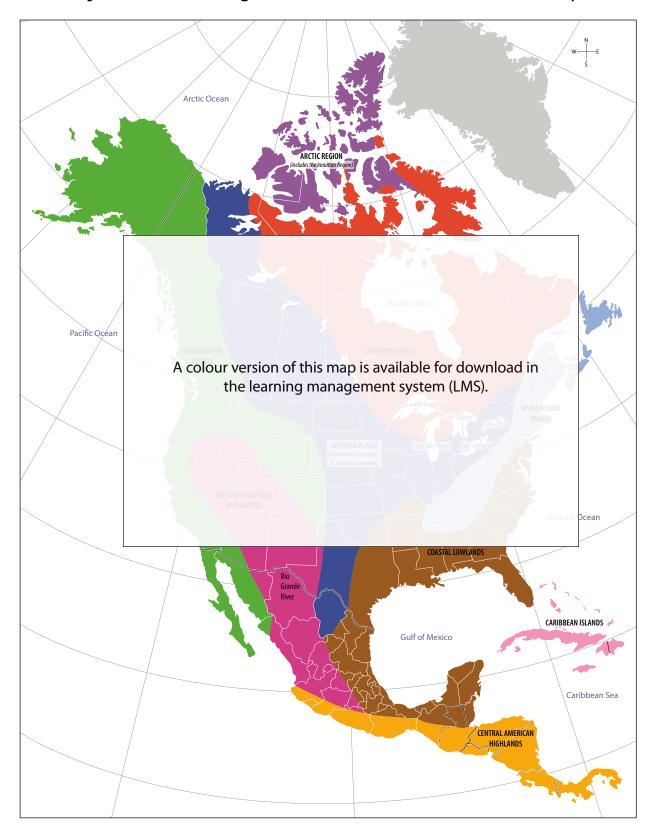
Major Landform Regions	Water Bodies
Cordilleran Region	Arctic Ocean
Interior Plains (includes Great Lakes-	Atlantic Ocean
St. Lawrence Lowlands)	Pacific Ocean
Canadian Shield	Hudson Bay
Arctic Region (includes the Innuitian Region)	Gulf of Mexico
Western Plateaus and Basins	Caribbean Sea
Coastal Lowlands	Rio Grande River
Central American Highlands	Lake Superior
Caribbean Islands	Lake Michigan
	Lake Huron
Appalachian Region	Lake Ontario
	Lake Erie

See map entitled Major Landform Regions in North America—Answer Key.

Political Map of North America—Answer Key



Major Landform Regions in North America—Answer Key



Learning Activity 1.5: Place and Identity

1. Think about communities, towns, and cities that have promoted their identity by creating roadside monuments or catchy sayings. These can be in Manitoba or other familiar places in North America. Try to explain the origin or reason for the choice of monument or saying. Record your examples in a chart similar to the following. Examples are provided to help you get started.

Answers will vary. The following are examples of appropriate responses.

Name of Community	Monument or Saying	Explanation
Brandon	"The Wheat City"	Crop for which Brandon became well-known
Steinbach	Rolls Royce Car and/or "The Automobile City"	Known for its many car dealerships, to attract customers from nearby Winnipeg
Boissevain	Turtle	Near Turtle Mountains, an area with many turtles in local lakes and ponds
Gladstone	Happy Rock	Direct translation of town's name
Lundar	Canada Goose	Common bird in the Interlake region
Glenboro	Camel	To reflect Spirit Sands in nearby Spruce Woods Provincial Park
Onanole	Elk	Common animal in Riding Mountain National Park



For more examples check out Big Things in Manitoba at www.bigthings.ca/bigmb.html.

2. Think about sports teams in Manitoba, Canada, or North America, with names and logos that reflect specific geographic locations or features, major economic activities, or common birds and animals. Record your examples and provide an explanation for each. Examples are provided to help you get started.

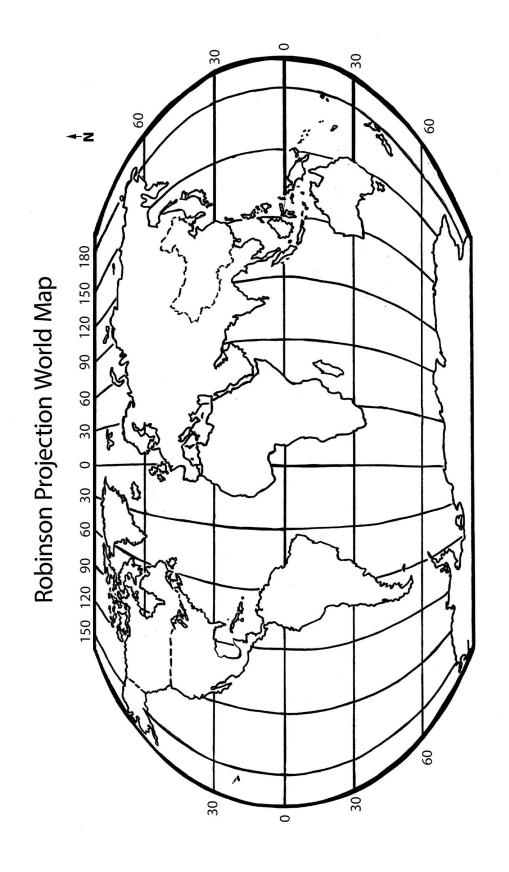
Answers will vary. The following are examples of appropriate responses.

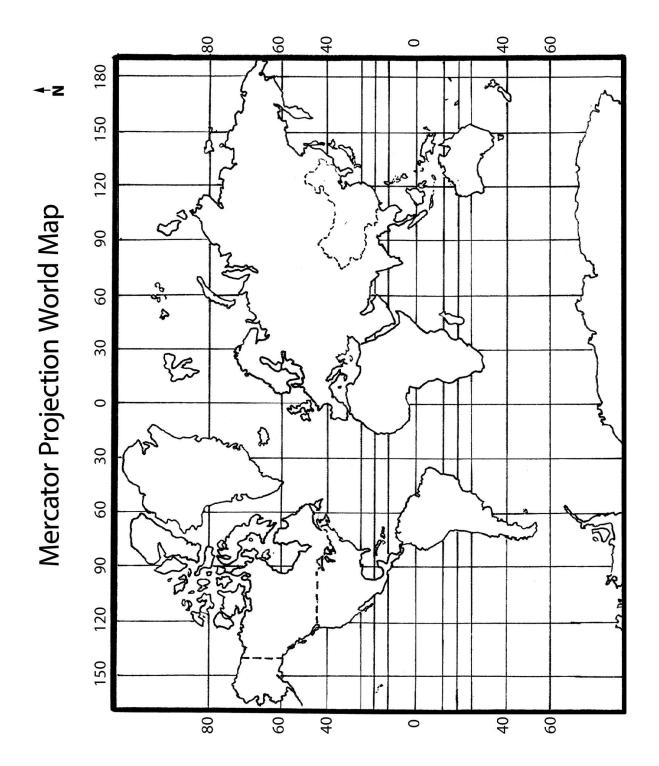
Name of Sports Team	Town/ Community	Explanation
Goldeyes (baseball)	Winnipeg	Named after common fish in local waterways
King Miners (hockey)	Thompson	Named for the main economic activity: mining
Wheat Kings (hockey)	Brandon	Named after the major crop in the region
Stampeders (football)	Calgary	Named after the annual stampede event
Oilers (hockey)	Edmonton	Major oil refining centre
Celtics (basketball)	Boston	Many Irish settlers in the region
Senators (hockey)	Ottawa	Home of the Senate of Canada

Learning Activity 1.6: Map Projections and Perceptions

- 1. Refer to the Robinson Projection World Map and the Mercator Projection World Map that follow.
- a) On each map, observe the following pairs of countries and continents. For each pair, determine which one appears to be larger. Record your findings in the following table.
 - i) Greenland and South America
 - ii) China and Canada
 - iii) North America and Africa

	Mercator Projection World Map			Robinson Projection World Map		
	Greenland or South America	China or Canada	North America or Africa	Greenland or South America	China or Canada	North America or Africa
Appears Larger	Greenland	Canada	North America	South America	Canada	Africa





- b) Using either your atlas or the Internet, search the total land area for each of the following countries and continents. For each pair, determine the country or continent that has the larger total land area. Record your findings in the following table.
 - i) Greenland and South America
 - ii) China and Canada
 - iii) North America and Africa

Note: Be aware of the units of measurement used when researching the total land area. You may need to convert some numbers so that they all have the same unit of measurement.

	Greenland or South America	China or Canada	North America or Africa
Larger by	South America:	Canada :	Africa:
Total Land Area	17,819,000 km²	9,984,670 km²	30,500,000 km²

- c) For each country or continent pair, determine which country or continent is closer to the equator. Based on the Mercator Projection World Map and actual total land area, do the countries or continents closest to the equator only appear to be smaller, or are they in fact smaller? Record your findings in the following table.
 - i) Greenland and South America
 - ii) China and Canada
 - iii) North America and Africa

Greenland or		China or		North America	
South America		Canada		or Africa	
Country/	Appears	Country/	Appears	Country/	Appears
Continent	Smaller or	Continent	Smaller or	Continent	Smaller or
Closer to the	Is	Closer to the	Is	Closer to the	Is
Equator	Smaller	Equator	Smaller	Equator	Smaller
South America	Appears smaller than Greenland	China	Is smaller than Canada, but only slightly	Africa	Appears smaller than North America



Learning Activity 1.7: Manitoba Environmental Types

1. The following map shows the location and extent of environmental types in Manitoba. Look through magazines or do an image search online for pictures of the three environmental types and attach them near the appropriate regions on the map. If you already have photographs of these three environmental types in your personal collection, feel free to use those instead.



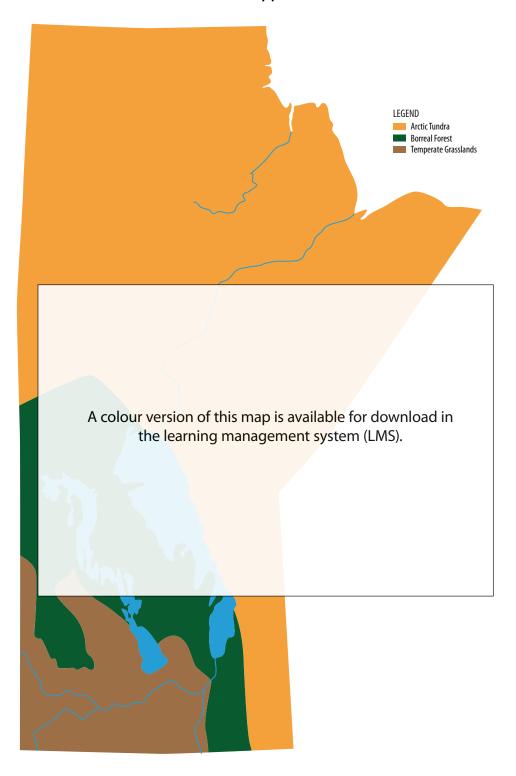
Note: Appropriate pictures could include a grassland scene (could show a farming region); a forest scene with coniferous trees, rocky outcrops, and rivers; and a tundra scene with barren landscape and, perhaps, a polar bear.

- 2. Refer to a population density map of Manitoba in your atlas or from an Internet source and compare it to the map of environmental types in Manitoba.
 - a) Where does most of Manitoba's population reside?

 Most of Manitoba's population is located in the southern half of the province, primarily below Lake Manitoba and Lake Winnipeg.
 - b) With respect to the environmental types in Manitoba, why do you think Manitoba's settlement pattern is the way it is?

Most of Manitoba's population is located in the grassland environmental type. This region has flat land, fertile soils, and climatic conditions that are good for farming. The population in the forest environmental type occurs mainly in isolated clusters such as mining, forestry, and hydro towns, as well as in First Nations communities. Many other places have few if any people due to the cold climate, and lack of soils and resources. The small tundra environmental type in Manitoba has several coastal communities, the largest of which is Churchill. It serves as a port and tourism centre. Most of the tundra region has few, if any, people due to the cold, barren landscape and isolated location.

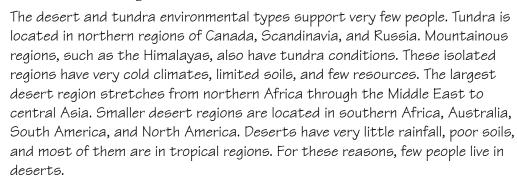
Environmental Types in Manitoba



Learning Activity 1.8: World Environmental Types and Population

- 1. The following map, "Global Environmental Types," shows the approximate boundaries of the four main environmental types and some of the subcategories throughout the world. Refer to a population density or distribution map of the world in your atlas or from an Internet source and compare it to the map of global environmental types.
 - a) Name the environmental types that support very few if any people. In which parts of the world are they located? Why do so few people live there?

Note: Think of vegetation, climatic, and landform factors.



b) Name the environmental types that support the highest population densities in the world. Where are they located? Describe the conditions that support high populations in these regions.

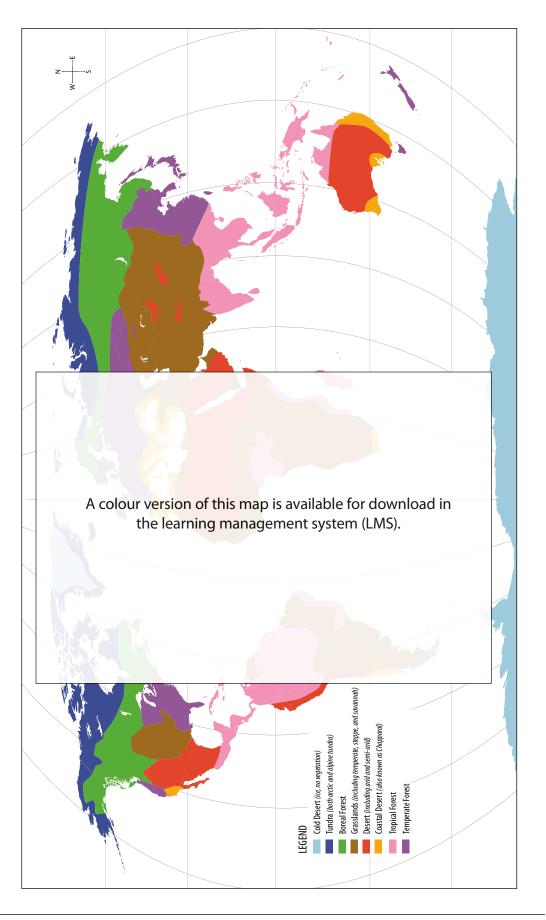
Forest environmental types support the highest population densities. Specifically, the mid-latitude broadleaf and mixed forest regions are where most of the world's people live. These regions are located in East Asia, Europe, and eastern North America. Grasslands and tropical forests in India, West Africa, and South America also support high populations. These regions consist of plains with fertile soils and suitable climates to support a variety of agricultural activities.

2. According to population growth estimates, some of the countries with the fastest population growths are located in less developed regions of the world. Many of these countries are located in environmental types that cannot support higher populations. What might be the impact of this trend on life in these regions?

These regions will have difficulty producing enough food for growing populations. There may also be an inadequate water supply for domestic and agricultural use. Many countries in Africa are already struggling with malnutrition and starvation.



Global Environmental Types



Learning Activity 1.9: Analyzing Environmental Types Based on the Definition of Geography

- 1. Recall Gritzner's definition of geography, "What is Where, Why There, and Why Care?"
 - a) Select one environmental type that is *not* found in Manitoba.
 - b) Gather information about this different environmental type and record the appropriate information in the following table. Sources may include an atlas and Internet websites.



Note: Desert is the only one of the four major environmental types not found in Manitoba. If you selected desert as the major environmental type for this activity, see the answer key that follows. If you selected one of the subcategories, your answers will vary.

	Name of Environmental Type	Desert
	Location(s) on Earth	Southwestern USA
		Northern Mexico
		West Coast of South America
		Central and Southern Argentina
		Northern Africa and the Middle East
		Southwest Africa
		Central Asia
	Maiar Landfarra Accessibled	Central Australia
ė;	Major Landforms Associated with Environmental Type	Most deserts are plains
her	With Environmental Type	Many have sand dunes
What is Where?	Main Vanatation	Some are mountainous
at is	Main Vegetation Types Associated with	Shrubs
Wha	Environmental Type	Sparse grasses
		Cactus
	Climathia Can dikiana	Some barren sand
	Climatic Conditions Associated with	Dry
	Environmental Type	Little rainfall
	,,,,	Tropical deserts are hot
	Distribution and Type of Human Settlement	Cool in temperate regions
		Generally few settlements
	and Economic Activities	Sparsely populated
	Associated with	Many areas have no population
	Environmental Type	Some grazing and subsistence farming in semi-desert regions
10/1	ny Thoro?	Some deserts are underlain by large oil and gas reserves
VVI	ny There?	Many deserts in subtropical regions are caused by dry air in subtropical high-pressure zones. A number of coastal deserts are
		caused by cool offshore ocean currents. Some temperate deserts are
		caused by interior continental locations or by rain shadows on the
		leeward sides of mountains.
WI	ny Care?	The desert biome covers over a third of Earth's land area. The
What are some issues relating to this biome? What human and economic activities take place in this biome? How is it interrelated with other regions?		world's deserts are expanding due to climate change, overgrazing,
		and deforestation in the margins of semi-desert regions. Serious
		conditions exist in Africa, where the Sahara Desert is expanding
		southward in the Sahel region. Many people who herded animals and grew crops in this region in the past are now starving. Western
		countries, including Canada, are providing food and development aid
		to people in this region. Several desert countries have large deposits
WI	ny is this important?	of oil, resulting in some tense political situations with Western oil-
		consuming countries. The drilling and pumping of oil is also causing
		considerable damage to fragile desert environments.
L		

Learning Activity 1.10: Environmental Responsibility

1. Brainstorm some environmental issues and concerns in your community or region. Use a variety of resources to collect a number of articles that deal with environmental concerns. Use the following table to summarize the issues reflected in at least three articles.

Write the headline and source of the article	Summarize the issue or problem discussed in the article	Summarize the suggested action that should be taken to solve the issue or problem. If no action is suggested, provide a recommendation for action.

Answers will vary depending on the articles that were chosen. Answers could include some discussion of air, soil, or water pollution; climate change; resource use; farming practices; urbanization; recycling; or fossil fuels.

2. Reflect upon actions that you, as an individual, and other groups such as businesses and corporations can take to demonstrate environmental responsibilities. Identify at least two recommendations for action that you and other groups can take. Record your recommendations in the following table. Examples are provided to help you get started.

Suggestions for individual action
Examples:
■ riding a bicycle instead of driving a car to school or work
■ participating in local recycling programs
Currentians for business/somewhat patien
Suggestions for business/corporate action
Examples:
 following suggested environmental guidelines that government has made into law
■ enforcing the reduction of chemicals and pesticides in a corporation
5 · · · 5 · · · · · · · · · · · · · · ·
·

Answers will vary.

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 2 Natural Resources

MODULE 2: NATURAL RESOURCES

Introduction

This module will help you familiarize yourself with the world's natural resources as well as issues relating to their use.

In this module, you will

- use various maps to identify the locations of major natural resources in the world
- learn about Indigenous People's perspectives and rights regarding resource use
- identify factors that influence the changing use of natural resources over time
- identify ways in which competing interests and needs influence the control and use of land and natural resources
- describe issues related to sustainability of resource extraction and use
- learn about the implications of wealthy countries extracting resources from the world's poorest countries
- reflect on diverse views regarding the use of natural resources
- reflect on your personal choices regarding resource use

Module 2 consists of three lessons. Each lesson has learning activities to help you practise, review, and reflect upon what you have learned. At the end of the module, you will find an answer key for the learning activities in this module.



As you work through this course, remember that your learning partner and your tutor/marker are available to help you if you have questions or need assistance with any aspect of the course.

Assignment

When you have completed the assignment for Module 2, submit your completed assignment to the Distance Learning Unit either by mail or electronically through the learning management system (LMS). The staff will forward your work to your tutor/marker.

Lesson	Assignment	Marks
3	Assignment 2.1: Natural Resources	81

Writing Your Midterm Examination



You will write the midterm examination when you have completed Modules 1 and 2 of this course. The midterm examination is based on Modules 1 and 2, and is worth 25 percent of your final mark in the course. To do well on the midterm examination, you should review all the work you complete in Modules 1 and 2, including all the learning activities and assignments. You will write the midterm examination under supervision.

LESSON 1: LOCATION OF NATURAL RESOURCES

Lesson Focus
By the end of this lesson, you will be able to
☐ identify major natural resources on maps of the world, North America, and Canada, including water, forest, fossil fuels, and metallic and non-metallic minerals
select information from a variety of sources, including visual, print, and electronic
organize and record information in a variety of formats such as maps, graphs, and tables
select and use appropriate tools and technologies to accomplish tasks
 present information and ideas in a variety of formats appropriate for audience and purpose

Introduction

In this lesson, you will learn about how natural resources are distributed throughout the world. You will define the term natural resource and distinguish between renewable and non-renewable resources. You will locate where water, forest, fossil fuel, and mineral resources are found by identifying these features on maps of Canada, North America, and the world.

Defining Natural Resources

What is a natural resource? You have likely heard this term many times and may have an idea of what a natural resource is. You may be thinking of things such as oil and gas, or perhaps metals such as nickel and gold. These are examples of natural resources; however, there are many other natural resources. So, how would you define the term *natural resource*?

What Is a Natural Resource?



A resource is any item or material that is of value to humans. A natural resource refers to materials that are found in the natural environment in the form of raw materials. Many **natural resources** need to be removed and processed before they can be used by humans. Most people think of **minerals** when they think of natural resources. Other naturally occurring materials such as wood (from forests), water, soils, and even plants and animals are also natural resources. As such, a natural resource can be defined as any naturally occurring material that is of value to humans.

Renewable and Non-Renewable Resources



Natural resources can be either **renewable** or **non-renewable**. A renewable resource is one that can be replaced or regrown. Forests, fish, soils, and water are renewable resources if managed properly. Trees can be replanted and given time to grow, fish stocks can be replenished, soils can be managed carefully to maintain fertility, and water is renewed and replenished through the hydrologic (water) cycle. If mismanaged or polluted, however, these resources may be reduced in quality and quantity, or may no longer be renewable.

As the term implies, non-renewable resources are those that cannot be renewed or replenished within an average human life span. Non-renewable resources usually require millions of years to form. Minerals such as iron, copper, and gypsum, as well as fossil fuels such as oil and gas are examples of non-renewable resources. In order to conserve resources and to protect the environment, people are encouraged to reduce their dependence on resources and to recycle and reuse resources whenever possible.



This may be a good time to ask your learning partner for help. Remember, your learning partner is anybody whom you choose to help you with your course.



Learning Activity 2.1

Natural Resources—Sort and Predict

- 1. Use the information from the introductory section as well as your general knowledge to complete the following learning activity. As you work through the remainder of the learning activity, check back on your predictions and make any necessary corrections.
 - a) Read the list of resources that follows and sort the resources into four different categories by placing them into the appropriate boxes.
 - i) Within the mineral resources category, you must sort terms between two subcategories: metallic and non-metallic.
 - b) Three categories are identified, but you will have to come up with a name for the fourth category. For words that you are unsure of, predict in which category they might belong.
 - c) In the brackets after each category name, indicate whether the resources in that category are renewable (R) or non-renewable (N).

Word Bank					
potash	oil	limestone	coal	diamonds	precipitation
rivers	plywood	paper	wetlands	iron	gold
lumber	nickel	salt	wells	groundwater	gravel
copper	lakes	berries	natural gas	particleboard	

Water	Mineral Re	esources ()	Forest	
Resources ()	Metallic	Non-Metallic	Resources ()	



You can now assess your learning activity by consulting the answer keys at the end of this module. Keep up the great work!

Major Natural Resources

Let's take a look at the major natural resources available to us. In the following section, you will find descriptions and examples of water, forest, fuel, and mineral resources, as well as brief descriptions of fish and land resources.

Water Resources

Water: We are all very familiar with this important resource. In fact, our lives depend upon water. We use it every day for drinking and cleaning. We see it around us in the form of streams, lakes, and precipitation. Agriculture and industry rely on it. Without water, life as we know it would not exist. Earth is sometimes called the blue planet because nearly three quarters of its surface is covered by water. Water is a renewable resource; however, that does not mean we can afford to pollute our rivers, lakes, and oceans.



Water occurs in three physical states: liquid, gas, and solid. We are most familiar with water in its liquid form as land **runoff** or **surface** water in streams, rivers, ponds, lakes, and oceans. Liquid water can also be found as **groundwater** within the many spaces and pores in soil, sand, gravel, and porous rock. Drinking water can be obtained from wells that tap groundwater.



Water is classified as either **salt water** (oceans and seas) or **fresh water** (lakes, rivers, wetlands, and groundwater). The health of Earth's salt water and fresh water is critically important to life on Earth. Both are part of the hydrologic cycle and, together, support and sustain the many varieties of life on our planet.

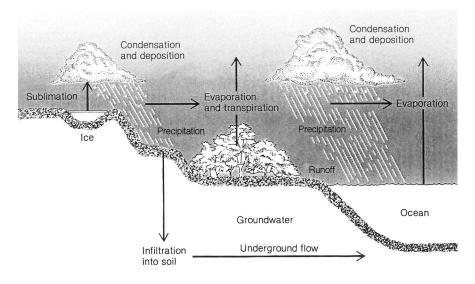


As part of the hydrologic cycle, liquid water evaporates into the atmosphere in the form of a gas known as **water vapour**. Water vapour is an important part of our atmosphere as it provides humidity, forms clouds, and results in all forms of **precipitation**.

Water also occurs in a solid state (snow, ice, and glaciers) when it reaches temperatures below the freezing point. Fresh water and salt water freeze at different temperatures. Fresh water freezes at zero degrees Celsius while salt water does not freeze until several degrees below zero because of its high salt content. Most frozen water (water in a solid state) is found in mountain glaciers and continental ice sheets such as those in Greenland and Antarctica. You are likely most familiar with water in its solid state as snow in winter or as ice cubes in your freezer at home.



Water is in constant motion as it changes states and makes its way through the hydrologic cycle. Surface water evaporates and becomes a gas in the atmosphere. There, it **condenses** to form clouds and precipitation. Some rainfall becomes groundwater, but much of it runs off the land into streams, lakes, rivers, and, eventually, the ocean. Precipitation in the form of snow usually stays on the ground much longer, often for a season (winter) or even for centuries (in the case of glaciers) in cold regions. Ice can evaporate directly into the atmosphere, without having to melt first, in a process known as **sublimation**. Once back in the form of surface water, it evaporates again and the cycle repeats itself.



Moran, Joseph M., and Michael D. Morgan. *Meteorology: The Atmosphere and the Science of Weather*. 3rd ed. New York, NY: MacMillan Publishing Company, 1991. 127.



The use of water can be either instream use or withdrawal use. **Instream** use refers to the use of water without removing it from rivers and lakes. Examples of instream use include the generation of hydroelectric power, recreation activities, transportation activities, and fishing. **Withdrawal** use, as the term implies, means that water is removed from rivers and lakes, although most of it is usually returned after use. Withdrawal water is used in manufacturing and agriculture, as well as in thermal electric generating stations. Withdrawal water is also consumed by humans, animals, and plants.

Canada has a wealth of water resources, compared to most other countries in the world, with about 20% of the world's total groundwater resources. Canada also has approximately 20% of the world's fresh water, although less than half of this is available for human use. Canada has many large lakes and numerous rivers. Manitoba boasts over 100,000 lakes! It is no wonder that many Canadians take water for granted. Although we drink less than three litres of water per day on average, Canadians are the second largest **per capita** (per person) users of water in the world, at over 300 litres per day. The





five countries of the world with the largest available freshwater supplies are (in order from the largest) Brazil, Russia, Canada, China, and Indonesia. (See www.worldwater.org.)



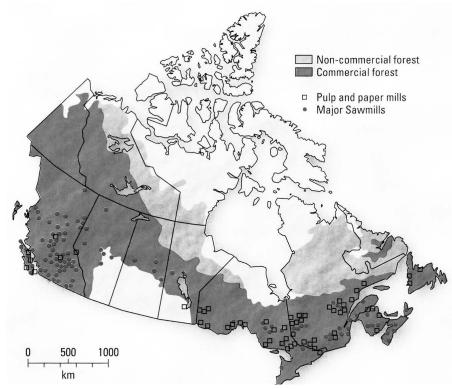
Unfortunately, water resources are not evenly distributed in Canada or in other areas of the world. In Canada, areas such as the prairies frequently experience water shortages and **drought**. Generally, dry areas of the world such as deserts do not have enough freshwater resources. The availability of water can also be inconsistent. An area may get too much rainfall and experience flooding one year, while suffering drought conditions another year. The use of water to generate hydroelectric power often results in flooding and loss of land for other uses. Management of water resources, ensuring the presence of a reliable water supply, and the effects of pollution are important water resource issues in Canada and around the world.

Forest Resources

Most Canadians know that Canada is a land of vast forests that stretch across the country, from Newfoundland to British Columbia. Forests cover almost 50% of Canada's land area, although only about half of that is suitable for commercial forestry. The only countries in the world with larger forested areas are Russia and Brazil. Look at natural vegetation maps in your atlas or online for other major forested regions in the world. Forests are considered to be a renewable resource because they can be replanted by humans or regrown naturally over time.



Forests can be classified in a number of ways. They can be classified by tree species. Coniferous trees such as spruce, pine, and fir are cone-bearing trees with needle leaves. Lumber from coniferous trees is often called **softwood** lumber. In Canada, coniferous forests are found throughout most of the Canadian Shield and in the Cordilleran regions. Deciduous trees such as poplar, maple, and birch are usually broad-leaved and lose their leaves over the winter. Lumber from deciduous trees is **hardwood** lumber. Deciduous forests are found in the Great Lakes—St. Lawrence Lowlands region and in the southern fringes of the Canadian Shield. Some areas, such as much of Atlantic Canada, have mixed forests that include both types of trees.



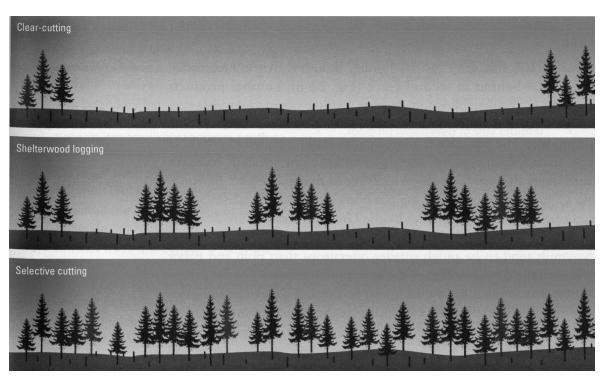
Clark, Bruce W., and John K. Wallace. *Geographic Issues of the Twenty-first Century*. Don Mills, ON: Pearson Education Canada Inc., 2005. 300.

Forests can also be classified according to their commercial value. Commercial forests have trees that are large enough and grow quickly enough to be harvested easily for making lumber products, as well as pulp and paper. Commercial forests in Canada include most of the Cordilleran region, the southern parts of the Canadian Shield, and all of the Atlantic and Great Lakes—St. Lawrence Lowlands regions. Commercial forests are also located in the Cordilleran region of the United States of America.



A number of cutting methods are used in the forest industry. The most common method is **clear-cutting**, where all the trees in an area are cut. In **selective cutting**, only trees of a certain size or species are cut. **Shelterwood logging** involves the clear-cutting of small areas while other trees are left standing to reseed the open spaces. There is controversy over which cutting methods are best. Forest companies often prefer clear-cutting since it is fast and economical. Those concerned about the environment often prefer selective cutting to encourage faster regrowth of forests and to save habitat for wildlife. However, recent research has indicated that even selective cutting, like clear-cutting, can cause a significant loss of wildlife in an area.

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Clark, Bruce W., and John K. Wallace. *Geographic Issues of the Twenty-first Century*. Don Mills, ON: Pearson Education Canada Inc., 2005. 305.



Non-commercial forests have smaller trees that take longer to grow. These forests grow in cold and dry conditions in the north and are usually hard to reach. The northern parts of the boreal forest in the Canadian Shield are non-commercial forests.



Forests are important for many reasons other than just providing wood products and paper. They also provide habitats for many kinds of life, including animals, birds, insects, plants, and others. In the process of **photosynthesis**, trees remove **carbon dioxide** from the atmosphere and return oxygen to the atmosphere. Forests hold a lot of water, which helps reduce flooding. Tree roots hold the soil in place and reduce erosion. Wetlands in forested regions help to purify water. Forests also provide areas for hunting and trapping by many **First Nations** and other people. Certain tree species also provide edible berries. Furthermore, forests are important for tourism and recreational use. As you can see, forests are an important renewable resource that provide us with many different and valuable things. This is why conservation and **sustainable** practices are of utmost importance.

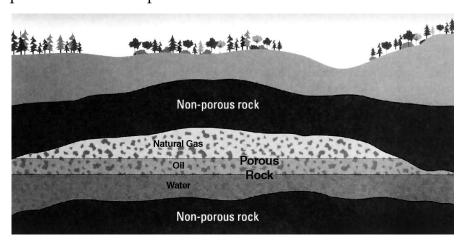
Fossil Fuels



A fossil fuel is any mineral that can be burned to produce energy. Oil, natural gas, and coal are examples of **fossil fuels**. These fuels originate from the remains of marine animals and plants that lived in shallow seas and oceans millions of years ago. As the remains of these organisms fell to the sea floor, layers of **sediments** covered them up and accumulated for long periods of time. After millions of years, the weight of the sediments compressed the layers near the bottom into **sedimentary rock**. Pressure, heat, and the action of bacteria changed the organisms into **hydrocarbons** often called **crude oil**. Oil and gas originated with marine animal life, while coal originated with marine plant life.



Oil and gas fill and move through porous spaces in sedimentary rock. Since oil is lighter than water, it will always float above groundwater and move upward. Natural gas is lighter than oil and will rest on top of oil. Oil and gas are "trapped" when they move up against **impermeable** or **non-porous** rock layers that do not allow liquids to pass through them. **Geologists** look for new oil and gas deposits in areas of sedimentary rock where they think such **traps** exist. In some places, such as the Athabasca tar sands in Alberta, oil seeps upward into sand deposits from which it can be extracted.



Clark, Bruce W., and John K. Wallace. *Geographic Issues of the Twenty-first Century*. Don Mills, ON: Pearson Education Canada Inc., 2005. 344.



Fossil fuels are found on land that was once covered by shallow seas as well as under the ocean floor. In Canada, the largest oil and gas deposits are in Alberta, with smaller deposits in Saskatchewan, Manitoba, British Columbia, and Ontario. Manitoba's deposits are in the southwestern part of the province near the towns of Virden and Melita. Canada also has large offshore oil and gas deposits. These are located on the **continental shelf** off the Atlantic coast and in the Beaufort Sea in the Arctic region.

The largest oil deposits in the United States of America are found in Texas, while those in Mexico are in the Gulf of Mexico coastal region. Approximately half of the world's petroleum deposits are located in the Middle Eastern countries, with the largest reserves in Saudi Arabia. Countries in other regions with significant oil deposits include Russia, Venezuela, Norway, Indonesia, Nigeria, and Angola. One of the largest offshore deposits in the world is in the North Sea between the United Kingdom and Norway.

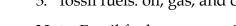


The production, refining, and transportation of fossil fuels have a profound effect on the environment, polluting soil and water. The biggest problems surrounding fossil fuels are the effects of their extraction and use on the environment. The burning of fossil fuels produces large amounts of carbon dioxide and other **emissions** that cause air pollution and **global warming**. Many people are concerned about our heavy reliance on fossil fuels in industry and transportation. They are seeking ways to reduce the use of oil and gas and are looking for alternative sources of energy with fewer harmful effects on the environment. People are also increasingly concerned with issues related to the transport of oil and gas, including pipeline ruptures and train tanker-car accidents. Coal mining is still a common economic activity in many parts of the world, although there has been a decline in the use of coal in recent decades. Some of the world's largest coal deposits are found in the southeastern United States of America, the Ukraine, and China.

Metallic and Non-metallic Minerals

Minerals occur naturally within our planet. They are non-living and are located in and among rocks. **Minerals** can be divided into three categories for the purpose of this course:

- 1. metallic: gold, copper, and nickel
- 2. non-metallic: gravel, potash, diamonds, and limestone
- 3. fossil fuels: oil, gas, and coal



Note: Fossil fuels were previously discussed.

We often take minerals for granted because so many common items around us are made from them. Any items containing plastics, metals, cement, and stone are produced from minerals. Minerals are non-renewable resources.



Clark, Bruce W., and John K. Wallace. *Geographic Issues of the Twenty-first Century*. Don Mills, ON: Pearson Education Canada Inc., 2005. 321.

Metallic Minerals



Metallic minerals produce a metal when they are processed. Metallic minerals include iron, nickel, gold, silver, and copper. Metallic minerals are found in **igneous rock**. Metals are found in molten rock (**magma**) deep beneath Earth's crust. Geologic forces push magma upward into cracks and spaces in the igneous rock within Earth's crust. When magma cools and solidifies, minerals are **concentrated** into layers according to their density. Minerals can also be concentrated when hot molten rock comes into contact with existing rock inside Earth's crust. Concentrations of minerals are known as **ore bodies**. Geologists looking for metallic minerals will look for concentrations of minerals in areas of igneous rock.



The Canadian **Shield** is composed of igneous rock and is the largest source of metallic minerals in Canada. Thompson (nickel), Flin Flon (copper, nickel, and zinc), and Snow Lake (copper and nickel) are mining towns located in the Manitoba portion of the Canadian Shield. Igneous rock is also found in the Cordilleran and Atlantic regions, as well as in some mountains in the Arctic. Numerous metallic minerals occur in these regions.

Metallic minerals are found in most mountain systems around the world and in shield landscapes on all continents. Iron ore is produced in several countries around the world including Brazil, Australia, and China. Gold is produced in many countries including South Africa, the United States of America, and Australia. Canada also produces gold.

Non-metallic Minerals



Non-metallic minerals produce non-metal materials when they are processed. Minerals that are not metallic or fossil fuels are usually referred to as non-metallic or industrial minerals. These include sand, gravel, salt, potash, gypsum, diamonds, and others.



Many non-metallic minerals occur in areas of **sedimentary rock**. The Canadian Interior Plains and most of the Great Lakes—St. Lawrence Lowlands are composed of sedimentary rock.



Canada is the world's largest producer of potash, which is used in agricultural fertilizers. Most of Canada's potash deposits are in Saskatchewan. Other major potash producers around the world are Russia and Belarus. In Manitoba, the limestone quarries near Stonewall and the gravel deposits near Bird's Hill north of Winnipeg are examples of non-metallic (industrial) mineral extraction. Construction minerals such as sand and gravel are found throughout most regions of Canada. In 1991, diamonds were discovered in Canada and, in 1998, the first diamond mine opened northeast of Yellowknife near the Nunavut/Northwest Territories boundary. Other major diamond-producing regions in the world are southern Africa, Russia, and Australia. Many different non-metallic minerals are found throughout the world.

It is hard to imagine how we could survive without mineral resources. The extraction and processing of minerals is also an important part of the economy and creates many jobs. Mining, however, has a number of negative effects on the environment. Removal of topsoil, excavations in the earth, as well as water and air pollution associated with mining and processing are common problems. Further problems occur when there is a sudden change in the demand for minerals or when ore bodies are mined out. In some cases, towns that are dependent on mining may not be able to survive when their mines shut down. The Manitoba town of Sherridon, north of Flin Flon, is an example of such a town. The towns of Lynn Lake and Leaf Rapids in northern

Manitoba have declined considerably in recent years due to the depletion of ore bodies and the closing of major mines.

Fish as a Resource

Fishing is one of Canada's oldest industries. Many First Nations Peoples relied on fishing as a food source long before Canada became the nation we know today. European fishing vessels visited the Atlantic coast long before settlement began. Fishing has remained an important economic activity throughout much of Canadian history.



Canada's fishing industry is located in three major areas: the Atlantic fishery, the Pacific fishery, and the **freshwater** fishery found in the lakes and rivers throughout Canada. Sport fishing and **subsistence** fishing (to provide your own food) are important aspects of fishing in Canada, although they are not major contributors to Canada's economy. Cod is the most common fish in the Atlantic region, although other species are also caught. **Shellfish**, such as lobster and shrimp, have become important catches of the Atlantic fishery. The most common catch in the Pacific region is salmon. Freshwater fish include pickerel, whitefish, trout, and perch. The freshwater fishery is concentrated in the Great Lakes region, Lake Winnipeg, and Great Slave Lake. Major fishing grounds are located in most coastal areas around the world.

Although fish are a renewable resource, the Canadian fishing industry is in a crisis situation. In the Atlantic region, the overfishing of cod by Canadian and foreign fleets led the government to close the cod fishery in 1992. Several years later the salmon fishery in the Pacific region was reduced due to declining numbers of fish. Good management of the fishing industry, including fishing treaties with other countries, will be required to allow the replenishment of this important, renewable resource.

Land as a Resource



Land can be considered a natural resource in different ways. The First Nations Peoples of Canada relied on the land for day-to-day survival. They used the land for hunting, trapping, and fishing. They also used the land for gathering fruit, berries, and edible plants. The land provided materials such as logs, stones, clay, and sticks for constructing shelter, and making tools and weapons. In several parts of Canada where climatic and soil conditions were favourable, **First Nations Peoples** practised **horticulture** to produce a variety of vegetables. Canada's First Nations Peoples considered the land a **sacred** resource to be managed carefully so it could keep providing for them from generation to generation.

Land is also a renewable resource for farming purposes, particularly for crop growing. Through wise farming practices such as **crop rotation**, proper cultivation, effective drainage, and appropriate use of fertilizers and chemicals, soils can stay fertile for long periods. Poor management causes soil to deteriorate and lose its fertility very quickly. The fertile soils of the Canadian Prairies, the Great Lakes—St. Lawrence Lowlands, and the valleys of the Atlantic and Cordilleran regions have allowed Canada to become a major producer of agricultural products. In the United States of America, the Interior Plains and the Southeastern Lowlands are the main crop-growing regions. Aside from North America, other regions with large areas of fertile soils for commercial crop production are located in Europe, Russia, Southeast Asia, and parts of South America.



Note: If you have access to the Internet, you can find additional information on natural resources. A good starting point is the Natural Resources Canada website. Go to www.nrcan.gc.ca and click on "subject listings" to find information on selected resources in Canada.



Learning Activity 2.2

Natural Resources

- 1. Refer back to the lesson you just read. Based on the information in the lesson, complete the following organizer.
 - a) For each resource listed, the number of countries/regions is indicated. Use this number to help you identify the countries/regions that possess this resource. Write the list of countries/regions in the appropriate column.
 - b) Look at the list of countries/regions you identified for each resource and determine the *continents* on which these resources can be found. Write these continents in the appropriate column.
 - c) For each resource listed, identify under which category it falls.
 - i) Fossil fuels
 - ii) Water
 - iii) Forests
 - iv) Metallic minerals
 - v) Non-metallic minerals
 - vi) Land
 - d) For each resource, identify whether it is renewable or non-renewable.

Natural Resource	Countries/ Regions	Continent	Resource Type	Renewable or Non-Renewable
Oil	6 countri	es, 1 region		
			_	
Offshore Oil	3 re	egions		

continued

Learning Activity 2.2: Natural Resources (continued)

Natural Resource	Countries/ Regions	Continent	Resource Type	Renewable or Non-Renewable
Coal		untries		
Soils	5 countr	ies/regions		
30115	3 count	les/regions	_	
Potash	2.00	untrios		
Potasn	3 00	untries	_	
			_	
Fresh Water	5 co	untries		
			_	
Iron Ore	5 co	untries		
			_	
Diamonds	4 co	untries		
			-	
Gold	5 co	untries		
			1	
			_	

continued

Learning Activity 2.2: Natural Resources (continued)

Natural Resource	Countries/ Regions	Continent	Resource Type	Renewable or Non-Renewable
Lumber	3 countries			

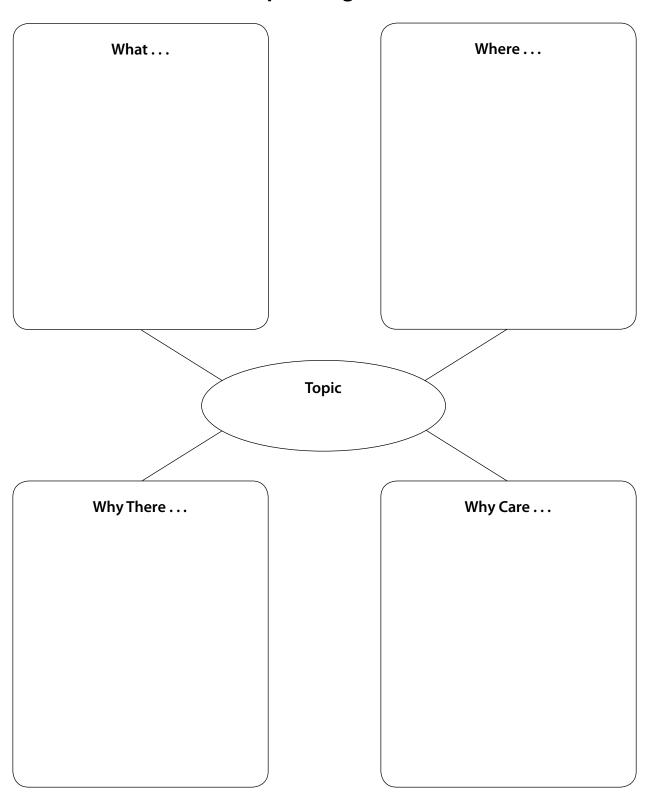


2. Using the organizer on the following page, choose one of the natural resources introduced in this lesson and describe its components according to Gritzner's definition of geography.

Summary

Natural resources are materials from the natural environment that are useful to humans. Renewable resources can be renewed, replenished, or regrown. Non-renewable resources cannot be replaced once they are used although some, such as copper and iron, can and need to be recycled. Canada has a wealth of water, forestry, fuel, mineral, fish, and land resources. These resources are also found in other places in the world. Knowledge of how resources are formed helps us understand why they are located in the places they are found.

Graphic Organizer



LESSON 2: DIVERSE PERSPECTIVES

Lesson Focus
By the end of this lesson, you will be able to
identify the First Nations, Métis, and Inuit Peoples' viewpoints and rights regarding natural resources and their use (e.g., land claims, fishing and hunting rights, mineral rights, etc.)
identify factors that influence the changing use of natural resources over time
identify ways in which competing interests and needs influence control and use of the land and natural resources such as mining, forestry, and water
acylore diverse views regarding the use of natural resources
propose actions with respect to natural resource management that include different perspectives
analyze how prejudice, racism, stereotyping, and other forms of bias influence the management of natural resources

Introduction

In this lesson, you will identify and consider different points of view about natural resource ownership and development. These diverse perspectives include those of First Nations, Métis, and Inuit Peoples in Canada and other groups. You will also learn about the changing use of natural resources over time. You are encouraged to consider the diverse views regarding the use of natural resources throughout this lesson.

Diverse Perspectives



Canada is a land of diversity. It has many different landforms, economic activities, and groups of people. The term **diverse** means different or varied. In Canada, diversity often refers to the many cultural groups that make up our society. These include the First Nations, Métis, and Inuit Peoples and the many immigrant groups that have settled here over time. A **perspective** is a point of view or a way of looking at the world around you. Different cultural groups have their own perspectives that are shaped by their history, experiences, and values. There are also interest groups, such as environmental groups, that have their own perspectives.



All groups, past and present, depend on natural resources for survival. In the case of the First Nations, Métis, and Inuit Peoples that survived by hunting, fishing, trapping, and **gathering**, direct dependence on natural resources was a daily reality. For people living in cities, resource dependence is indirect but just as important. We all depend on natural resources for food, shelter, energy, transportation, and the many things that allow us to live comfortably. The First Nations, Métis, and Inuit Peoples have different perspectives on land and resource use from that of other Canadians. It is important for us to learn about and respect these differences. One of the challenges of living in a democratic, multicultural society is to have groups with different viewpoints get along.

Who Were the Indigenous Peoples?

Most of us know that the First or Indigenous Peoples are the original inhabitants of North and South America. We know that they lived here for thousands of years before the arrival of Europeans. You probably know of other terms, such as First Nation, Inuit, and Métis, that refer to the Indigenous Peoples.



Most Canadians use the term First Nations to describe the groups of First Peoples that live from the Atlantic to the Pacific coasts south of the **tree line**. The **Inuit** are the Indigenous Peoples that live north of the tree line in northern Canada. The **Métis** are people of mixed First Nation and European ancestry.

It is important to recognize that there are many First Nations, Métis, and Inuit groups in Canada with their own cultures and languages. In Manitoba, for example, there are five distinct First Nations groups. They are the Anishinaabe (Ojibwe and Saulteaux), Dene, Nahayowak (Cree), Oji-Cree, and Oyata (Dakota). There are also Métis in Manitoba as well as a small number of Inuit in the extreme northern region of the province. There are many other groups in different parts of Canada and over 50 different First Nations languages are spoken.

First Nations, Métis, and Inuit Perspectives



Despite many differences, most First Nations, Métis, and Inuit groups share similar views or perspectives about the land and the use of natural resources. To the First Nations, Métis, and Inuit Peoples, the term **land** includes plants and animals, as well as water and air. They view the land as **sacred** because it is the giver of all life. They believe that the **Creator** made Earth and that people are to live in harmony with each other and with nature. The First

Nations, Métis, and Inuit Peoples believe that they are connected to Earth and must use nature's gifts carefully and respectfully. The First Nations, Métis, and Inuit Peoples demonstrate these beliefs by offering thanks to the Creator when they obtain food and other materials from the land.

The First Nations, Métis, and Inuit Peoples believe that they are a part of the land and that no one can own the land. Land and its gifts (resources) are shared by all who need it. For example, a successful hunt is shared with the entire community. In fact, traditionally, the hunter would give away the best meat. Most non-Indigenous Canadians view these concepts very differently. They believe in individual ownership of the land and its resources and are used to people owning property, staking claim to resources, and protecting what is theirs.

Better Understanding

These major differences in perspectives have led to misunderstanding and conflict between society at large and the First Nations, Métis, and Inuit Peoples in Canada. First Nations Peoples did not understand that, by signing treaties, they were giving up rights to the land. Modern-day treaties and land-claim settlements, such as the Nisga'a treaty in British Columbia and the agreement to create the territory of Nunavut, are different than the historical treaties. They include provisions that allow the Indigenous Peoples to continue to use the land and its resources. In addition, a number of recent court cases have recognized the **inherent rights** of Indigenous Canadians to the land. Today, many Canadians have a better understanding of the Indigenous Peoples' perspectives and are more respectful of different views pertaining to the land and natural resources.

Changing Use of Natural Resources over Time



The importance and use of natural resources has changed throughout Canadian history. You may even be aware of some changes in resource use in your lifetime. Your learning partner, parents, and grandparents can probably give you a number of examples of how resource use has changed since they were young. Perhaps they had a coal furnace instead of a modern high-efficiency electric furnace or **geothermal** system to heat the house. They might have used small amounts of water carefully because they had to pump water from a well and carry it indoors before the arrival of indoor plumbing. The entire family may have depended on one vehicle, instead of having two or three cars as many families do today. They would certainly have had fewer electric appliances and electronic devices that require resources to produce and to operate.

Reasons for Changing Use of Resources

influence the use of natural resources.



There are different reasons for the changing use of natural resources. Some of the changes are a result of advancements in technology. Other changes are a result of the availability and cost of resources. Concerns about the environment can bring about changes. An example is the development of **wind farms** to generate **green electricity** in Manitoba and in other provinces. The first wind farm to exist in Manitoba is located in St. Leon, near the town of Morden. Political decisions can also help change the use of resources. The Manitoba government's support of wind farms and **ethanol** production are examples. Ethanol is produced at a plant in Minnedosa.

Cultural factors can also influence the use of resources. For instance, many First Nations Peoples still rely on hunting, fishing, and gathering for food resources. Band members share much of the land on First Nations reserves and there is no individual ownership. Due to religious beliefs, the Amish Mennonites in southern Ontario use the horse and buggy for transportation rather than cars and trucks. This uses wood products and animal feed instead of steel, plastics, and fossil fuels. The importance most Canadians place on **consumerism**, home ownership, entertainment, vehicle transportation, and other aspects of our modern lifestyle are all examples of cultural factors that





The use of fossil fuels is an interesting example of how resource use changes over time. During the first half of the 20th century, coal was used to heat homes and to generate **thermal electricity**. When people became aware of the environmental impact of burning coal, many switched over to natural gas and electricity. Natural gas also replaced coal in some thermal electric power stations, such as the one in Selkirk, Manitoba. Gas-powered turbines were also added to the Brandon Generating Station. These changes came at a time when oil and gas were plentiful and available at a reasonable cost.



More recently, we have become aware that the increased use of oil and gas in transportation and industry is the main cause of global climate change. At the same time, the prices for oil and gas have increased dramatically. People are looking for alternative energy sources and new technologies to reduce our use of fossil fuels. Smaller vehicles are becoming popular. Many vehicles use **ethanol additives** and **bio-diesel** fuels to reduce the amount of gasoline required. These fuels come from agricultural crops (a renewable resource). The development of **hybrid** vehicles has further reduced the use of fossil fuels. Hybrids generate their own electricity to help power the vehicle. Vehicle manufacturers are experimenting with **hydrogen fuel cells** that may power vehicles in the future. These examples demonstrate the changing use of fossil fuels as a natural resource.



Learning Activity 2.3

Resource Use—Now and Then



1. Read the following excerpt from *Caretakers of the Land*. Discuss at least one similarity and one difference between the First Peoples' traditional relationship with the land and your relationship with the land today.

Caretakers of the Land

The traditional worldview of First Peoples did not include a sense of ownership of the land. Instead, communities saw themselves as caretakers of the land in a giveand-take relationship.

Communities had traditional territories defined by natural or geographic features such as rivers or forests. Communities might negotiate with other communities to use or pass through traditional territories. Negotiations helped ensure a sustainable use of resources and show respect for the communities involved. Locations with especially good resources were often used by many communities. Sometimes communities cooperated with one another to make use of these resources, such as the great bison herds.

First Peoples viewed the well-being of the land as being inseparable from the well-being of their communities. The resources of the land were not to be exploited or abused: they were gifts from the Creator. Decisions about how to use the land considered the needs of the land, the people, and the people's descendants. The Great Law of the Haudenosaunee (Iroquois) required chiefs to guide their decisions by considering the welfare of people seven generations into the future.

Through their oral tradition, communities had detailed knowledge of the resources of their traditional territories and how and when to use them. Communities with a mobile lifestyle did not wander randomly. They moved seasonally through their people's traditional territory according to the knowledge and traditions of their ancestors. These movements helped them take advantage of each resource, whether berries, rice, fish, animals, maple syrup, or medicinal plants.

Connor, Linda, Brian Hull, and Connie Wyatt-Anderson. Shaping Canada: Our History: From Our Beginnings to the Present. Canada: McGraw-Hill Ryerson Limited. 2011. 34.

continued

Learning Activity 2.3: Resource Use—Now and Then (continued)

- 2. Compare your personal use of resources with that of your parents, grandparents, or Elders. Use the *Resource-Use Log: Now and Then* on the following page to record your information in the appropriate columns.
 - a) Keep a daily log of what resources you use for a week.

Examples:

- fuel for transportation as well as heating or cooling the home
- water for personal, household, and recreational use
- electricity for household appliances
- batteries for personal electronic devices
- foods and packaging
- resources used in the production of items you purchased
- b) Interview your parents, grandparents, or Elders to determine what their resource-use log as a teenager might have looked like and how it might differ from your own.
- c) Use the interview information as well as your own knowledge to determine what factors influenced the changing use of natural resources over time.

Examples:

- technology
- availability of resources
- cultural factors
- 3. Write a short summary to express what you have learned about the changing use of resources over time.



U	Potential Factors Influencing the Changing Use of Resources				
Resource-Use Log: Now and Then	Natural Resources Used by Parent, Grandparent, or Elder (when they were your age)				
Resource	Natural Resources You Use (provide specific examples)				
	Date				

Competing Interests and Needs

Canada is a country with many natural resources. Canada's population and economy rely on the use of resources. People do not always agree on how resources should be developed or used, and communities, **interest groups**, corporations, and governments may have different views on how to handle resource development. Public discussions and debates on resource development are common in our democratic society. Decisions on resource development often require discussion, research, and environmental reviews, as well as conformity with established guidelines.

You may be aware of competing interests over land and resource use in your community or region of the province. Perhaps there is a debate over whether land should be used for industrial development or left for agricultural use. There may be controversial plans for a housing development that would harm the natural environment near a river. In a northern community, there may be debates between mining companies and environmental groups about the impact of a new mine. Similar debates can occur on a larger scale between political parties in government or between different countries.

Conflicts over Land and Resource Use in Manitoba

The following section looks at recent examples of competing interests and needs around land use and resource development in Manitoba. What is your view on these issues?

Suburban Development in Winnipeg

A good example of conflict over land use is the Waverley West suburb development in southwest Winnipeg where houses are being built. This area of approximately 13 km² is mainly farmland that is being developed into a residential area with an expected population of up to 40,000 people. Housing developers proposed the project and the City of Winnipeg gave its support, arguing that the city is growing and needs more space for housing. Some urban planners, as well as environmental and agricultural groups, oppose the development. They believe that the city has enough space to develop new housing and can improve decaying neighbourhoods closer to downtown. This would mean that people would live closer to where they work, which would reduce the need for more cars and the amount of fossil fuels burned. They also feel that this kind of **urban sprawl** will take huge amounts of farmland out of production and destroy the natural ecosystem. Once urban development takes over farmland, it is considered lost to production forever.



Logging in Provincial Parks

Another controversial issue around resource use is a Manitoba government policy that allows logging and mining in provincial parks. You may be surprised to hear this, considering that parks are meant to protect the natural environment. In the case of Duck Mountain Provincial Park in western Manitoba, up to 80% of the land area is designated for logging. The wood is used by local sawmills to make lumber and by the Louisiana Pacific **oriented strand board** plant near Swan River. These activities provide jobs and support the economy of the region. Many local people and environmental interest groups such as the Western Canada Wilderness Committee oppose resource development inside parks. They know logging threatens important habitat for wildlife in the area and destroys the rugged beauty of the landscape. They believe that the purpose of parks is to protect the natural environment.

Hydro Stations in the North

Hydroelectric development in Manitoba is another example of controversial resource development and land use. Manitoba has a wealth of freshwater resources in its lakes and rivers. Northern rivers have great potential for generating electricity because they have a good supply of water, many rapids, and considerable **gradient** or elevation drop. Electricity is considered to be a clean source of energy because its production does not result in water and air pollution. The negative side of hydro development is the impact on the environment and the traditional ways of the First Nations and Métis communities. The construction of dams usually results in flooding large areas of land, which are no longer available for hunting and trapping. Changing water levels erode shorelines and can ruin the fishery for long periods. In several cases, entire First Nations communities such as South Indian Lake and Chemawawin had to be relocated to higher ground due to major flooding.

In 1999, the Manitoba Government announced plans for a new hydroelectric dam on the Burntwood River west of Thompson. This development affects the Nisichawayasihk Cree Nation at Nelson House. To avoid some of the problems of past hydro developments, the Government and Manitoba Hydro entered into negotiations with the Nisichawayasihk Cree. The environmental impact studies included both traditional First Nations knowledge and scientific knowledge. The parties reached an agreement to scale down the project and build a smaller dam to reduce the area that would be flooded. This agreement is an example of compromise between the competing interests over resource development. Manitobans get more hydroelectric power and the local First Nations People get some of the jobs while preserving most of their land for traditional hunting, trapping, and fishing activities. If you have access to the Internet, you can learn more about this agreement at www.ncncree.com/hydro.html.





Learning Activity 2.4

Locating Resources, Issues, and Changes

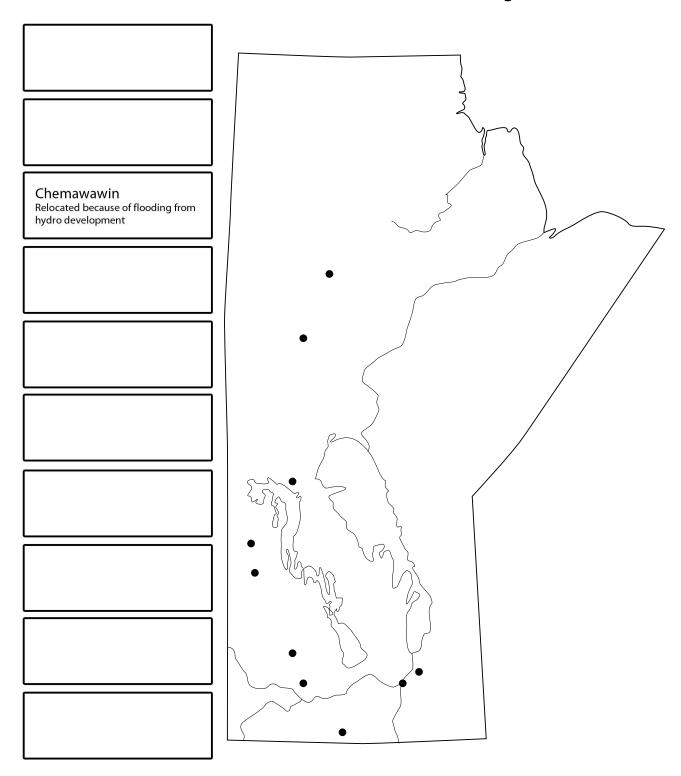


- 1. A number of resources have been identified in Lesson 2 and reference was made to issues related to resource use and changes over time. An example is provided to help you get started.
 - a) Label each of the following places on the map of Manitoba found on the following page.
 - Brandon
 - St. Leon
 - Winnipeg
 - Duck Mountain Provincial Park
 - South Indian Lake
 - Selkirk
 - Minnedosa
 - Nelson House
 - Swan River



b) Next to the place name, list the resource, issue, or change with which it is connected.

Manitoba Resources: Issues and Changes



Summary

Different groups in our society have their own perspectives on the use of natural resources. Canada's First Nations, Métis, and Inuit Peoples believe that the land is sacred and that its resources must be respected and used carefully. They believe that no one can own land and that it must be shared. The use of natural resources keeps changing over time because of changes in technology, availability, and cost, as well as environmental concerns and cultural factors. Competing interests and needs in our society influence the use of the land and natural resources in Canada.

LESSON 3: SUSTAINABLE DEVELOPMENT

Lesson Focus
By the end of this lesson, you will be able to
describe sustainability issues related to the removal and use of natural resources
identify the impact of more-developed countries extracting resources from less-developed countries (e.g., social, political, economic, etc.)
consider the impact of personal choices regarding natural resources
promote actions that reflect principles of environmental stewardship and sustainability
reconsider personal assumptions based on new information and ideas
propose and defend new ideas or solutions to address issues and problems
listen to others to understand their viewpoints
articulate your viewpoints on issues

Introduction

In this lesson, you will look at the ideas of resource extraction and consumption, as well as possible long-term consequences of each. You will consider the effects of wealthy countries removing natural resources from some of the poorest nations in the world. You will also look at the implications of your personal choices regarding the use of natural resources and your actions with regard to looking after the environment.

Sustainable Development



In the previous two lessons, you learned about different natural resources and perspectives toward the use of resources. You also learned that some resources are **renewable**, while others are not. We all rely on natural resources, directly or indirectly, to survive. As the population of the world continues to grow, there is increased demand on natural resources. If managed properly, renewable resources such as forests, water, fish, and agriculture can continue to meet the needs of an increased population. However, the world has a limited supply of **non-renewable** resources and will eventually run out of these resources. This is a major challenge facing the world in the twenty-first century.

We Are Okay



There are two different perspectives regarding sustainable development. One view is that new discoveries and technologies will find ways to provide new resources and to deal with the environmental problems that we face. People with this view feel that Earth has not yet reached its **carrying capacity** (its ability to support its population at current living standards). They point to past events, such as the **Industrial Revolution**, to show that major changes and improvements can occur in the future as they did in the past. They believe that new discoveries and technologies will allow us to continue with our current lifestyles and **standard of living**.

We Are Not Okay

The other perspective sees Earth as already having reached its carrying capacity. People who support this view believe that we will have to change the way we live and the way we use our resources if we are to survive. We will have to work harder to manage our renewable resources and we will have to reduce our consumption of these resources as well as protect our environment. We may have to settle for a moderate and **sustainable** standard of living instead of increasing our wealth by using more and more resources. Sustainability means using resources in such a way that they meet present needs without long-term, negative consequences on the environment.

Defining Sustainable Development



Today, many governments, including the Government of Canada, encourage sustainable development. This means that new developments should not rely on the increased use of non-renewable resources. In addition, they should not use renewable resources more rapidly than they can be replaced. This would apply to all new industries, agricultural activities, city expansions, transportation networks, and recreational activities. The United Nations has defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (World Commission on Environment and Development. *Our Common Future*. 1987.) Another United Nations body has a similar definition, "improving the quality of human life while living within the carrying capacity of supporting ecosystems." (World Conservation Union, the United Nations Environment Programme and the World Wide Fund For Nature. *Caring for the Earth: A Strategy for Sustainable Living*. 1991.)

Sustainability and You

What resources do you use in your daily life? Can you reduce your dependence on non-renewable resources? How does your lifestyle affect the environment? What things can you do to save the environment? The following activity will help you answer these questions.



Learning Activity 2.5

Resource-Use Log: Reassessment



- 1. What resources do you use and how can you make your resource use more sustainable and environmentally friendly?
 - a) Refer back to the Resource-Use Log: Now and Then from Learning Activity 2.3. Copy the information from the "Natural Resources You Use" column into the appropriate column in the following chart, Resource-Use Log: Reassessment.

continued

Learning Activity 2.5: Resource-Use Log: Reassessment (continued)

- b) Analyze the list of resources you use and make suggestions about how you can change your needs and behaviours to reduce the amount and number of resources you use. List your ideas in the column on the right. Examples:
 - recycle
 - reduce use
 - walk instead of drive

Resource-Use Log: Reassessment					
Date	Natural Resources You Use (provide specific examples)	Strategies to Reduce Resource-Use			



2. Write a short journal entry to express what you learned about your resource use habits and how you could change them to reflect more sustainable use.

Resource Exploitation and Its Impact



Many of the wealthy, more-developed countries of the world do not have enough resources to meet their needs and satisfy their high standard of living. Sometimes, they rely on resources such as tea and coffee that are only available in poorer, tropical countries of the world. Less-developed countries are often looking for **foreign investment**. They want to make money or profit and are willing to allow foreign companies to come in and build mines, develop plantations, or engage in other resource-dependent activities. **Multinational** companies operate around the world. In many cases, such companies **exploit** the resources of less-developed countries and export them for use in wealthier countries. This benefits people in wealthy countries, but often results in negative political, economic, and social change in less-developed countries. Many Canadians think it is important to be aware of the activities of multinational companies and to strive for fair treatment of foreign workers and **fair trade** with poorer countries.

Political Implications

The exploitation of natural resources by multinational companies can have major negative political implications for less-developed countries. In some cases, the leaders of these countries keep the money paid by multinational companies. When this happens, the common people do not benefit from the sale of resources. This type of political corruption results in very wealthy leaders in countries while the majority of the population remains very poor. In some cases, the income from resources is used for military purposes by governments or by rebel groups. For example, in several African countries, rebel groups control the diamond trade. They use the money to pay for weapons and fight civil wars. Diamonds sold for this purpose are sometimes called **blood diamonds**. People in wealthier countries who buy diamonds should ask for a **Certificate of Origin** to make sure the money paid is not used for war.



Economic Implications

The extraction of resources from less-developed countries can also have economic implications. It can provide jobs and income for the local people. The workers may learn new skills; however, it can also lead to problems. Foreign workers are often poorly paid, while the resource companies make huge profits. These workers do not receive benefits such as unemployment insurance, paid sick leave, and better housing. In some countries, multinational companies develop **plantations** to grow export crops such as coffee, tea, bananas, and citrus fruits. This means that land is taken away





from local farmers who are no longer able to produce food for themselves and their families. Local **subsistence** farming is replaced by large-scale, commercial plantations controlled by outsiders.

Social Implications

The extraction of resources from less-developed countries can lead to social problems. Traditional family life may be disrupted when family members, often fathers, are away at work for long periods. Although income is usually considered a good thing, the workers may misuse the money, leaving their families without support. The profit motive may result in an increase in crime and a breakdown of traditional village life.

Environmental Implications

The extraction of resources in less-developed countries can also have a negative impact on the environment. Poorer countries often do not have laws to protect the environment. This allows multinational companies to operate without spending money to reduce environmental damage. In some cases, companies move their factories to less-developed countries where they do not have regulations about levels of pay, age of workers, environmental protection, or fair trading. Factories that employ children, have long shifts, and pay low wages are sometimes called **sweatshops**. There is some evidence that sweatshops also exist right here in Canada.



Implications for More-Developed Countries

Importing goods from less-developed countries has advantages and disadvantages for more-developed countries such as Canada. Importing goods gives us access to more resources and boosts our economy. Specifically, importing food products gives us access to items that we cannot produce here (e.g., tea, coffee, bananas, etc.). It also provides a year-round supply of produce that is produced seasonally (e.g., fruits and vegetables). Disadvantages may be that importing products increases our dependence on foreign items, and having easy access to additional resources may discourage us from reducing our use of non-renewable resources and finding alternative raw materials and fuels.

Making Personal Choices

Many Canadians are concerned about the practices of some multinational companies. Perhaps your community has a group or organization that encourages Canadians to ask questions about the products they buy. Sometimes, the media will carry stories about working conditions in factories



in less-developed countries. Wise consumers try to learn where the products they purchase come from, who made them, and the conditions under which they are manufactured. Numerous organizations support fair trade. If you have access to the Internet, you may be able to find websites of organizations that give information about sweatshops and suggestions for fair trade. Most cities and larger towns in Manitoba have shops run by **non-governmental** and church organizations that sell fair trade products. One example is that of Ten Thousand Villages with shops throughout Canada and the United States. In Manitoba, they have stores in Altona, Brandon, Steinbach, and Winkler, as well as two in Winnipeg. The Worldly Goods store run by the Marquis Project in Brandon carries a wide variety of fair trade products. Many specialty shops in Winnipeg carry them as well. Due to customer demand, many regular grocery stores have added a number of fair trade food products to their stock. Next time you shop, look for Fair Trade Certified products.

What do you know about the impact of more-developed countries exploiting resources in less-developed countries? What do you know about sweatshops? What do you know about fair trade? What actions can you take to support fair trade? How can the money from your purchases support local workers in less-developed countries of the world? Your personal choices have a considerable impact on the use and trade of natural resources, and on the people who are involved in the process. The following activity will help you organize your knowledge about these topics.

Environmental Stewardship and Sustainability

Aside from questions about fair trade, many Canadians are very concerned about our use of natural resources and how our lifestyles affect the environment. We are becoming aware of the long-term, negative impact of our lifestyles on the environment; that our dependence on non-renewable resources cannot last; and that we must take individual and collective actions to use resources in a sustainable manner. We know that we must become better stewards of the environment. What actions can you take?

Taking Action

You and your family may already be doing many things that are environmentally friendly and sustainable. You may be walking or cycling instead of driving to school or to work. You may be careful with your use of paper. Your family may be participating in a local recycling program. Perhaps your community hosts a farmers' market where you can buy fresh, locally produced food. Can you think of other actions that promote environmental stewardship and sustainability?



Learning Activity 2.6

Implications of Resource Extraction throughout the World



 Both mining and plantation agriculture have positive and negative implications in the less-developed countries where these resources are produced and exported. In the following chart, identify the positive and negative implications of both mining and plantation agriculture in this context. Be sure to consider the political, economic, social, and environmental implications.

Resource Production and Export in Less-Developed Countries						
Positive Implications Negative Implications						
Mining						
Plantation						

2. Both mining and plantation agriculture have positive and negative implications in more-developed countries where these resources are imported and consumed. In the following chart, identify the positive and negative implications of both mining and plantation agriculture in this context. Be sure to consider the political, economic, social, and environmental implications.

Resource Import and Use in More-Developed Countries						
	Positive Implications Negative Implications					
Mining						
Plantation						

Learning Activity 2.6: Implications of Resource Extraction throughout the World (continued)

3. Develop a list of ideas, actions, and activities that young people can practise to demonstrate environmental stewardship and sustainability. Organize them into personal, family, and school/community actions and activities. Use the following chart to record your ideas. Then, try to implement as many of your ideas as possible. Examples are provided to help you get started.

Personal Actions

Example:

put your fruit peels in the school or family compost bin

Family Actions

Examples:

- plant a garden
- use a bicycle to travel to and from school and work

School/Community Actions

Examples:

- shut off lights at school
- recycle juice and drink cans



Summary

Sustainable development means that we should not rely on the increased use of non-renewable resources, nor should we use renewable resources more rapidly than they can be replaced. One view suggests that technology and new discoveries will continue to provide needed resources. Another view suggests that Earth has reached its carrying capacity and that we need to adjust our lifestyles. The exploitation of resources from less-developed countries has economic, political, and social implications, many of them negative. As individuals, we need to consider the impact of personal choices regarding the use of natural resources, and promote environmental stewardship and sustainability.

Notes



1.

Natural Resources (81 marks)

Review the material from the Module 2 lessons and learning activities in order to complete this assignment. Be sure to read the questions carefully and to provide answers in complete sentences. Please remember that you must write answers in your own words. Do not copy information directly from any of your sources. Keep the mark value of each question in mind as you do the assignment and develop your answers accordingly.

Na	tural resources play an important role in our daily lives.
a)	Define the term <i>natural resource</i> . (1 mark)
b)	List at least four of the major resources discussed in this module. (4 marks)
c)	Explain what is meant by <i>renewable</i> and <i>non-renewable</i> resources and give an example of each. (4 marks)

2. Using the information provided in this module about the location of resources, and either an atlas or the Internet, label the locations of the natural resources listed below on the map of Canada that follows. The clarity and neatness of your labeling will be included in the mark value for this question. (2 marks) An example is provided to help you get started. When labelling the map with your answers, be sure to follow the format of the example. (total of 12 marks)



Note: The borders of the major landform regions in Canada as well as the provincial and territory borders are provided to help you locate the natural resources.

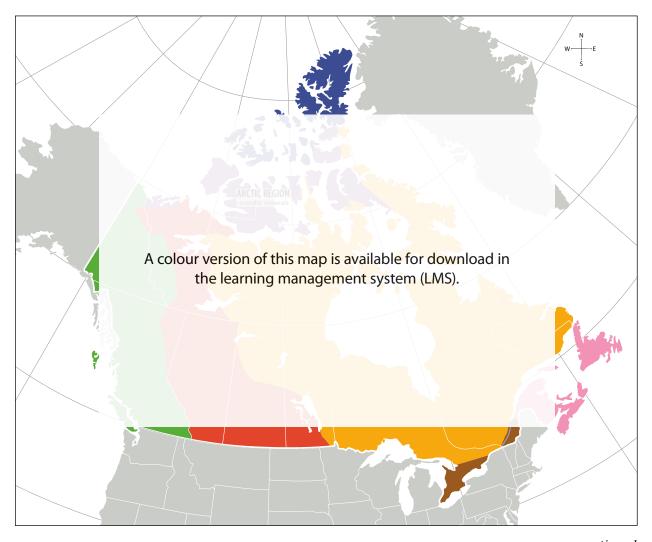
a) Identify at least two regions of metallic mineral deposits. (2 marks)



Note: One location (the Arctic Region) is already provided as an example. You need to identify at least two other locations in which metallic mineral deposits can be found in Canada.

- b) Identify at least *one* location of offshore oil and gas deposits. (1 mark)
- c) Identify *one* location for major oil and gas deposits on land. (1 mark)
- d) Identify at least *one* location for freshwater fishing. (1 mark)
- e) Identify *one* major salmon fishing area. (1 mark)
- f) Identify one major cod fishing area. (1 mark)
- g) Identify the two major regions for forestry. (2 marks)
- h) Identify at least *one* major agricultural region. (1 mark)

Natural Resources in Canada



3. On the world map provided, label the locations for the resource indicated. You may refer back to the lessons in the module. You may also use an atlas or the Internet as a resource. The clarity and neatness of your labelling will be included in the mark value for this question. (2 marks) An example is provided to help you get started. When labelling the map with your answers, be sure to follow the format of the example. (total of 17 marks)



Note: The map provided does not show borders of countries, only land borders of continents. Please be careful when labelling and do your best to locate countries.

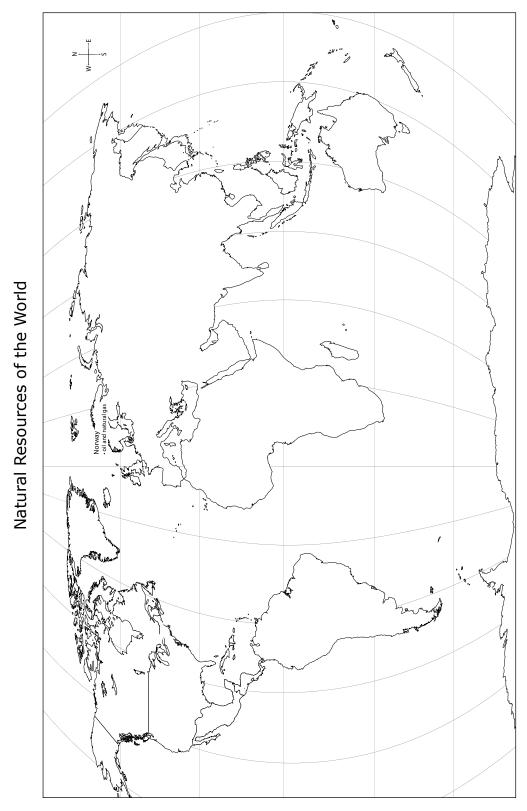
a) Identify at least *one region* and *three countries* where oil and natural gas can be found. (4 marks)



Note: One country (Norway) is already provided as an example. You need to identify at least three other countries as well as a region where oil and natural gas can be found.

- b) Identify at least *one country* where coal is mined. (1 mark)
- c) Identify at least three regions where land is a resource. (3 marks)
- d) Identify at least *two countries* where the metallic mineral iron ore is extracted. (2 *marks*)
- e) Identify at least *three countries* where the metallic mineral gold is extracted. (3 *marks*)
- f) Identify at least two countries where forest resources can be found. (2 marks)

Assignment 2.1: Natural Resources (continued)



	plain the First Nations, Métis, and Inuit Peoples' perspectives and rights garding the use of land and resources, including a decision of how they view that, their connection to it, and the use of resources the land provides. (3 marks)
	e use of natural resources has changed over time.
	Give at least <i>one</i> example that describes this change. (1 <i>mark</i>)
b)	List <i>five</i> factors that may influence the changing use of natural resources ove
b)	
b)	List <i>five</i> factors that may influence the changing use of natural resources over

	c)	Choose <i>one</i> factor that may influence the changing use of natural resources over time and provide an example to help explain it. (2 <i>marks</i>)
6.	COI	sing at least <i>one</i> example, discuss how competing interests and needs influence ntrol over land use and resources in Canada. Be sure to explain the nature of the sue and identify the competing interests or parties. (3 marks)

7. Match the Manitoba locations in the left column with the appropriate resource, issue, or change listed in the right column by placing the letters in the appropriate locations. (5 marks)

Α	Brandon	 Relocated due to flooding near Grand Rapids	
В	Duck Mountains	 Proposed new hydro development	
С	Easterville	 Logging in provincial parks	
D	Minnedosa	 Adding gas turbines to thermal electric plant	
Е	Nelson House	Site of ethanol plant	

	stainable development and environmental stewardship are themes related to
a)	In your own words, define the term <i>sustainable development</i> . (2 <i>marks</i>)
b)	In your own words, define the term <i>environmental stewardship</i> . (1 mark)
c)	Summarize the two different points of view regarding the ability of Earth to continue to support a growing population with growing demands for natural resources. (4 marks)
d)	Which point of view do you agree with? Explain why. (2 marks)
	continu

9.	be	With the increase in communication and transportation technology, the world has become more interconnected. Less-developed and more-developed countries are interacting with one another more than ever before.				
	a)	Why are more-developed countries interested in getting natural resources from less-developed countries? (2 marks)				
	b)	Why are less-developed countries interested in selling natural resources to more developed countries? (2 <i>marks</i>)				
	c)	Describe the implications of more-developed countries extracting resources from less-developed countries. Refer to both positive and negative implications in at least <i>two</i> of the following areas: social, political, economic, and environmental. (6 marks)				

	e choices you make regarding the trade and use of natural resources and vironmental stewardship have a number of implications.
a)	Suggest at least <i>three</i> actions you can take to promote fair trade and responsible use of resources and products from less-developed countries. (3 marks)
b)	Suggest at least <i>two</i> personal actions you can take to promote environmental responsibility and sustainability. (2 <i>marks</i>)

MODULE 2 SUMMARY

Congratulations, you have completed Module 2!

Module 2 introduced you to the study of natural resources, the difference between renewable and non-renewable resources, and the identification of resources such as water, forests, fossil fuels, and minerals on maps.

You looked at the Indigenous Peoples' perspectives and rights regarding resources and the factors that influence the use and control of land and natural resources. Module 2 also explored issues such as the sustainability of the world's natural resources and the ethics surrounding the exploitation of poorer countries in the extraction of natural resources.

This module also provided you with an opportunity to reflect on your own personal choices regarding resource use.



Submitting Your Assignments

It is now time for you to submit Assignment 2.1 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 2 assignment and organize your material in the following order:

Module 2 Cover Sheet	(found at the end	of the course	Introduction)

☐ Assignment 2.1: Natural Resources

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Midterm Examination



Congratulations, you have finished the second module in the course. The midterm examination is out of 100 marks and worth twenty-five percent (25%) of your final mark. In order to do well on this examination, you should review all of your learning activities and assignments from Modules 1 and 2.

You will complete this examination while being supervised by a proctor. You should already have made arrangements to have the examination sent to the proctor from the Distance Learning Unit. If you have not yet made arrangements to write it, then do so now. The instructions for doing so are provided in the Introduction to this module.

You will need to bring the following items to the examination: pens/pencils and scrap paper. A maximum of 2.5 hours is available to complete your midterm examination. When you have completed it, the proctor will then forward it for assessment. Good luck!

Examination Review

You are now ready to begin preparing for your Midterm examination. Please review the content, learning activities, and assignments from Modules 1 and 2.

The midterm practice examination is also an excellent study aid for reviewing Modules 1 and 2.

You will learn what types of questions will appear on the examination and what material will be assessed. Remember, your mark on the midterm examination determines twenty-five percent (25%) of your final mark in this course and you will have 2.5 hours to complete the examination.

Midterm Practice Examination and Answer Key

To help you succeed in your examination, a practice examination can be found in the learning management system (LMS). The midterm practice examination is very similar to the actual examination that you will be writing. The answer key is also included so that, when you have finished writing the practice examination, you can check your answers. This will give you the confidence that you need to do well on your examination. If you do not have access to the Internet, contact the Distance Learning Unit at 1-800-465-9915 to get a copy of the practice examination and the answer key.

Examination Format

The midterm examination consists of seven types of questions, the values of which combine to a total of 100 marks:

- Multiple Choice: 17 marks
 - In the multiple choice section of the examination, you will choose the single best answer to each of the questions given.
- Fill in the Blanks: 7 marks
 - There will be sentences with blanks that need to be filled-in to complete the sentence. The word list is not provided.
- Matching: 6 marks
 - You will match a list of 6 terms with corresponding definitions. Each definition will be used only once.
- Definitions: 10 marks
 - Review the glossary in the appendix of the course for the list of terms and definitions. This glossary has all the terms for the entire course. Remember that you are preparing for the midterm examination which covers the terms found in modules 1 and 2.
- Mapping: 20 marks
 - A map will be provided and you will be required to label the map.
- Short Answer: 20 marks
 - A short paragraph is required for six questions.
- Long Answer: 20 marks
 - You will be asked to choose 2 out of 3 long-answer questions given and answer each question clearly and thoroughly in the space provided. Refer to A Very Brief Guide to Writing an Essay to help you prepare for your midterm examination. This guide can be found in the appendix section of this course.

Notes

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 2 Natural Resources

Learning Activity Answer Key

MODULE 2: NATURAL RESOURCES

Learning Activity 2.1: Natural Resources—Sort and Predict

- 1. Use the information from the introductory section as well as your general knowledge to complete the following learning activity. As you work through the remainder of the learning activity, check back on your predictions and make any necessary corrections.
 - a) Read the list of resources that follows and sort the resources into four different categories by placing them into the appropriate boxes.
 - i) Within the mineral resources category, you must sort terms between two subcategories: metallic and non-metallic.
 - b) Three categories are identified, but you will have to come up with a name for the fourth category. For words that you are unsure of, predict in which category they might belong.
 - c) In the brackets after each category name, indicate whether the resources in that category are renewable (R) or non-renewable (N).

Word Bank					
potash	precipitation				
rivers	plywood	paper	wetlands	iron	gold
lumber	nickel	salt	wells	groundwater	gravel
copper	lakes	berries	natural gas	particleboard	

Water	Mineral Resources (N)		Forest	Fossil
Resources (R)	Metallic	Non-Metallic	Resources (戌)	Fuels (N)
rivers	copper	potash	lumber	oil
lakes	nickel	limestone	plywood	coal
wetlands	iron	salt	paper	natural gas
wells	gold	diamonds	berries	
groundwater		gravel	particleboard	

Learning Activity 2.2: Natural Resources

- 1. Refer back to the lesson you just read. Based on the information in the lesson, complete the following organizer.
 - a) For each resource listed, the number of countries/regions is indicated. Use this number to help you identify the countries/regions that possess this resource. Write the list of countries/regions in the appropriate column.
 - b) Look at the list of countries/regions you identified for each resource and determine the *continents* on which these resources can be found. Write these continents in the appropriate column.
 - c) For each resource listed, identify under which category it falls.
 - i) Fossil fuels
 - ii) Water
 - iii) Forests
 - iv) Metallic minerals
 - v) Non-metallic minerals
 - vi) Land
 - d) For each resource, identify whether it is renewable or non-renewable.

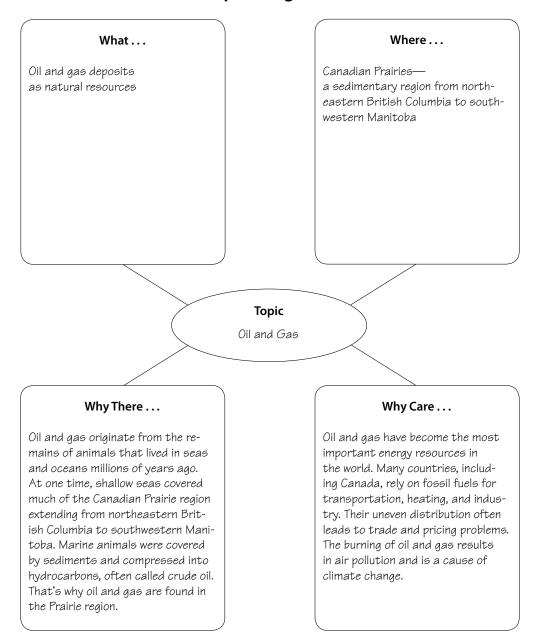
Natural Resource	Countries/ Regions	Continent	Resource Type	Renewable or Non-Renewable
Oil	6 countr	ies, 1 region		
	Middle East	Asia		
	Russia	Asia		
	Venezuela	South America	Fossil fuels	Non-renewable
	Norway	Europe	7 F09911 1 UE19	Non-renewable
	Indonesia	Asia		
	Nigeria	Africa		
	Angola	Africa		
Offshore Oil	3 ו	regions		
	North Sea	Europe		Non-renewable
	Beaufort Sea	North America	Fossil fuels	
	Canada East Coast	North America		
Coal	3 c	ountries		
	United States	North America	Fossil fuels	Non-renewable
	Ukraine	Europe		
	China	Asia	<u> </u>	

Natural Resource	Countries/ Regions	Continent	Resource Type	Renewable or Non-Renewable
Soils	5 count	ries/regions		
	Canada/USA	North America		
	Europe	Europe		n
	Russia	Europe/Asia	─ Land	Renewable
	Southeast Asia	Asia		
	South America	South America		
Potash	3 cc	ountries		
	Canada	North America	NI STATE OF THE	NI.
	Russia	Europe/Asia	─ Non-metallic	Non-renewable
	Belarus	Europe		
Fresh Water	5 cc	ountries		
	Brazil	South America		
	Russia	Europe/Asia		n
	Canada	North America	─ Water	Renewable
	China	Asia		
	Indonesia	Asia		
Iron Ore	5 cc	ountries		
	Brazil	South America		
	Australia	Australia	 	NI.
	China	Asia	Metallic mineral	Non-renewable
	India	Asia		
	Russia	Europe/Asia		
Diamonds	4 co	ountries		
	Southern Africa	Africa		
	Russia	Europe/Asia	Non-metallic	Non-renewable
	Australia	Australia		
	Canada	North America		
Gold	5 cc	ountries		
	South Africa	Africa		
	United States	North America	1	
	Australia	Australia	Metallic mineral	Non-renewable
	China	Asia		
	Canada	North America		
Lumber	3 co	ountries		
	Russia	Europe/Asia	- Forests Rend	n
	Brazil	South America		Renewable
	Canada	North America		

2. Using the organizer on the following page, choose one of the natural resources introduced in this lesson and describe its components according to Gritzner's definition of geography.

Answers will vary; however, the following is an example of a good response.

Graphic Organizer



Learning Activity 2.3: Resource Use—Now and Then

1. Read the following excerpt from *Caretakers of the Land*. Discuss at least one similarity and one difference between the First Peoples' traditional relationship with the land and your relationship with the land today.

Caretakers of the Land

The traditional worldview of First Peoples did not include a sense of ownership of the land. Instead, communities saw themselves as caretakers of the land in a giveand-take relationship.

Communities had traditional territories defined by natural or geographic features such as rivers or forests. Communities might negotiate with other communities to use or pass through traditional territories. Negotiations helped ensure a sustainable use of resources and show respect for the communities involved. Locations with especially good resources were often used by many communities. Sometimes communities cooperated with one another to make use of these resources, such as the great bison herds.

First Peoples viewed the well-being of the land as being inseparable from the well-being of their communities. The resources of the land were not to be exploited or abused: they were gifts from the Creator. Decisions about how to use the land considered the needs of the land, the people, and the people's descendants. The Great Law of the Haudenosaunee (Iroquois) required chiefs to guide their decisions by considering the welfare of people seven generations into the future.

Through their oral tradition, communities had detailed knowledge of the resources of their traditional territories and how and when to use them. Communities with a mobile lifestyle did not wander randomly. They moved seasonally through their people's traditional territory according to the knowledge and traditions of their ancestors. These movements helped them take advantage of each resource, whether berries, rice, fish, animals, maple syrup, or medicinal plants.

Connor, Linda, Brian Hull, and Connie Wyatt-Anderson. Shaping Canada: Our History: From Our Beainnings to the Present. Canada: McGraw-Hill Ryerson Limited. 2011. 34.

■ Similarity

There is a recent trend in environmental awareness and caring for the environment.

■ Difference

 Today, we largely believe in land ownership and make distinct borders of ownership.

- 2. Compare your personal use of resources with that of your parents, grandparents, or Elders. Use the *Resource-Use Log: Now and Then* on the following page to record your information in the appropriate columns.
 - a) Keep a daily log of what resources you use for a week.

Examples:

- fuel for transportation as well as heating or cooling the home
- water for personal, household, and recreational use
- electricity for household appliances
- batteries for personal electronic devices
- foods and packaging
- resources used in the production of items you purchased
- b) Interview your parents, grandparents, or Elders to determine what their resource-use log as a teenager might have looked like and how it might differ from your own.
- c) Use the interview information as well as your own knowledge to determine what factors influenced the changing use of natural resources over time.

Examples:

- technology
- availability of resources
- cultural factors

Answers will vary; however, some general patterns in the change of resource use over time should be evident.

Your parents, grandparents, or Elders will likely have had fewer electrical appliances and electronic devices. Many older houses require more electrical outlets to accommodate the additional appliances we use today. The production of many modern items requires raw materials, energy, and a variety of hazardous substances. These items also require energy (often disposable batteries) to operate. People of past generations usually had fewer vehicles than we do today; thus, they relied less on fossil fuels. A family might have had only one vehicle, and perhaps they made efforts to use it sparingly instead of going "anywhere, anytime" as we do today. Children were more likely to walk or ride a bicycle to school in the past. Today we use many resources for disposable packaging while in the past, glass containers were often refilled and paper was reused to wrap items. Singleuse items such as cameras and razors were unheard of several decades ago. We also use a lot of water with modern plumbing, additional bathrooms, and lawn and garden care. Likewise, we use a lot more paper than people did in the past, thus cutting down a lot more trees, and we use more land for tourism and recreation. The development of amusement parks and golf courses near urban centres is taking up land that was once used for farming.

You will probably be able to think of other examples of how resource use has changed over the generations.

3. Write a short summary to express what you have learned about the changing use of resources over time.

Answers will vary depending on the issues discussed in question one.

Learning Activity 2.4: Locating Resources, Issues, and Changes

- 1. A number of resources have been identified in Lesson 2 and reference was made to issues related to resource use and changes over time. An example is provided to help you get started.
 - a) Label each of the following places on the map of Manitoba found on the following page.
 - Brandon
 - St. Leon
 - Winnipeg
 - Duck Mountain Provincial Park
 - South Indian Lake
 - Selkirk
 - Minnedosa
 - Nelson House
 - Swan River
 - b) Next to the place name, list the resource, issue, or change with which it is connected.

Manitoba Resources: Issues and Changes

South Indian Lake

Relocated because of flooding from hydro dam

Nelson House

Hydro dam

Chemawawin

Relocated because of flooding from hydro development

Swan River

Strand board

Duck Mountain Provincial Park Logging

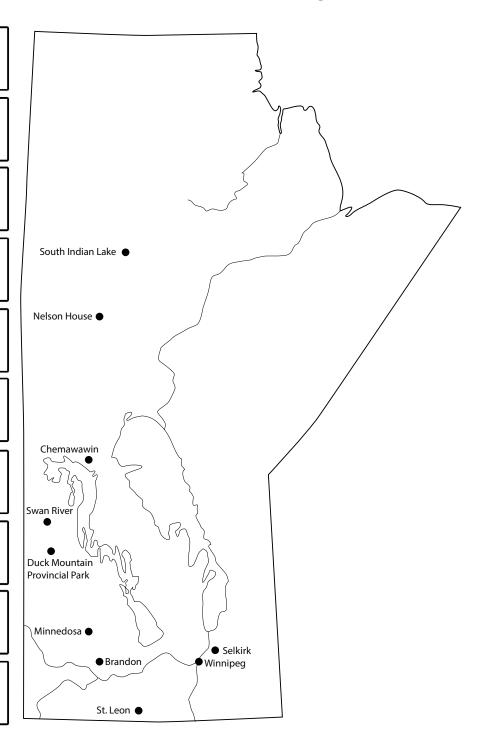
Minnedosa Ethanol plant

Brandon Gas turbines

St. Leon Wind turbines

Winnipeg Suburb development

Selkirk Gas turbines



Learning Activity 2.5: Locating Resources, Issues, and Changes

- 1. What resources do you use and how can you make your resource use more sustainable and environmentally friendly?
 - a) Refer back to the Resource-Use Log: Now and Then from Learning Activity 2.3. Copy the information from the "Natural Resources You Use" column into the appropriate column in the following chart, Resource-Use Log: Reassessment.
 - b) Analyze the list of resources you use and make suggestions about how you can change your needs and behaviours to reduce the amount and number of resources you use. List your ideas in the column on the right.

Examples:

- recycle
- reduce use
- walk instead of drive

Answers will vary depending on the natural resources identified in daily use. The following is an example of possible answers:

- walk, cycle, take the bus, or carpool instead of driving to school or work
- do not idle your car before driving
- turn off tap while brushing your teeth
- reduce length of shower and use water-saving showerheads
- use plug-in adaptor instead of batteries for personal electronic devices whenever possible
- use rechargeable instead of disposable batteries
- turn off electric lights when you are not in the room
- turn off appliances when not in use (including computers)
- turn down the thermostat in the house, wear a sweater if necessary
- use both sides of notepaper
- recycle paper products such as newspapers, notepaper, and packaging
- recycle drink cans and bottles
- bring your own mug when you go out for coffee (paper cups are wasteful)
- repair and use items as long as possible—manufacturing new items requires energy (fossil fuels) and raw materials (non-renewable)
- avoid the purchase and use of disposable items (cameras, razors, batteries, etc.)
- purchase items with minimal packaging

2. Write a short journal entry to express what you learned about your resource use habits and how you could change them to reflect more sustainable use.

Answers will vary depending on the issues discussed in question one. The following is a sample of a good answer.

I have learnt that little things, like shutting off the water when I wash the kitchen counters, can help conserve energy. I also have learnt that by using fewer packaged products there are fewer climate-changing effects on the planet.

Learning Activity 2.6: Implications of Resource Extraction throughout the World

1. Both mining and plantation agriculture have positive and negative implications in the less-developed countries where these resources are produced and exported. In the following chart, identify the positive and negative implications of both mining and plantation agriculture in this context. Be sure to consider the political, economic, social, and environmental implications.

Resource Production and Export in Less-Developed Countries			
	Positive Implications	Negative Implications	
Mining	Answers will vary; the following are examples of possible answers.	Answers will vary; the following are examples of possible answers.	
	■ creates jobs	damage to the environment	
	■ increases incomes	change traditional lifestyles	
	■ brings in revenue for government	political corruption	
	■ may create spinoff benefits	■ disrupt family/village life	
	■ workers may learn new skills	■ social problems (crime, alcohol)	
		poor working conditions	
		■ child labour	
Plantation	Answers will vary; the following are examples of possible answers.	Answers will vary; the following are examples of possible answers.	
	■ creates jobs	■ loss of local farmland	
	■ increases incomes	■ reduces local food production	
	brings in revenue for government	creates dependence on foreign	
	■ may create spinoff benefits	trade	
	■ workers may learn new skills	 other implications similar to those listed above 	

2. Both mining and plantation agriculture have positive and negative implications in more-developed countries where these resources are imported and consumed. In the following chart, identify the positive and negative implications of both mining and plantation agriculture in this context. Be sure to consider the political, economic, social, and environmental implications.

Resource Import and Use in More-Developed Countries			
	Positive Implications	Negative Implications	
Mining	Answers will vary; the following are examples of possible answers.	Answers will vary; the following are examples of possible answers.	
	■ access to additional resources	dependence on foreign materials	
	■ increases economic activity	■ easy access to more resources	
	new processing industries	discourages change in resource use which is especially	
	■ improves the standard of living	important for non-renewable resources	
Plantation	Answers will vary; the following are examples of possible answers.	Answers will vary; the following is an example of a possible answer.	
	 access to products that cannot be produced locally 	 dependence on foreign products 	
	 availability of produce year- round that otherwise would be seasonal 		
	 other implications similar to those listed above 		

3. Develop a list of ideas, actions, and activities that young people can practise to demonstrate environmental stewardship and sustainability. Organize them into personal, family, and school/community actions and activities. Use the following chart to record your ideas. Then, try to implement as many of your ideas as possible. Examples are provided to help you get started.

Personal Actions

Example:

put your fruit peels in the school or family compost bin

Answers will vary; the following are examples of possible answers.

- walk, cycle, take the bus, or carpool instead of driving to school or work
- do not idle your car before driving
- turn off the faucet while brushing your teeth
- reduce the length of showers and use water-saving showerheads
- use plug-in adaptors instead of batteries for personal electronic devices whenever possible
- use rechargeable instead of disposable batteries
- turn off electric lights when you are not in the room
- use both sides of notepaper
- purchase items with minimum packaging
- avoid the use of disposable products (cameras, razors, batteries, etc.)

Family Actions

Examples:

- plant a garden
- use a bicycle to travel to and from school and work

Answers will vary; the following are examples of possible answers.

- participate in recycling programs
- turn down thermostat at night or when you are away
- install a programmable thermostat
- turn off electric lights when you are not in the room
- turn off appliances when not in use (including computers)
- use timers for lights and outdoor plugs
- use low-energy light bulbs
- purchase energy-efficient appliances when they need replacement
- carpool or use public transportation
- walk or use bicycles whenever possible
- purchase energy-efficient vehicles when they need replacement
- repair and use items as long as possible—manufacturing new items requires energy (fossil fuels) and raw materials (non-renewable)
- maintain furnaces and heating systems for maximum efficiency
- install weather stripping and insulation according to guidelines
- install water-saver showerheads and run small baths
- reduce water use for yard and garden care

School/Community Actions

Examples:

- shut off lights at school
- recycle juice and drink cans

Answers will vary; the following is an example of a possible answer.

· establish recycling programs

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Midterm Practice Examination

Note: The practice examination will provide you with a sample of the types of questions you can expect on your midterm examination. Your actual examination will be marked out of a total of 100 marks, whereas the practice examination will only be marked out of 50 marks. Check the answer key to assess how you did on the questions.

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY

Midterm Practice Examination

	For Marker's Use Only
Name:	Date:
Student Number:	Final Mark: /100 = %
Attending Non-Attending	Comments:
Phone Number:	
Address:	

Instructions

The midterm examination is based on Modules 1 and 2 of the Grade 10 Geographic Issues of the 21st Century course. It is worth **25 percent** of your final mark.

Time

You will have a maximum of **2.5 hours** to complete your midterm examination.

Format

The format of the midterm examination is as follows:

■ Part A: Multiple Choice	8 marks
■ Part B: Fill-in-the-Blanks	4 marks
■ Part C: Matching	3 marks
■ Part D: Definitions	5 marks
■ Part E: Map Work	10 marks
■ Part F: Short Answer	10 marks
■ Part G: Long Answer	10 marks
Total examination value:	50 marks

Total examination value: 50 marks

Read the questions carefully so that you don't miss any marks.

Part A: Multiple Choice				
	(a)	(b)	(c)	(d)
1.	O	O	O	O
2.	О	O	O	O
3.	0	O	0	O
4.	0	0	0	O
5.	0	0	0	0
6.	0	0	0	O
7.	0	0	0	О
8.	0	0	0	О

Part B: Fill-in-the-Blanks	
1.	
2.	
3.	
4.	

Name: _		

Part A: Multiple Choice (8 marks)

Use the answer sheet found on page 2 to answer the multiple choice questions in this section. Shade in the circle that corresponds to your answer. *Do not* circle your answers directly on the examination. Each question is worth 1 mark.

Note: On the real midterm examination, you will be asked to answer 17 questions. To help you practise, 8 sample questions have been provided. There are 4 questions that cover topics from Module 1 and 4 questions that cover topics from Module 2.

- 1. Latitude and longitude are used in which type of location description?
 - a) specific location
 - b) absolute location
 - c) relative location
 - d) descriptive location
- 2. After the United States of America, which is the next closest foreign territory to Canada?
 - a) Islands of St. Pierre and Miquelon (owned by France)
 - b) Iceland
 - c) Greenland (owned by Denmark)
 - d) Alaska (owned by the United States)
- 3. Of the following major landform regions, which one does *not* extend into the United States of America?
 - a) Canadian Shield
 - b) Interior Plains
 - c) Western Plateaus and Basins
 - d) Central American Highlands
- 4. Of the four main environmental types, which one best supports high densities of human populations?
 - a) tundra
 - b) desert
 - c) grassland
 - d) forests

- 5. Which country has the world's largest oil reserve?
 - a) Canada
 - b) Norway
 - c) Saudi Arabia
 - d) United States of America
- 6. Which of the following countries does not have a large supply of available fresh water resources?
 - a) Indonesia
 - b) Venezuela
 - c) Russia
 - d) China
- 7. Most of Canada's non-commercial forest can be found in what major landform region?
 - a) Canadian Shield
 - b) Coastal Lowlands
 - c) Cordilleran Region
 - d) Interior Plains
- 8. Of the countries listed below, which one is not one of the world's largest producers of gold?
 - a) South Africa
 - b) United States of America
 - c) Australia
 - d) Brazil

Part B: Fill-in-the-Blanks (4 marks)					
que	Use the answer sheet found on page 2 of this examination to answer the fill-in-the-blank questions of this section. Write your answer in the space provided that corresponds to the question. <i>Do not</i> write your answers directly on the examination.				
foll	Using a term from the word bank provided below, complete each of the statements that follow. Each blank is worth one mark. There are <i>more</i> terms provided than you need, so read over the list carefully and choose the terms you want to use.				
Note: On the midterm examination, you will be asked to answer 7 questions. To help you practise, 4 sample questions have been provided. There is 1 question that covers topics from Module 1 and there are 3 questions that cover topics from Module 2.					
		coniferous deciduous ethanol	,	precipitation	
1.	The Prime Meridia	an, at zero degr	ees (0°), is th	ne starting point for meas	suring
2.	Trees that produce	cones and hav	e needle lea	ves are known as	trees.
3.	Fossil fuels are usuand its porous cha			rock because of the n	nethod of formation
4.	Derived from grain gasoline to reduce			is a form of alcohol that	can be added to

Name: _____

Part C: Matching (3 marks)

In the spaces provided, write the letter of the term that best corresponds with the statement.

Note: On the midterm examination, you will be asked to answer 6 questions. To help you practise, 3 sample questions have been provided which cover topics from Module 2.

a) ore bodies	 1. The product of burning fossil fuels
b) selective cutting	 2. Mineral concentrations found underground
c) carbon dioxide	 3. Cutting down trees of a certain size or species

Nan	ne:
Dor	t D. Definitions (E marks)
	t D: Definitions (5 marks)
	bose <i>five</i> of the following terms and write the definition of each in the space provided. h question is worth one mark.
a lis	te: On the midterm examination, you will be asked to choose and define 10 terms from st of 12. To help you practise, 7 terms have been provided, 3 of which cover topics from dule 1 while the remaining 4 cover topics from Module 2.
1.	Geographic Viewpoint
2.	Geographic Information System
3.	Place Attachment
4.	Fossil Fuels
5.	More Developed
6.	Global Warming
7.	Stewardship

Part E: Map Work (20 marks)

Follow the directions for each question. Mark values are provided at the end of each question.

1. **Map of Canada:** Locate and label the following on the map of Canada. Use a dot to show the location of the cities. (5 *marks*)

Note: For question 1 on the midterm examination, you will be asked to locate and label 5 Canadian cities and 5 provinces and territories. To help you practise, a list of 3 cities and 2 provinces/territories has been provided. You must locate and label each one on the map of Canada.

Provinces/Territories
Nunavut
British Columbia

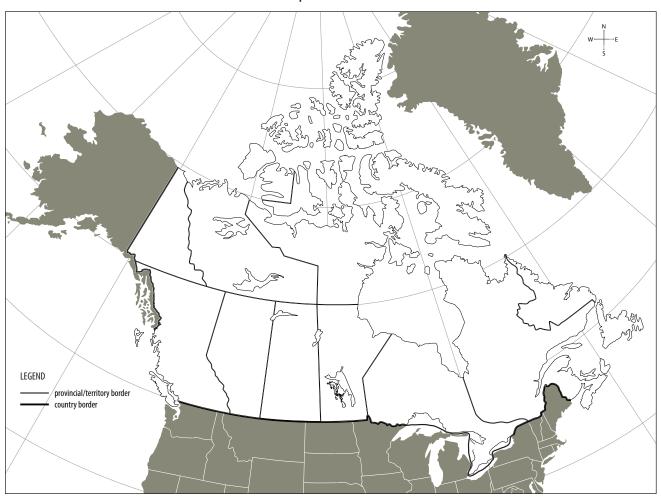
2. **Map of North America:** In the space below, name the features identified with letters and numbers on the map of North America. (5 *marks*)

Note: For question 2 on the midterm examination, you will be asked to name 3 major landform regions (identified on the map of North America with capital letters), 5 countries (identified with numbers on the map) and 2 water bodies (identified with numbers on the map). To help you practice, 2 major landform regions, 2 countries, and 1 water body have been identified. You must name them.

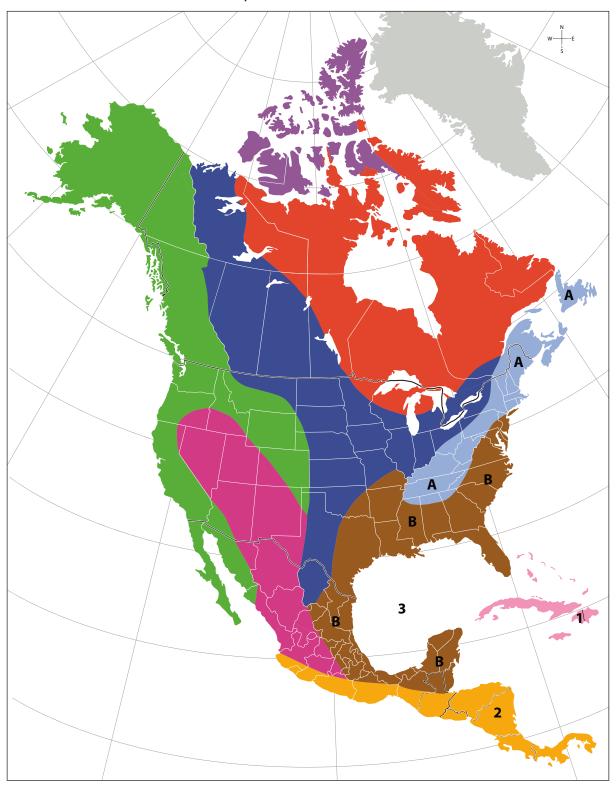
Landform Regions	Countries	Water Bodies
A	1	3
В	2	

Name: _____

Map of Canada



Map of North America



Par	t F: Short-Answer Questions (10 marks)
nur	swer each of the following questions in clear, concise paragraphs. Pay attention to the nber of marks that each question is worth, as this may help you decide how much ormation to provide for full marks.
tota	te: On the midterm examination, you will be asked to answer at least 5 questions that al 20 marks. To help you practise, 1 question has been provided which covers topics from dule 1 and 2 questions have been provided which cover topics from Module 2.
1.	Describe how map projections can skew the true shape or size of landmasses. Use examples to support your answer. (4 marks)
2.	Forests are important resources for humans as they provide us with wood and paper. What are some other reasons why forests are so important to humans? Identify at least 4 reasons. (4 marks)
3.	List at least two metallic minerals. (2 marks)

Name: _____

Part G: Long-Answer Questions (10 marks)

Respond to the following question in a well-developed essay.

Note: On the midterm examination, you will be provided with three essay questions. You are to choose two of these questions and respond in a clear, well-developed essay. Each question will be worth 10 marks for a total of 20 marks. The essay marking rubric will be provided for you on the examination. To help practise, one sample essay question has been provided that covers topics from Module 1.

1. What is meant by the term *global environmental type*? Discuss this term and the unique characteristics of the four major global environment types in terms of their general locations, landforms, vegetation, and climate. Explain the apparent relationship between environmental types and population, and give real-world examples. (10 marks)

	Marking Rubric (10 marks)	
10-7 marks	6-4 marks	3-0 marks
 Explains thoroughly the term global environmental type and compares this term to similar terms. Identifies the four major world environmental types and gives a thorough description of each type. Demonstrates a strong understanding of the relationship between environmental types and population with supporting real-world examples cited. 	 Explains somewhat clearly the term global environmental type and compares this term to similar terms. Identifies the four major world environmental types and gives a description of each type. Demonstrates an understanding of the relationship between environmental types and population with supporting examples cited. 	 A limited explanation of the term global environmental type is given with no comparison to similar terms. Identifies the four major world environmental types with no description given. Demonstrates a limited understanding of the relationship between environmental types.

Name:	
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Grade 10 Geographic Issues of the 21st Century (20F)

Midterm Practice Examination Answer Key

Note: The practice examination will provide you with a sample of the types of questions you can expect on your midterm examination. Your actual examination will be marked out of a total of 100 marks, whereas the practice examination will only be marked out of 50 marks. Check the answer key to assess how you did on the questions.

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY

Midterm Practice Examination Answer Key

	For Marker's Use Only
Name:	Date:
Student Number:	Final Mark:
Attending Non-Attending	C mmen
Phone Number:	
Address:	

Instructions

The midterm examination is based on Modules 1 and 2 of the Grade 10 Geographic Issues of the 21st Century course. It is worth **25 percent** of your final mark.

Time

You will have a maximum of **2.5 hours** to complete your midterm examination.

Format

The format of the midterm examination is as follows:

■ Part A: Multiple Choice	8 marks
■ Part B: Fill-in-the-Blanks	4 marks
■ Part C: Matching	3 marks
■ Part D: Definitions	5 marks
■ Part E: Map Work	10 marks
■ Part F: Short Answer	10 marks
■ Part G: Long Answer	10 marks
Total examination value:	50 marks

Read the questions carefully so that you don't miss any marks.

Part A: Multiple Choice					
	(a)	(b)	(c)	(d)	
1.	О		O	O	
2.		O	O	O	
3.	О	O	O		
4.	0	O	O		
5.	O	O		O	
6.	O		O	O	
7.		O	O	O	
8.	0	O	0		

Part B: Fill-in-the-Blanks			
1.	longitude		
2.	coniferous		
3.	sedimentary		
4.	ethanol		

Name: _		

Part A: Multiple Choice (8 marks)

Use the answer sheet found on page 2 to answer the multiple choice questions in this section. Shade in the circle that corresponds to your answer. *Do not* circle your answers directly on the examination. Each question is worth 1 mark.

Note: On the real midterm examination, you will be asked to answer 17 questions. To help you practise, 8 sample questions have been provided. There are 4 questions that cover topics from Module 1 and 4 questions that cover topics from Module 2.

- 1. Latitude and longitude are used in which type of location description? (Module 1)
 - a) specific location
 - b) absolute location
 - c) relative location
 - d) descriptive location
- 2. After the United States of America, which is the next closest foreign territory to Canada? (Module 1)
 - a) Islands of St. Pierre and Miquelon (owned by France)
 - b) Iceland
 - c) Greenland (owned by Denmark)
 - d) Alaska (owned by the United States)
- 3. Of the following major landform regions, which one does *not* extend into the United States of America? (Module 1)
 - a) Canadian Shield
 - b) Interior Plains
 - c) Western Plateaus and Basins
 - d) Central American Highlands
- 4. Of the four main environmental types, which one best supports high densities of human populations? (Module 1)
 - a) tundra
 - b) desert
 - c) grassland
 - d) forests

- 5. Which country has the world's largest oil reserve? (Module 2)
 - a) Canada
 - b) Norway
 - c) Saudi Arabia
 - d) United States of America
- 6. Which of the following countries does not have a large supply of available fresh water resources? (Module 2)
 - a) Indonesia
 - b) Venezuela
 - c) Russia
 - d) China
- 7. Most of Canada's non-commercial forest can be found in what major landform region? (Module 2)
 - a) Canadian Shield
 - b) Coastal Lowlands
 - c) Cordilleran Region
 - d) Interior Plains
- 8. Of the countries listed below, which one is not one of the world's largest producers of gold? (Module 2)
 - a) South Africa
 - b) United States of America
 - c) Australia
 - d) Brazil

Par	t B: Fill-in-the-Blanks <i>(4 marks)</i>
que	the answer sheet found on page 2 of this examination to answer the fill-in-the-blank stions of this section. Write your answer in the space provided that corresponds to the stion. <i>Do not</i> write your answers directly on the examination.
oll	ng a term from the word bank provided below, complete each of the statements that ow. Each blank is worth one mark. There are <i>more</i> terms provided than you need, so read the list carefully and choose the terms you want to use.
ora	e: On the midterm examination, you will be asked to answer 7 questions. To help you ctise, 4 sample questions have been provided. There is 1 question that covers topics from dule 1 and there are 3 questions that cover topics from Module 2.
	coniferous gasoline longitude deciduous hybrid precipitation ethanol latitude sedimentary
1.	The Prime Meridian, at zero degrees (0°), is the starting point for measuring (Module 1)
2.	Trees that produce cones and have needle leaves are known as trees. (Module 2)
3.	Fossil fuels are usually found in rock because of the method of formation and its porous characteristics. (Module 2)
4.	Derived from grain and corn, is a form of alcohol that can be added to gasoline to reduce the use of fossil fuels. (Module 2)

Name: _____

Part C: Matching (3 marks)

In the spaces provided, write the letter of the term that best corresponds with the statement.

Note: On the midterm examination, you will be asked to answer 6 questions. To help you practise, 3 sample questions have been provided which cover topics from Module 2.

a) ore bodies (Module 2)	С	1. The product of burning fossil fuels
b) selective cutting (Module 2)	Α	2. Mineral concentrations found underground
c) carbon dioxide (Module 2)	В	3. Cutting down trees of a certain size or species

Name:		

Part D: Definitions (5 marks)

Choose *five* of the following terms and write the definition of each in the space provided. Each question is worth one mark.

Note: On the midterm examination, you will be asked to choose and define 10 terms from a list of 12. To help you practise, 7 terms have been provided, 3 of which cover topics from Module 1 while the remaining 4 cover topics from Module 2.

1. Geographic Viewpoint (Module 1)

This is the viewpoint of a geographer that asks questions about locations, why things are where they are, and the relationships between different aspects of the world.

2. Geographic Information System (Module 1)

This is integrated computer software for the input of data as well as the display, analysis, and management of geographic information.

3. Place Attachment (Module 1)

This is a strong connection to a familiar place, a feeling of comfort and familiarity with the place where you live, part of your identity.

4. Fossil Fuels (Module 2)

These are minerals such as petroleum, natural gas, and coal, which are burned to produce energy. They are formed from plant and animal fossil remains in sedimentary rock.

5. More Developed (Module 2)

This is a term used to describe a modern, industrialized country that enjoys a high standard of living. Among such countries are countries in Europe and North America, as well as countries from other regions of the world.

6. Global Warming (Module 2)

It is the gradual warming of Earth and its atmosphere which may be caused in part by pollution and the increase of the greenhouse effect.

7. Stewardship (Module 2)

Stewardship is looking after something for someone else; for example, managing resources carefully and leaving enough for future generations.

Part E: Map Work (20 marks)

Follow the directions for each question. Mark values are provided at the end of each question.

1. **Map of Canada:** Locate and label the following on the map of Canada. Use a dot to show the location of the cities. (5 *marks*) (Module 1)

Note: For question 1 on the midterm examination, you will be asked to locate and label 5 Canadian cities and 5 provinces and territories. To help you practise, a list of 3 cities and 2 provinces/territories has been provided. You must locate and label each one on the map of Canada.

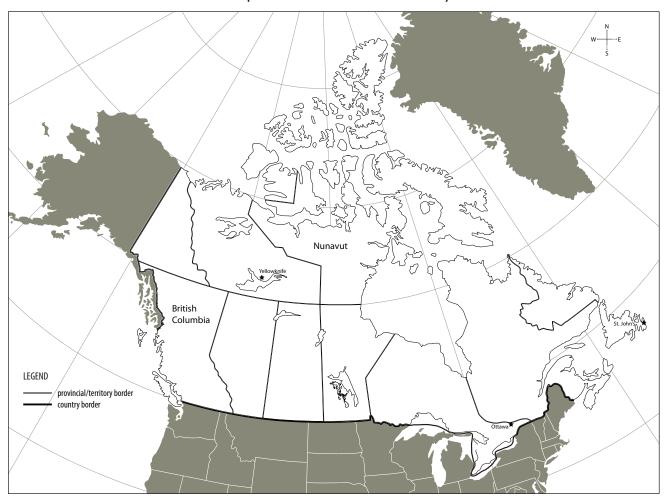
Cities	Provinces/Territories	
Yellowknife	Nunavut	
Ottawa	British Columbia	
St. John's		

2. **Map of North America:** In the space below, name the features identified with letters and numbers on the map of North America. (5 *marks*) (Module 1)

Note: For question 2 on the midterm examination, you will be asked to name 3 major landform regions (identified on the map of North America with capital letters), 5 countries (identified with numbers on the map) and 2 water bodies (identified with numbers on the map). To help you practice, 2 major landform regions, 2 countries, and 1 water body have been identified. You must name them.

Landform Regions	Countries	Water Bodies
A. Appalachian Region	1. Haiti	3. Gulf of Mexico
B. Coastal Lowlands	2. Honduras	

Map of Canada—Answer Key



Map of North America



Name:	
Part F: Short-Answer Questions (10 marks)	

Answer each of the following questions in clear, concise paragraphs. Pay attention to the number of marks that each question is worth, as this may help you decide how much information to provide for full marks.

Note: On the midterm examination, you will be asked to answer at least 5 questions that total 20 marks. To help you practise, 1 question has been provided which covers topics from Module 1 and 2 questions have been provided which cover topics from Module 2.

1. Describe how map projections can skew the true shape or size of landmasses. Use examples to support your answer. (*4 marks*) (Module 1)

Some map projections show the areas (sizes) of countries accurately; however, others, such as the Mercator projection, show a lot of size distortion. These distortions increase as you move away from the equator; thus, countries in the mid and higher latitudes appear much larger in relation to equatorial countries. For example, in the Mercator projection, Greenland appears larger than South America: in reality though, it is only one-eighth of its size. Likewise, North America appears much larger than Africa but it is actually smaller.

2. Forests are important resources for humans as they provide us with wood and paper. What are some other reasons why forests are so important to humans? Identify at least 4 reasons. (4 marks) (Module 2)

Answers could include at least four of the following responses:

- provide habitat for birds and animals
- remove carbon dioxide and add oxygen to the atmosphere
- hold water to reduce flooding
- hold soil in place to reduce erosion
- provide areas for hunting and trapping
- provide food items such as berries
- provide tourism and recreation facilities
- purify water via wetlands in forest regions
- 3. List at least two metallic minerals. (2 marks) (Module 2)

Answers could include at least two of the following:

nickel

copper

■ silver

■ zinc

■ gold

iron

Part G: Long-Answer Questions (10 marks)

Respond to the following question in a well-developed essay.

Note: On the midterm examination, you will be provided with three essay questions. You are to choose two of these questions and respond in a clear, well-developed essay. Each question will be worth 10 marks for a total of 20 marks. The essay marking rubric will be provided for you on the examination. To help practice, one sample essay question has been provided that covers topics from Module 1.

1. What is meant by the term *global environmental type*? Discuss this term and the unique characteristics of the four major global environment types in terms of their general locations, landforms, vegetation, and climate. Explain the apparent relationship between environmental types and population, and give real-world examples. (10 marks) (Module 1)

Marking Rubric (10 marks)						
10-7 marks	6-4 marks	3-0 marks				
 Explains thoroughly the term global environmental type and compares this term to similar terms. Identifies the four major world environmental types and gives a thorough description of each type. Demonstrates a strong understanding of the relationship between environmental types and population with supporting real-world examples cited. 	 Explains somewhat clearly the term global environmental type and compares this term to similar terms. Identifies the four major world environmental types and gives a description of each type. Demonstrates an understanding of the relationship between environmental types and population with supporting examples cited. 	 A limited explanation of the term global environmental type is given with no comparison to similar terms. Identifies the four major world environmental types with no description given. Demonstrates a limited understanding of the relationship between environmental types. 				

Sample Response (in point form):

- Global environmental types are large areas with certain landforms and plant and animal communities. They are named after the main vegetation type in an area. Global environmental types are also known as biomes or ecosystems. The four major world environmental types are grassland, forest, tundra, and desert.
- Grassland environmental types are located in tropical and temperate regions of the world, and usually occupy lowlands and plains. Grasslands occur in relatively dry regions of the world where there is not enough precipitation for trees to grow.

Name:				
	Name: _			

- Forest environmental types are located in tropical, temperate, and subarctic regions where there is enough precipitation for trees to grow. They are found in lowlands, highlands, and mountain regions. Forest types range from evergreen tropical forests, rainforests, deciduous forests, to coniferous forests in various climatic regions from the tropics to the subarctic.
- Tundra environmental types are vegetation zones in northern regions or in higher elevations where it is too cold for trees to grow. Vegetation consists of shrubs, grasses, mosses, and lichens. Landforms range from flat plains to mountains. Tundra environmental types are located in arctic and mountainous regions of the world.
- Desert environmental types are arid (dry) regions of the world in tropical, subtropical, and temperate regions. They are covered in sand or sparse vegetation consisting of shrubs, grasses, and cactus plants. They occur on relatively flat land as well as in more rugged terrain, and even in mountainous regions.
- Due to varying conditions, some global environmental types are able to support much higher populations than others. The world's highest populations are found in the mid-latitude broadleaf and mixed forest regions, such as those in eastern North America, Europe, and Southeast Asia. Grasslands and some tropical forests also support high populations. These are found in the Interior Plains of North America, South America, India, and parts of Africa. Deserts are not able to support many people due to their dry and often hot conditions. The Sahara Desert in Africa is a good example. The tundra environmental type also does not support high populations due to cold climatic conditions and remote locations. Northern Canada is a good example.

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 3 Food from the Land

MODULE 3: FOOD FROM THE LAND

Introduction

This module will help you familiarize yourself with the production and the acquisition of food: a basic human necessity.

In this module, you will

- identify the location of major food production areas around the world
- examine how physical and human factors influence food production
- consider the impact agricultural practices have on the physical environment
- examine how food production has changed over time—especially on the Prairies
- consider issues related to food production; including the production of freshwater and saltwater food sources, the impact of climate change, and concerns regarding genetic modification of foods on our overall health
- identify the stages involved in food production
- examine issues related to the scarcity and distribution of food

Module 3 consists of four lessons. Each lesson has learning activities to help you practise, review, and reflect upon what you have learned. At the end of the module, you will find an answer key for the learning activities in this module.



As you work through this course, remember that your learning partner and your tutor/marker are available to help you if you have questions or need assistance with any aspect of the course.



Assignments

When you have completed the assignment for Module 3, submit your completed assignment to the Distance Learning Unit either by mail or electronically through the learning management system (LMS). The staff will forward your work to your tutor/marker.

Lesson	Assignment	Marks
4	Assignment 3.1: Food from the Land	50

Notes

LESSON 1: FOOD PRODUCTION: LOCATION AND CONDITION

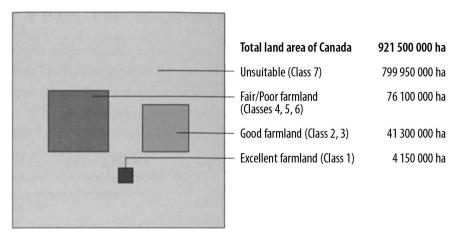
Lesson Focus				
By the end of this lesson, you will be able to				
identify the major food production areas on a map of the world and a map of Canada				
identify physical conditions that are required to produce major food crops				
describe the impact of agricultural practices on the physical environment				
describe the responsibilities we have as humans to respect Earth as a complex environment				

Introduction

In this lesson, you will discover the major food production areas in Canada and the world by studying maps. You will investigate the physical conditions necessary for the production of major food crops and you will also consider the impact of agricultural practices on the physical environment.

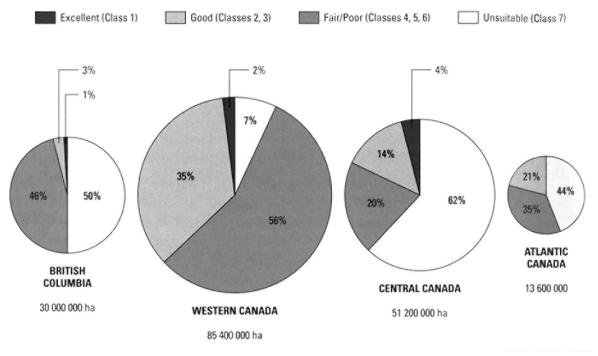
Land: The Basic Resource

During the 1960s and 1970s, the federal and provincial governments in Canada surveyed most of the land in Canada: approximately 2.4 million square kilometres. This survey enabled them to divide Canada's land into seven classes: Class 1 to Class 7. Class 1 land has deep soils and is excellent for farming. This accounts for 0.5% of Canada's land. Class 7 land has no capability for farming. This represents about 87% of Canada's land.



Clark, Bruce W., and John K. Wallace. *Geographic Issues of the Twenty-first Century*. Don Mills, ON: Pearson Education Canada Inc., 2005. 287.

Limitations such as climate and soil quality reduce the amount of land that can be used for agricultural production. Dependable agricultural land includes Class 1, Class 2, and Class 3 land and is concentrated in three provinces: Saskatchewan, Alberta, and Ontario.

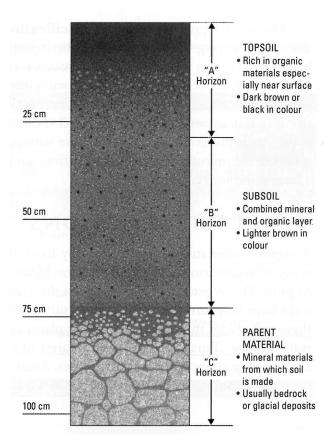


Clark, Bruce W., and John K. Wallace. *Geographic Issues of the Twenty-first Century*. Don Mills, ON: Pearson Education Canada Inc., 2005. 287.

What qualities make soil high quality and excellent for farming? Let's take a look at a cross-section of the layers of soil and then at the composition of soil.

As you can see in the image that follows, soil is found in layers. Each layer is called a horizon. The top layer, the most important horizon in respect to agriculture, is called **topsoil**. Seeds germinate and the roots of plants grow in this dark-coloured layer. It is made up of **humus** (decomposed organic matter) mixed with mineral particles. The next horizon is called **subsoil**. It contains clay and mineral deposits. The layer beneath the subsoil is called parent material and is made up of **regolith** and solid **bedrock**. Regolith consists of slightly broken-up bedrock. Plant roots do not penetrate this layer; very little organic material is found in this layer. At the bottom of the parent material layer is bedrock, which is solid, unweathered rock.





Clark, Bruce W., and John K. Wallace. *Geographic Issues of the Twenty-first Century*. Don Mills, ON: Pearson Education Canada Inc., 2005. 141.

As previously mentioned, topsoil is the most important horizon of soil. What does topsoil consist of? Basically, soil is composed of the following four things:

- minerals: These come from weathered rock and include calcium, phosphorus, and potassium. They provide nutrients for plant growth.
- bacteria and organic materials: When plants and animals die, they are decomposed by bacteria in the soil. As bacteria break down the matter, nutrients are released. Decaying organic materials form the humus.
- **air:** Plants need air around their roots. Air spaces are created by worms, insects, and small animals that tunnel through the soil.
- **moisture:** Water dissolves nutrients plants need to grow, and helps decay rock and organic minerals.

Topsoil makes up only the upper 5 to 12 centimetres of soil. Without topsoil, little plant life is possible. It takes approximately 500 years for one inch of topsoil to be deposited. It is quite a fixed amount and must be carefully managed. This "thin skin" of farmable surface is responsible for supporting humankind.

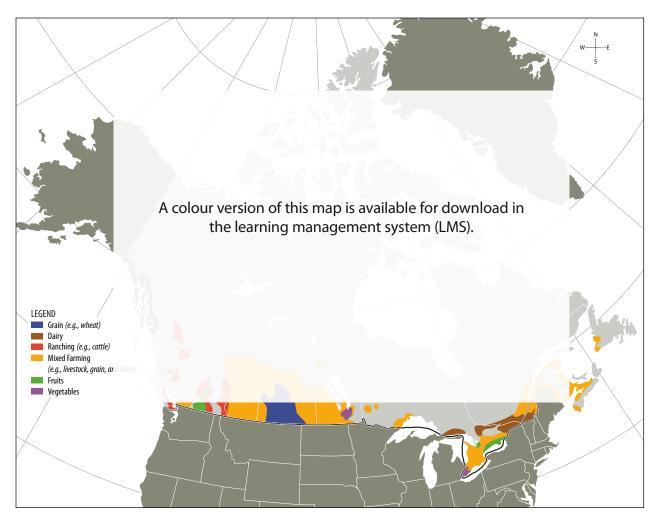
Food Production in North America

Most food production occurs in the central region of North America. The foothills of the Rocky Mountains mark the region's boundary. The region extends from the Peace River in northwestern Alberta to the east at the North Saskatchewan River, which creates its northern border in Manitoba and Saskatchewan. The boundary cuts through the southern part of the Prairie Provinces (Alberta, Saskatchewan, and Manitoba) and stops just east of Winnipeg where the Prairies meet the Canadian Shield. South of the Great Lakes–St. Lawrence area, from Quebec City to Windsor, Ontario, we find Canada's other major food-producing region. This farming region then expands southward to the border between the United States and Mexico.

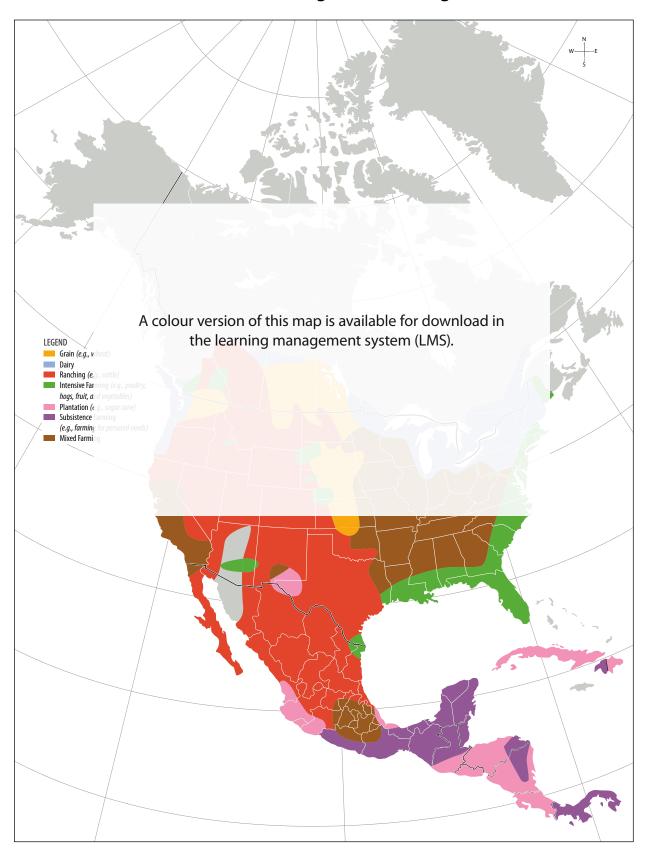


This area of food production includes a vast resource base that includes **geology**, landscape, soils, **natural vegetation**, and water. All of these interact to support agriculture. To keep the land productive, it must be carefully managed.

Canada's Agricultural Regions



North America's Agricultural Regions





Note: As the scale becomes larger, the details shown in the map become more generalized. This is why the agricultural production regions on the map of North America are not consistent with those on the map of Canada. In this case, some new terms need to be used to describe these generalizations. The term *intensive* refers to a method of farming that requires a small amount of land but a large amount of labour. Products produced on *intensive* farms include fruits, vegetables, poultry, and hogs. *Plantation* farming is the opposite of *intensive* farming. *Plantation* farming uses a large amount of land and requires a relatively small amount of labour, and is known as *extensive* farming. Products of *plantation* farming include sugar cane and other cash crop products that are mass produced for profit. *Subsistence* farming is a type of farming in which the products are solely used for the farmer's personal consumption. In essence, *subsistence* farming is farming for survival. Only surplus products are sold in local markets.

Food Production in the World

The United Nations estimates that more than one-third of the world's land area (not including Greenland and Antarctica) is in some form of agricultural use. Forty-two percent (42%) of the world's labourers are employed in agriculture, making it by far the world's most common occupation. Nevertheless, agricultural production accounts for less than 5% of the gross world product (the total gross domestic product of all the countries in the world).



How do we determine how much food a country produces? Agricultural output is a component of a country's **gross domestic product (GDP)**. The GDP is the value of all goods and services produced in a country per given year. In 2005, China and the **European Union** (the EU is an intergovernmental union of 27 countries in Europe whose aim is to cooperate economically) led the world in agricultural output. This means that of all the goods and services produced in China and the EU, agricultural products account for more of the total than in any other country. As the top producer, China grosses \$267,000,000,000 in agricultural output; however, even though China and the EU lead in agricultural output, the United States of America leads in productivity per farmer.

Food Production: Physical Factors

What physical factors are needed to produce food? As you read previously, soil is the most important factor affecting most types of land-based food production. Other physical factors are

amount of precipitation

- climate
 - the amount of heat a region receives has a considerable effect on the types of crops or food products that may be produced

■ growing season

- the average number of days without frost
- topography
 - level land is the best-suited land for farming

Agricultural Practices and the Physical Environment

In the late 1800s, about 80% of Canadian families farmed the land. Today, this number is less than 3%. What caused this overwhelming change? One hundred years ago farmers used animals such as horses and oxen, as well as their own manpower, to do the tasks needed to run a farm. Farmers were able to manage relatively small farms of about 50 **hectares** in size. Today, one or two people using modern machines can operate large farms of 200 hectares or more.

In 1996, the average farm size was 246 hectares. In 2001, it was 274 hectares. By 2006, farm size had grown by nearly 8% to 295 hectares. Today, there are fewer farms producing more food than ever before.

Farming is a very expensive business. It costs anywhere from \$500,000 to more than \$1 million in start-up costs alone. Yearly costs to maintain a farm are also very high. Farming is a high-debt industry: farmers must pay for seeds, veterinary care, equipment, pesticides and other chemicals, vehicle repairs, insurance, and other costs.





As you read earlier, land or soil is the most important resource for farming. In order for a farmer to make a profit, he or she must make sure the land yields the greatest amount of produce possible. Unfortunately, over the past 100 hundred years or so, much of Canada's soil and farmland has been damaged by poor agricultural practices designed to increase yields. Some of the damages have been a result of

■ leaching

Leaching occurs when soil loses it nutrients through excessive irrigation.

compaction of soil

Farmers use heavy equipment like tractors and combines. The use of these can compact the soil so that it loses its ability to hold water and air, which are necessary for plant growth.

erosion

Erosion is the wearing away of the Earth's surface (in this case the topsoil) to other locations. Erosion may be caused by water, wind, ice, and the natural downward slope of the land, as well as poor agricultural practices. Erosion can occur because of nature or because of human activity.

contamination

Farmers use chemical fertilizers, **herbicides**, and **pesticides** to increase their yields and profits. These chemicals cause great concern because run-off fertilizers are known to contaminate water bodies. Herbicides harm wildlife as well as humans. Pesticides kill many useful insects such as bees, and may upset the natural balance of the ecosystem.

Food production in North America is entirely dependent on the land. The quality and character of the soil determine how good a farmer's crop will be. Soil is all too often mistaken as an infinite, everlasting resource. This is only true if soil is carefully managed. Soils must be protected from a variety of destructive forces—the production of our food depends on it.



This may be a good time to ask your learning partner for help. Remember, your learning partner is anybody whom you choose to help you with your course.



Learning Activity 3.1

Locations and Conditions for Food Production

- 1. The government has classified the land in Canada in seven different classes. What is the difference between Class 1 land and Class 7 land?
- 2. In which three provinces is most of Canada's best agricultural land found?
- 3. This chart shows the area of dependable agricultural land per province as well as the total portion of that land in Canada as a whole.

Province	Dependable Agricultural Land (Class 1, Class 2, and Class 3)	Portion of Total Land in Canada
British Columbia	6,922 km²	1.4%
Alberta	106,462 km²	21.6%
Saskatchewan	190,105 km²	38.6%
Manitoba	56,228 km²	11.4%
Ontario	76,537 km²	15.5%
Quebec	24,560 km²	5.0%
New Brunswick	15,879 km²	3.2%
Nova Scotia	11,920 km²	2.4%
Prince Edward Island	4,048 km²	0.8%
Newfoundland and Labrador	67 m²	0%

Hofmann, N., Filoso, G., and Schofield, M. Statistics Canada. "The Loss of Dependable Agricultural Land in Canada." Rural and Small Town Canada Analysis Bulletin. Volume 6, Number 1. January 2005. www.smartgrowth.bc.ca/Portals/0/Downloads/Loss%20of%20Dependable%20Land%20in%20Canada.pdf (4 April 2013).

- a) Which province contains the most dependable agricultural land?
- b) How many square kilometres (km²) of dependable agricultural land are located in Manitoba?
- c) Using the information in the chart in this question and the information in the pie charts in this module, identify at least three provinces that do not contain Class 1 land.

- 4. Why do you think land in Classes 1, 2, and 3 is called dependable agricultural land? What makes land dependable agricultural land?
- 5. On the following diagram, label the horizons of soil and briefly describe the components of each horizon.

Soil Profile	Description
Level 1	
Level 2	
Level 3	

6. In the past 100 years or so, great technology has been created and great scientific advances have been made regarding the way we farm the land in North America; however, each of these advances to increase agricultural output and yield has come with a toll on the physical environment, notably the soil.

The following organizer shows some of the technological and scientific advances made in agriculture over the past century. Read the technological/scientific advance in the left-hand column and complete the right-hand column, summarizing the negative impact on the physical environment. The first one is completed for you as an example to help you get started.

Technological/Scientific Advance	Negative Impact on the Physical Environment
Farmers use heavy equipment like combines, tractors, and balers.	Compaction of soil
Irrigation is the artificial application of water to the soil. It is mainly used to replace missing rainfall in periods of drought, but also to protect plants against frost.	
Farmers use poor agricultural practices aimed at increasing yields, such as overgrazing and over-cropping.	
Farmers use chemicals such as fertilizers, herbicides, and pesticides to increase yields and profits.	

- 7. Read the following case study and carefully inspect the map of the Andersens' farm. Answer the questions that follow. You may need to consult the glossary at the end of this course or a dictionary for new terms.
 - a) What evidence is there that the Andersens are currently trying to protect the topsoil?
 - b) Approximately what percentage of their farmland is in summer fallow?
 - c) Based on the diagram of the Andersens' farm, from what direction do you think the wind usually comes on the farm? How do you know this?
 - d) Considering the Andersen farm topography, how would they plough their fields? Choose one of the following options and justify why you chose it.
 - i) Plough the rows from east to west
 - ii) Plough the rows from north to south

Case Study: The Andersens—Grain Farmers

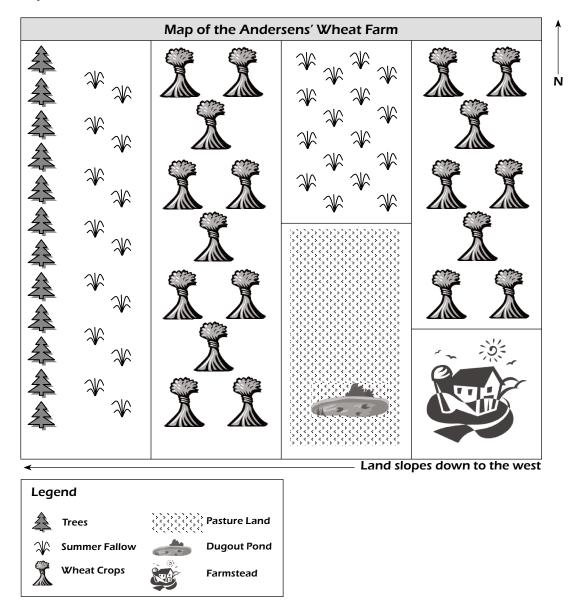
The Andersens own a large wheat farm south of Winnipeg. Like many people on the Prairies, they make their living from farming as land as their parents and grandparents did before them.

The Andersen family farms a much larger farm than their ancestors did. They depend a great deal on modern machinery and chemicals to do the work on their farm. Their family consists of the two parents, two teenaged sons, and an 11-year-old daughter. The Andersens are able to handle all the work on the farm except at harvest time, when they hire extra people to drive trucks and do other work that must be done to get the crop off the field.

The Andersens are very aware that their farm and their livelihood are dependent on the quality and quantity of their soil. In order to protect the land, they have adopted several agricultural practices intended to preserve the topsoil and the environment. They also recently attended a seminar in Winnipeg aimed at farmers called "Sustainable Agriculture—Ensuring Your Farming Future" to learn even more.

Some of the practices the Andersens are currently using or learned about at the seminar include the following:

- Summer fallowing
 - leaving farmland without a crop to conserve soil nutrients and moisture; may be cultivated during the summer
- No-till cropping
 - leaving stubble from the previous year's crop so that it holds the soil in place and protects it from wind erosion
- Contour ploughing
 - ploughing across hilly fields, rather than up and down to reduce the damage caused by soil erosion
- Shelterbelts
 - planting one or more rows of trees that function to reduce wind erosion
- Biological control of pests
 - controlling pests, such as insects, without the use of chemicals
 - examples include spraying "enemy" bacteria on worms and sterilizing male insects by radiation
- Use of organic fertilizers
 - rather than using chemicals, farmers use naturally occurring, organic fertilizers such as manure and sewage





You can now assess your learning activity by consulting the answer keys at the end of this module. Keep up the great work!

Summary

Food production in Canada takes place in two areas: the southern part of the Prairie Provinces and the southern Great Lakes–St. Lawrence region. Food is produced all over the world as well, making farming the world's most common occupation. World food production is led by the European Union, China, and the United States. Land is the basic resource for food production and there are several other physical conditions necessary for the production of major food crops. Modern agricultural practices are meant to result in high yields for farmers, but they often have serious negative effects on the physical environment: farmers must safeguard the quantity and quality of the soil they farm.

Notes

LESSON 2: FOOD PRODUCTION

Lesson Focus
By the end of this lesson, you will be able to
identify human factors that affect the production and use of various types of food
☐ identify stages involved in food production and distribution
describe ways in which food production has changed over time

Introduction

In this lesson, you will identify a number of human factors that affect the production and use of various types of food. You will also investigate the major stages in food production and distribution, and explore ways in which food production has changed over time.

Food Production: Human Factors

The physical environment is not the only thing that farmers must consider. If farmers are to survive, they must make a profit and so it is no surprise that economic factors play a large role in the business of farming. Examples of these economic factors are

- selling prices
- land values
- competition
- available transportation
- size and location of consumer markets

Not only are there natural environment and economic factors, there are also political considerations. Governments create many regulations and policies that affect farmers.

Food Production and Distribution until 1920

Traditionally, over thousands of years, food production was centred on two key factors.





- Agricultural activities are done by the physical labour of humans such as the farming of **grain**, produce, and **livestock**.
- Personal food preparation
 - Individuals and families would grow, process, and prepare food for their own personal consumption.

A considerable percentage of the population was directly involved in farming and, in the process, many people actually fed themselves, from field to table.

A series of technological breakthroughs throughout history significantly increased the amount of food that humans could produce. Following is a timeline providing examples of some of these innovations.

3000 BCE	Improved ploughs allowed domesticated animals to pull a sharp stick through the soil, creating a gap in which seeds could be planted. These were called <i>scratch ploughs</i> . Prior to this, early farmers planted their seeds using a stick to dig holes.
	Scratch Plough Handle Digs into soil, creating a gap to plant seeds.
500-900 CE	Ploughs that included an iron knife-like blade were developed. These could cut the ground and roots better than scratch ploughs.
1000 CE	In Europe, animals began to be used effectively in the process of farming; the horse collar was invented, which allowed the horse to pull an implement (like a plough) harder without choking itself. Harnesses were also invented, which allowed more than one animal to be attached to a single plough. The horseshoe allowed for horses to have better traction in muddy fields.

1750-1920 CE

Inventors and farmers were quick to add the benefits of **industrialization** to agriculture. They adapted machinery that was being used in factories and mines to produce more efficient farm equipment. Some types of machines included steampowered tractors and threshing machines.



Photo Credits: Minnesota Historical Society/CORBIS/MAGMA.
Clark, Bruce W., and John K. Wallace. *Geographic Issues of the Twenty-first Century*. Don Mills, ON: Pearson Education Canada Inc., 2005. 263.

In the past, farmers did not have modern means of transporting food and keeping it from spoiling, and so the distribution of food took place in a relatively small area. For example, at one time, in The Pas, Manitoba, there were five dairy farms supplying the area with milk and milk products. Milk and dairy products were delivered to customers and retailers within a few days of cows being milked. Today, there are no local dairies in The Pas and milk is shipped in by truck and sold at local grocery stores. Parmalat is an Italian-owned dairy corporation and consumers in The Pas can purchase milk that was processed in Winnipeg but owned by a company from Italy!

Food Production and Distribution in the 21st Century



The food industry has changed radically since the early 1900s. In contrast to what you have already read in this lesson, the modern food industry relies far more on technology, particularly on **mechanization** and **biochemistry**, than on human and animal labour. In this way, food is raised, manipulated, preserved, and transported, resulting in a food industry that is, to a great degree, global in nature. Food and related resources travel great distances in today's world. One example is the previously mentioned dairy company Parmalat.

Food Production and Distribution in the 21st Century



Not only is food shipped great distances, so too are farm machinery and parts. Machinery and parts from Europe, and **agrichemicals** from the United States are all routinely shipped to farms in South America, where farm products are raised and shipped to North America for fresh market consumption or for use in processed foods, which may then travel to further points around the world!

This modern food system relies heavily on

- technology
- transportation
- management
- transportation logistics
- marketing
- government regulations

Food Processing in the 21st Century

Food processing dates back to prehistoric times when humans processed food by fermenting, sun drying, preserving with salt, and cooking (roasting, smoking, steaming, and oven baking).

Food processing technology in the 19th and 20th centuries was largely developed to serve military needs. The canning and tinning of food was invented in France during the time of Napoleon in order to supply food to the French army. Pasteurization, discovered by Louis Pasteur in 1862, involves the process of heating liquids for the purpose of destroying harmful organisms and was another significant advance in the processing of food.



Since the end of World War II in 1945, a **consumer society** has developed in the world's industrialized countries, including Canada. At the same time, there has been a rise in the pursuit of convenience; food processors especially marketed their products to middle-class working wives and mothers. This shift in society—consumerism and mothers working outside of the home—has contributed to the growth of food processing. Innovations in food processing include

- spray drying
 - This is a technique for dehydrating fluid foods such as milk, coffee, and egg powders.
- juice concentrates
- freeze drying
 - This is a technique whereby perishable foods are dehydrated to make them more convenient for transport; instant coffee is often freeze dried.

- artificial additives
 - sweeteners
 - colourants
 - preservatives

Modern food processing has many benefits and at the same time creates issues. Good points associated with modern food processing include toxin removal, preservation, flavour improvement, ease of marketing and distribution tasks, and an increase in food consistency. In addition, it increases seasonal availability of many foods, enables transportation of delicate, perishable foods across long distances, and makes many kinds of foods safe to eat by removing micro-organisms. Food processing can also add extra nutrients. Modern supermarkets would not be possible without modern food-processing techniques.

On the other hand, modern food processing has drawbacks too. Food processing can greatly lower the nutritional value of some foods. Some preservatives that are added during processing may cause adverse health effects on some consumers. The addition of preservatives such as salt, and flavour enhancers such as sugar and fat, can add unnecessary chemicals and calories to our diet.

Food Distribution in Canada

Canada's food distribution system represents the final link in the food supply chain from food producers (farmers) to processors to distributors and finally to us, the consumers. Food distribution is a large and complex sector that includes supermarkets, grocery stores, restaurants and fast food operations, as well as the wholesalers, distributors, and brokers that supply them. At the time this course was written in 2013, there were about 24,000 retail stores and close to 63,000 food service establishments in Canada, with total consumer sales of \$131 billion (in 2005). The sector employed 1.4 million people and accounted for 4% of Canada's total GDP.



Learning Activity 3.2

Food Production and Distribution



1. In the space next to each era in the timeline that follows, organize the advances in farming technology and food production. Each box represents a chronological time frame listed on the timeline.

Chronological Time Frame	
3000 BCE	
500-900 CE	
1000 CE	
1750- 1920	
21st Century	

Learning Activity 3.2: Food Production and Distribution (continued)

 Read the case study below. In the chart that follows, describe each step of banana production and distribution from Central/South America to North America. Be sure to pay attention to the number of points you are to use as specified in each section. Some examples are provided to help you get started.

Case Study: Canadians Go Bananas for Bananas

A recent study has shown that Canadians consumed an average of 13 kg of bananas in the year 2000. Compared to other fruit consumed in Canada—11 kg of apples and 9 kg of oranges—the banana is Canada's favourite fruit.

Where do all these bananas come from?

Bananas are grown in 132 countries; most of Canada's bananas come from Central and South America. The most common type of banana sold in Canada is the Cavendish banana, which is grown specifically for the North American market. The Cavendish banana is not only tasty, but is thick-skinned and, therefore, travels well.

Bananas are grown in tropical regions where the average temperature is 27°C and the yearly rainfall is 200 to 250 centimetres. They require moist soil with good drainage. Most bananas grown for export are harvested within 30 degrees either side of the equator.

Bananas are produced on farms called plantations. While there are a few small plantations owned by local farmers, most plantations are very large, as big as 5,000 hectares, and are usually controlled or operated by large transnational corporations.

The banana industry in Central America is still controlled by United States of America—based fruit companies. Chiquita Brands, Dole, and Del Monte are the "big-three" banana producers. Together, these companies control over 65% of the world banana exports. These fruit companies have developed many regions of Central America. They have constructed fully functioning company towns in primarily rural or undeveloped regions. They have constructed hospitals, schools, roads, railways, and communication systems to support their plantations. Despite this, workers on plantations work ten- to twelve-hour days, six to seven days a week, but earn only \$2,000 per year.

Bananas are picked and sorted by hand and then transported by truck to a packaging plant. They are shipped hard and unripe (green). At the plant, the bananas are cleaned and packaged, then sent by refrigerated truck or train to the export harbour. At the harbour, the bananas are placed in sealed, refrigerated containers and loaded onto a large container ship. From the harbour, the ship sails to a port in Canada—Vancouver, Montreal, or Halifax—where the bananas are either placed in a warehouse or loaded directly onto trucks.

Learning Activity 3.2: Food Production and Distribution (continued)

Case Study: Canadians Go Bananas for Bananas (continued)

At the warehouse in Canada, the bananas are partially ripened in temperature-controlled units filled with ethylene gas. The bananas take about eight to ten days to ripen. After this, they are shipped to individual stores for sale to the consumer. The whole process—from picking to arrival at the supermarket—usually takes no longer than 20 days.

Along with natural factors, there are several human factors that affect the production of food. There are several stages in the production of food including growing, processing, transportation, and marketing. Distribution is the final link in the food supply chain from farmers to processors and finally to consumers. Food production has changed over time and we currently have a highly specialized process that relies heavily on modern technology, particularly on mechanization and biochemistry. Modern food production has both benefits and drawbacks.

Stage	Description
Growing	Bananas are grown in tropical regions where the average temperature is 27°C and the yearly rainfall is 200 to 250 centimetres. Provide at least two clear and distinct points.
Processing	Provide at least one clear and distinct point.
Transportation	They are shipped hard and unripe. Provide at least two clear and distinct points.
Marketing	Provide at least one clear and distinct point.
Consuming	Provide at least one clear and distinct point.



Summary

There are many factors that influence the production and use of food. Human influence is one of the major factors. The major stages of food production and distribution include growing, processing, transporting, marketing, and consuming. As society has changed, so too has food production. The development of new techniques and tools has changed the way we produce food.

LESSON 3: SAFEGUARDING YOUR FOOD SUPPLY

Lesson Focus	
By the end of this lesson, you will be able to	
provide examples of the potential impact of climate change on food production	
explain ways in which natural and human-caused phenomena affect food production	
☐ reflect on the environmental consequences of your food choices	

Introduction

In this lesson, you will examine the ways in which both natural phenomena and human actions affect the food supply. You will explore examples of the impact of climate change on our food supply, and consider the fact that your own food choices have environmental consequences.

Food Production: Natural and Human-Caused Factors

You read previously in this module that there are several factors that directly affect what a farmer in this country will produce. All these factors can be organized into two categories:

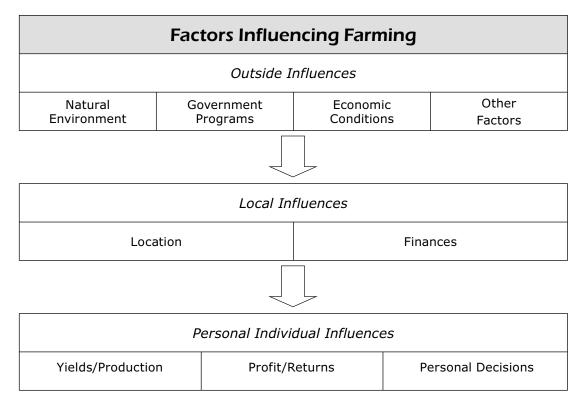
- natural
 - having to do with the physical environment
- human
 - caused by and having to do with the actions of people

The following diagram arranges these two categories one step further, by sorting them into

- outside influences
 - overarching factors over which the farmer has limited or no control
- local influences
 - factors that are related to the area in which a farmer lives, like a province or a region such as the prairies

- personal/individual farm influences
 - factors that have to do with the farmer and his/her farm

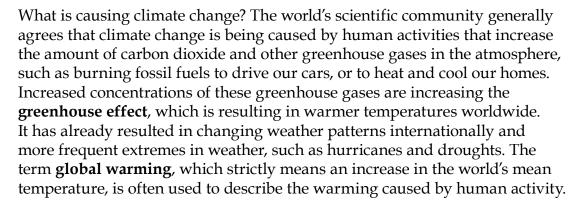
Study the following diagram carefully. Which of these factors is a result of the natural environment? Which of these factors are caused by humans?



Climate Change and the Production of Food

As you have learned, physical forces play a large and determining role in the agricultural process and the production of food. To simplify things, we can define food production as "the access by all people at all times to enough food for an active, healthy life." Let's look at how climate change is affecting and will affect food production.

It is generally accepted that one of the greatest transformations in the physical world over the past 50 years has been that of climate change. Climate change is the change in average **weather** over time in a particular region. Climate change includes changes in temperature, wind patterns, and precipitation. Changes in weather patterns and climate are natural processes but, over the past 50 years, these changes have been intensified by human actions. Over the past five decades, average temperatures in Canada have risen by 1.2°C, almost twice the global rate. As a matter of fact, all ten of the warmest years on record have occurred since 1980.





Water shortages, heat waves, storms, and floods are likely to be the result of global warming caused by human actions. Global temperatures are predicted to rise by about 3°C by the year 2100. According to **The Intergovernmental Panel on Climate Change (IPCC)**, the effects of climate change are likely to have major impacts on soil and water resources, which will have direct impacts on agriculture and food production.



How will food production be affected by climate change? The **Food and Agriculture Organization (FAO)** of the United Nations indicates that climate change, over the long term, in particular global warming, could affect agriculture in a number of ways, the majority of which would threaten **food security** for the world's most vulnerable people.

- The overall predictability of weather and climate would decrease, making planning of farm operations more difficult.
- Climate variability might increase, putting additional stress on fragile farming systems.
- Climate extremes—which are almost impossible to plan for—might become more frequent.
- The sea level would rise, threatening valuable coastal agricultural land, particularly in low-lying small islands.
- Biological diversity would be reduced in some of the world's most fragile environments, such as **mangroves** and tropical forests.
- Climatic zones and ecozones would shift, forcing farmers to adapt, as well as threatening natural vegetation.
- Quantities of fish and seafood, as well as their distribution, could change dramatically, wreaking havoc in established national fishery activities.
- Pests and diseases would spread into areas where they were previously unknown.

On the other hand, global warming might have some positive effects for farmers, especially in areas of the northern hemisphere such as Canada and Russia. Some positives might be as follows:

- As temperatures increase, higher levels of carbon dioxide may have a fertilizing effect for many crops, increasing growth rates and water use efficiency.
- Higher temperatures could lengthen the growing season and increase crop production in northern regions.

Experts believe that the impact of climate change on agriculture and food production will most likely be more extreme in tropical areas compared to **temperate regions**. How vulnerable countries and regions in the world are to climate change's impacts on agriculture will depend on their access to land, water, and government support and action.

Coffee-Conscious Canadians

Canadians love their coffee. The following are a few statistics about Canadians and coffee*:

- 81% of Canadians drink coffee at least occasionally.
- More than 63% of Canadians over the age of 18 drink coffee on a daily basis, making it the number one beverage choice of adult Canadians.
- Canadian coffee drinkers consume an average of 2.6 cups of coffee per day.
- Coffee is more popular in Canada than the United States of America, with just 49% of Americans drinking coffee on a daily basis.
- For several decades coffee has been more popular than tea, milk, beer, fruit juices, and soft drinks among Canadians.
- More teenagers between the ages of 18 and 19 are consuming coffee than ever before.
- 37% of coffee drinkers have an awareness of organic—up from 30% in 2001. Awareness of fair-trade coffee increased from 4% in 2001 to 11% in 2003.



Take another look at the last bullet in the coffee statistics list. What does **organic** mean? What is **fair trade**? Let's look at how you (or your parents and friends) can choose a coffee that's healthier for people and the environment. Let's also investigate why people are searching for a coffee that is healthier for people, the environment, and even songbirds.

^{*} Coffee Association of Canada. www.coffeeassoc.com/index.htm. (2005).

Coffee is produced in countries that are situated between the two Tropics where the climate is hot and humid. These countries may be divided into four geographical zones: South America (Brazil, Colombia, Venezuela, Peru, and Ecuador); Central America and the Caribbean (from Mexico to Panama, and in the various Caribbean islands); Africa (Kenya, Tanzania, and Cameroon); and Asia (India, Thailand, and Indonesia).

Beginning in the late 1990s, people in developed countries, such as Canada and the United States of America, became concerned about several issues surrounding the production of coffee in developing countries. The coffee industry was supplying millions of dollars' worth of coffee to consumers in wealthy countries. At the same time, however, the coffee industry itself was exploiting its growers and harming the environment.

Average coffee workers (including farmers and mill workers) in the Central American country of Nicaragua were making \$3 per day, while Canadians were spending on average over \$500 per person per year to drink coffee! Furthermore, coffee growing puts great stresses on the environment, often due to poor agricultural practices.

During the 1960s and 1970s, changes in growing methods made the production of coffee increasingly harmful to the environment. Coffee, which was traditionally grown under a shade canopy of trees, was now being grown without a canopy, under the sun. The trees were removed and the elimination of this shade canopy also caused an elimination of a vibrant habitat for wildlife. Also, growing coffee under direct sunlight required a dramatic increase in the use of fertilizers, pesticides, and insecticides, as well as excessive use of water, which led to the contamination of rivers resulting from runoff.

In light of an increased awareness of the harm the coffee-growing sector was inflicting on the environment, companies involved in the manufacturing and selling of coffee have given us—consumers—several options when we buy coffee. Some of the choices we now have centre on several labels.

■ Organic

- What does this mean?
 - This means that coffee is grown without the use of fertilizers, pesticides, and insecticides. About 90% of organic coffee is grown under tree cover rather than in full sun.
- *Why care?*
 - Coffee is one of the most chemically treated foods and may contain toxic chemicals that cause, among other things, nausea and lung damage. Coffee grown without chemicals is better for the ecosystem as well.

■ Fair Trade

- What does this mean?
 - Fair trade means that workers and producers in the coffee industry get fair wages for their labour and products.
- Why care?
 - Vulnerable workers and producers in developing countries will receive a secure income, and children will not be exploited producing the coffee that we drink here in the developed world.

■ Shade-Grown (Bird Friendly)

- What does this mean?
 - This means that coffee is grown under a canopy of different species of shade trees.
- Why care?
 - Instead of destroying forests to make room for coffee crops, shadegrown coffee provides a habitat for a variety of birds and other species and even helps prevent global warming.

We can have positive effects on the environment through our consumer choices.

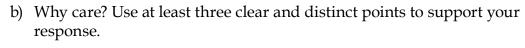


Learning Activity 3.3

Consequences of Our Food Choices



- 1. Using Dr. Gritzner's definition of geography, analyze the section of this lesson titled, "Coffee-Conscious Canadians." Be sure to focus your analysis on the environmental consequences of food choices.
 - a) Why there? Use at least two clear and distinct points to support your response.





Industrial Hemp

Industrial hemp (Cannabis sativa) is one of the oldest cultivated plants in the world. The species was banned in North America in the late 1930s because its leaves and flowers contain a hallucinogenic drug known as delta-9 tetrahydrocannabinol (THC). Hemp is often confused with marijuana; however, hemp is not a consciousness-altering drug like its cousin marijuana.

In March 1998, the commercial production and cultivation of industrial hemp was permitted in Canada. Farmers were allowed to plant and produce hemp by obtaining a licence and authorization from Health Canada. Before 1998, only a handful of licences were issued to grow industrial hemp in Canada.

- In 1998, the first year after Health Canada opened up the licensing process, 241 licences were issued. The licensees grew almost 2,370 hectares of hemp for industrial use.
- In 1999, the number of applications to grow hemp jumped dramatically to 545, with the area of hemp production increasing six-fold to nearly 14,000 hectares.

It appears that interest in producing industrial hemp has returned. In 2004, the amount of land licensed for industrial hemp production increased by 28% over 2003 to 3,531 hectares.

What Is Hemp Used For?

Hemp is used for textiles, paper, food, body care products, and building materials. Hemp is often known as a "dual crop" because both the seeds of the plant and the stalk can be used. The seeds can be used for food and body care products, and the stalk can be used to create a fibre that is used for paper, textiles, and building materials.

Manitoba Industrial Hemp Industry

In Canada, industrial hemp is viewed as a new, alternative crop that complements other crops grown in the Prairies. Hemp grows in a wide variety of climate and soil types, making it a good choice for areas of Manitoba that do not have ideal crop-growing conditions for crops such as beans and sunflowers.

Manitoba farmers were quick to see potential in the growing industrial hemp industry after 1998. Manitoba farmers have been pioneers not only in the growing of hemp but in the harvesting of hemp as well. A hemp crop can grow three to four metres tall, which is a challenge at harvest time. Producers have made many of the necessary equipment changes on their farms to overcome many of the obstacles to growing hemp.

Hemp-processing companies in Manitoba are involved in the procurement, processing, marketing, and distribution of raw hemp and hemp products to other out-of-province processors. As of 2007, there were at least three companies involved in hemp processing in this province.

- Hemp Oil Canada, in Ste. Agathe
- Manitoba Harvest (Fresh Hemp Foods), in Winnipeg
- Parkland Industrial Hemp Growers Coop Ltd. (PIHG), in Dauphin

It seems that the hemp industry has sprouted up overnight. Not only have farmers and business people developed an interest in hemp, so have politicians and researchers. Many people are in favour of growing industrial hemp because it is beneficial to both the economy and the environment. Rotated with other crops, it gives farmers a secure income. It can be grown with few or no fertilizers, herbicides, or pesticides. It can be planted year after year on the same field; the hemp-growing process pulls carbon out of the air (carbon sequestering), which enhances the quality of the air we breathe; and every part of the plant is used: seed, grain, and fibre.

The industrial hemp industry is a new industry in Western Canada. Nonetheless, many see it as being full of endless potential and believe it will benefit not only agriculture, but also consumers, all levels of government, companies, and people living on the Prairies with the creation of new jobs.



Learning Activity 3.4

Hemp Is "Happening" in Manitoba



- 1. What is industrial hemp and what is it used for?
- 2. Why is hemp described as a dual crop?
- 3. In three or four sentences, summarize the hemp-growing industry in Manitoba.
- 4. There are several benefits associated with the growing of hemp.
 - a) Using at least two clear and distinct points, describe the economic benefits associated with growing hemp.
 - b) Using at least five clear and distinct points, describe the environmental benefits associated with growing hemp.



5. Describe ways in which natural and human-caused factors have affected the production of hemp (as a food as well as for other purposes) in Canada.

Summary

Both humans and the environment can greatly change food production patterns throughout the world. Society's values and beliefs as well as economics play an important role in food production patterns. You also explored the possible impact of climate change on food production patterns. As a consumer, you can make food choices that can benefit or at least do minimal damage to the environment.

Notes

LESSON 4: CONTEMPORARY ISSUES RELATED TO FOOD

Lesson Focus
By the end of this lesson, you will be able to
identify the changing nature of farming on the prairies and describe some of the social and economic implications for communities
identify issues related to the genetic modification of plants and animals
describe issues related to freshwater and saltwater food resources
acceptation examine issues related to scarcity and distribution of food
reflect upon how your own food choices have a global influence

Introduction

In this lesson, you will identify issues related to the shortage and distribution of food in general. You will examine issues related to freshwater and saltwater food resources, and study ways in which food production has changed over time, with a focus on aquaculture. This lesson introduces you to new developments in the controversial area of genetic modification in food production. You will also consider the economic and political consequences of your food choices and why you should care.

What Is an Issue?

Considering the course that you are currently completing is entitled *Geographic Issues* of the 21st Century, it may be practical to define exactly what constitutes an issue.



An **issue** is a topic that has arisen from a significant event, development, or process and about which there are differing views or perspectives. It is a matter that people discuss and debate.

There are many issues pertinent to the field of geography and there are several issues related to food production.

Issue One: World Food Distribution

You learned earlier in this module that food is produced around the world and farming is the world's most common occupation. World food production is led by the European Union, China, and the United States. Where is the world's food being distributed and what areas of the world are experiencing food shortages?



Food availability and distribution is one of the most serious issues in the world. **Famine** has always been an issue facing human society. What marks the lack of food today is its impact on large numbers of people worldwide and its potential for social and political upheaval.

Before we continue, let's look at the vocabulary associated with food production, famine, and hunger.

■ Famine

A famine is an extreme shortage of food that results in the starvation or malnutrition of populations.

Calories/kilojoules

- Units of energy used in nutrition.
- Estimated requirements for a daily calorie intake are
 - 1940 calories per day for women
 - 2550 calories per day for men

Malnutrition

A medical condition caused by an improper or insufficient diet.

Undernourished

People are undernourished if they are not provided with sufficient nutrition to sustain proper health and growth.

Starvation

A condition of severe suffering due to a lack of nutrition. Mass starvation is the starvation of a large proportion of a region's population due to drought, warfare, famine, or similar events.

Food Security

A situation that exists when a person has access to enough food that is nutritious and safe in order to be healthy. A "food insecure" situation exists when a person does not have access to abundant, safe, and nutritious food.

World food production has tripled since World War II (1939–1945). There is enough food produced in the world to feed everyone. Why then are famine and malnutrition so prevalent and why are certain regions of the world facing food scarcity?

- The World Health Organization estimates that one-third of the world is well-fed, one-third is underfed, and one-third is starving.
- One in twelve people worldwide is malnourished, including 160 million children under the age of five.
- The Indian subcontinent has nearly half of the world's hungry people. Africa and the rest of Asia together have approximately 40%, and the remaining hungry people are found in Latin America and other parts of the world.
- Half of all children under five years of age in South Asia and one-third of those in sub-Saharan Africa are malnourished.
- Every 3.6 seconds someone in the world dies of hunger.
- It is estimated that 800 million people in the world suffer from hunger and malnutrition, about 100 times as many as those who die from it each year.
- In the year 2000, the number of obese people in the world caught up with the number of underfed people, according to the World Watch Institute.

Why Are People Starving?

World food distribution is uneven. The following map shows the percentage of the world's population who are undernourished. You'll notice that the African continent has the most undernourished people and other areas with significant undernourishment include Asia and Latin America.

Factors influencing food scarcity in food-deficient nations include:

- lack of proper food-storage facilities for excess food
- number of people who are so poor that they are unable to buy sufficient food for themselves or their families
- not using agricultural land to grow food for people
 - governments instead grow cash crops (like sugar, tea, tobacco, coffee, cocoa) for export
 - agricultural land is used to grow non-food crops like rubber and cotton
 - most of the nation's agricultural land is in the hands of a few wealthy landowners who produce whatever they want (not necessarily food, but rather a crop that will make them the most profit)
- rapid population growth that outpaces food production
- poor land and soil management practices that harm farmland
- ineffective and inappropriate government agricultural and economic policies



World Hunger

Factors influencing food scarcity in developed nations include the following:

- not all agricultural land is used efficiently; land is used for parks, new housing developments, shopping malls, highways, athletic stadiums, and so on
- much of the livestock raised (often for fast-food franchises) eats grains that humans could eat

With one-third of the world population currently lacking food security, world food production will have to double to provide food security for the 8 billion people projected to be alive in 2025. By 2050, when the world population is projected to be over 9 billion, the situation will be even more challenging. At current levels of consumption and without allowing for additional imports of food, Africa, Latin America, and Asia would have to boost their food production by anywhere from 70% to 300% just to provide minimally adequate diets for their people. Even North America would have to increase food production by 30% to feed a projected 384 million people by 2050.

Population growth results in a greater demand for food, but it will also threaten the world's sensitive agricultural lands. As people try to get higher yields (more food) from heavily used natural resources, soil loss will worsen, fresh water will become scarcer, and pollution will increase. As the **developing world** tries to expand food production, valuable and finite agricultural land will shrink.

Issue Two: Genetically Modified Organisms

Since the 1990s, technology has been developed that allows scientists to add new genes to crops. **Genetically modified organisms**, or GMOs, are organisms whose genetic structure has been changed to give them characteristics that seem desirable. Specifically, it means the genes of one organism have been "cut out" and then "pasted" into another organism. For example, a crop may have been altered to tolerate herbicides, ward off viruses, or even survive in harsher climates. With expected advances in the science of GMOs in the years ahead, the floodgates of genetic modification—and GM (genetically modified) foods—could release an extraordinary variety of genetically enhanced products. The issue of GM food is a sensitive and controversial issue.

About 60% of our processed foods contain some genetic modifications, but consumers in Canada would find it difficult to determine what is and what is not genetically altered. As of 2007, in Canada, it was not mandatory for food producers to identify the method in which their food was produced, including if genetic modification was used to develop the food product. However, voluntary method-of-production labelling was permitted, provided it was truthful and not misleading.

It is difficult to have enforceable rules because of the complicated food-growing processes in Canada. For example, farmers can grow different varieties of corn or wheat. Some are modified while others are not. Although farmers try to grow GM crops in separate fields, it is hard to guarantee that the different crops will not get mixed somewhere in the process. It is hard to keep some foods completely GMO-free, which leads to the question: What should the label say?

While some groups call for mandatory labelling of GM foods or other products, others want complete prohibition of GMOs. These latter groups say that the use of GMOs is unnecessary and is an intolerable and unnecessary meddling with the natural environment that may have long-term negative consequences we cannot begin to imagine. They believe that the natural world has evolved slowly over time and are concerned about the potentially negative ramifications—on people and the environment—of such a new science as genetic modification. Still others believe that the whole process of GMOs is ethically wrong. In 2005, the government of Prince Edward Island (PEI) became the first province in Canada to begin work to review a proposal to ban the production of GMOs in the province. PEI had already banned GM potatoes, which account for most of its crops.

It is important to know that not everyone is against the use of GMOs. Many believe that the use of GMOs is a natural step in science as humans learn more and more about bettering the world. They argue that GMOs make food more nutritious by adding ingredients like vitamin A to rice; that Canadian farmers need to modify their crops to remain competitive with other farmers in the world; and that people have been modifying their environment forever, which has resulted in our current high standard of living.

Issue Three: Freshwater and Saltwater Food Resources



The fishing industry is the commercial activity of fishing and producing fish and other seafood products for human consumption or for industrial processes. According to FAO statistics, the total fish production in the world in 2001 was 130 million tonnes. In addition to commercial fishing, 37.9 million tonnes of fish were produced in **aquaculture** plants.

Surrounded by the Arctic, Pacific, and Atlantic Oceans, and home to the Great Lakes, Canada boasts the world's longest coastline (244,000 km), representing 25% of the entire coastline in the world. With more than 755,000 square kilometres of fresh water, Canada has 16% of the world's area of fresh water and four of the largest lakes in the world. In Canada, the fishery is divided into two categories: the marine or ocean fishery, which takes places off Canada's coasts, and the freshwater fishery, which takes place in the country's lakes.

Commercial fishing is a very small industry in the sparsely populated Arctic. In the Northwest Territories, the Inuit have fished Arctic char for both human and dog food. Lake trout, whitefish, and Arctic cisco are also fished. The Atlantic fishery accounts for 80% of all fish caught in Canada. The main catches include lobster, crab, shrimp, and scallops. The Pacific fishery accounts for 16% of total landings. The main catches are salmon, clams, groundfish, and herring roe. The fresh water fishery—which takes place mainly in Ontario, Manitoba, Saskatchewan, Alberta, and the Northwest Territories—accounts for 4% of total Canadian fishing. The main catches include pickerel, yellow perch, whitefish, northern pike, and lake trout.

Canada's aquaculture sector continues to increase in importance. Key products are farmed: salmon, trout, steelhead, Arctic char, blue mussels, oysters, and manila clams. New farmed species like halibut and cod are on the way.

Overfishing has become a serious issue affecting the world's commercial fishery. A third of all fishing stocks worldwide have collapsed; if current trends continued, all fish stocks worldwide would collapse within 50 years. What has caused such a severe drop in the quantity of fish in the world? Simply put: the fish do not stand a chance. The use of modern fishing tools, such as Global Positioning Systems for navigation, sonar for locating fish, and high-efficiency **trawlers** for netting fish are largely to blame. Modern fishing is an industry that is dominated by fishing vessels and techniques that far outmatch nature's ability to replenish fish. Giant ships using state-of-the-art fish-finding sonar can pinpoint schools of fish quickly and accurately. The ships are like giant floating factories with fish-processing and packing plants, huge freezing systems, and powerful engines to drag enormous fishing gear through the ocean. New technologies include sea-floor dredging, which alters the ocean floor and scoops up all living things—including plants—in its path. Much of the sea life that is dredged up is wasted, as dead and unwanted, yet edible, species are thrown back into the ocean.

Overfishing has already led to the collapse of some fisheries. In 1992, the cod fishery off Newfoundland collapsed, leading to the loss of some 40,000 jobs in the industry. Many believe that the cod stocks in the North and Baltic Seas, in northern Europe, are heading the same way and are particularly close to complete collapse.

According to the United Nations, the aquaculture industry is growing more rapidly than all other animal food-producing sectors. However, despite aquaculture's soaring worldwide production rates, more sobering statistics reveal that global marine fish stocks are in jeopardy.

Issue Four: Aquaculture

Is aquaculture the solution to the overfishing problem? Most agree that the answer is no. Other than the fact that an ocean empty of fish and aquatic life is a tragedy, aquaculture is not the answer to the world's commercial fishing predicament.

First, let us once again define *aquaculture*: the production and harvesting of fish and shellfish in land-based (or at least shore-based) ponds. It is basically fish farming.

Second, let us examine the history of aquaculture in Canada. As wild stocks of fish began to decline in Canada, aquaculture became an attractive alternative. Commercial aquaculture production in Canada began in the 1950s, when trout and oysters were first cultivated. As time went on, the industry grew into two distinct branches: one for finfish, such as salmon and trout, and the other for shellfish, such as mussels and clams. Aquaculture in Canada takes place mainly in New Brunswick and British Columbia.

Like most new industries, there are pros and cons associated with aquaculture. Here are some of the pros and cons.

Pros include

- Consumers are now able to buy fresh (not frozen) fish year round.
- Fish farms supply consumers with farmed fish in the winter (the off-season) and ocean fish in the summer—the two complement each other.
- Farming fish removes some of the pressures from traditional commercial fishing and may allow fish in the oceans to naturally replenish their stocks.
- Many see aquaculture as the next step in the evolution of the seas eventually fish will be like cattle and swim in ponds just as livestock graze on the prairies.
- Aquaculture provides an economic boost to the commercial fishing industry, which has been in a crisis due to dwindling fish stocks since the 1990s.

Cons include

■ Feeding the fish: Because the aquaculture industry is so new, there are no established guidelines as to how much the fish should be fed, what are the best times of day to feed them, and what should be the food and the nutritional make-up of the food. Often, excess feed is not eaten by the fish and settles on the ocean floor as waste.

- Hormones and antibiotics: Because disease is an issue with fish farmed in pens, hormones and antibiotics are often added to the feed. In some cases, these drugs have entered the environment. Additionally, the residual presence of these drugs in human food products has become controversial. There also have been no scientific studies about the long-term effects of humans eating farmed fish.
- **Pollution and disease:** Farmed fish are kept in concentrations not seen in the wild (e.g., 50,000 fish in a two-acre area), with each fish occupying less room than the average bathtub. This can cause several forms of pollution. Packed tightly, fish rub against each other and the sides of their cages, damaging their fins and tails and becoming sickened with various diseases and infections.
- Shoreline and environmental destruction: Most aquaculture operations in Canada consist of a series of floating sea cages that are connected and anchored to the ocean shore. Many people believe that, along with pollution from feces and drugs, the actual coastline and its physical environment are being destroyed as well.
- **Mixing of farmed and wild fish:** No one is exactly sure how many farmed fish escape from their ocean pens into the wild and what effect they have on wild fish in the oceans.

The "book" on aquaculture is largely unwritten, and some scientists and other organizations have raised concerns about the impact of aquaculture on the environment and on animal welfare.

Issue Five: The Changing Nature of Farming

The nature of farming has changed radically over the past century. The introduction of mechanization has resulted in fewer people being involved in farming the land, in farm sizes becoming large, in high farm start-up and maintenance costs, and in a trend in Canada of having fewer, larger farms producing more food than ever before.

As a result of the changing nature of farming, communities on the Canadian Prairies have been affected both socially and economically.

Social implications involve people and communities. In light of the reduced number of people required for farm labour, smaller towns in Canada that once served a farm area are disappearing as young people move to the cities for employment and education. Farmsteads that have been in families for several generations are being sold off to larger farmers or land is being subdivided for housing developments.

Economic implications involve jobs and money: Farmers on the Prairies have been affected by many negative economic events in recent decades. When the Prairie provinces first became part of Canada (from 1870 to 1907), the federal government decided that the flat prairie lands were ideal for grains. After the drought of the 1930s and the worldwide drop in grain prices, farmers learned to adapt and change with the times.

Since that time, farmers have continued to change the *way* they farm (you read earlier about the use of technology, mechanization, and biochemistry in modern farming) and *what* they farm (you learned about the growing hemp industry in Manitoba) to remain economically viable.

At the beginning of the 20th century, wheat was the most important commodity in each of the three Prairie provinces, followed by oats and barley. Today, signs of diversification are everywhere: in Manitoba, hog farming has become the number one agricultural industry; in Saskatchewan, chickpeas are being grown for an Asian market; and in Alberta, the raising of livestock has overshadowed the growing of grain.

Issue Six: Food Fashions

What we eat and how we eat are influenced by fashion. Already, cookbooks and table settings from the 1950s and 1960s look old-fashioned.

Historically, fashions in foods have evolved through a variety of factors: availability, cooking facilities, tools/equipment, skills, and even tradition and religion. In Canada, around the time of Confederation (1867), there were few choices for food. For the poor, lack of money and distance from large centres limited their food choices. The diet of farmers consisted mainly of vegetables that they grew, bread, and meat they slaughtered or could afford to buy. People ate largely what they could obtain in their local area: either by growing it or purchasing it. First Nations people lived off the land and ate what Mother Earth afforded them: wild game, fish, berries, pemmican, and bannock (after they began to trade with Europeans).

By the 1950s, processed food became more common. Canadians tended to live in cities and fewer and fewer people farmed and grew their own food. Mothers, who traditionally did most of the cooking for families, had refrigerators, freezers, and electric ovens for the storing and preparation of food. The choices and availability of food became vast. People began to buy processed food from supermarkets and grocery stores, especially as women entered the workforce and looked for quick and easy meals to cook for the family after a day of work. Families generally sat together for at least one meal per day—usually supper.

Sociologists tell us today that family meals may eventually become a thing of the past. Grazing or eating on the run appears to be a trend; eating out in restaurants or eating fast food (or going through the drive-through) is commonplace.



Learning Activity 3.5

Contemporary Food-Related Issues: Overview



- 1. Complete the following organizer. The first issue has been done for you as an example to help you get started.
 - a) In the "Overview of Issue" column, summarize the issue for that particular row.
 - b) "Social Implications" pertain to people, society, and communities. How does each issue have an effect on society?
 - c) "Economic Implications" pertain to jobs, money, and industry. How does each issue have an effect on the economy?
 - d) "Political Implications" pertain to governments and the laws they establish for society. How does each issue have an effect on politics?



e) "Why Care?" is part of Dr. Gritzner's definition of geography. Why should you care about the issue? Whom does the issue currently affect or whom will it affect in the future?

Learning Activity 3.5: Contemporary Food-Related Issues: Overview (continued)

Contemporary Food-Related Issues: Overview					
Issue	Overview of Issue	Social Implications	Economic Implications	Political Implications	Why Care?
World Food Distribution	World food production has tripled since World War II. There is enough food in the world to feed everyone, yet millions face starvation and malnutrition.	One-third of the world population is lacking food security. Starvation and malnutrition are common in developing nations.	Food may become more expensive as food-producing areas are environmentally degraded and demand for food increases.	Governments— nationally and internationally— will need to meet the requirements to feed a growing world. Civil unrest (wars) may ensue as food security decreases.	Millions face starvation and malnutrition.
Genetically Modified Organisms (GMOs)					
Freshwater and Saltwater Food Resources					

Learning Activity 3.5: Contemporary Food-Related Issues: Overview (continued)

Contemporary Food-Related Issues: Overview (continued)					
Issue	Overview of Issue	Social Implications	Economic Implications	Political Implications	Why Care?
Aquaculture					
The Changing Nature of Farming					
Food Fashions					

Summary

As you can see, there are many contemporary food-related issues, many of which may have a direct impact on your life. It is important to consider these issues when making food choices. It is also important to realize that there is enough food produced in the world to feed everyone; however, because of various issues related to food distribution, not everyone has enough to eat. Food is a complex issue that includes social, political, and economic aspects.

Notes



Food from the Land (50 marks)

Review the material from the Module 3 lessons and learning activities in order to complete this assignment. Be sure to read the questions carefully and to provide answers in complete sentences. Please remember that you must write answers in your own words. Do not copy information directly from any of your sources. Keep the mark value of each question in mind as you complete the assignment and develop your answers accordingly.

1.	So	Soil is a very important component for food production.				
	a)	Which level of soil is the most important for the production of food? (1 mark)				
	b)	Why is land considered the most important resource? (2 marks)				
2.		her than soil, what physical factors are needed to produce food? List and expand on at least two. (2 <i>marks</i>)				

3. Complete the following chart. For each term, describe how poor agricultural practices have impacted the physical environment. An example is provided to help you get started. (3 marks)

Leaching	Excessive irrigation has led to nutrient loss in soil.
Compaction of Soil	
Erosion	
Contamination	

4.	Ca	Canada has a wide range of agricultural products.					
	a)	In what province is dairy farming primarily performed? (1 mark)					
	b)	In what province is grain farming (including mixed farming) primarily performed? (1 mark)					
	c)	In what province is ranching primarily performed? (1 mark)					
	d)	In what two areas in Canada does food production take place? Based on what you learned in this module, what aspects make these areas suitable for food production? (3 marks)					

5.	Farmers take many steps to protect their most valuable natural resource: the soil. Choose <i>three</i> of the following methods aimed at protecting soil. For each method, provide an overview and describe how it protects the soil and/or aids in sustainable agriculture. (6 marks)					
	a)	summer fallowing				
	b)	no-till cropping				
	c)					
	d)	shelterbelts				
	e)	biological control of pests				
	f)	use of organic fertilizers				

	ribe how the modern food industry relies on it. An exampl get started. (4 marks)
Management	The global marketing and shipping of foodstuffs and agricultural products require a network of skilled individual involved in management at a variety of levels.
Technology	
Transportation	
Marketing	
Government Regulatio	ns

8. Make a list of the pros and cons associated with modern food production. List at least *two* pros and *two* cons. (4 *marks*)

Modern Food Production			
Pros	Cons		

	ght climate change negatively impact agriculture? Provi	de at least
four examples. (4	marks)	
	····················	

	n what areas of the world might climate change have a positive impact on agriculture? Why? (2 marks)			
_				
. Th	nere are several reasons why people are starving or malnourished.			
a)	What is the main reason that there is food scarcity in the world? (1 mark)			
b)	Discuss three reasons that contribute to food scarcity in food-deficient nations (3 marks)			

- 12. Genetically Modified Organisms (GMOs) have emerged as a new trend in food production technology.
 a) What are GMOs? (1 mark)
 b) Discuss why the use of GMOs for food production has caused discussion and debate. (1 mark)
- 13. In the following chart, list at least one issue for each of the fishing industry types. An example is provided to help you get started. (2 *marks*)

Fishing Industry Type	Issue
Freshwater/Saltwater Fishery	collapse of fisheries and resultant loss of jobs (e.g., Newfoundland)
Aquaculture	Feeding the fish: Because the aquaculture industry is so new, there are no established guidelines as to how much the fish should be fed, the best times of day to feed the fish, and the nutritional make-up of the feed itself. Often, excess feed is not eaten by the fish and settles on the ocean floor as waste.

14. Describe how Canadians' diets have changed since 1867 to today. In the following timeline, fill in the appropriate information for eras. Be sure to discuss what was/is eaten and why and how food was/is obtained? (6 marks)

Change in Canadians' Diets Timeline			
1867	Present Day		
What was eaten?	What is eaten?		
Why was it eaten?	Why is it eaten?		
How was food obtained?	How is food obtained?		
	1		

Notes

MODULE 3 SUMMARY

Congratulations, you have completed Module 3!

Module 3 focused on food production and acquisition, outlining the global breakdown of food production and the factors that affect the physical environment that supplies the world's food.

This module explored the human factors affecting the food supply, from production to consumption. Module 3 also looked at the natural and human-caused factors that affect the food supply, from climate change to the use of fertilizers and pesticides.

Several issues were examined surrounding the production and acquisition of food. The study of these issues provides an opportunity to examine the many aspects surrounding the world's food supply and how food is produced. The integral question that underlies geography, "What is where, why there, and why care?", is raised in the study of these issues.



Submitting Your Assignments

It is now time for you to submit Assignment 3.1 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 3 assignment and organize your material in the following order:

☐ Assignment 3.1: Food from the Land

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Notes

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 3 Food from the Land

Learning Activity Answer Key

MODULE 3: FOOD FROM THE LAND

Learning Activity 3.1: Locations and Conditions for Food Production

- 1. The government has classified the land in Canada in seven different classes. What is the difference between Class 1 land and Class 7 land?
 - Class 1 land contains deep soil that is excellent for farming.
 - Class 7 land has no farming capability.
- 2. In which three provinces is most of Canada's best agricultural land found?

Saskatchewan

Alberta

Ontario

3. This chart shows the area of dependable agricultural land per province as well as the total portion of that land in Canada as a whole.

Province	Dependable Agricultural Land (Class 1, Class 2, and Class 3)	Portion of Total Land in Canada	
British Columbia	6,922 km²	1.4%	
Alberta	106,462 km²	21.6%	
Saskatchewan	190,105 km ² 38.6%		
Manitoba	56,228 km²	11.4%	
Ontario	76,537 km ² 15.5%		
Quebec	24,560 km²	5.0%	
New Brunswick	15,879 km²	3.2%	
Nova Scotia	11,920 km²	2.4%	
Prince Edward Island	4,048 km²	0.8%	
Newfoundland and Labrador	67 m ²	0%	

Hofmann, N., Filoso, G., and Schofield, M. Statistics Canada. "The Loss of Dependable Agricultural Land in Canada." Rural and Small Town Canada Analysis Bulletin. Volume 6, Number 1. January 2005. www.smartgrowth.bc.ca/Portals/0/Downloads/Loss%20of%20Dependable%20Land%20in%20Canada.pdf (4 April 2013).

a) Which province contains the most dependable agricultural land?
 Saskatchewan

b) How many square kilometres (km²) of dependable agricultural land are located in Manitoba?

56,228 km²

c) Using the information in the chart in this question and the information in the pie charts in this module, identify at least three provinces that do not contain Class 1 land.

Answers should include at least three of the following.

- New Brunswick
- Nova Scotia
- Prince Edward Island
- Newfoundland and Labrador
- 4. Why do you think land in Classes 1, 2, and 3 is called dependable agricultural land? What makes land dependable agricultural land?

Answers will vary. The following is an example of a good answer.

Dependable likely means that, with care and modern farming techniques, the land is capable of producing crops on a regular basis. Farmers can depend on the land to make a living.

5. On the following diagram, label the horizons of soil and briefly describe the components of each horizon.

Soil Profile	Description
Level 1	Rich layer of organic material (humus) found near the surface
Topsoil	
Level 2	Layer of combined organic material, mineral particles, and clay
Subsoil	
Level 3	Layer of mineral materials, regolith, and bedrock
Parent Material	

6. In the past 100 years or so, great technology has been created and great scientific advances have been made regarding the way we farm the land in North America; however, each of these advances to increase agricultural output and yield has come with a toll on the physical environment, notably the soil.

The following organizer shows some of the technological and scientific advances made in agriculture over the past century. Read the technological/scientific advance in the left-hand column and complete the right-hand column, summarizing the negative impact on the physical environment. The first one is completed for you as an example to help you get started.

Technological/Scientific Advance	Negative Impact on the Physical Environment
Farmers use heavy equipment like combines, tractors, and balers.	Compaction of soil
Irrigation is the artificial application of water to the soil. It is mainly used to replace missing rainfall in periods of drought, but also to protect plants against frost.	Leaching
Farmers use poor agricultural practices aimed at increasing yields, such as overgrazing and over-cropping.	Soil erosion
Farmers use chemicals such as fertilizers, herbicides, and pesticides to increase yields and profits.	There are negative effects on water bodies caused by runoff from fields and chemicals may upset the natural balance of the ecosystem.

7. Read the following case study and carefully inspect the map of the Andersens' farm. Answer the questions that follow. You may need to consult the glossary at the end of this course or a dictionary for new terms.

Case Study: The Andersens—Grain Farmers

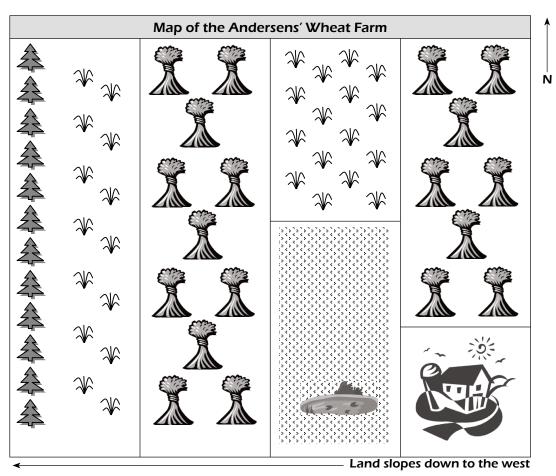
The Andersens own a large wheat farm south of Winnipeg. Like many people on the Prairies, they make their living from farming the land as their parents and grandparents did before them.

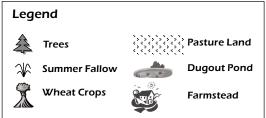
The Andersen family farms a much larger farm than their ancestors did. They depend a great deal on modern machinery and chemicals to do the work on their farm. Their family consists of the two parents, two teenaged sons, and an 11-year-old daughter. The Andersens are able to handle all the work on the farm except at harvest time, when they hire extra people to drive trucks and do other work that must be done to get the crop off the field.

The Andersens are very aware that their farm and their livelihood are dependent on the quality and quantity of their soil. In order to protect the land, they have adopted several agricultural practices intended to preserve the topsoil and the environment. They also recently attended a seminar in Winnipeg aimed at farmers called "Sustainable Agriculture—Ensuring Your Farming Future" to learn even more.

Some of the practices the Andersens are currently using or learned about at the seminar include the following:

- Summer fallowing
 - leaving farmland without a crop to conserve soil nutrients and moisture; may be cultivated during the summer
- No-till cropping
 - leaving stubble from the previous year's crop so that it holds the soil in place and protects it from wind erosion
- Contour ploughing
 - ploughing across hilly fields, rather than up and down to reduce the damage caused by soil erosion
- Shelterbelts
 - planting one or more rows of trees that function to reduce wind erosion
- Biological control of pests
 - controlling pests, such as insects, without the use of chemicals
 - examples include spraying "enemy" bacteria on worms and sterilizing male insects by radiation
- Use of organic fertilizers
 - rather than using chemicals, farmers use naturally occurring, organic fertilizers such as manure and sewage





a) What evidence is there that the Andersens are currently trying to protect the topsoil?

The Andersens have planted a row of trees (a shelterbelt) and are practising summer fallowing.

b) Approximately what percentage of their farmland is in summer fallow? 40% to 50%

- c) Based on the diagram of the Andersens' farm, from what direction do you think the wind usually comes on the farm? How do you know this? The wind usually blows from the west. The shelterbelt is planted along the west perimeter of the farm.
- d) Considering the Andersen farm topography, how would they plough their fields? Choose one of the following options and justify why you chose it.
 - i) Plough the rows from east to west
 - ii) Plough the rows from north to south

The Andersens would plough their fields north to south to prevent soil erosion. This is known as contour ploughing.

Learning Activity 3.2: Food Production and Distribution

1. In the space next to each era in the timeline that follows, organize the advances in farming technology and food production. Each box represents a chronological time frame listed on the timeline.

Chronological Time Frame			
3000 BCE	Improved ploughs, called scratch ploughs, allowed domesticated animals to pull a sharp stick through the soil, creating a gap in which seeds could be planted.		
500-900 CE	Ploughs that included an iron knife-like blade were developed. These could cut the ground and roots better than scratch ploughs.		
1000 CE	Animals began to be used effectively in the process of farming.		
	The horse collar was invented, which allowed the horse to pull an implement (like a plough) harder without choking itself.		
	Harnesses were also invented, which allowed more than one animal to be attached to a single plough.		
1750-	The benefits of industrialization were added to agriculture.		
1920	Some types of machines included steam-powered tractors and threshing machines.		
21st Century	The modern food industry relies far more on technology such as mechanization, biochemistry, and agrichemicals.		
	Foodstuffs and machinery are shipped great distances.		

2. Read the case study below. In the chart that follows, describe each step of banana production and distribution from Central/South America to North America. Be sure to pay attention to the number of points you are to use as specified in each section. Some examples are provided to help you get started.

Case Study: Canadians Go Bananas for Bananas

A recent study has shown that Canadians consumed an average of 13 kg of bananas in the year 2000. Compared to other fruit consumed in Canada—11 kg of apples and 9 kg of oranges—the banana is Canada's favourite fruit.

Where do all these bananas come from?

Bananas are grown in 132 countries; most of Canada's bananas come from Central and South America. The most common type of banana sold in Canada is the Cavendish banana, which is grown specifically for the North American market. The Cavendish banana is not only tasty, but is thick-skinned and, therefore, travels well.

Bananas are grown in tropical regions where the average temperature is 27°C and the yearly rainfall is 200 to 250 centimetres. They require moist soil with good drainage. Most bananas grown for export are harvested within 30 degrees either side of the equator.

Bananas are produced on farms called plantations. While there are a few small plantations owned by local farmers, most plantations are very large, as big as 5,000 hectares, and are usually controlled or operated by large transnational corporations.

The banana industry in Central America is still controlled by United States of America—based fruit companies. Chiquita Brands, Dole, and Del Monte are the "big-three" banana producers. Together, these companies control over 65% of the world banana exports. These fruit companies have developed many regions of Central America. They have constructed fully functioning company towns in primarily rural or undeveloped regions. They have constructed hospitals, schools, roads, railways, and communication systems to support their plantations. Despite this, workers on plantations work ten- to twelve-hour days, six to seven days a week, but earn only \$2,000 per year.

Bananas are picked and sorted by hand and then transported by truck to a packaging plant. They are shipped hard and unripe (green). At the plant, the bananas are cleaned and packaged, then sent by refrigerated truck or train to the export harbour. At the harbour, the bananas are placed in sealed, refrigerated containers and loaded onto a large container ship. From the harbour, the ship sails to a port in Canada—Vancouver, Montreal, or Halifax—where the bananas are either placed in a warehouse or loaded directly onto trucks.

Learning Activity 3.2: Food Production and Distribution (continued)

Case Study: Canadians Go Bananas for Bananas (continued)

At the warehouse in Canada, the bananas are partially ripened in temperature-controlled units filled with ethylene gas. The bananas take about eight to ten days to ripen. After this, they are shipped to individual stores for sale to the consumer. The whole process—from picking to arrival at the supermarket—usually takes no longer than 20 days.

Along with natural factors, there are several human factors that affect the production of food. There are several stages in the production of food including growing, processing, transportation, and marketing. Distribution is the final link in the food supply chain from farmers to processors and finally to consumers. Food production has changed over time and we currently have a highly specialized process that relies heavily on modern technology, particularly on mechanization and biochemistry. Modern food production has both benefits and drawbacks.

Stage	Description			
Growing	Bananas are grown in tropical regions where the average temperature is 27°C and the yearly rainfall is 200 to 250 centimetres.			
	They require moist soil with good drainage.			
	Most bananas exported are grown within 30 degrees either side of the equator.			
	Bananas are produced on farms called plantations.			
	Most plantations are very large, as big as 5000 hectares, and are usually controlled or operated by large transnational corporations.			
Processing	Bananas are picked and sorted by hand and then transported by truck to a packaging plant.			
Transportation	They are shipped hard and unripe.			
	At the plant, the bananas are cleaned and packaged and then sent by refrigerated truck or train to the export harbour.			
	At the harbour, the bananas are placed in sealed, refrigerated containers and loaded onto a large container ship.			
	From the harbour, the ship sails to a port where the bananas are either placed in a warehouse or loaded directly onto trucks.			
Marketing	After the bananas are ripened, they are sold to grocery distributors who in turn sell them to grocery stores.			
Consuming	Consumers buy bananas at their local grocery store or supermarket.			

Learning Activity 3.3: Consequences of Our Food Choices

- 1. Using Dr. Gritzner's definition of geography, analyze the section of this lesson titled, "Coffee-Conscious Canadians." Be sure to focus your analysis on the environmental consequences of food choices.
 - a) Why there? Use at least two clear and distinct points to support your response.
 - A hot and humid climate is necessary to grow coffee; this is the type of climate found between the two Tropics.
 - Trees were removed in order to grow more coffee-producing bushes. Once the canopy of trees was removed, coffee bushes required more chemicals to produce more beans.
 - b) Why care? Use at least three clear and distinct points to support your response.
 - \$3 a day is a poor and unfair wage, even in a country like Nicaragua. Workers are being exploited and coffee drinkers are unwittingly playing a role.
 - Consumers drink coffee from coffee beans that have been chemically treated. Consumers can, therefore, assume that these chemicals are finding their way into people's bodies. Chemicals found in coffee may contain toxic chemicals that cause nausea and lung damage.
 - Environmentally destructive coffee-growing practices caused the elimination of a shade canopy as well as the elimination of a vibrant habitat for wildlife.

Learning Activity 3.4: Hemp Is "Happening" in Manitoba

1. What is industrial hemp and what is it used for?

Industrial hemp is a plant that is grown for its seed and for its fibre; it is used in the production of textiles, paper, food, body care products, and building materials.

2. Why is hemp described as a dual crop?

Hemp is known as a dual crop because both the seeds of the plant and the stalk can be used.

3. In three or four sentences, summarize the hemp-growing industry in Manitoba.

- Hemp grows in a wide variety of climate and soil types, making it a good choice for areas of Manitoba that do not have ideal conditions for growing crops like beans and sunflowers.
- Manitoba farmers were quick to see potential in the growing industrial hemp industry after 1998.
- Manitoba farmers have been pioneers in growing and harvesting hemp.
- As of 2007, there were three companies involved in hemp processing in this province.

4. There are several benefits associated with the growing of hemp.

- a) Using at least two clear and distinct points, describe the economic benefits associated with growing hemp.
 - Rotated with other crops, it gives farmers a secure income.
 - Many see it as being full of endless potential and believe it will benefit not only agriculture, but also consumers, all levels of government, companies, as well as people living on the Prairies with the creation of new jobs.

b) Using at least five clear and distinct points, describe the environmental benefits associated with growing hemp.

Answers should include at least five of the following points.

- It can be grown with few or no fertilizers, herbicides, or pesticides.
- Both the seeds of the plant and the stalk can be used.
- It can be planted year after year on the same field.
- It complements other crops grown in the Prairies.
- Hemp grows in a wide variety of climate and soil types, making it a good choice for areas of Manitoba that do not have ideal conditions for growing crops like beans and sunflowers.
- The hemp-growing process pulls carbon out of the air.
- Every part of the plant is used: seed, grain, and fibre.
- 5. Describe ways in which natural and human-caused factors have affected the production of hemp (as a food as well as for other purposes) in Canada.
 - Natural Factors
 - Hemp grows well in the climate and soil of the Prairies; hemp grows in a wide variety of climate and soil types, making it a good choice for areas of Manitoba that do not have ideal crop-growing conditions for crops such as beans and sunflowers; hemp is a dual crop.
 - Human-caused Factors
 - In March 1998, the commercial production and cultivation of industrial hemp was permitted in Canada. A hemp crop can be 3 to 4 metres tall, which is a challenge at harvest time; therefore, producers have made many of the necessary equipment changes on their farms to overcome many of the obstacles.

Learning Activity 3.5: Contemporary Food-Related Issues: Overview

- 1. Complete the following organizer. The first issue has been done for you as an example to help you get started.
 - a) In the "Overview of Issue" column, summarize the issue for that particular row.
 - b) "Social Implications" pertain to people, society, and communities. How does each issue have an effect on society?
 - c) "Economic Implications" pertain to jobs, money, and industry. How does each issue have an effect on the economy?
 - d) "Political Implications" pertain to governments and the laws they establish for society. How does each issue have an effect on politics?
 - e) "Why Care?" is part of Dr. Gritzner's definition of geography. Why should you care about the issue? Whom does the issue currently affect or whom will it affect in the future?

Contemporary Food-Related Issues: Overview					
Issue	Overview of Issue	Social Implications	Economic Implications	Political Implications	Why Care?
World Food Distribution	World food production has tripled since World War II. There is enough food in the world to feed everyone, yet millions face starvation and malnutrition.	One-third of the world population is lacking food security. Starvation and malnutrition are common in developing nations.	Food may become more expensive as food-producing areas are environmentally degraded and demand for food increases.	Governments— nationally and internationally— will need to meet the requirements to feed a growing world. Civil unrest (wars) may ensue as food security decreases.	Millions face starvation and malnutrition.
Genetically Modified Organisms (GMOs)	New genes that have been added to crops are called GMOs; they are organisms whose genetic structure has been changed to give them characteristics that seem desirable.	Some people are against the use of GMOs in the production of food; others see their employment as a natural step in the evolution and improvement of food science and production.	Farmers may have to use (or not use) GMOs in order to compete globally; the cost of GM seeds and products may be subject to monopoly as companies vie for new scientific methods and markets.	Governments may need to enact laws concerning the use and labelling of GMOs as consumers become more aware and/or concerned about their use.	GMOs appear to have become a mainstay in agricultural production: the future is uncharted.

	Contemporary Food-Related Issues: Overview (continued)					
Issue	Overview of Issue	Social Implications	Economic Implications	Political Implications	Why Care?	
Freshwater and Saltwater Food Resources	Overfishing has become a serious issue affecting both the freshwater and saltwater commercial fishery.	Overfishing has led to the collapse of some fisheries and may lead to more; the depletion of fisheries poses a major threat to the food supply of millions of people.	Loss of jobs in the fishing industry; loss of jobs and a way of life for entire communities.	Governments may need to create new jobs for the loss of employment in the fishing industry; they may have to develop entire new industries that were once reliant on the fishery.	Overfishing may lead to the collapse of fisheries worldwide and cause a major threat to world food supply.	
Aquaculture	Aquaculture is essentially the farming of fish. The industry is relatively new and many concerns have been raised about the impact that aquaculure has on the environment and on animal welfare.	Farmed fish are often fed antibiotics and hormones; there have been no long-term studies as to their effect on humans.	Aquaculture may provide an economic base for those who had been involved in the traditional fishery, but start-up costs are very expensive.	Because the industry is so new—relatively speaking—the government has yet to set stringent environmental, economic, and human health guidelines.	The aquaculture industry is relatively new and many concerns have been raised about the impact that it may have or that it has on the environment, on animal welfare, and on human health.	

	Contemporary	Food-Related I	ssues: Overvie	w (continued)	
Issue	Overview of Issue	Social Implications	Economic Implications	Political Implications	Why Care?
The Changing Nature of Farming	The introduction of mechanization has resulted in fewer people being involved in farming the land; farm sizes becoming large; high start-up and maintenance costs associated with farming; and a trend in Canada of having fewer, larger farms producing more food than ever before.	The century- old family farm is dying and with it the small farming communities that supported it are also dying; farmsteads that have been in families for several generations are being sold off to larger farmers or land is being subdivided for housing developments.	Farming is expensive and income is unpredictable.	Governments have encouraged diversification in order to maintain stability (e.g., new crops such as hemp and chickpeas).	Traditional ways of farming are ending and the era of the family farm is almost ended. It is very expensive to operate and maintain farms and this may cause an increase in food prices for the average Canadian household.
Food Fashions	What we eat and how we eat are influenced by fashion; family meals are becoming a thing of the past. Grazing or eating on the run appears to be a trend; eating out in restaurants or eating fast food (or going through the drive-through) is commonplace.	The family ties associated with a sit-down family dinner may be eroded due to eating on the run or grazing.	Families may spend more of their household budget on fast food items because of handiness.	Many governments have become concerned about the growth of diseases related to poor dietary habits, including obesity, childhood obesity, cardiovascular disease, and diabetes. This may cause longer hours of mandated physical education in schools, and national promotions aimed at physical fitness and healthy eating.	Due to our fast-paced lifestyles, many families eat on the run and eat unhealthily. Trends that are not always healthy for us (and that may even be harmful to the environment) sometimes determine what we eat.

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 4 Industry and Trade

MODULE 4: INDUSTRY AND TRADE

Introduction

This module focuses on industry and trade in Canada, North America, and the world. You will identify current issues related to industry, trade, and globalization, and consider economic, social, and environmental impacts of your consumer choices.

In this module, you will

- become familiar with terminology related to industry and trade
- examine different levels of industry
- identify factors that determine the location of industries
- identify geographic locations of the major manufacturing regions in North America and the world, as well as Canada's major trading partners and major trade products
- examine current industry and trade developments, including the increasing involvement of First Nations, Métis, and Inuit Peoples in Canadian business and industry

Module 4 consists of three lessons. Each lesson has learning activities to help you practise, review and reflect upon what you have learned. At the end of the module, you will find an answer key for the learning activities in this module.



As you work through this course, remember that your learning partner and your tutor/marker are available to help you if you have questions or need assistance with any aspect of the course.



Assignments

When you have completed the assignment for Module 4, submit your completed assignment to the Distance Learning Unit either by mail or electronically through the learning management system (LMS). The staff will forward your work to your tutor/marker.

Lesson	Assignment	Marks
3	Assignment 4.1: Industry and Trade	45

Notes

LESSON 1: DEFINITION AND LOCATION OF INDUSTRY

Lesson Focus
By the end of this lesson, you will be able to define the term industry and give examples of primary, secondary, tertiary, and quaternary industries
 □ identify factors that determine the location of industry □ use examples to describe advantages and disadvantages of locating a manufacturing industry in a particular area □ identify major manufacturing regions on a map of the world and on a map of North America

Introduction

In this lesson, you will be introduced to terminology related to industry and to the different levels of industry. You will consider factors that determine the location of an industry as well as the advantages and disadvantages of locating a manufacturing industry in a particular area. You will also identify geographic locations of major manufacturing regions on maps of North America and the world.

What Is Industry?

The word industry has many definitions. For our purposes, we will define industry as the actions of **labour** (people who make up a workforce) for the purpose of extracting or creating a product, or performing a service for profit.

Industry may be divided into four categories depending on what is being extracted, created, or provided. The four levels of industry are as follows:

Primary Industry

Primary industries are involved in the extraction of a natural resource or raw material from the environment. The word *primary* means *first* and primary industries are the first step in the industrial process. They extract (take from Earth) resources, but do not make finished products.

Examples include the forestry, fishing, and mining industries.



Secondary Industry

Secondary industries—the second step in the industrial process—are involved in the production of a finished product. These businesses create finished goods or products for sale to consumers. This category includes all manufacturing and construction industries.

Examples include automobile factories, shoe factories, and home-building companies.



Tertiary Industry

Tertiary industries are not related to extracting or making goods, but involve the providing of service. People involved in this level of industry provide a service for which consumers pay.

Examples include waiters, doctors, and teachers.



Quaternary Industry

Quaternary-level industries are highly specialized, knowledge-based industries that usually support secondary and tertiary industries. They are involved in research and the development of new ideas and technologies that may cut costs, find new markets, and create new ways of producing goods.

Examples include scientists or employees in a consulting firm.





This may be a good time to ask your learning partner for help. Remember, your learning partner is anybody whom you choose to help you with your course.



Learning Activity 4.1

Levels of Industry

1. Using your own words, define and expand upon the definition of the four levels of industry in the chart below.

Primary	
Industry	
Secondary	
Industry	
Tertiary	
Industry	
Quaternary	
Industry	
•	

2. Below is a list of jobs. Place each job in the column in which you feel it best fits. Examples are provided to help you get started.

Logger	Baker	Teacher
University professor	Truck driver	Biotech researcher
Carpenter	Clerk	Hairdresser
Fisher	Waiter	Plumber
Automotive factory worker	Bank teller	Computer scientist
Market researcher	Accountant	Auto technician
	Miner	
	Farmer	

Learning Activity 4.1: Levels of Industry (continued)

Primary	Secondary	Tertiary	Quaternary
Logger	Baker	Hairdresser	Biotech researcher



You can now assess your learning activity by consulting the answer keys at the end of this module. Keep up the great work!

Location Factors for Manufacturing

Why are certain industries located in particular areas? Specifically, let's think about Manitoba.

- Why is there a pulp and paper mill in The Pas?
- Why is there a large pork-farming industry in Brandon?
- Why would an aerospace firm locate in Winnipeg?

Location factors are reasons that determine where a company will decide to build its headquarters, plant, or factory. Let's look at these factors.

	Location Factors for Industry
Raw Materials	Manufacturers need reliable sources of raw materials. Some companies (especially primary industries) must be close to the source (e.g., canneries, pulp and paper mills).
Location of Markets	Industries need to consider where their customers are located. The closer companies are to their customers, the cheaper the shipping costs.
Availability of Fresh Water and Power	Most companies need some form of power to operate their businesses (e.g., hydroelectricity, nuclear). Many use water as part of the manufacturing process and, therefore, need to be located near sources of fresh water (e.g., steel mills, oil refineries).
Labour Supply	Industries need workers; some require skilled workers— workers who have university or college educations and can perform specialized jobs in the industry.
Transportation	Manufacturers need ways to ship goods to and from their factories. Things such as highways, ports, railways, airports, and canal systems enable them to do this.
Political Factors	Governments often encourage industries to locate in certain areas by offering them incentives such as tax credits, business loans, grants, and direct investment.
Circumstance	Sometimes, businesses and industries are developed in areas that appear not to follow the normal pattern of location as previously described. This is often due to entrepreneurs and advances in Internet use in reaching markets.

So, let's revisit our previous questions.

■ Why is there a pulp and paper mill in The Pas?

A primary industry like a pulp and paper mill needs to be near its source of raw materials: trees. The Pas is located in a large forested region.

Why is there a large pork-farming industry in Brandon?

■ The pork industry requires several things to operate that Brandon can offer: a land base that can grow feed for the hogs; a labour force that can work in a processing plant; workers with experience in the industry; and transportation links such as rail and roads for moving products.

■ Why would an aerospace firm locate in Winnipeg?

An aerospace firm produces airplanes. Winnipeg is the geographic centre of North America—which makes shipping to other places in North America convenient and economical. Winnipeg has Manitoba's largest airport. Winnipeg is also home to two universities and one college that produce a skilled workforce.

Location of Manufacturing Industry: Pros and Cons

There is no doubt that manufacturing makes a tremendous contribution to an area by providing employment opportunities in both direct and **spin-off jobs**. Direct jobs are those directly associated with the manufacturing company—a person who is an employee of the company. Spin-off jobs are jobs that are created to support an industry, or are created as an indirect result of the industry. Spin-off jobs that support the pulp and paper mill in The Pas include grocery store clerks, car dealers, medical clinic nurses, and many others.

Manufacturing gives a great number of people in an area access to wealth through economic growth. Manufacturing also increases the tax base of communities, which means that local governments can provide a higher quality of public services (like recreation facilities, schools, hospitals, libraries) to its citizens.

Not all aspects of a manufacturing industry locating in a particular area, however, are positive. Along with benefits, there are environmental and social problems, including the following:

- Manufacturing generally uses an enormous amount of the local resource base: this may lead to resource depletion.
- Most manufacturing industries contaminate or pollute the environment in one way or another in their processes. Chemicals, exhaust fumes, heat, and solid and liquid wastes contaminate our air, land, and water.
- **Acid precipitation** is caused by a variety of exhaust gases, chemicals, and minute (tiny) particles emitted from factory smokestacks. In sunlight, sulphur and nitric oxide combine with condensing vapour and produce an acid cloud, which then turns into acid precipitation.
- **Global warming** is the heating of the atmosphere by trapped solar energy and heat from industrial processes.

Manufacturing in North America

You have learned why industries locate where they do. Manufacturing, part of the secondary level of industry, is involved in the making of finished goods. Where does manufacturing take place in North America?

In North America, the manufacturing **heartland** is a relatively small area that includes southern Ontario and southwest Quebec in Canada. In the United States of America, it stretches along the northeast coast from Boston in the north to Washington DC in the south; it extends west inland to the Ohio River Valley; finally, it stretches north to include St. Louis, Missouri, Milwaukee, and Wisconsin.



The industrial heartland in North America is not only the main manufacturing region of the continent, but is also the social, political, and cultural hub of the continent.

Manufacturing in the World

Eighty percent (80%) of the world's manufacturing takes place in three regions: eastern North America, northwestern Europe, and East Asia. These areas of the world were the first to industrialize. The **Industrial Revolution** began in Britain around 1750 and later spread to Western Europe and the United States of America after 1865. Industrialization spread to East Asia, most notably to Japan after 1945.



In recent years, there has been a **globalization of manufacturing**. This means that there has been a shift in the traditional regions of manufacturing—United States of America, Canada, Europe, and Japan—to less developed countries. China in particular has seen great growth. Since 1979, the Pearl River Delta area of China has become a major manufacturing centre for products such as electronics, toys, clothes, textiles, and plastic products, as well as a range of other goods. In 2001, nearly 5% of the world's goods were produced in the Pearl River Delta area.



Another recent trend in world globalization is a move to **transnational manufacturing**. This is a process whereby goods or components are partially created or assembled in one country, and then shipped across national borders for further work. For example, a car with an American brand name may be assembled in Mexico with component parts that are made and preassembled in factories in over two dozen countries.



Learning Activity 4.2

Location of Industry



- 1. Where is the majority of the world's manufacturing industry located and why is it located there? (What is where, and why there?)
- 2. Following are a series of statements regarding factors that influence or help determine the location of industries. Choose and read at least three statements and state whether you agree or disagree. Be sure to provide an explanation for your choice.
 - a) *Statement 1:* Industries can only be located in large centres where there are many people available to provide labour.
 - b) *Statement 2:* It is a great advantage to a community to have any kind of industry located nearby.
 - c) *Statement 3:* No community wants to have a new industry located nearby because industries always bring pollution.
 - d) *Statement 4:* Agricultural industries are the only ones likely to locate in Brandon, Manitoba.
 - e) *Statement 5:* A community should always promise anything that is necessary to get an industry to locate nearby.
 - f) *Statement 6:* Having any new industry locate near your community will attract many more people to come and live there.
- 3. As you have read, location factors play a large role in determining where companies and/or industries will decide to build. Sometimes, however, successful businesses may exist "off the beaten path" due to entrepreneurship. An entrepreneur is a person who takes a risk by setting up a business in order to make a profit. Let's look at a Manitoba entrepreneur, Judy Pettersen.
 - Read the case study, *Entrepreneurship and the Location of Industries: The babyTrekker*©, and answer the following questions. You may need to consult the glossary or a dictionary for new terms.
 - a) Look back at the location factors for manufacturing in this lesson. Make a list of factors that Judy had to overcome when manufacturing and marketing the *babyTrekker*©.
 - b) Use the list you just created for part (a) and discuss how Judy had to overcome these limitations in order to make her company a success.
 - c) How has new technology like the Internet helped Judy's business grow?



Learning Activity 4.2: Location of Industry (continued)

Case Study: Entrepreneurship and the Location of Industries: The babyTrekker©

Judy lives in Flin Flon, a mining community with approximately 6,200 people, which is located just over 740 kilometres northwest of Manitoba's capital city of Winnipeg. Flin Flon is accessible by highway, railway, and air. The nearest Manitoba communities are Thompson and The Pas, with distances of 380 and 140 kilometres respectively.

Judy owns a company in Flin Flon called babyTrekker[©]. The babyTrekker[©] is a baby carrier that allows parents to carry their child with them in a "sling" of sorts. Judy's babyTrekker[©] has five different positions, so parents can carry their baby as they hike, walk, ski, shop, or even do housework.

How did Judy come to invent the *babyTrekker*[©]? In 1987, she designed the carrier for her second daughter, Michelle, as a means of transporting and comforting her. Other parents began to notice her baby carrier. It was so popular that she began to make them for friends. In fact, she actually made up patterns and gave them away too. On a trip to Banff, when Michelle was eight months old, several people on the street stopped her to ask about her baby carrier.

Judy then decided to enter a home business show in Flin Flon. On the first evening of the show, she sold 23 of the 30 carriers that she had made for the show. After the home business show, Judy decided that there was a real need and a market for the carrier. She applied for a **patent** and began the *babyTrekker*[®] business in October of 1989, incorporating it by 1995.

Because Judy lived in Flin Flon, she needed to find a way to market her baby carrier. She began by advertising in grassroots parenting magazines and selling the items by mail order only. The babyTrekker© was shipped by Canada Post in this country and via courier to the United States of America. Next, she got a toll-free number. In 1994, she began selling the babyTrekker® wholesale to stores as well.

Today, babyTrekker® headquarters remain in Flin Flon, with three employees (not including the subcontractors who do the sewing). The company imports one colour of carrier from overseas, and the rest are manufactured in Regina. The company sells baby carriers to stores in Canada, the United States of America, and Australia, as well as to customers all over the world. Customers reach Judy either online or by telephone.

The babyTrekker® has been featured in the Calgary Herald, on Canada AM, in Baby Attitude magazine, in Today's Parent magazine, and in the Financial Post. Actor Vin Diesel even wore the baby carrier in the movie The Pacifier.

Judy Pettersen's babyTrekker[©] business has flourished in Flin Flon despite several limitations to location factors. She is a true entrepreneur.

Summary

There are four levels of industry, based on the product or service that is created in each. Several factors determine the location of manufacturing industries and each factor has a set of advantages and disadvantages of locating a manufacturing industry in a particular area. Certain entrepreneurs are successful despite the limitations that are presented to them. In North America, the major manufacturing region is located in a relatively small area called the industrial heartland that is found in the northwest region of the continent. On a global scale, 80% of the world's manufacturing takes place in three regions: eastern North America, northwestern Europe, and East Asia.

LESSON 2: TOPICS IN INDUSTRY AND TRADE

Lesson Focus
By the end of this lesson, you will be able to
identify current issues related to industry and trade
identify, on a map of the world, Canada's major trading partners and major trade products
give examples of increasing involvement of First Nations, Métis, and Inuit Peoples in business and industry in Canada
consider the economic implications of your own consumer choices and decisions

Introduction

In this lesson, you will consider a variety of issues related to industry and trade at the local, national, and international levels. You will identify Canada's major trading partners on a map of the world and consider Canada's major trade imports and exports. The lesson will also have you focus on the increasing involvement of Canada's First Nation, Métis, and Inuit Peoples in business and industry. Throughout the learning experience, you will be encouraged to consider the economic implications of your consumer choices.

Issue One: Sustainable Development

In industry, sustainable development means an approach to industrial production that can be maintained indefinitely without harming the environment, the society, and the country's economic prosperity.

Sustainable development means that producers and manufacturers are able to meet market demands, while at the same time

- reducing the rate at which they use natural resources
- reducing the amount of pollution they create
- decreasing the amount of energy they use
- providing enough products, such as food, to satisfy the needs of the population

Many see **biotechnology** as a means of achieving the goals of sustainable development. Biotechnology is the use of biological processes in industrial processes such as agriculture, as well as in the manufacturing of products.

Examples of biotechnology in action include

- the use of natural bacteria to replace harsh chemicals in the treatment and breakdown of waste material
- the use of natural bacteria to convert waste into useful materials or energy sources
- the use of pesticides derived from natural materials instead of harsh chemical pesticides, to control insects and other pests that devastate crops
- the replacement of fossil fuels and other non-renewable resources by renewable sources of biomass
- the replacement of harsh chemicals with biological organisms, such as bacteria, to speed up the chemical reactions used in the production of industrial products

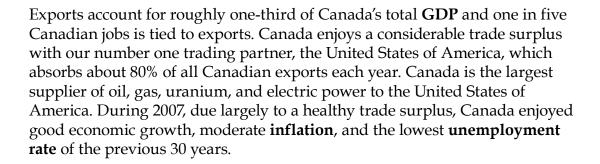


On March 30, 2000, the Canadian Environmental Protection Act came into effect. It is an act that aims at "respecting pollution prevention and the protection of the environment and human health in order to contribute to sustainable development." (The act can be viewed at http://laws-lois.justice.gc.ca/eng/acts/.)

Issue Two: Balance of Trade

International trade involves the buying and selling of goods and services between countries. International trade has been present throughout much of history. The Silk Road was an ancient trade route between China and the Mediterranean Sea extending 6,440 kilometres; likewise, the Amber Road was an ancient trade route for the transfer of amber that led from Europe to Asia and back and from northern Europe to the Mediterranean.

Countries involved in international trade are usually involved in both the **exporting** (selling) and **importing** (buying) of goods and services. In 2007, Canadians imported goods worth more than \$395 billion and exported even more. In the same year, Canadian exports totalled more than \$440 billion. If exports exceed imports, the difference in these amounts is called a **trade surplus**. If imports are higher than exports, then it is called a **trade deficit**. Canada's trade surplus is very important because we must earn money from exports to pay for the goods and services that we buy from other countries.





Canada's Trading Partners

As you know, Canada is involved in international trade. Do you know whom we sell to and whom we buy from? What goods do we buy and sell?

Let's look at exports first. Canada's main exports are motor vehicles and parts, industrial machinery, aircrafts, telecommunications equipment, chemicals, plastics, fertilizers; wood pulp, timber, crude petroleum, natural gas, electricity, and aluminum. Who buys our goods? In 2006, the top ten countries that received Canada's exported goods were as follows (the percentage of exports is in brackets):

- 1. United States of America (81.6%)
- 2. United Kingdom (2.3%)
- 3. Japan (2.1%)
- 4. China (1.7%)
- 5. Mexico (1.0%)
- 6. Germany (0.9%)
- 7. France (0.7%)
- 8. Netherlands (0.7%)
- 9. South Korea (0.7%)
- 10. Belgium (0.5%)

Now, let's examine Canada's imports. Canada's chief imports are machinery and equipment, motor vehicles and parts, crude oil, chemicals, electricity, and low-cost consumer goods. From whom do we purchase these goods? In 2006, the top ten countries that Canada imported goods from were (the percentage of imports is in brackets) as follows:

- 1. United States of America (54.9%)
- 2. China (8.7%)
- 3. Mexico (4.0%)
- 4. Japan (3.9%)

- 5. Germany (2.8%)
- 6. United Kingdom (2.7%)
- 7. South Korea (1.5%)
- 8. Norway (1.4%)
- 9. France (1.3%)
- 10. Algeria (1.2%)

Take a look at the pen or pencil you are writing with and the tags on the clothing you are wearing. Where were they made? What countries did they come from?

First Nations, Métis, and Inuit Peoples, and Business and Industry

Over the past several decades, First Nations, Métis, and Inuit Peoples in Canada have come to play an increasingly greater role in business and industry in Canada. As a matter of fact, Aboriginal Affairs and Northern Development Canada (AANDC) operates a program called Aboriginal Business Canada (ABC). The aim of this program is to maximize First Nations, Métis, and Inuit Peoples' participation in the economy through business development. The program works with First Nations, Métis, and Inuit Peoples that live on-reserve, off-reserve, and in remote areas by offering financial assistance, business information, and support.

Outside of government, the Canadian Council for Aboriginal Business (CCAB) is a national non-profit organization aiming for full participation of First Nations, Métis, and Inuit Peoples and communities in Canada's economy. CCAB provides tools and resources to access First Nations, Métis, and Inuit Peoples as partners, employees, and customers. Each year, the CCAB awards outstanding First Nations, Métis, and Inuit Peoples' business leaders the Aboriginal Business Hall of Fame Award (which was designed by a Salish artist). The CCAB states that

Aboriginal business in Canada has come of age.... [we] believe that the time has come to recognize the first generation of great Aboriginal business leaders. These leaders have set the stage for the renaissance of Aboriginal business in Canada and will serve as role models for the generations who are following them.



Learning Activity 4.3

Industry and Trade, the World and You



1. Choose at least *three* terms listed below and complete a Word Map for each term by defining it in your own words, providing a synonym, using it in a meaningful sentence, and drawing an image that best represents the term.

Industry International trade

Sustainable development Import
Biotechnology Export
Trade surplus Inflation

Trade deficit Unemployment rate

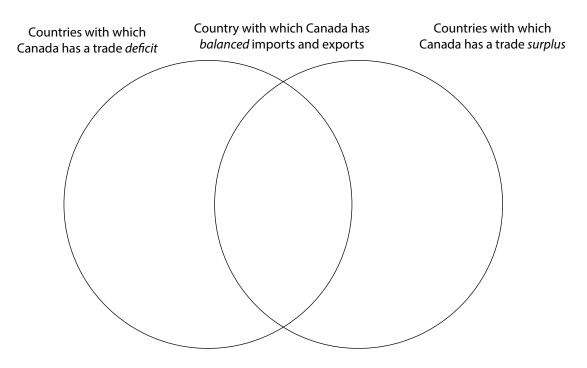
Term 1	Your Own Definition	Synonym	Meaningful Sentence	Representative Image
Term 2	Your Own Definition	Synonym	Meaningful Sentence	Representative Image
Term 3	Your Own Definition	Synonym	Meaningful Sentence	Representative Image

Learning Activity 4.3: Industry and Trade, the World and You (continued)

2. Name the top five countries to which Canada *exports* goods. Name the top five countries to which Canada *imports* goods. Complete the following chart to compare Canada's imports and exports.

Top 5 Export Countries	Top 5 Import Countries

3. Complete the Venn diagram to compare and contrast Canada's trade deficit, trade surplus, and trade balance.



Learning Activity 4.3: Industry and Trade, the World and You (continued)

- 4. Every time we buy a product or service we are making a choice. Once we decide to make a purchase, we might have to make decisions based on the price, quality, colour, or other considerations. Many consumers are also interested in knowing where the product came from, how and under what conditions it was produced, as well as the environmental, economic, and human impact of its production. If we purchase a service, we may need to make decisions about the price, the quality, and from whom we will make the purchase. Following are several theoretical consumer choice situations for you to think about. Do your choices really matter? What should you do? What are the possible implications of your choices? Read each of the situations and respond to each of the questions in your own words.
 - a) Situation 1: You plan to purchase some sterling silver jewellery from Mexico while on vacation. A family friend reminds you that these items are made from minerals that are mined in mines that cause the destruction of plant life in Mexico. You feel that one necklace is hardly going to destroy Mexico and that the people need jobs so you might as well buy the necklace.
 - What do you think? What are the economic and environmental implications if you buy just one necklace? Do our individual consumer choices matter?
 - b) Situation 2: You are going to the corner store to purchase a chocolate bar. One of your friends objects to your choice of chocolate, saying that the manufacturer does not purchase its cocoa beans through the fair trade network and that its cocoa is produced without giving fair wages to the workers. Another friend says that since there are no cocoa plantations in Canada, there is no need to worry about where and under what conditions the cocoa is produced.

What do you think? Is it worth the trouble of looking for another place to go? What are the economic and social implications if you purchase a chocolate bar made by workers receiving low wages and living in poor conditions?



Summary

There are many issues related to industry and trade. Canada is involved in an international trading network of importing and exporting, with its most important trading partner being the United States of America. Canada's First Nations, Métis, and Inuit Peoples are ever-increasing their involvement in business and industry. As a citizen who is part of the global economy, you make choices every time you buy a product or service. You make decisions by taking into consideration the price, quality, and colour, and you also may take into consideration where the product comes from as well as how and under what conditions it was produced.

LESSON 3: GLOBALIZATION

Lesson Focus
By the end of this lesson, you will be able to define the concept of globalization and identify related social issues
consider the social and environmental impacts of your consumer choices

Introduction

In this lesson, you will be introduced to the concept of globalization as it relates to industry and trade. You will consider a variety of issues and challenges brought about by increasing trends towards globalization. You will also be encouraged to consider the social and environmental implications of your personal consumer choices.

Issue Three: Globalization—Positive or Negative?



What is **globalization**? Does the term mean that all countries of the world are becoming the same? Does it mean the integration of economic, political, and cultural systems around the world? Does globalization mean that we will be able to find the same stores and restaurants in every part of the world? Does it mean that individual countries will not be able to make business and trade decisions on their own but will have to consult other countries? If these are the realities of globalization, what kinds of impacts will it have on the way we live? Indeed, the concept of globalization raises many questions and controversial issues.

Some argue that globalization is a *positive* development that will give rise to new industries and more jobs in developing countries. Others say globalization is *negative* in that it will force poorer countries of the world to do whatever the big developed countries pressure them to do. Another viewpoint is that developed countries, including Canada, are the ones who may lose out because they are involved in **outsourcing** many of the manufacturing jobs that used to be done by their own citizens. Outsourcing refers to obtaining goods by contract from outside sources. This is why you may find that many of your clothes have labels indicating they were made in developing countries such as Bangladesh, Malaysia, China, or the Philippines,

where they can be produced at lower costs. Critics of outsourcing feel that no one wins with this practice. Workers in Canada and other developed countries may lose their jobs, while those doing the work in poorer countries get paid much less while working in poor conditions. What can be done about these realities?

Global trade gives Canadians access to many products, such as fruits, that cannot be produced here. Global trade means that produce such as bananas, mangoes, oranges, and kiwi fruit are relatively inexpensive and available year-round in our grocery stores. This implies that farmers in developing countries have an opportunity to produce and sell more goods and make a better living. Some people in developing countries, however, feel that the wealthier countries purchasing the products are the ones who make all the production and trade rules, which they must abide by, thus reducing their chance at fair competition in the world marketplace. In addition, this forces developing countries to produce export foods wanted by the wealthier developed countries instead of producing local foods to feed their own populations. The development of orchards and plantations by multinational companies in the poorer countries of the world often means that there is reduced land available to produce local food supplies. What can be done about these issues? Will more emphasis on **fair trade** make any difference?



Factors related to globalization can also cause workers to migrate from their homelands in poorer countries to other more developed countries to find work. These **migrant labourers** may leave their families and live temporarily in another country, thus disrupting the family and social fabric of their home communities. Most of their earnings may be sent home, reducing the benefits their employment could have in the country where they are employed. Often, foreign workers immigrate to another country and, because they live in their own neighbourhoods, continue to follow their religions and customs, and even follow their own laws: they are sometimes accused of not being willing to adapt to and accept the ways of their new country. Often, newcomers complain that they face racism and discrimination, are poorly treated, and cannot live the way they would like to live in the more developed countries to which they have immigrated. This raises questions as to the role of **human rights**, as a consequence of globalization. Should we consider the rights of workers and the responsibilities of new immigrants in our shopping practices? Does it matter?

Many developing countries need new industries and the jobs these industries would bring if they are to improve their economies through globalization; however, people in developing countries do not want to lose their own culture and identity in the process. Many fear that increased globalization may lead to the loss of control over economic and political decisions and may also threaten their traditions, languages, and cultures. With the predominance

of American pop culture, as well as political and economic influence around the world, many developing countries see globalization as a form of **Americanization** that is undermining the fabric of their traditional societies. In addition, many developing countries do not have stringent rules about environmental protection. Consequently, industries that establish themselves in developed countries can avoid the use of expensive pollution control equipment, resulting in serious air, water, and soil pollution that would not be acceptable in Canada and other developed countries. Should we be concerned about the social and environmental impacts of globalization? Do pollution and destruction of the environment in distant lands affect us here in Canada?

There are many arguments for and against globalization. As citizens in a developed country, do we need to be aware of the impact our purchases of food, clothing, and other items may have on people and the environment in developing countries? Should we be asking ourselves why many items produced in developing countries are so much less expensive than goods produced in Canada? Are we familiar with the



living and working conditions of the workers in poorer countries that produced these items? Do we know how much they get paid for their labour? Are we familiar with their lack of protection and benefits in the workplace? Are we aware of the environmental impact of production in developing countries? Should we support those companies and stores that promote fair trade even if it may mean slightly higher prices? What is our responsibility? What are the potential impacts of our choices? What does "the high cost of low prices" really mean?



Learning Activity 4.4

Globalization—Positive or Negative?



1. Complete the following organizer comparing different features, terms, or issues of globalization with an assessment of the pros and cons.

Feature, Term, or Issue	Overview and/or Definition	Pros	Cons
Globalization			
Outsourcing			
Fair Trade			
Human Rights			
Migrant Labourers			
Labourers			
Americanization			

Learning Activity 4.4: Globalization—Positive or Negative? (continued)



2. Explain in your own words what is meant by the expression "the high cost of low prices."

Summary

Globalization is an issue that relates to industry and trade. We face a variety of issues and challenges as citizens and as consumers and, because of globalization, our personal consumer choices carry with them global, social, and environmental implications.

Notes



Industry and Trade (45 marks)

1. Define the term *industry*. (1 mark)

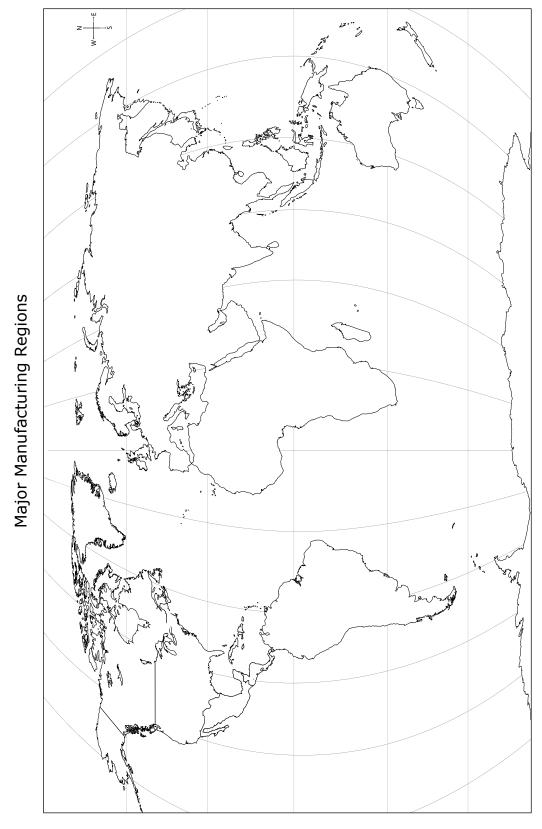
Review the material from the Module 4 lessons and learning activities in order to complete this assignment. Be sure to read the questions carefully and to provide answers in complete sentences. Please remember that you must write answers in your own words. Do not copy information directly from any of your sources. Keep the mark value of each question in mind as you do the assignment and develop your answers accordingly.

Industry is made up of four levels. For each level, provide a definition and an example. (0.5 mark for each example, totalling 2 marks, and 1 mark for each correct definition, for a total of 6 marks)		
Primary Industry		
Secondary Industry		
Tertiary Industry		
Quaternary Industry		

•	Identify and briefly explain six factors that determine the location where a company will decide to build its headquarters, plant, or factory. (0.5 mark for each correctly identified location factor, totalling 3 marks, and 1 mark for each brief discussion of location factors, for a total of 9 marks)

1.	Manufacturing may bring benefits to an area; however, it often has negative effects on the environment. List and expand upon <i>two</i> negative effects manufacturing can			
	have on the environment. (2 marks)			

5. On the following map, draw rough boundaries to indicate the three major regions of manufacturing in the world. (*3 marks*)



6.	Fill in the following chart by providing a brief description of the specific issues
	relating to industry and trade. (6 marks)

Sustainable Development	
Balance of Trade	
First Nations, Métis, and Inuit Peoples, Business, and Industry	

7. Complete the following table by listing Canada's top five trading partners and at least two examples of exported goods and two examples of imported goods. (0.5 mark each for a total of 6 marks)

	Top 5 Countries	Goods
Export		
Import		
Import		

8. Choose *one* of the following situations dealing with the choices that we have to make as consumers. Answer the questions that follow in a thoughtful and detailed manner. (5 *marks*)

a) Situation 1:

Your family plans to purchase some new furniture made of tropical hardwoods. A family friend reminds you that the purchase of items made from tropical hardwoods is causing the destruction of rainforests, resulting in erosion, an increased likelihood of flooding, and a reduction in the amount of oxygen released in the atmosphere during photosynthesis. You feel that one coffee table is hardly going to destroy a rainforest, and that the trees have already been cut so you might as well use the products.

What do you think? What are the economic and environmental implications if many families buy just one coffee table? Do our individual consumer choices matter?

b) Situation 2:

You are going to a coffee bar with some friends to enjoy a cup of specialty coffee. One of your friends objects to your choice of coffee bar, saying that it does not purchase its coffee through the fair trade network and that its coffee is produced without giving fair wages to the workers. Another friend says that since there are no coffee plantations in Canada, you do not need to worry about where and under what conditions the coffee is produced.

What do you think? Is it worth the trouble of looking for another place to go? What are the economic and social implications if you purchase coffee made by workers getting low wages and living in poor conditions?

c) Situation 3:

You are showing off some imported clothes you just bought. Your friend responds by telling you that you should not purchase items produced in that country because of its poor human rights record. People are being jailed without being charged and those who protest often disappear. She tells you that your purchase helps support a government that disregards human rights. Your sister, however, says young people cannot do anything about this situation, so you shouldn't worry about your consumer choices.

What do you think? Should you refuse to purchase products from countries with poor human rights records? What difference can you make?

signment 4.1: Industry and Trade (continued)
What is globalization? (2 marks)
Make a list of at least <i>two</i> pros and at least <i>two</i> cons associated with globalization List an additional point that you feel may be both pro and con and provide an explanation for your choice. (5 marks)

Notes

MODULE 4 SUMMARY

Congratulations, you have completed Module 4!

Module 4 focused on industry and trade within Canada, within North America, and on a global level. The four categories of industry were discussed, along with the reasons why specific industries are located in certain areas. Manufacturing, part of the secondary level of industry, was explored and the pros and cons associated with manufacturing were also studied.

Module 4 also examined the issues associated with industry and trade, including sustainable development and trading practices, and looked at the role of the First Nations, Métis, and Inuit Peoples in the Canadian economy.

The issues surrounding globalization were also considered, both as a negative and a positive influence. Outsourcing, fair trade, and human rights are just some of the topics that were examined.



Submitting Your Assignments

It is now time for you to submit Assignment 4.1 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 4 assignment and organize your material in the following order:

☐ Assignment 4.1: Industry and Trade

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Notes

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 4 Industry and Trade

Learning Activity Answer Key

MODULE 4: INDUSTRY AND TRADE

Learning Activity 4.1: Levels of Industry

1. Using your own words, define and expand upon the definition of the four levels of industry in the chart below.

Primary Industry	Industries that are involved in the extraction of a natural resource or raw material from the environment
Secondary Industry	Industries that are involved in the production of a finished product
Tertiary Industry	Industries that are involved in the provision of a service
Quaternary Industry	Industries that are highly specialized and knowledge-based that usually support secondary and tertiary industries; they are involved in research and development

2. Below is a list of jobs. Place each job in the column in which you feel it best fits. Examples are provided to help you get started.

Logger Baker Teacher

Carpenter Clerk Hairdresser Fisher Waiter Plumber

Automotive factory worker Bank teller Computer scientist Market researcher Accountant Auto technician

Miner Farmer

Primary	Secondary	Tertiary	Quaternary
Logger	Baker	Hairdresser	Biotech engineer
Fisher	Carpenter	Truck driver	Computer scientist
Miner	Automotive factory	Clerk	Market researcher
Farmer	worker	Bank teller	
		Accountant	
		Plumber	
		Teacher	
		Waiter	
		University professor	
		Auto technician	

Learning Activity 4.2: Location of Industry

1. Where is the majority of the world's manufacturing industry located and why is it located there? (What is where, and why there?)

The majority of the world's manufacturing takes place in eastern North America, northwestern Europe, and East Asia. This is because industrialization came to these parts of the world first.

2. Following are a series of statements regarding factors that influence or help determine the location of industries. Choose and read at least three statements and state whether you agree or disagree. Be sure to provide an explanation for your choice.

Answers should include at least three of the following statements and will vary; the following responses are examples of good answers.

- a) *Statement 1:* Industries can only be located in large centres where there are many people available to provide labour.
 - Disagree
 - Industries optimally would like to be located in large centres with a sizeable trained workforce nearby; however, industries sometimes flourish "off the beaten path" simply because of entrepreneurship.
- b) *Statement 2:* It is a great advantage to a community to have any kind of industry located nearby.
 - Agree
 - Jobs are created.

OR

- Disagree
 - Some communities do not want industries to locate in their area if there is a belief that they will do more harm than good to the local economy, environment, or social values.
- c) *Statement 3:* No community wants to have a new industry located nearby because industries always bring pollution.
 - Disagree
 - Not all industries create pollution.
 - Some communities may be so desperate for jobs that they may be willing to sacrifice their environmental concerns.

- d) *Statement 4:* Agricultural industries are the only ones likely to locate in Brandon, Manitoba.
 - Disagree
 - Manitoba attracts many different types of industries ranging from primary to secondary, to tertiary, and to quaternary.
- e) *Statement 5:* A community should always promise anything that is necessary to get an industry to locate nearby.
 - Disagree
 - Communities have a responsibility to their citizens and to the future. Communities should not sacrifice the health of their local economy as it exists, their natural environment, the health of their citizens, and the social fabric of the community just to get any industry to locate in their area. They need to weigh the pros and cons, and consider all the shortand long-term consequences.
- f) *Statement 6:* Having any new industry locate near your community will attract many more people to come and live there.
 - Agree
 - Most of the time, new industries create new jobs.

OR

- Disagree
 - Just because an industry is new, it does not mean that it will employ more people than those who already live in an area; not all people are willing to relocate to locations that are considered remote just for employment.
- 3. As you have read, location factors play a large role in determining where companies and/or industries will decide to build. Sometimes, however, successful businesses may exist "off the beaten path" due to entrepreneurship. An entrepreneur is a person who takes a risk by setting up a business in order to make a profit. Let's look at a Manitoba entrepreneur, Judy Pettersen.
 - Read the case study, *Entrepreneurship and the Location of Industries: The babyTrekker*©, and answer the following questions. You may need to consult the glossary or a dictionary for new terms.

a) Look back at the location factors for manufacturing in this lesson. Make a list of factors that Judy had to overcome when manufacturing and marketing the <code>babyTrekker®</code>.

Factors that Judy had to overcome included the following:

- source of raw materials
- location of markets
- transportation
- labour supply
- b) Use the list you just created for part (a) and discuss how Judy had to overcome these limitations in order to make her company a success.
 - Source of raw materials
 - The company imports one colour of carrier from overseas and manufactures the rest in Regina.
 - Location of markets
 - She began advertising in grassroots parenting magazines and selling the items by mail order; she got a toll-free number; customers reach Judy either online or by telephone; she began selling the babyTrekker® wholesale to stores.
 - Transportation
 - She ships using Canada Post in this country and via courier to the United States of America.
 - Labour supply
 - Other than the three employees she has in Flin Flon, she subcontracts employees who do the sewing and construction.
- c) How has new technology like the Internet helped Judy's business grow?

The Internet allowed Judy to reach a global market via the worldwide web, something she most likely would not have been able to do as easily, readily, or economically without the Internet.

Case Study: Entrepreneurship and the Location of Industries: The babyTrekker©

Judy lives in Flin Flon, a mining community with approximately 6,200 people, which is located just over 740 kilometres northwest of Manitoba's capital city of Winnipeg. Flin Flon is accessible by highway, railway, and air. The nearest Manitoba communities are Thompson and The Pas, with distances of 380 and 140 kilometres respectively.

Judy owns a company in Flin Flon called *babyTrekker*[©]. The *babyTrekker*[©] is a baby carrier that allows parents to carry their child with them in a "sling" of sorts. Judy's *babyTrekker*[©] has five different positions, so parents can carry their baby as they hike, walk, ski, shop, or even do housework.

How did Judy come to invent the *babyTrekker*[©]? In 1987, she designed the carrier for her second daughter, Michelle, as a means of transporting and comforting her. Other parents began to notice her baby carrier. It was so popular that she began to make them for friends. In fact, she actually made up patterns and gave them away too. On a trip to Banff, when Michelle was eight months old, several people on the street stopped her to ask about her baby carrier.

Judy then decided to enter a home business show in Flin Flon. On the first evening of the show, she sold 23 of the 30 carriers that she had made for the show. After the home business show, Judy decided that there was a real need and a market for the carrier. She applied for a **patent** and began the babyTrekker® business in October of 1989, incorporating it by 1995.

Because Judy lived in Flin Flon, she needed to find a way to market her baby carrier. She began by advertising in grassroots parenting magazines and selling the items by mail order only. The babyTrekker® was shipped by Canada Post in this country and via courier to the United States of America. Next, she got a toll-free number. In 1994, she began selling the babyTrekker® wholesale to stores as well.

Today, babyTrekker® headquarters remain in Flin Flon, with three employees (not including the subcontractors who do the sewing). The company imports one colour of carrier from overseas, and the rest are manufactured in Regina. The company sells baby carriers to stores in Canada, the United States of America, and Australia, as well as to customers all over the world. Customers reach Judy either online or by telephone.

The babyTrekker[®] has been featured in the Calgary Herald, on Canada AM, in Baby Attitude magazine, in Today's Parent magazine, and in the Financial Post. Actor Vin Diesel even wore the baby carrier in the movie The Pacifier.

Judy Pettersen's babyTrekker[©] business has flourished in Flin Flon despite several limitations to location factors. She is a true entrepreneur.

Learning Activity 4.3: Industry and Trade, the World and You

1. Choose at least *three* terms listed below and complete a Word Map for each term by defining it in your own words, providing a synonym, using it in a meaningful sentence, and drawing an image that best represents the term.

Industry International trade

Sustainable development Import
Biotechnology Export
Trade surplus Inflation

Trade deficit Unemployment rate

Term 1	Your Own Definition	Synonym	Meaningful Sentence	Representative Image
Term 2	Your Own Definition	Synonym	Meaningful Sentence	Representative Image
Term 3	Your Own Definition	Synonym	Meaningful Sentence	Representative Image

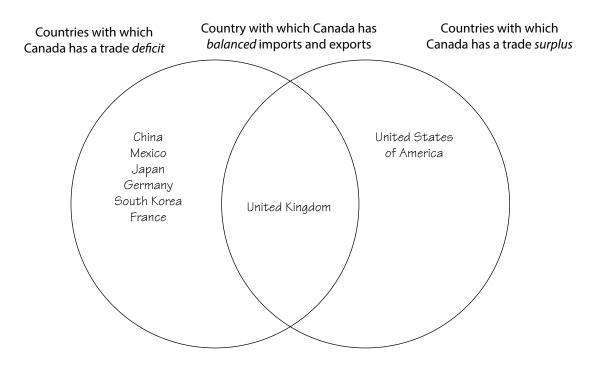
Since the activity asks you to define the terms in your own words, responses will vary. The same holds true for "using it in a meaningful sentence" and "drawing an image." The following is a list of possible synonyms:

- Industry: manufacturing, business
- Sustainable development: environmental protection
- Biotechnology: genetic engineering
- International trade: world trade
- Import: buy
- Export: sell
- Trade surplus: positive balance of trade
- Trade deficit: trade gap; negative balance of trade
- Inflation: rise; increase; price increase
- Unemployment rate: percentage of workforce that is unemployed

2. Name the top five countries to which Canada *exports* goods. Name the top five countries to which Canada *imports* goods. Complete the following chart to compare Canada's imports and exports.

Top 5 Export Countries	Top 5 Import Countries
United States of America (81.6%)	United States of America (54.9%)
United Kingdom (2.3%)	China (8.7%)
Japan (2.1%)	Mexico (4.0%)
China (1.7%)	Japan (3.9%)
Mexico (1.0%)	Germany (2.8%)

3. Complete the Venn diagram to compare and contrast Canada's trade deficit, trade surplus, and trade balance.



- 4. Every time we buy a product or service, we are making a choice. Once we decide to make a purchase, we might have to make decisions based on the price, quality, colour, or other considerations. Many consumers are also interested in knowing where the product came from, how and under what conditions it was produced, as well as the environmental, economic, and human impact of its production. If we purchase a service, we may need to make decisions about the price, the quality, and from whom we will make the purchase. Following are several theoretical consumer choice situations for you to think about. Do your choices really matter? What should you do? What are the possible implications of your choices? Read each of the situations and respond to each of the questions in your own words.
 - a) Situation 1: You plan to purchase some sterling silver jewellery from Mexico while on vacation. A family friend reminds you that these items are made from minerals that are mined in mines that cause destruction of plant life in Mexico. You feel that one necklace is hardly going to destroy Mexico and that the people need jobs so you might as well buy the necklace.

What do you think? What are the economic and environmental implications if you buy just one necklace? Do our individual consumer choices matter?

Every piece of jewellery counts; it would still add up to the loss of thousands of acres of land. At the same time, purchasing the necklace may be creating an economy for a fledgling developing country's economy. Yes, our individual consumer choices matter.

Please note that your answer may vary.

b) Situation 2: You are going to the corner store to purchase a chocolate bar. One of your friends objects to your choice of chocolate, saying that the manufacturer does not purchase its cocoa beans through the fair trade network and that its cocoa is produced without giving fair wages to the workers. Another friend says that since there are no cocoa plantations in Canada, there is no need to worry about where and under what conditions the cocoa is produced.

What do you think? Is it worth the trouble of looking for another place to go? What are the economic and social implications if you purchase a chocolate bar made by workers receiving low wages and living in poor conditions?

Looking for another place to go may be a hassle in a busy day and cause you to burn more fossil fuels (if you drive); however, it may urge cocoa producers to pay their workers fairly and support the fair trade cocoa movement. If you purchase cocoa made by workers getting low wages, you may be causing the cycle to perpetuate itself.

Please note that your answer may vary.

Learning Activity 4.4: Globalization—Positive or Negative?

1. Complete the following organizer comparing different features, terms, or issues of globalization with an assessment of the pros and cons.

Feature, Term, or Issue	Overview and/or Definition	Pros	Cons
Globalization	This is a global movement to increase the flow of goods, services, people, and money across national borders in order to create a more interdependent world economy.	It will give rise to new industries and more jobs in developing countries.	It will force poorer countries of the world to do whatever the big developed countries tell them to do.
Outsourcing	Outsourcing refers to obtaining goods by contract from outside sources; most often, companies in developed nations hire contract workers in developing nations because of cheap labour costs.	Workers in developing nations gain employment and training; goods are cheaper for consumers in the developed world.	Workers in Canada and other developed countries may lose their jobs while those doing the work in poorer countries get paid much less while working in poor conditions.
Fair Trade	This includes making sure that products exported internationally from developing countries to developed countries are produced under fair conditions. In other words, promoting the payment of fair prices, safe and healthy working conditions, and responsible environmental practices.	Workers in developed nations will be paid fairly and work in safe and healthy environments.	Goods will be more expensive for consumers in the developed world.

Feature, Term, or Issue	Overview and/or Definition	Pros	Cons
Human Rights	They constitute the basic entitlement accorded to every human being. The rights include the right to health, education, shelter, employment, property, food, and freedom of expression and movement.	Most people would argue that all should be afforded the basic human rights outlined in the first column.	Affording all peoples basic human rights may make goods and services in developed countries more expensive—some people in these areas may not like that.
Migrant Labourers	These are workers who migrate from their homelands in poorer countries to more developed countries to find work.	Workers have an income which they may send home to support their families.	Many leave their families and live temporarily in another country, which disrupts the family and social fabric of their home communities. Most of their earnings may be sent home, reducing the benefits their employment could have in the country where they are employed.
Americanization	Americanization is the term used for the influence the United States of America has on the culture of other countries. This influence often comes from the media.	Americanization may serve as a unifying factor among the world's different peoples and cultures; it may act as a common "language" in many areas including international trade.	It is undermining the fabric of many traditional societies.

2. Explain in your own words what is meant by the expression "the high cost of low prices."

Answers will vary but should focus on the idea that people in developing countries pay a high cost for the quality of their lives—low wages, few opportunities, polluted environments—so that Canadians and others can purchase low-cost goods.

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 5 Urban Places

MODULE 5: Urban Places

Introduction

This module focuses on urbanization and related issues in Canada and around the world. You will become familiar with the terminology related to urbanization and consider the advantages of living in rural, remote, and urban places.

In this module, you will

- examine factors that influence the location of cities and various functions of urban places
- identify the causes for the emergence of megacities around the world
- reflect upon major environmental, economic, and social issues facing modern urban centres
- examine the importance of urban planning
- discover the value of social diversity in urban centres

Module 5 consists of four lessons. Each lesson has learning activities to help you practise, review, and reflect upon what you have learned. At the end of the module, you will find an answer key for the learning activities in this module.



As you work through this course, remember that your learning partner and your tutor/marker are available to help you if you have questions or need assistance with any aspect of the course.



Assignment

When you have completed the assignment for Module 5, submit your completed assignment to the Distance Learning Unit either by mail or electronically through the learning management system (LMS). The staff will forward your work to your tutor/marker.

Lesson	Assignment	Marks
4	Assignment 5.1: Urban Places	55

Writing Your Final Examination



You will write the final examination when you have completed Modules 3, 4, and 5 of this course. The final examination is based on Modules 3, 4, and 5, and is worth 25 percent of your final mark in the course. To do well on the final examination, you should review all the work you complete in Modules 3, 4, and 5, including all the learning activities and assignments. You will write the final examination under supervision.

LESSON 1: RURAL, URBAN, AND REMOTE PLACES

	Lesson Focus	
	By the end of this lesson, you will be able to	
	distinguish among rural, urban, and remote places	
	$lue{}$ consider the merits of living in rural, urban, and remote places	
١		

Introduction

In this lesson, you will examine the concepts of rural, urban, and remote settlements and learn to recognize examples of each. You will be asked to consider the advantages and disadvantages of living in each type of settlement. Also, you will weigh the value or merits of living in rural, urban, and remote places.

Rural, Urban, or Remote?



The term **settlement pattern** refers to where people live on Earth (or in a country or province) and the factors that influence where people live.

Canada is the second-largest country in the world in geographical size; however, it has a relatively small population compared to many other countries. The majority of Canadians live in the southern portion of the country and within a few 100 kilometres of the Canada-U.S.A. border. The largest concentration of the Canadian population is in the Great Lakes–St. Lawrence Lowland region. A relatively small number of Canadians live in the Shield regions of the near north, and even fewer live in the northern territories. Prior to European arrival in what is now Canada, the First Peoples and original occupants of this land lived in most regions of the country, although population numbers and densities were generally very low.



From the viewpoint of the early European explorers and settlers, Canada itself was regarded as a remote country, since it was far away from the centres of population, power, and wealth in Europe. The term **remote** means out of the way or located far from the main centres of population and society. A small portion of Canada's settlements are still considered remote because they are located in isolated regions, often in the north. Many of Canada's

First Nations, Métis, and Inuit Peoples still live in remote settlements in areas occupied by their ancestors. They make a living through hunting, fishing, gathering, and often working in modern resource development industries in remote northern locations. Many other Canadians have chosen to live in remote settlements where they may have jobs related to the mining, forestry, hydro, and tourism industries in the Canadian Shield or in Canada's Arctic regions.

Many of Canada's early immigrants were attracted by the promise of free or low-cost farmland and saw this as an opportunity for a better life than the one they had in Europe. Much of western Canada was settled through advertising campaigns to attract farmers to the vast open spaces of the prairies. The development of **rural** settlement focused on farming and established a rural way of life that is still important in Canada today. Early rural life was characterized by large families and neighbours helping each other, among other things, construct farm buildings and harvest crops. It was also characterized by active community social activities such as dances, ball games, and churchgoing. Although families might have lived some distance apart, neighbours always knew each other and could count on each other for help and support. A similar rural way of life still exists in many parts of Canada today. Approximately one out of every five Canadians lives in a rural settlement.

Canada's cities originally developed as centres of trade, as transportation hubs, as places where resources were processed, and as places where artisans could ply their trades. Cities were able to grow and develop once food production was efficient enough that not everyone had to be involved in farming or hunting and gathering activities. Consequently, **urban** dwellers could focus on other things such as industry and trade, developing the arts and culture, expanding service industries, and developing a variety of educational and recreational opportunities. Urban life is often viewed as very desirable and, over the years, many people, especially those in younger age groups, have migrated from rural and remote areas to the cities in order to live and work, and enjoy the amenities offered in urban centres. Today, approximately four out of five Canadians live in an urban centre.

There are advantages and disadvantages related to living in each type of settlement. Many Canadians may decide to stay in the settlement where they were born, while others may decide to move to another type of settlement for economic opportunities or other personal interests. All three types of settlements, however, are important components in the diverse fabric that makes up our Canadian society.



This may be a good time to ask your learning partner for help. Remember, your learning partner is anybody whom you choose to help you with your course.



Learning Activity 5.1

Rural, Urban, or Remote?

- 1. Differentiate between urban, rural, and remote.
- 2. Read the description for at least three of the following fictional places. Identify whether the fictional place is urban, rural, or remote and explain your thinking.

Fictional Place	Description	Urban, Rural, or Remote	Explain Your Thinking
Kelsey House	Kelsey House is a community situated on a pristine lake in northern Manitoba, 700 kilometres northeast of Winnipeg. It has a population of 1,500 people. The economy is centred on commercial fishing and tourism. The community has no year-round road access, but is accessible in winter by a winter road and in summer by ferry service.		
Birdtale	Birdtale is situated in western Manitoba. The primary source of Birdtale's income is from agriculture and related industries. The town serves as an agricultural service centre for the prosperous farming community in the area. Several more agriculture-related businesses operate in the surrounding municipality to further serve local farms. Cereal crops and oilseeds are principal crops, but livestock and specialty animals are becoming increasingly important to the economy. Tourism is a growing part of Birdtale's economy as well. The population of the town is 850.		
Dufferin	With a population of 695,000, Dufferin is one of Canada's largest centres. The city is home to three universities, two colleges, and several trade schools. Dufferin has a strong economy based on transportation, finance, manufacturing, agriculture, and education. It also has the third-busiest airport in Canada. The city has three professional sports teams: hockey, baseball, and football.		

Fictional Place	Description	Urban, Rural, or Remote	Explain Your Thinking
Zachary Rapids	Zachary Rapids is a community located 840 kilometres by air from Manitoba's capital city, Winnipeg. It is accessible via a paved highway and the nearest city is 300 kilometres northeast. The community began a century ago as an outpost for local traders, hunters, and trappers, and as a base for wilderness lodges and outposts. In the mid 1960s, the construction of three hydroelectric generating stations near the community caused an economic boom and the population quickly grew to close to 1600 people. Today, Zachary Rapids is bustling with numerous businesses and services. The community acts as a retail and shopping centre for a large number of small northern Manitoba communities. Goods and supplies are brought in by plane or by truck and are then redistributed to the communities that need them.		
Thunder Valley	6,000 people live in the parkland community of Thunder Valley. It is known as the gateway to northern Manitoba and is a bustling trading centre with a market area of over 20,000 people. Since its settlement, the town has thrived on agriculture. Almost 50% of the surrounding area is under cultivation. Most is seeded with grains and oilseeds, but many producers are diversifying to specialty crops. Woodlands around the town also support a large and prosperous forestry industry. Recreation and tourism are major parts of the Thunder Valley economy too.		

3. Look at the following chart of urban population versus rural population in Canada. Read the following questions and circle the best possible answer.

Region	Urban Population (% of Total Population)	Rural Population (% of Total Population)
Canada	80	20
Newfoundland	58	42
Prince Edward Island	45	55
Nova Scotia	55	45
New Brunswick	50	50
Quebec	81	19
Ontario	85	15
Manitoba	72	28
Saskatchewan	65	35
Alberta	81	19
British Columbia	85	15
Yukon	59	41
Northwest Territories	58	42
Nunavut	33	67

Source: Statistics Canada. "Statistics Canada 2001 Census". $\underline{www12.statcan.ca/english/census01/home/index.} cfm.$

<u>cfm</u>	•			
a) What is the total urban population of Canada?				Canada?
	a)	100%	c)	20%
	b)	80%	d)	10%
b)		which province or territory doo ban population?	es tl	ne rural population exceed the
	a)	British Columbia	c)	Nunavut
	b)	Yukon	d)	Saskatchewan
c) In which province or territor equally balanced?		1	the	e rural and urban populations most
	a)	New Brunswick	c)	Northwest Territories
	b)	Nova Scotia	d)	Newfoundland

- d) Which province or territory has the greatest percentage of urban dwellers out of the total population?
 - a) Quebec

- c) Alberta
- b) Prince Edward Island
- d) British Columbia
- e) If Canada's urban-rural population is 80%-20% respectively, which provinces most reflect the national settlement pattern?
 - a) Manitoba and Saskatchewan
 - b) British Columbia and Manitoba
 - c) Quebec and Alberta
 - d) Saskatchewan and Alberta
- 4. Read the case study that follows and answer the following questions.
 - a) Based on the reading and your own experience, what are the merits of living in a rural setting?
 - b) Based on the reading and your own experience, what are the merits of living in an urban setting?
 - c) What would you do if you were Sean? Sean's parents? Akina?
 - d) What do you think about Akina's concerns about moving to the farm?
 - f) Do you prefer rural or urban life?

Case Study: Urban versus Rural: Sean and Akina's Story

Sean grew up on his parents' dairy farm. As the only child, Sean had a lot of responsibility. Every morning, he would get up at 5:00 with his mother and father to prepare the cows for milking, making sure the mechanized milk pipeline worked properly. He also had other chores around the farm that he did after school and on the weekends.

Sean started working on the dairy farm with his parents when he was only four; his parents would assign him small tasks that a preschooler could handle. It was important to Sean's parents that he acquire a good work ethic, as well as respect for the farming business, which had sustained his family for generations. It was a hard but rewarding childhood and Sean grew to love the farm. He forged a strong relationship with his parents.

Case Study: Urban versus Rural: Sean and Akina's Story (continued)

After finishing high school at age 18, Sean went against his parents' wishes and left the farm for university to study biology and agriculture. The university was located in a city 250 kilometres away from the farm. Sean would spend the week at school (he had a dorm room in one of the university's residences) and would then travel home and spend the weekends on the farm. He loved going home on the weekends. Sean missed the perks of farm life: being connected to nature; seeing his labours and hard work rewarded; and feeling a sense of connectedness and belonging to the farm.

In his third year of university, Sean met and fell in love with Akina, a fellow student from Japan. Akina grew up in the Japanese city of Tokyo, with a combined (with sister city Yokohama) urban population of 33 million. Being a "city girl," Akina liked the amenities that city life had to offer. She liked live theatre and cultural pursuits such as museums and art galleries. She enjoyed the hustle and bustle of city life and the endless opportunities for jobs, leisure and recreation, education, and culture. Akina was very proud of her Japanese culture and heritage.

After several months of dating, Sean and Akina became engaged. Sean now faces a dilemma...

Once they are married, Akina wants Sean to move to Japan or at least to a large city on the west coast of Canada, such as Vancouver, which has a high population of Japanese people and other Japanese cultural pursuits. She does not want to live in a rural area where people do not understand Japanese culture and where there are none of the pursuits she enjoys. She is worried that if they live in the country, their children will never learn about their Japanese cultural heritage.

Sean's parents, however, want him to take over the farm once they retire. The farm has been in his family for five generations. Sean's great-great-great-grandfather invented a unique kind of cheese. The production of the cheese is a trade secret and Sean's parents want to teach it to him. While Sean's parents do not object to his having a Japanese fiancée, they have been very clear that they will "cut Sean out of their lives" if he does not come back to the farm.

Graduation is only six weeks away. What should Sean do?



You can now assess your learning activity by consulting the answer keys at the end of this module. Keep up the great work!

Summary

Canadians live in rural, urban, and remote settlements, with each type having its own set of advantages and disadvantages. The merits of living in each are based largely on the personal interests of and opportunities for the people living there. Many Canadians may decide to stay in the settlement they were born in, while others may decide to move to another type of settlement for economic opportunities or other personal interests. Some people prefer the closer relationship to nature that remote settlements offer. Others may prefer the traditions and sense of community that rural life has to offer. Still, others may be drawn to the excitement, opportunity, and anonymity of the city.

LESSON 2: LOCATION AND FUNCTION OF URBAN PLACES

Lesson Focus
By the end of this lesson, you will be able to
use Canadian examples to describe major functions of urban places
☐ locate major urban centres on a map of the world and on a map of North America
identify factors that influence the location of urban centres
☐ identify reasons for the emergence of particular cities as centres of power and wealth, including London, Tokyo, and New York

Introduction

In this lesson, you will consider the location and function of urban centres in North America and the world. You will investigate factors that influence the locations of cities and identify the geographic locations of major urban centres on maps of North America and the world. Also, you will examine the major functions of cities, using Canadian examples. Lastly, you will identify reasons for the emergence of particular world cities as influential centres of power and wealth.

Urban Revolution

Cities are a fact of life for almost half of the world's population. For the first time in history, urban dwellers now outnumber those living in rural areas. By the year 2025, the global urban population will have more than doubled from 2.4 billion in 1995 to 5 billion. This shift from rural to urban is regarded as the largest migration in history. It has also made the world's cities more important and influential than at any other time in the past.

Consider the importance of this urban migration. People move to cities because of the key features of contemporary (modern) life that can be found within cities. These include

- cultural centres
- museums and galleries
- newspapers, magazines, and other forms of media
- educational institutions
- jobs (cities usually account for 80% of a country's GNP)
- greater recreational activities

Why Are Cities Located Where They Are?

Why do people live together in urban groupings? The ultimate answer is rooted in the evolutionary past, when our ancestors banded together for their mutual survival.

The origins of cities date back to at least 5000 BCE (over 7000 years ago), which archeologists have unearthed in their discoveries in the Middle East. Cities developed as new farming techniques enabled people to produce more food than they needed; therefore, not all people were needed to obtain food. Urban centres gradually became places where products and services were traded for surplus food from the countryside. Early towns remained small because transportation was limited.

Settlers were likely to seek sites for their homes (and cities) close to resources with which they could earn a living or which they needed for their survival. Various places where settlements are likely to be established are detailed in the following table, with examples. Remember, many cities continue to grow and prosper long after the reasons for choosing the original site have been forgotten.

Natural Topography	Visual Representation	Example
Confluence of Two Rivers (the meeting of two rivers)	River Possible Settlement	Montreal Winnipeg
River Crossing	River Possible Settlement Bridge	Edmonton Kansas City
Natural Harbour	Possible Settlement Open Water Bay/Harbour	Halifax New York City
River Delta	Open Water Strips of Land Possible Settlement Settlement	New Orleans

Natural Topography	Visual Representation	Example
Portage Point (point between two rivers)	River Possible Settlement	Chicago
Defensive Hilltop	Hill Top Growth of Settlement Down Slope	Quebec City
Peninsula	Open Water Possible Settlement Open Water Peninsula	Boston

Where do you live? Why do you think the early settlers to the area chose that particular site for their settlement?

The Role and Functions of Cities

As you read previously, the growth of urban settlement was accompanied by new and more complex divisions of labour—not all people were needed to grow and raise food. Occupations such as trader, priest, and administrator appeared. These occupations had little to do with growing or gathering food. Thus, towns created an entirely new form of society in which occupations became specialized.

The location of a city, as you previously learned, has much to do with the geography of the area: settlers chose sites near the natural resources they needed. A city may grow and thrive for just one reason or for any number of reasons. Cities may grow to serve many functions, such as administration (government), defence, trade, finance, resources, and so on.

Consider the following Canadian cities:

Ottawa

European settlement began in 1800 when it was discovered that timber could be transported down the Ottawa River to Montreal: the city experienced a boom based almost solely on the timber trade. In 1857, Queen Victoria chose Ottawa as the capital of the then-province of United Canada because of its strategic location halfway between Montreal and Toronto. Today, Ottawa is the administrative centre of Canada and is home to a wealth of national museums, official residences, government buildings, memorials, and heritage structures.

■ Halifax

The modern city of Halifax was founded in 1759 by the British because of the presence of its naturally deep harbour (the second deepest in the world) which made it ideal for a military base. The city is still sometimes called the "Warden of the North" for its historic military role. The strength of the city's present-day economy rests on traditional defence and on jobs related to the port.

Vancouver

British Columbia's largest city is named after British explorer Captain George Vancouver. The city was incorporated in 1886, the same year that the first transcontinental train arrived. After that, Vancouver grew rapidly. Since the completion of the Panama Canal in 1914, which made it possible to ship grain exports west through the port of Vancouver, the city has grown to be the busiest seaport in Canada. Today, Vancouver is a centre of trade, exporting more cargo than any other port in North America.

■ Toronto

The modern City of Toronto was incorporated in 1834. It is Canada's largest city with a population of 5.5 million (2008). Toronto is a major international centre for business and finance. It is considered the financial capital of Canada. Toronto has a high concentration of banks and brokerage firms on Bay Street, in the Financial District. The Toronto Stock Exchange is the seventh-largest stock in the world.

Thompson

■ The modern city of Thompson, Manitoba began in 1956, when geologists discovered a major ore body in the region. Shortly thereafter, the mining company Inco Limited signed an agreement with the province and began constructing a mine, a mill, a smelter, and a town. In 1970, Thompson was incorporated as a city, having reached a population of 20,000. Queen Elizabeth II was present for the milestone celebration. At the time this course was written, the most prominent industry was the mining, milling, smelting, and refining of nickel. The total number of people in the City of Thompson's labour force equalled 3,389, with 42% employed at the Inco nickel mine.



Cities may have one or many roles/functions that lead to their establishment and continued growth. The functions and activities on which a city depends for its existence are known as the community's **economic base**. Cities provide services and produce goods for people. Often, these goods and services bring money into the city from the surrounding area or hinterland.

Take a minute and think about your community. What function does your community serve? Or, do you live in the hinterland?

Global Cities



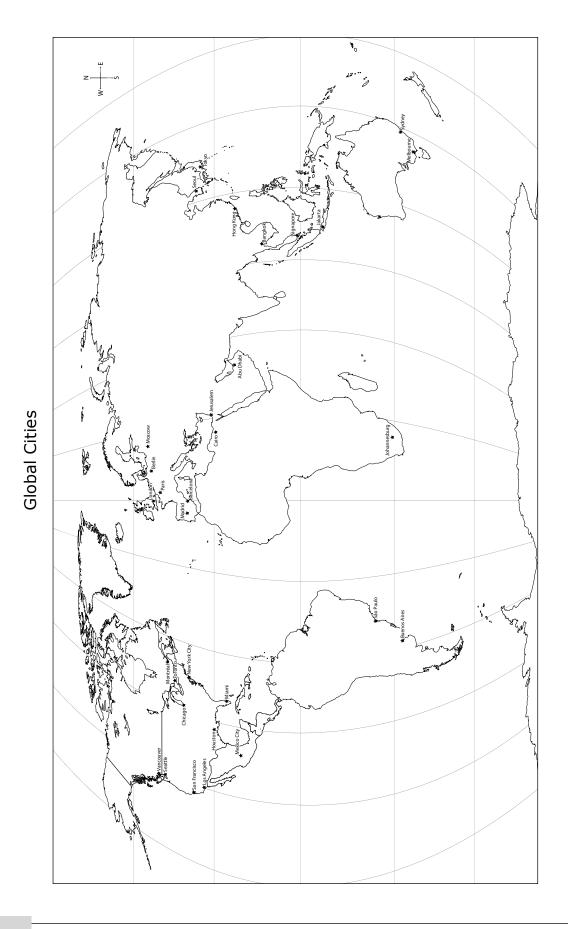
Some cities become so large and powerful that they have outstripped their national role and have come to prominence in the world sphere; for that reason, they are known as world cities or **global cities**. The term global city is thought to have been coined in 1991 to describe London, New York, and Tokyo. So, what makes a city a global city? What characteristics do London, New York, and Tokyo possess that make them global cities?

There has been debate among the world's academics as to exactly what characteristics a global city possesses. Most, however believe that a global city is one that

- is recognized by its first name only
 - For example, even though there is a London in Ontario, Ohio, and Kentucky, most people simply say London – not London, United Kingdom – when speaking of the global city.
- has an active influence on and participation in world affairs
 - For example, New York City is home to the United Nations General Assembly and several of its other missions.
- has a fairly large population of at least one million, if not substantially more
 - Tokyo's population is almost 13 million (2008). The Greater Tokyo Area (centred on Tokyo but also including Chiba, Kanagawa, and Saitama) has a population of over 35 million people.

- has a major international airport that acts as a centre for several international airlines
 - Heathrow Airport in London has the largest number of international passengers each year.
- has advanced transportation systems, such as networks of freeways, and several modes of mass transit (e.g., subways, ferries, or buses)
 - The London Underground (the subway system in London, also called The Tube) is used by over 1 billion passengers each year.
- in the West (North America and Western Europe), is made up of several international cultures and communities
 - For example, a city may have a "Chinatown" or a "Little Italy." New York has both.
- has a wide range of financial institutions, law firms, corporate headquarters, and stock exchanges that have influence over the world economy
 - The New York Stock Exchange is the largest stock exchange in the world.
- has world-renowned cultural institutions, such as museums and universities
 - Tokyo has many universities, junior colleges, and vocational schools. Many of Japan's most prestigious universities are in Tokyo, the University of Tokyo being considered the most prestigious.
- has a vibrant cultural and music/theatre scene; including film festivals, orchestras, operas, and art galleries
 - London is one of the major classical and popular music capitals of the world and is home to major music corporations, such as EMI and Decca Records, as well as countless bands, musicians, and industry professionals.
- is home to several media outlets that have a global reach; including things such as news services, newspapers, magazines, and television or radio stations
 - New York is a global centre for the television, advertising, music, newspaper, and book publishing industries, and is also the largest media market in North America. Seven of the world's top-eight global advertising agency networks are headquartered in New York.
- is home to several professional sporting teams, and has played a role in international sport by hosting events such as the Olympic Games, Football (Soccer) World Cup, or Grand Slam tennis events
 - Tokyo is home to two professional baseball clubs and two professional football (soccer) teams; the Japan Sumo Association is also headquartered in Tokyo; and the city was host to the 1964 Olympic Summer Games.

Module 5: Urban Places ■ 19



Global cities have become part of an international system. They are centres of political power, world trade, and communication, and they are leaders in banking and finance. Global cities attract world-stage entertainment and sporting spectacles. They are the headquarters of non-government organizations as well as international corporations. Global cities benefit from high levels of tourism. What Canadian cities are on the global cities map?



Learning Activity 5.2

Major Urban Centres in North America and the World



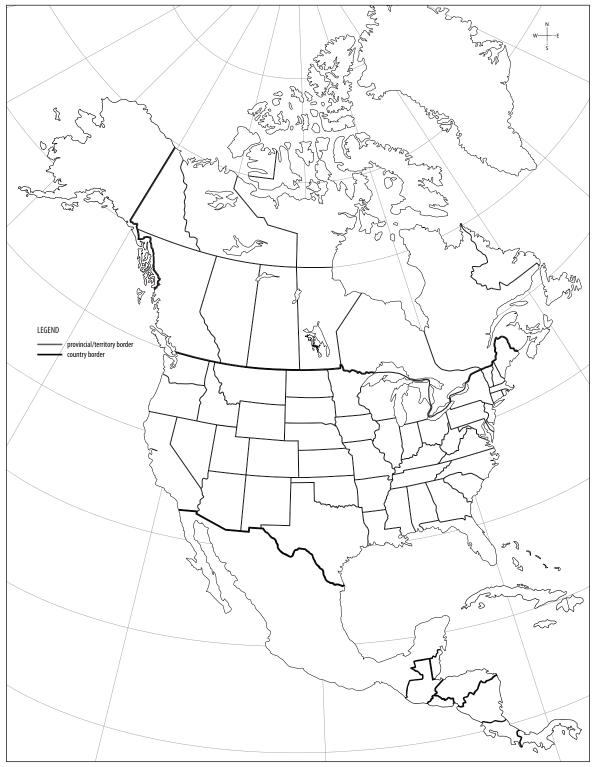


1. Using an atlas, or maps off the Internet, locate and indicate the major North American urban centres listed below on the map that follows.

Note: It may be difficult to place these locations on your map. Do your best to place them in the general area of their actual location. Also, remember to keep your map clear and easy to read. This means making labels a uniform size and placing them as close as possible to the location.

Major Urban Centres in North America		
Top 10 Largest Cities in Canada	Top 10 Largest Cities in the United States	Large Cities in Mexico
Toronto	New York City	Mexico City
Montreal	Los Angeles	Guadalajara
Vancouver	Chicago	
Calgary	Philadelphia	
Edmonton	Miami	
Ottawa	Dallas	
Quebec City	Boston	
Hamilton	Washington D.C.	
Winnipeg	Detroit	
Kitchener	Houston	

Major Urban Centres in North America

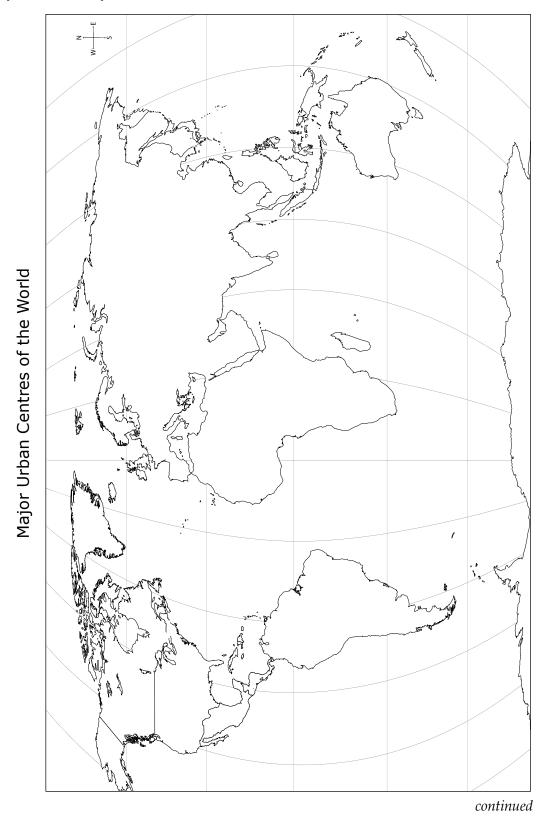


2. Using an atlas, or maps from the Internet, locate and indicate the following major urban centres of the world on the map that follows.



Note: It may be difficult to place these locations on your map. Do your best to place them in the general area of their actual location. Also, remember to keep your map clear and easy to read. This means making labels a uniform size and placing them as close as possible to the location.

Tokyo,	São Paulo,	Karachi,	London,
Japan	Brazil	Pakistan	United Kingdom
Delhi,	Mexico City,	Istanbul,	Rome,
India	Mexico	Turkey	Italy
Seoul,	Shanghai,	Buenos Aires,	Berlin,
South Korea	China	Argentina	Germany
Jakarta,	Cairo,	Rio de Janeiro,	Tehran,
Indonesia	Egypt	Brazil	Iran
Metro Manila, Philippines	Los Angeles, United States of America	Lagos, Nigeria	Johannesburg, South Africa
Mumbai,	Beijing,	Paris,	Sydney,
India	China	France	Australia
New York City, United States of America	Moscow, Russia	Chicago, United States of America	Toronto, Canada



- 3. Choose at least *two* statements below and answer the Gritzner question as indicated.
 - a) In the first few years of the 21st century, for the first time in history, urban dwellers outnumbered those living in rural areas. By the year 2025, the global urban population will have more than doubled from 2.4 billion in 1995 to 5 billion.

Gritzner Question: Why There?

b) Settlers were likely to seek sites for their homes (and cities) close to their key resources.

Gritzner Question: Why There?

- c) There are various types of places where settlements are likely to flourish. *Gritzner Question:* What Is Where?
- d) What characteristics do London, New York, and Tokyo possess that make them global cities?

Gritzner Question: Why There?

e) Global cities have become part of an international system.

Gritzner Question: Why Care?

- 4. Choose *three* of the following urban centres and describe their function and general location. In other words, is the urban centre administrative (government), defensive, good for trade, good for finance, or good for resources?
 - a) Halifax, Nova Scotia
 - b) Toronto, Ontario
 - c) Thompson, Manitoba
 - d) Ottawa, Ontario
 - e) Vancouver, British Columbia



Summary

Urban centres, in North America and throughout the world, have both their own unique location and function. The function of a city may be related to the provision of administration, defence, trade, or finance; or the result of the available resources in the area. The location of cities largely came about as a result of the available resources for the first settlers to the area. Some cities in the world have emerged as influential centres of power and wealth: the global cities.

LESSON 3: ENVIRONMENTAL AND ECONOMIC ISSUES

Lesson Focus	
By the and of this lesson, you will be able to	
By the end of this lesson, you will be able to	
identify issues related to urban growth and decline	
describe urban environmental and economic issues	
describe the role of urban planning and use examples to illustrate its importance	
 appreciate the interdependence between urban centres and hinterlands 	
hinterlands	

Introduction

In this lesson, you will examine many of the critical issues facing rapidly urbanizing societies in Canada and around the world. You will consider urban environmental and economic issues related to land use, infrastructure, as well as interactions with the hinterlands. The challenges of urban growth and decline, and the importance of urban planning in the development of better cities in the future will also be examined. Lastly, you will gain a greater understanding and appreciation of the interdependence between urban centres and their respective hinterlands.

Urbanization: An International Issue

The United Nations has several branches that are concerned with urban growth, urban development, urban decline, and urban issues in general. Urban issues are viewed as pressing *international* concerns. According to the United Nations Centre for Human Settlements (Habitat), more than 1.5 billion people in the world's cities will face life- and health-threatening environments by 2025, unless a revolution in urban problem-solving occurs.

Another division of the United Nations, the United Nations Development Program (UNDP), surveyed 151 city mayors worldwide about the key challenges facing local authorities as they entered the 21st century. The findings of the survey are ranked according to how prevalent the issue was, according to the mayors who were asked and the issue itself.

- 1. Unemployment
- 2. Insufficient solid waste disposal
- 3. Urban poverty
- 4. Inadequate housing
- 5. Insufficient solid waste collection
- 6. Inadequate water and sanitation facilities
- 7. Inadequate public transportation
- 8. Traffic congestion
- 9. Poor health services
- 10. Insufficient civil society participation
- 11. Inadequate education services
- 12. Air pollution
- 13. Urban violence/crime/personal safety
- 14. Discrimination (women, ethnic groups, poor)

Does the place where you live face any of the above-listed challenges? If your mayor, reeve, or chief were to participate in a survey such as this one, what do you think he or she would cite as the most pressing urban issues facing your community?

Urban Issues: Environmental and Economic

Cities have always been at the heart of economic growth, technological advances, and cultural production; however, as you read previously, their rapid growth has also brought forth negative issues such as pollution, unemployment, and traffic congestion.

Issues that concern the natural world (air, land, water) are environmental issues. Issues pertaining to jobs, industrial development, and trade are economic issues.

Many people are concerned about the deterioration of the urban natural environment. The effects of climate change, the loss of biodiversity, and a deteriorating environment affecting food supplies, water, energy, infrastructure, and the livability of cities are serious points to consider. The urban challenges of climate change alone may be noteworthy. Cities in the not-so-distant future will likely have to seriously investigate the possibilities of new and clean energy, a reorganization of where citizens live and work, and the options provided by new forms of eco-friendly transit.

Economic issues are also a major concern. These will be explored in the next section.



Learning Activity 5.3

Urban Environmental and Economic Issues



1. Consider the following terms and sort them into the appropriate column. The first one is completed for you as an example.

insufficient solid waste decaying urban environment unemployment declining property values depopulation depopulation property abandonment climate change unemployment air pollution

collection urban poverty loss of biodiversity

Environmental Issues	Economic Issues
insufficient solid waste disposal	urban poverty

Learning Activity 5.3: Urban Environmental and Economic Issues (continued)

- 2. Read the case study that follows and answer the following questions.
 - a) What recent developments have led to an increase in the population of Smalltown? How can these developments be seen as both negative and positive?
 - b) Outline the issue facing Smalltown concerning water and sewage service for the expanding town. Is this an environmental or economic issue?
 - c) Outline the issue facing Josh's family. Is this an environmental or economic issue?
 - d) Carefully read the section entitled *The Decision: Should the New Development Be Allowed to Proceed?* Pretend you are a citizen of Smalltown and you are making a presentation to town council favouring development. Make a list of pros that you may use as speaking notes.
 - e) Carefully read the section entitled *The Decision: Should the New Development Be Allowed to Proceed?* Pretend you are a citizen of Smalltown and you are making a presentation to town council opposing development. Make a list of cons that you may use as speaking notes.



Case Study: To Develop or Not to Develop? Background Information:

Josh lives in the small rural community of Smalltown in a prairie province. For many years, things remained much the same, with slow and manageable growth, mainly as a result of retired farmers moving into town. In recent years, however, there has been some concern as more and more people from a nearby city have been coming to live in Smalltown while commuting to the city for work. The positive impact has been that a larger population has led to the development of more businesses and job opportunities. The concern, however, is that the town may not be able to keep up in providing all the services that its residents have come to expect now that the population has almost doubled.

The major problem is related to water and sewage services. The town gets its water from a nearby lake via a pipeline that was constructed a long time ago and is already showing its age. The water is used not only for domestic purposes in town, but also for agricultural purposes by market gardens and small farms at the edge of town. The sewage system has reached capacity and has spilled into the river on several occasions. The town council is worried about the potential negative impact of a growing population.

Case Study: To Develop or Not to Develop? (continued)

Josh lives on a farm right next to town. His family has experienced difficult times as a result of various problems in the agricultural industry and they have had trouble paying their bills as of late. Now, there is talk that a construction company wants to buy some nearby farmland and develop a subdivision of 40 homes to attract more residents from the city. Josh's family has already had a good offer for their farm from the developer and is seriously thinking of selling their land.

The Decision: Should the New Development Be Allowed to Proceed?

The town council is meeting next week for a vote on whether the development should be allowed to proceed. Those in favour argue that the new development will create new growth, bring new business, create jobs, and bring in more tax revenue. Those opposed to the plan feel that the water and sewer system cannot handle the expansion and that the tax base simply cannot handle the cost of the required upgrades. Furthermore, additional services such as schools, hospitals, and emergency services will be required and they are not sure the town has the resources to pay for them. Some people also fear that city residents will bring city problems and that their quiet, safe rural life will be threatened. Those concerned about the environment fear that the loss of farmland will further reduce badly needed food production areas, and that the additional pressure on the sewer system may pollute the local river and bring harm to aquatic life, if not to humans.

What should the citizens and council of Smalltown do?

Urban Growth and Decline

Cities constantly grow outward, but they also frequently decay in the centre. Keeping that in mind, let's explore the issues associated with both this outward growth and this inner decay.



The widespread sprawl of the modern city—known as **urban sprawl**—has been made possible by the automobile. Automobiles (and other forms of mass transportation like high-speed trains, freeways, and subways) meant that people could live further away from where they worked. In the 1950s, **suburbs** popped up on the outer edges of Canadian and American cities. These new communities were less crowded than downtown areas and land was cheaper, which made home ownership more possible. In 1964, the Canadian government formed the Canadian Mortgage and Housing Corporation (CMHC), which offered low-cost loans for **mortgages**, which added to the exodus to the suburbs.

People flocked to these new homes, which usually had a big picture window, spacious lawns in the front and back, and an attached garage or carport. By 1961, 1.1 million of Canada's 18 million people lived in urban places, many in the new suburbs.

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As new freeways and suburbs lured businesses and residents away from the core of the city, the traditional heart of the city often decayed. Skilled workers, professionals, and particularly young families with children moved to the suburbs. These **suburbanites** travelled downtown only to work—they spent little or no time outside of the working day there, and spent no money in the urban centre of the city, either. In many cities, the central core soon featured deserted buildings, and those residents left behind were the poor, the unemployed, the homeless, the elderly, and the recent **immigrants** or **migrants**.



The central city often falls victim to the ills of urban *economic decay* (remember you read about environmental issues previously). It is characterized by **depopulation**, a shift from secondary to tertiary industries (manufacturing to service), property abandonment, high unemployment, political **disenfranchisement**, and a decaying urban environment (sometimes including contaminated land and outdated infrastructure like old subways or streetcars). As property values decline, city governments may favour spending money on infrastructure and other improvements in suburban areas.

The Role of the Urban Planner



As you just learned, cities change continually. These processes of change, which include not only urban sprawl and urban decay, but also physical weathering and air pollution, create problems, since a city's structure and layout must accommodate more people and changing patterns of living. It is the role of the urban planner to renew the city. **Urban renewal** is a complex and expensive process that requires careful planning.



Let's explore some of the terms associated with urban planning.

Zoning

Laws are usually passed by city governments controlling the kind and amount of development in an area. For example, some areas of a city are zoned for residences (homes) and others are zoned for businesses.

■ End-state planning

This is urban planning where plans are fixed from the start (like the preplanning and building of Thompson, Manitoba in the mid-1950s).

Structure planning

This is the continual modification of a city's layout.

Gentrification

This is the process of renewing and rebuilding formerly run-down residential or commercial areas. As a result of the renewal, higherincome groups often move into the area.

■ Comprehensive development areas

This involves the tearing down of old buildings and the construction of a completely planned urban unit, with housing (often high-rises to accommodate more people), shops, and recreation facilities.

As you learned previously, cities tend to decay in the centre. Consequently, urban planners are often charged with the task of trying to rejuvenate the inner city. Most planners given this mission agree on the following points:

- The reliance on vehicles should be reduced: emphasis on public transit, cycling, and walking paths should be a priority.
- Different types of business and residential activities should be mixed: shops, professional offices, and homes should all be located in relatively small neighbourhoods.
- Where possible (climate permitting), there should be squares, parks, and streets where people can meet and relax.

Heartland-Hinterland



Until the early 20th century, Canada was mainly an agricultural nation. Since then, it has become one of the most highly industrialized countries in the world; this has led to the development of a **heartland**. The heartland is the area of a region or country where we find an abundance of manufacturing and an abundance of population.

You may recall from Module 4 that in Canada, the heartland is located in southern Ontario and southwest Quebec. In the United States of America, it stretches along the northeast coast from Boston to Washington D.C. and extends west to the Ohio River Valley.



Often, the manufacturing industries found in the heartland are supplied with raw materials produced by the agricultural, mining, forestry, and fishing sectors (primary industries); this region is known as the **hinterland**. The relationship between the heartland and hinterland is known as the **heartland-hinterland** concept or the **core-periphery theory**.

In Canada, this concept helps us

- study the patterns of economic power (and what is produced in each) between the heartland and the hinterland
- understand that the relationship between heartland and hinterland is one of mutual dependency and cooperation
- realize that, in Canada's modern economy, neither region can exist without the other; the well-being of one directly affects the other
- recognize that these two regions show great contrasts, but they are interdependent



Learning Activity 5.4

Urban Planning and the Heartland-Hinterland



1. Choose at least *two* of the scenarios below. For each, describe the role of the urban planner by discussing the type of urban planning that will be required (e.g., zoning, end-state planning, structure planning, gentrification, and comprehensive development).

Statement 1:

"City C" has recently demolished an entire section of formerly rundown warehouse space near the coast. A multi-billion-dollar plan is being hatched to construct a completely new area with high-rises, shops, and a waterfront park.

What is the role of the urban planner?

Statement 2:

"City A" has recently bulldozed a dilapidated army base and barracks on 35 hectares of land. The land is flanked by a mall, green space, and residential neighbourhoods. City council is now in the midst of deciding what to do with the vacant area.

What is the role of the urban planner?

Statement 3:

A "City B" businessman has met with representatives of an inner city area to discuss the possibility of building a football stadium in the inner-city community. Parts of the discussions have centred on building a new fourlane bridge as well as reconstructing an old freeway.

What is the role of the urban planner?

Statement 4:

On the heels of the discovery of a large ore body in an uninhabited, largely pristine part of the province, Company XYZ is beginning the construction of a multi-million-dollar smelting and refining operation.

What is the role of the urban planner?

Learning Activity 5.4: Urban Planning and the Heartland–Hinterland (continued)

Statement 5:

A wealthy business group has just purchased a two-city-block section that was once a rundown residential area. Many of the houses are vacant and vandalized; some have a few occupants. The business group aims to refurbish some of the older, statelier properties.

What is the role of the urban planner?

2.	Fill in the blanks in the following text based on the information found in t section entitled "Heartland-Hinterland."	
	Canada was mainly an nation until the early 1900s. Since that time, Canada has become one of the world's most nations. This has led to the creation of a : an area in a country where one finds a concentration of both people and manufacturing.	
	The manufacturing industries that are found in this region are fed with, mainly from primary industries. The region of the country that supplies these resources for the heartland is known as the	
	The relationship between the manufacturing region and the raw material-producing region is known as the concept or the	
	In Canada, this concept helps us to understand that the relationship between the heartland and hinterland is one of and cooperation. Canada's modern economy is based on the of the heartland and hinterland.	

Summary

There are many issues facing rapidly urbanizing societies in Canada and around the world. Several issues are of an environmental and economic scope, including issues related to land use, infrastructure, and interactions with the hinterlands. Urban planning is continually increasing in importance as the development of better cities will be a must in the future.

Notes

LESSON 4: THE IMPACT OF URBANIZATION

Lesson Focus	
By the end of this lesson, you will be able to	
analyze urban social issues	
describe the impact of urbanization on Canadian ways of life	
ualue the social diversity of urban centres	
\	

Introduction

In this lesson, you will be asked to consider the positive and negative impacts of the trend towards increasing urbanization. You will analyze a variety of social issues common in urban centres. You will also examine the impact of urbanization on Canadians' lives, with particular emphasis on valuing the social diversity of the population of Canadian cities.

Urban Issues: Social

In the previous lesson, you studied urban issues that were of an environmental and economic scope. In this lesson, you will focus on urban issues of a social nature. (Social issues pertain to people.)

In 1867, when Canada became a country, about 80% of Canadians lived in rural areas. Today, almost 80% of the population lives in towns and cities. Cities drew migrants then as they do now with the promise of jobs and higher living standards. City residents have greater access to health care, employment opportunities, and social and cultural events.

For all the relative advantages of city life, however, poverty still casts a shadow over the urban landscape. A number of people in urban areas are threatened by homelessness and violence, among other things. These may affect a portion of the urban population directly, but their indirect effects are felt by the whole society.

Homelessness is a growing problem in Canada and cities throughout the world. People who are homeless or live in poor housing are often threatened by illnesses and have a much lower life expectancy than the rest of the population.

Widespread crime and violence are other urban problems. Globally, urban violence has been growing by about 3% to 5% a year over the last two decades. Poverty and social disintegration are often named as the causes of urban crime and violence.

A 2007 survey by the Canada West Foundation reported that the majority of urbanites in western Canada and Toronto rated reducing homelessness as a high priority. In seven of Canada's largest cities—Vancouver, Calgary, Edmonton, Regina, Saskatoon, Winnipeg, and Toronto—respondents reported feeling safe in their own neighbourhoods during the day; however, the majority were "scared to set foot in" parts of their city.

Social Diversity in Urban Centres



Another poll conducted in 2005 by the *National Post*, the Dominion Institute, and Innovative Research, asked Canadians: What makes Canada unique? In addition to "freedom" and "geography," Canadians also cited our diverse, pluralistic population. The word **pluralism** refers to a society in which members of varied ethnic, racial, religious, or social groups maintain their traditional culture while playing a role in the larger national culture.

Canada's pluralism is overwhelmingly urban in nature. By international standards, Canada's largest cities have very socially diverse populations. Immigrants, for the most part, are attracted to Canada's cities. According to Statistics Canada (2003), the Census Metropolitan Areas of Toronto and Vancouver have a higher percentage—over 40% in each case—of foreign-born residents than other global cities such as New York and Los Angeles.

Social diversity in Canadian cities is not limited to the presence of recent immigrants. According to the 2006 Canadian census, approximately 50% of Canada's First Nations, Métis, and Inuit population live in cities, with the cities of western Canada having a particularly visible First Nations, Métis, and Inuit population. Likewise, this same census indicated that 74% of First Nations, Métis, and Inuit Peoples in Manitoba are urban dwellers, with Winnipeg having the largest urban First Nations, Métis, and Inuit population in the country.

Social diversity is thus a defining characteristic of Canada's big cities. This urban social diversity enriches Canada by

- introducing new demands for cultural goods and services in areas such as tourism, food, media, and the arts
- changing patterns of communication, worship, ways of interacting with society, and political participation; all of which make Canadian cities become more a part of the global village
- promoting a cosmopolitan (international) lifestyle and a creative urban culture

Some people fear that Canada's growing, socially diverse urban landscape will result in the erosion of Canadian values; it is felt that Canadian culture and symbols are being discarded in order to accommodate other cultures. On the other hand, defenders of Canada's urban multiplicity argue that social diversity serves only to enrich Canada.



Learning Activity 5.5

Urban Social Issues



- 1. Define urban social issues.
- 2. Describe how urbanization has affected Canadians' way of life since 1867.
- 3. Make a list of pros and cons associated with life in the city. One example is done for you.

Pros	Cons
opportunity for higher living standards	increased levels of violence

4. Is Canada's ever-increasing urban social diversity an advantage or a disadvantage? Does increased pluralism erode Canadian identity or make it more global?

The way you answer this question depends on your values. Suppose you consider it an asset to have Canada's cities populated with a high number of foreign-born peoples. It is not likely that everyone will agree with you, since everyone has different values.

Values can be assessed by means of the following tests. These tests address principles that can provide you with a basis for making value judgments confidently and thoughtfully.

The Role Exchange Test

The role exchange test involves imagining yourself in the situation of another person. This is also called empathy. To perform this test, ask yourself, "How would I like that done to me?" After you have answered that question, you can make a thoughtful value judgment of an action.

Learning Activity 5.5: Urban Social Issues (continued)

The Universal Consequences Test

The universal consequences test involves imagining the consequences of everyone performing the action that you are trying to judge. To perform this test, ask yourself, "What if everyone did that?" The answer to this question will lead you to a fairer value judgment of the action.

The New Cases Test

The new cases test gives you an opportunity to apply the action you are trying to judge to a distinct but similar situation. To perform this test, ask yourself, "Are there any other situations that are similar to this?" Once you have answered this question, you can form a thoughtful value judgment on the action you wish to assess.

Read at least two of the following dialogues and answer the questions based on the dialogue.

Dialogue 1

Scott: I don't think we should let so many immigrants come into Canada. They are congregating in cities and aren't really Canadian.

Mark: So you believe that Canada should stop all immigration?

Scott: That's right! We have our own people who are constantly moving to cities from rural areas. We don't need more foreigners!

Mark: Does that mean that you didn't enjoy our evening at the Chinese cultural festival last week? Where do you think the arts, foods, and cultural events originated? What if all immigration was stopped?

Scott: Well....that's different. Our city's "Chinatown" has been here a long time....

- a) What test is Mark using to challenge Scott?
- b) Does Scott meet Mark's challenge appropriately? Explain.
- c) How would you meet Mark's challenge?

Learning Activity 5.5: Urban Social Issues (continued)

Dialogue 2

Maria: I spent last week in Toronto at my aunt's. What a horrible city—I don't think I saw one person who looked like a "real" Canadian. I swear that city is full of foreigners. I don't know why Canada has to let in every poor and starving person from all the world's countries....

Terri: But suppose you were really poor and starving. Suppose you had the opportunity to come and live in Canada for a better life. Wouldn't you want the opportunity for a better future for you and your family?

Maria: Hmmm, I guess so...

- a) What test is Terri using to challenge Maria?
- b) Does Maria meet Terri's challenge appropriately? Explain your answer.
- c) How would you meet Terri's challenge?

Dialogue 3

Kevin: We ought to celebrate the cultural diversity of our city and school by holding a culturally themed dinner and arts event once a month at school.

Shayne: You mean you want every class and every student at our school to do that?

Kevin: Sure, why not? Our school is rich with cultural heritage, as is our city. We can learn so much from each other.

Shayne: What if not everyone is for your idea? What if some classes and students don't want to participate?

Kevin: I'd only want those people who were willing to share and learn to take part, of course.

Shayne: What if people don't think this idea is so great?

Kevin: I still think that people will be enriched if they share their culture and learn about others' as well. All you have to do is walk around the streets of our city to see the cultural richness in which we all live.



- a) What test is Shayne using to challenge Kevin?
- b) Does Kevin meet Shayne's challenge appropriately? Explain your answer.
- c) How would you meet Shayne's challenge?

Summary

There are positive and negative impacts associated with the trend towards increasing urbanization; many of these are of a social nature. Canada's cities are increasing in their social diversity and with that change come both opportunities and challenges for Canada as a whole.



Urban Places (55 marks)

Review the material from the Module 5 lessons and learning activities in order to complete the assignment. Be sure to read the questions carefully and to provide answers in complete sentences. Please remember that you must write answers in your own words. Do not copy information directly from any of your sources. Keep the mark value of each question in mind as you do the assignment and develop your answers accordingly.

1.	Se	Settlements can be urban, rural, or remote.			
	a)	What is the difference between the three types of settlements? Support your response with a Manitoba example of each. (3 marks)			
	b)	Using your own experiences, perceptions, and what you have learned, make a list of the merits of living in an urban, a rural, and a remote community. List at least <i>one</i> merit for each. (3 marks)			

2.	Major urban centres are often located in specific regions.			
	a)	List at least <i>five</i> major urban centres in North America and, using landmarks and other indicators, describe their general location on the continent. (5 marks)		
	b)	List at least <i>seven</i> major urban centres in the world and, using landmarks and other indicators, describe their general location on the planet. (7 marks)		
	c)	What is the key feature that influences the location of an urban centre? Support your answer with at least <i>three</i> examples of this location factor. (4 marks)		

3. In the following chart, indicate the major function of the following Canadian urban centres. (5 *marks*)

City	Major Function
Halifax	
Vancouver	
Toronto	
Ottawa	
Thompson	

4. As improved technology increases our ability to move to and communicate with other parts of the world, certain cities have become global cities.

What is a global city? Support your answer with an example of a global city. (2 <i>marks</i>)
Describe how global cities have become part of a larger international scene. (2 <i>marks</i>)

5. For each urban issue in the chart, provide at least two concrete examples. (6 marks)

Urban Issue	Examples
Social	
Economic	
Environmental	

6. Carefully study the following photographs. Choose at least four photographs and, in the space provided, identify the issue that is being depicted as it relates to urban growth and decline. After you identify the issue, write a short explanation relating the issue to the photo. (3 marks per photo for a total of 12 marks)



Note: Issues you may choose from include urban sprawl, homelessness, urban renewal, urban/inner city decay, depopulation, and urban planning.

Photograph 1



Issue	
Explanation	

Photograph 2



Issue	
Explanation	

Photograph 3



Issue	
Explanation	

Photograph 4



Issue	
Explanation	

Photograph 5



Issue	
Explanation	

Photograph 6



Issue	
Explanation	

7.	What is meant by the term heartland-hinterland theory? Develop your answer with at least three clear and distinct points. (3 marks)		

8.	Describe the impact of urbanization on the Canadian way of life since 1867. Develop your answer with at least three clear and distinct points. (3 marks)			

MODULE 5 SUMMARY

Congratulations, you have completed Module 5!

Module 5 focused on urbanization and the related issues both in Canada and on a global level. It looked at urban, rural, and remote settlement patterns and the factors that determined those patterns. Module 5 also examined urbanization and the factors that influence where large cities develop, the function of those large centres, and the reasons why large world cities become centres of power.

This module raised some of the concerns around urbanization, including environmental and economic issues, urban growth and decline, and the interaction between the heartland and the hinterland. It also raised the issue of the social impact of urbanization, including not only an increase in homelessness and violence, but an increase in social diversity and the associated benefits.

Module 5 once again offered an opportunity to consider the question that is at the heart of the study of geography, "What is where, why there, and why care?"



Submitting Your Assignments

It is now time for you to submit Assignment 5.1 to the Distance Learning Unit so that you can receive some feedback on how you are doing in this course. Remember that you must submit all the assignments in this course before you can receive your credit.

Make sure you have completed all parts of your Module 5 assignment and organize your material in the following order:

☐ Module 5 Cover Sheet (found at the end of the course Introduction	n)
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Assignment 5.1: Urban Places

For instructions on submitting your assignments, refer to How to Submit Assignments in the course Introduction.

Final Examination



Congratulations, you have finished the last module in this course. The final examination is out of 100 marks and worth twenty-five percent (25%) of your final mark. In order to do well on this examination, you should review all of your learning activities and assignments from Modules 3 to 5.

You will complete this examination while being supervised by a proctor. You should already have made arrangements to have the examination sent to the proctor from the Distance Learning Unit. If you have not yet made arrangements to write it, do so now. The instructions for doing so are provided in the Introduction to this module.

You will need to bring the following items to the examination: pens/pencils and scrap paper. A maximum of 2.5 hours is available to complete your final examination. When you have completed it, the proctor will then forward it for assessment. Good luck!

Examination Review

You are now ready to begin preparing for your final examination. Please review the content, learning activities, and assignments from Modules 3 to 5.

The Final Practice Examination is also an excellent study aid for reviewing Modules 3, 4, and 5.

You will learn what types of questions will appear on the examination and what material will be assessed. Remember, your mark on the final examination determines twenty-five percent (25%) of your final mark in this course and you will have 2.5 hours to complete the examination.

Final Practice Examination and Answer Key

To help you succeed in your examination, a practice examination can be found in the learning management system (LMS). The final practice examination is very similar to the actual examination that you will be writing. The answer key is also included so that, when you have finished writing the practice examination, you can check your answers. This will give you the confidence that you need to do well on your examination. If you do not have access to the Internet, contact the Distance Learning Unit at 1-800-465-9915 to get a copy of the practice examination and the answer key.

Examination Format

The final examination consists of seven types of questions, the values of which combine to a total of 100 marks:

- Multiple Choice: 20 marks
 - In the multiple choice section of the examination, you will choose the single best answer to each of the questions given.
- Fill in the Blanks: 8 marks
 - There will be sentences with blanks that need to be filled-in to complete the sentence. The word list is not provided.
- Matching: 6 marks
 - You will match a list of 6 terms with corresponding definitions. Each definition will be used only once.
- Definitions: 10 marks
 - Review the glossary in the appendix of the course for the list of terms and definitions. This glossary has all the terms for the entire course. Remember that you are preparing for the final examination which covers the terms found in modules 3 to 5.
- Mapping: 21 marks
 - A map will be provided and you will be required to label the map.
- Short Answer: 19 marks
 - A short paragraph is required for six questions.
- Long Answer: 16 marks
 - You will be asked to choose 2 out of 3 long-answer questions given and answer each question clearly and thoroughly in the space provided. Refer to *A Very Brief Guide to Writing an Essay* to help you prepare for your final examination. This guide can be found in the appendix section of this course.

Notes

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Module 5 Urban Places

Learning Activity Answer Key

MODULE 5: Urban Places

Learning Activity 5.1: Rural, Urban, or Remote?

- 1. Differentiate between urban, rural, and remote.
 - Urban
 - Towns or cities with a population of more than 1,000
 - Rural
 - Outside towns or cities
 - Remote
 - Means out of the way, or located far from the main centres of population and society
- 2. Read the description for at least three of the following fictional places. Identify whether the fictional place is urban, rural, or remote and explain your thinking.

Fictional Place	Description	Urban, Rural, or Remote	Explain Your Thinking
Kelsey House	Kelsey House is a community situated on a pristine lake in northern Manitoba, 700 kilometres northeast of Winnipeg. It has a population of 1,500 people. The economy is centred on commercial fishing and tourism. The community has no year-round road access, but is accessible in winter by a winter road and in summer by ferry service.	Remote	Even though Kelsey House has a population of over 1,000, it is located 700 km away from the nearest city and is accessible only by winter road and ferry.
Birdtale	Birdtale is situated in western Manitoba. The primary source of Birdtale's income is from agriculture and related industries. The town serves as an agricultural service centre for the prosperous farming community in the area. Several more agriculture related businesses operate in the surrounding municipality to further serve local farms. Cereal crops and oilseeds are principal crops, but livestock and specialty animals are becoming increasingly important to the economy. Tourism is a growing part of Birdtale's economy as well. The population of the town is 850.	Rural	Birdtale is a small community that serves an agricultural area.

continued

Fictional Place	Description	Urban, Rural, or Remote	Explain Your Thinking
Dufferin	With a population of 695,000, Dufferin is one of Canada's largest centres. The city is home to three universities, two colleges, and several trade schools. Dufferin has a strong economy based on transportation, finance, manufacturing, agriculture, and education. It also has the third-busiest airport in Canada. The city has three professional sports teams: hockey, baseball, and football.	Urban	Dufferin is a large city.
Zachary Rapids	Zachary Rapids is a community located 840 kilometres by air from Manitoba's capital city, Winnipeg. It is accessible via a paved highway and the nearest city is 300 kilometres northeast. The community began a century ago as an outpost for local traders, hunters, and trappers, and as a base for wilderness lodges and outposts. In the mid 1960s, the construction of three hydroelectric generating stations near the community caused an economic boom and the population quickly grew to close to 1,600 people. Today, Zachary Rapids is bustling with numerous businesses and services. The community acts as a retail and shopping centre for a large number of small northern Manitoba communities. Goods and supplies are brought in by plane or by truck and are then redistributed to the communities that need them.	Remote/Urban	Zachary Rapids' population, transportation links, and economic base make it urban; however, its distance from the nearest city makes it remote in some ways.
Thunder Valley	6,000 people live in the parkland community of Thunder Valley. It is known as the gateway to northern Manitoba and is a bustling trading centre with a market area of over 20,000 people. Since its settlement, the town has thrived on agriculture. Almost 50% of the surrounding area is under cultivation. Most is seeded with grains and oilseeds, but many producers are diversifying to specialty crops. Woodlands around the town also support a large and prosperous forestry industry. Recreation and tourism are major parts of the Thunder Valley economy too.	Urban	Thunder Valley's population is in excess of 6,000.

3. Look at the following chart of urban population versus rural population in Canada. Read the following questions and circle the best possible answer.

Region	Urban Population (% of Total Population)	Rural Population (% of Total Population)
Canada	80	20
Newfoundland	58	42
Prince Edward Island	45	55
Nova Scotia	55	45
New Brunswick	50	50
Quebec	81	19
Ontario	85	15
Manitoba	72	28
Saskatchewan	65	35
Alberta	81	19
British Columbia	85	15
Yukon	59	41
Northwest Territories	58	42
Nunavut	33	67

Sou cfm		Statistics Canada. "Statistics Canada 2001 Ce	ensus	". www12.statcan.ca/english/census01/home/index
a)	W	hat is the total urban population	n of	f Canada?
	a)	100%	c)	20%
	b)	80%	d)	10%
b)		which province or territory doo ban population?	es tl	he rural population exceed the
	a)	British Columbia	c)	Nunavut
	b)	Yukon	d)	Saskatchewan
c)		which province or territory are ually balanced?	the	e rural and urban populations most
	a)	New Brunswick	c)	Northwest Territories
	b)	Nova Scotia	d)	Newfoundland

- d) Which province or territory has the greatest percentage of urban dwellers out of the total population?
 - a) Quebec c) Alberta b) Prince Edward Island d) British Columbia

- e) If Canada's urban-rural population is 80%-20% respectively, which provinces most reflect the national settlement pattern?
 - a) Manitoba and Saskatchewan
 - b) British Columbia and Manitoba
 - c) Quebec and Alberta
 - d) Saskatchewan and Alberta
- 4. Read the case study that follows and answer the following questions.
 - a) Based on the reading and your own experience, what are the merits of living in a rural setting?

Your answers will vary depending on your experiences and opinions. The following is an example of a good answer.

People who live in rural areas are often closer to nature, closer to community members, and live in a slower-paced, more relaxed setting.

b) Based on the reading and your own experience, what are the merits of living in an urban setting?

Your answers will vary depending on your experiences and opinions.

- c) What would you do if you were Sean? Sean's parents? Akina? Your answers will vary depending on your experiences and opinions.
- d) What do you think about Akina's concerns about moving to the farm? Your answers will vary depending on your experiences and opinions.
- f) Do you prefer rural or urban life?

Your answers will vary depending on your experiences and opinions.

Case Study: Urban versus Rural: Sean and Akina's Story

Sean grew up on his parents' dairy farm. As the only child, Sean had a lot of responsibility. Every morning, he would get up at 5:00 with his mother and father to prepare the cows for milking, making sure the mechanized milk pipeline worked properly. He also had other chores around the farm that he did after school and on the weekends.

Sean started working on the dairy farm with his parents when he was only four; his parents would assign him small tasks that a preschooler could handle. It was important to Sean's parents that he acquire a good work ethic, as well as respect for the farming business, which had sustained his family for generations. It was a hard but rewarding childhood and Sean grew to love the farm. He forged a strong relationship with his parents.

After finishing high school at age 18, Sean went against his parents' wishes and left the farm for university to study biology and agriculture. The university was located in a city 250 kilometres away from the farm. Sean would spend the week at school (he had a dorm room in one of the university's residences) and would then travel home and spend the weekends on the farm. He loved going home on the weekends. Sean missed the perks of farm life: being connected to nature; seeing his labours and hard work rewarded; and feeling a sense of connectedness and belonging to the farm.

In his third year of university, Sean met and fell in love with Akina, a fellow student from Japan. Akina grew up in the Japanese city of Tokyo, with a combined (with sister city Yokohama) urban population of 33 million. Being a "city girl," Akina liked the amenities that city life had to offer. She liked live theatre and cultural pursuits such as museums and art galleries. She enjoyed the hustle and bustle of city life and the endless opportunities for jobs, leisure and recreation, education, and culture. Akina was very proud of her Japanese culture and heritage.

After several months of dating, Sean and Akina became engaged. Sean now faces a dilemma...

Once they are married, Akina wants Sean to move to Japan or at least to a large city on the west coast of Canada, such as Vancouver, which has a high population of Japanese people and other Japanese cultural pursuits. She does not want to live in a rural area where people do not understand Japanese culture and where there are none of the pursuits she enjoys. She is worried that if they live in the country, their children will never learn about their Japanese cultural heritage.

Sean's parents, however, want him to take over the farm once they retire. The farm has been in his family for five generations. Sean's great-great-great-grandfather invented a unique kind of cheese. The production of the cheese is a trade secret and Sean's parents want to teach it to him. While Sean's parents do not object to his having a Japanese fiancée, they have been very clear that they will "cut Sean out of their lives" if he does not come back to the farm.

Graduation is only six weeks away. What should Sean do?

Learning Activity 5.2: Major Urban Centres in North America and the World

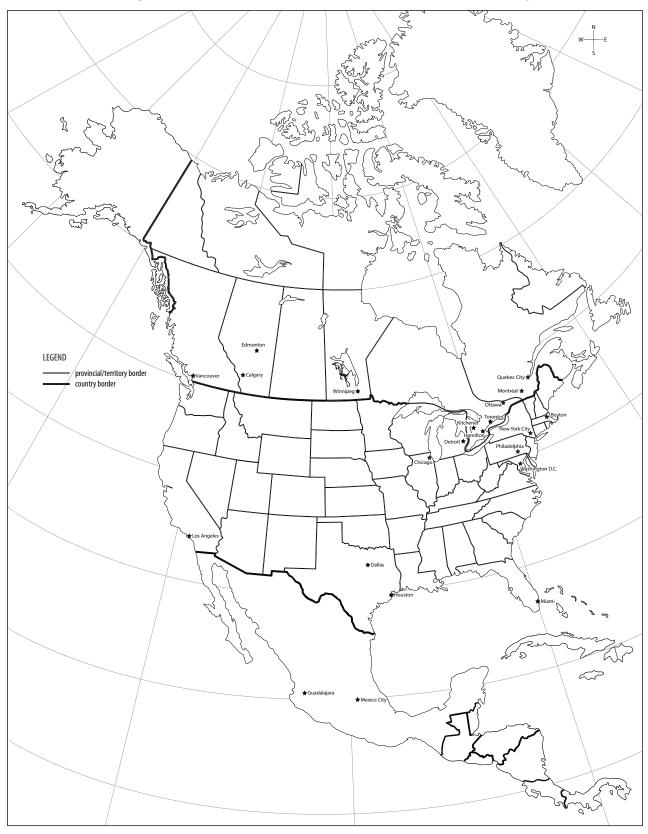
1. Using an atlas, or maps off the Internet, locate and indicate the major North American urban centres listed below on the map that follows.



Note: It may be difficult to place these locations on your map. Do your best to place them in the general area of their actual location. Also, remember to keep your map clear and easy to read. This means making labels a uniform size and placing them as close as possible to the location.

Major Urban Centres in North America				
Top 10 Largest Top 10 Largest Cities in Canada Cities in the United States		Large Cities in Mexico		
Toronto	New York City	Mexico City		
Montreal	Los Angeles	Guadalajara		
Vancouver	Chicago			
Calgary	Philadelphia			
Edmonton	Miami			
Ottawa	Dallas			
Quebec City	Boston			
Hamilton	Washington D.C.			
Winnipeg	Detroit			
Kitchener	Houston			

Major Urban Centres in North America—Answer Key

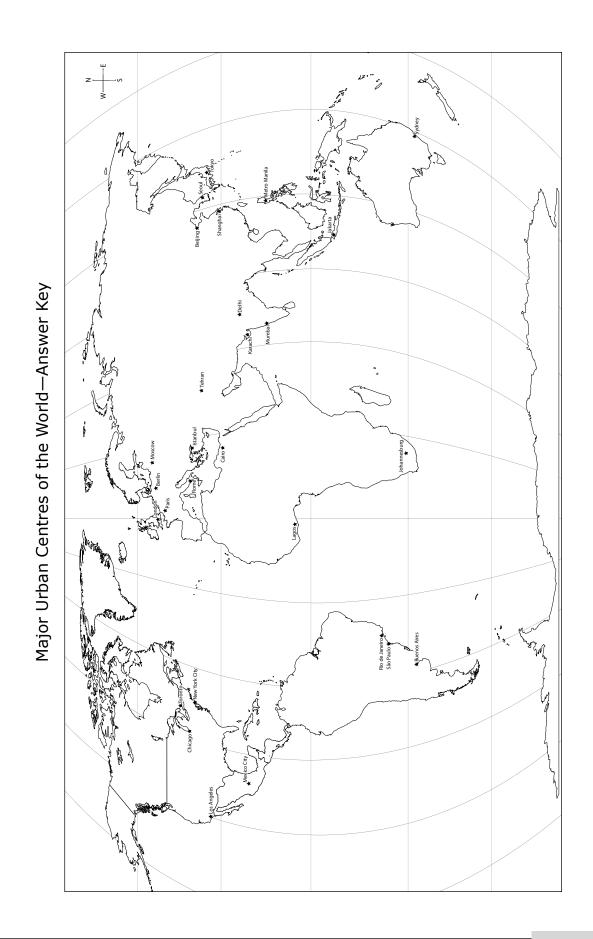


2. Using an atlas, or maps from the Internet, locate and indicate the following major urban centres of the world on the map that follows.



Note: It may be difficult to place these locations on your map. Do your best to place them in the general area of their actual location. Also, remember to keep your map clear and easy to read. This means making labels a uniform size and placing them as close as possible to the location.

Tokyo,	São Paulo,	Karachi,	London,
Japan	Brazil	Pakistan	United Kingdom
Delhi,	Mexico City,	Istanbul,	Rome,
India	Mexico	Turkey	Italy
Seoul,	Shanghai,	Buenos Aires,	Berlin,
South Korea	China	Argentina	Germany
Jakarta,	Cairo,	Rio de Janeiro,	Tehran,
Indonesia	Egypt	Brazil	Iran
Metro Manila, Philippines	Los Angeles, United States of America	Lagos, Nigeria	Johannesburg, South Africa
Mumbai,	Beijing,	Paris,	Sydney,
India	China	France	Australia
New York City, United States of America	Moscow, Russia	Chicago, United States of America	Toronto, Canada



- 3. Choose at least *two* statements below and answer the Gritzner question as indicated.
 - a) In the first few years of the 21st century, for the first time in history, urban dwellers outnumbered those living in rural areas. By the year 2025, the global urban population will have more than doubled from 2.4 billion in 1995 to 5 billion.

Gritzner Question: Why There?

People move to cities because of the presence of key features of modern life: cultural centres, museums, and galleries; newspapers, magazines, and other forms of media; educational institutions, jobs, and greater recreational activities.

b) Settlers were likely to seek sites for their homes (and cities) close to their key resources.

Gritzner Question: Why There?

People sought places near resources from which they could earn a living or which they needed the most often.

c) There are various types of places where settlements are likely to flourish. *Gritzner Question:* What Is Where?

Cities often developed in places where water (river, ocean, or lake) could provide food, drinkable water, power, and transportation. Cities may be located at sites such as river crossings, the confluence of two rivers, natural harbours, deltas, portage points, etc. Some city sites were chosen because of the benefits geography offered, such as a defensive hilltop site.

d) What characteristics do London, New York, and Tokyo possess that make them global cities?

Gritzner Question: Why There?

- They are recognized by their first name only.
- They have a fairly large population of a least one million.
- They have major international airports.
- They have advanced transportation systems.
- They are made up of several international cultures and communities.
- They have a wide range of financial institutions, law firms, corporate headquarters, and stock exchanges that have influence over the world economy.
- They have world-renowned cultural institutions, such as museums and universities.

- They have a vibrant cultural, music, and theatre scene; including film festivals, orchestras, operas, and art galleries.
- They are home to several media outlets that have a global reach. These may include things such as news services, newspapers, magazines, and television or radio stations.
- They are home to several professional sporting teams, and have played a role in international sport.
- e) Global cities have become part of an international system.

Gritzner Question: Why Care?

Decisions made and events that occur in international cities affect the globe: economically, politically, culturally, and environmentally.

4. Choose *three* of the following urban centres and describe their function and general location. In other words, is the urban centre administrative (government), defensive, good for trade, good for finance, or good for resources?

a) Halifax, Nova Scotia

Halifax has a port located on the Halifax Harbour. The city is located on the southeast coast of Nova Scotia. Defence and trade are important functions.

b) Toronto, Ontario

Toronto is located on the northwestern shore of Lake Ontario; its borders are formed by Lake Ontario to the south, Etobicoke Creek to the west, Steeles Avenue to the north, and the Rouge River to the east. Administration and finance are a major function in Toronto.

c) Thompson, Manitoba

Thompson is located 739 kilometres north of Winnipeg; it is on the Burntwood River. Thompson has many natural resources.

d) Ottawa, Ontario

Ottawa is located in the Ottawa valley. Its function is largely administrative as the capital of Canada.

e) Vancouver, British Columbia

Vancouver is a coastal city located in the Lower Mainland of southwestern British Columbia; it is bounded by the Strait of Georgia, the Fraser River, and the Coast Mountains. The major port makes Vancouver's function trade-related.

Learning Activity 5.3: Urban Environmental and Economic Issues

1. Consider the following terms and sort them into the appropriate column. The first one is completed for you as an example.

insufficient solid waste

disposal

decaying urban environment depopulation

climate change unemployment

air pollution

declining property values insufficient solid waste

collection

property abandonment

urban poverty

loss of biodiversity

Environmental Issues	Economic Issues	
insufficient solid waste disposal	urban poverty	
insufficient solid waste collection	property abandonment	
climate change	decaying urban environment	
loss of biodiversity	declining property values	
air pollution	unemployment	
	depopulation	

- 2. Read the case study that follows and answer the questions.
 - a) What recent developments have led to an increase in the population of Smalltown? How can these developments be seen as both negative and positive?

In recent years, more and more people from a nearby city have been coming to live in Smalltown while commuting to the city for work. Negative aspects include the fact that the town may not be able to keep up in providing all the services that its residents have come to expect—the major problem is related to water and sewage services. The positive impact has been that a larger population has led to the development of more businesses and job opportunities.

- b) Outline the issue facing Smalltown concerning water and sewage service for the expanding town. Is this an environmental or economic issue?
 - The town gets its water from a nearby lake via a pipeline that was constructed a long time ago and is already showing its age. The water is used not only for domestic purposes in town, but also for agricultural purposes by market gardens and small farms at the edge of town. The sewage system has reached capacity and indeed has spilled into the river on several occasions. The town council is worried about the potential negative impact of a growing population.

- The issue may be either environmental or economic. Environmental: Sewage has leaked into a nearby river several times. Economic: Local farmers may not have the money to upgrade their current irrigation systems; the town's population may not yet be large enough (or have a large enough tax base) to support the construction of a newer water and sewage system.
- c) Outline the issue facing Josh's family. Is this an environmental or economic issue?
 - Josh lives on a farm right next to town. His family has experienced difficult times as a result of various problems in the agricultural industry and they have had trouble paying their bills as of late. A construction company wants to buy some nearby farmland and develop a subdivision of 40 homes to attract more residents from the city. Josh's family has already had a good offer for their farm from the developer and is seriously thinking of selling their land.
 - The issue may be either environmental or economic. Environmental: "Difficult times" could refer to environmental factors such as too much rain, too little rain, early frost, and so on. Economic: "Difficult times" could refer to higher costs associated with fuel, shipping, and equipment or lower returns on agricultural products.
- d) Carefully read the section entitled *The Decision: Should the New Development Be Allowed to Proceed?* Pretend you are a citizen of Smalltown and you are making a presentation to town council favouring development. Make a list of pros that you may use as speaking notes.

Your opinion will vary based on your experiences. Possible responses may include the following:

- The new development will create new growth.
- The new development will bring new business and create jobs.
- The new development will bring in more tax revenue.

e) Carefully read the section entitled *The Decision: Should the New Development Be Allowed to Proceed?* Pretend you are a citizen of Smalltown and you are making a presentation to town council opposing development. Make a list of cons that you may use as speaking notes.

Your opinion will vary based on your experiences. Possible responses may include the following:

- The water and sewer system cannot handle the expansion and the tax base cannot handle the cost of the required upgrades.
- Additional services such as schools, hospitals, and emergency services will be required and the town may not have the resources to pay for them.
- City residents will bring city problems and the current quiet, safe rural life will be threatened.
- The loss of farmland will further reduce badly needed food production areas.
- The additional pressure on the sewer system may pollute the local river and bring harm to aquatic life, if not to humans.

Case Study: To Develop or Not to Develop? Background Information:

Josh lives in the small rural community of Smalltown in a prairie province. For many years, things remained much the same, with slow and manageable growth, mainly as a result of retired farmers moving into town. In recent years, however, there has been some concern as more and more people from a nearby city have been coming to live in Smalltown while commuting to the city for work. The positive impact has been that a larger population has led to the development of more businesses and job opportunities. The concern, however, is that the town may not be able to keep up in providing all the services that its residents have come to expect now that the population has almost doubled.

The major problem is related to water and sewage services. The town gets its water from a nearby lake via a pipeline that was constructed a long time ago and is already showing its age. The water is used not only for domestic purposes in town, but also for agricultural purposes by market gardens and small farms at the edge of town. The sewage system has reached capacity and has spilled into the river on several occasions. The town council is worried about the potential negative impact of a growing population.

continued

Case Study: To Develop or Not to Develop? (continued)

Josh lives on a farm right next to town. His family has experienced difficult times as a result of various problems in the agricultural industry and they have had trouble paying their bills as of late. Now, there is talk that a construction company wants to buy some nearby farmland and develop a subdivision of 40 homes to attract more residents from the city. Josh's family has already had a good offer for their farm from the developer and is seriously thinking of selling their land.

The Decision: Should the New Development Be Allowed to Proceed?

The town council is meeting next week for a vote on whether the development should be allowed to proceed. Those in favour argue that the new development will create new growth, bring new business, create jobs, and bring in more tax revenue. Those opposed to the plan feel that the water and sewer system cannot handle the expansion and that the tax base simply cannot handle the cost of the required upgrades. Furthermore, additional services such as schools, hospitals, and emergency services will be required and they are not sure the town has the resources to pay for them. Some people also fear that city residents will bring city problems and that their quiet, safe rural life will be threatened. Those concerned about the environment fear that the loss of farmland will further reduce badly needed food production areas, and that the additional pressure on the sewer system may pollute the local river and bring harm to aquatic life, if not to humans.

What should the citizens and council of Smalltown do?

Learning Activity 5.4: Urban Planning and the Heartland-Hinterland

1. Choose at least *two* of the scenarios below. For each, describe the role of the urban planner by discussing the type of urban planning that will be required (e.g., zoning, end-state planning, structure planning, gentrification, and comprehensive development).

Statement 1:

"City C" has recently demolished an entire section of formerly rundown warehouse space near the coast. A multi-billion-dollar plan is being hatched to construct a completely new area with high-rises, shops, and a waterfront park.

What is the role of the urban planner?

- Comprehensive development
 - The role of the urban planner will be to tear down old buildings and construct a completely new, planned urban unit.

Statement 2:

"City A" has recently bulldozed a dilapidated army base and barracks on 35 hectares of land. The land is flanked by a mall, green space, and residential neighbourhoods. City council is now in the midst of deciding what to do with the vacant area.

What is the role of the urban planner?

- Structure planning:
 - The continual modification of a city's layout
- Zonina
 - The urban planner may also have to rezone existing areas

Statement 3:

A "City B" businessman has met with representatives of an inner city area to discuss the possibility of building a football stadium in the inner-city community. Parts of the discussions have centred on building a new fourlane bridge as well as reconstructing an old freeway.

What is the role of the urban planner?

- Gentrification
 - The role of the urban planner will be to process and rebuild formerly rundown residential and commercial areas.

Statement 4:

On the heels of the discovery of a large ore body in an uninhabited, largely pristine part of the province, Company XYZ is beginning the construction of a multi-million-dollar smelting and refining operation.

What is the role of the urban planner?

- End-state planning
 - The role of the urban planner will be to preplan a community where workers and their families will live, work, play, and go to school.

Statement 5:

A wealthy business group has just purchased a two-city-block section that was once a rundown residential area. Many of the houses are vacant and vandalized; some have a few occupants. The business group aims to refurbish some of the older, statelier properties.

What is the role of the urban planner?

- Gentrification
 - The urban planner will be involved in the process of renewing and rebuilding formerly rundown residential areas.
- 2. Fill in the blanks in the following text based on the information found in the section entitled "Heartland-Hinterland."

Canada was mainly an agricultural nation until the early 1900s. Since that time, Canada has become one of the world's most industrialized nations. This has led to the creation of a heartland: an area in a country where one finds a concentration of both people and manufacturing.

The manufacturing industries that are found in this region are fed with raw materials, mainly from primary industries. The region of the country that supplies these resources for the heartland is known as the hinterland.

The relationship between the manufacturing region and the raw material-producing region is known as the heartland-hinterland concept or the coreperiphery theory.

In Canada, this concept helps us to understand that the relationship between the heartland and hinterland is one of mutual dependency and cooperation. Canada's modern economy is based on the well-being of the heartland and hinterland.

Learning Activity 5.5: Urban Social Issues

1. Define urban social issues.

Urban social issues are issues that have to do with people in a city setting.

2. Describe how urbanization has affected Canadians' way of life since 1867.

In 1867, when Canada became a country, about 80% of Canadians lived in rural areas. Today, almost 80% of the population lives in towns and cities. Cities drew migrants then as they do now with the promise of higher living standards. City residents have greater access to health care, employment opportunities, and social and cultural events.

3. Make a list of pros and cons associated with life in the city. One example is done for you.

Pros	Cons
opportunity for higher living standards	increased levels of violence
greater access to health care	crime
more employment opportunities	homelessness
greater access to social/cultural events	poverty

4. Is Canada's ever-increasing urban social diversity an advantage or a disadvantage? Does increased pluralism erode Canadian identity or make it more global?

The way you answer this question depends on your values. Suppose you consider it an asset to have Canada's cities populated with a high number of foreign-born peoples. It is not likely that everyone will agree with you, since everyone has different values.

Values can be assessed by means of the following tests. These tests address principles that can provide you with a basis for making value judgments confidently and thoughtfully.

The Role Exchange Test

The role exchange test involves imagining yourself in the situation of another person. This is also called empathy. To perform this test, ask yourself, "How would I like that done to me?" After you have answered that question, you can make a thoughtful value judgment of an action.

The Universal Consequences Test

The universal consequences test involves imagining the consequences of everyone performing the action that you are trying to judge. To perform this test, ask yourself, "What if everyone did that?" The answer to this question will lead you to a fairer value judgment of the action.

The New Cases Test

The new cases test gives you an opportunity to apply the action you are trying to judge to a distinct but similar situation. To perform this test, ask yourself, "Are there any other situations that are similar to this?" Once you have answered this question, you can form a thoughtful value judgment on the action you wish to assess.

Read at least two of the following dialogues and answer the questions based on the dialogue.

Dialogue 1

Scott: I don't think we should let so many immigrants come into Canada. They are congregating in cities and aren't really Canadian.

Mark: So you believe that Canada should stop all immigration?

Scott: That's right! We have our own people who are constantly moving to cities from rural areas. We don't need more foreigners!

Mark: Does that mean that you didn't enjoy our evening at the Chinese cultural festival last week? Where do you think the arts, foods, and cultural events originated? What if all immigration was stopped?

Scott: Well....that's different. Our city's "Chinatown" has been here a long time....

- a) What test is Mark using to challenge Scott?
 The Universal Consequences Test
- b) Does Scott meet Mark's challenge appropriately? Explain. Your answers will vary.
- c) How would you meet Mark's challenge?

Your answers will vary.

Dialogue 2

Maria: I spent last week in Toronto at my aunt's. What a horrible city—I don't think I saw one person who looked like a "real" Canadian. I swear that city is full of foreigners. I don't know why Canada has to let in every poor and starving person from all the world's countries....

Terri: But suppose you were really poor and starving. Suppose you had the opportunity to come and live in Canada for a better life. Wouldn't you want the opportunity for a better future for you and your family?

Maria: Hmmm, I guess so...

a) What test is Terri using to challenge Maria?

The Role Exchange Test

b) Does Maria meet Terri's challenge appropriately? Explain your answer.

Your answers will vary.

c) How would you meet Terri's challenge?

Your answers will vary.

Dialogue 3

Kevin: We ought to celebrate the cultural diversity of our city and school by holding a culturally themed dinner and arts event once a month at school.

Shayne: You mean you want every class and every student at our school to do that?

Kevin: Sure, why not? Our school is rich with cultural heritage, as is our city. We can learn so much from each other.

Shayne: What if not everyone is for your idea? What if some classes and students don't want to participate?

Kevin: I'd only want those people who were willing to share and learn to take part, of course.

Shayne: What if people don't think this idea is so great?

Kevin: I still think that people will be enriched if they share their culture and learn about others' as well. All you have to do is walk around the streets of our city to see the cultural richness in which we all live.

a) What test is Shayne using to challenge Kevin?

The New Cases Test

b) Does Kevin meet Shayne's challenge appropriately? Explain your answer.

Your answers will vary.

c) How would you meet Shayne's challenge?

Your answers will vary.

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Final Practice Examination

Note: The practice examination will provide you with a sample of the types of questions you can expect on your final examination. Your actual examination will be marked out of a total of 100 marks, whereas the practice examination will only be marked out of 50 marks. Check the answer key to assess how you did on the questions.

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY

Final Practice Examination

	For Marker's Use O	nly
Name:	Date:	
Student Number:	Final Mark: /100 =	%
Attending Non-Attending	Comments:	
Phone Number:		
Address:		

Instructions

The final examination is based on Modules 3 to 5 of the Grade 10 Geographic Issues of the 21st Century course. It is worth **25 percent** of your final mark.

Time

You will have a maximum of **2.5 hours** to complete your final examination.

Format

The format of the final examination is as follows:

■ Part A: Multiple Choice	10 marks
■ Part B: Fill-in-the-Blanks	4 marks
■ Part C: Matching	3 marks
■ Part D: Definitions	5 marks
■ Part E: Map Work	11 marks
■ Part F: Short Answer	9 marks
■ Part G: Long Answer	8 marks
Total examination value:	50 marks

Total examination value: 50 marks

Read the questions carefully so that you don't miss any marks.

Part A: Multiple Choice				
	(a)	(b)	(c)	(d)
1.	O	O	O	O
2.	О	O	O	O
3.	0	O	O	O
4.	0	0	0	0
5.	0	0	0	0
6.	0	0	0	O
7.	0	0	0	0
8.	0	0	0	О
9.	О	O	O	O
10.	О	О	О	0

Р	art B: Fill-in-the-Blanks
1.	
2.	
3.	
4.	

Name:		

Part A: Multiple Choice (10 marks)

Use the answer sheet found on page 2 to answer the multiple choice questions in this section. Shade in the circle that corresponds to your answer. *Do not* circle your answers directly on the examination. Each question is worth 1 mark.

Note: On the final examination, you will be asked to answer 20 questions. To help you practise, 10 sample questions have been provided. There are 4 questions that cover topics from Module 3, 3 questions that cover topics from Module 5.

- 1. Based on the land survey conducted by the federal and provincial governments during the 1960s and 1970s, which class of land had deep soils and was excellent for farming?
 - a) Class 1
 - b) Class 3
 - c) Class 5
 - d) Class 7
- 2. What would have been the average farm size in Canada in 1900 if the average farm size today is about 295 hectares?
 - a) 27 hectares
 - b) 50 hectares
 - c) 389 hectares
 - d) 503 hectares
- 3. Where in Canada can one find the least amount of dependable agricultural land?
 - a) British Columbia
 - b) Ontario
 - c) Newfoundland
 - d) Manitoba

- 4. As food proceeds through the stages of production, what stage would it enter directly after the marketing stage?
 - a) processing
 - b) consuming
 - c) transporting
 - d) marketing
- 5. Which country is Canada's primary trading partner?
 - a) Mexico
 - b) United States of America
 - c) United Kingdom
 - d) China
- 6. Which of the following would be the best example of a primary industry?
 - a) doctor
 - b) fisher
 - c) carpenter
 - d) scientist
- 7. Based on the information below, in what year did "Country-Y" experience a trade balance?
 - a) 2002: Imports = \$64.2 billion and Exports = \$78.3 billion
 - b) 2004: Imports = \$78.3 billion and Exports = \$64.2 billion
 - c) 2006: Imports = \$78.3 billion and Exports = \$78.3 billion
 - d) 2008: Imports = \$78.3 billion and Exports = \$78.4 billion
- 8. What is gentrification?
 - a) The continual modification of a city's layout
 - The process of renewing and rebuilding formerly run-down residential or commercial areas
 - c) Laws passed controlling the type of development in a city
 - d) The construction of a completely planned urban unit

Name:			

- 9. Which of the following is considered a world/global city?
 - a) Regina, Canada
 - b) Paris, France
 - c) St. Louis, United States of America
 - d) Brisbane, Australia
- 10. What is end-state planning?
 - a) The continual modification of a city's layout
 - b) The process of renewing and rebuilding formerly run-down residential or commercial areas
 - c) Laws passed controlling the type of development in a city
 - d) Urban planning where plans are fixed from the start

Part B: Fill-in-the-Blanks (4 marks)

cash crops

Use the answer sheet found on page 2 of this examination to answer the fill-in-the-blank questions of this section. Write your answer in the space provided that corresponds to the question. *Do not* write your answers directly on the examination.

Using a term from the word bank provided below, complete each of the statements that follow. Each blank is worth one mark. There are *more* terms provided than you need, so read over the list carefully and choose the terms you want to use.

Note: On the final examination, you will be asked to answer 8 questions. To help you practise, 4 sample questions have been provided. There is 1 question that covers topics from Module 3, 1 question that covers topics from Module 4, and 2 questions that cover topics from Module 5.

global warming

raw material

			migrant labourers natural resource	
l.	Non-food crops, re rather than used b			en grown to be sold or traded
2.	m more finished stat	2	something used by	an industry to be processed into a
3.	The process of red new construction	1 0		city, often through demolition and
ł.	Major industries of the community ar		rovide employment o	opportunities essential to support

Name:		

Part C: Matching (3 marks)

In the spaces provided, write the letter of the term that best corresponds with the statement.

Note: On the final examination, you will be asked to answer 6 questions. To help you practise, 3 sample questions have been provided which cover topics from Modules 3, 4, and 5.

a) entrepreneur	 or yea enzyn	se of micro-organisms, such as bacteria sts, or biological substances, such as nes, to perform specific industrial or facturing processes
b) rural	 -	son who takes a risk by setting up a ess in order to make a profit
c) biotechnology		nunities located in the country (outside urban centres) usually with smaller ations

Part D: Definitions (5 marks)

Choose *five* of the following terms and write the definition of each in the space provided. Each question is worth one mark.

Note: On the final examination, you will be asked to choose and define 10 terms from a list of 12. To help you practise, 7 terms have been provided, 3 of which cover topics from Module 3, 2 from Module 4, and 2 from Module 5.

1.	Bedrock
2.	Plantation
3.	Growing Season
4.	Industrial Revolution
5.	Globalization of Manufacturing
6.	Pluralism
7.	Remote

Name:		

Part E: Map Work (11 marks)

Follow the directions for each question. Mark values are provided at the end of each question.

Note: For question 1 on the final examination, you will be asked to demonstrate your knowledge of food production in Canada. A sample of this question has been provided to help you practise.

1. **Map of Food Production in Canada:** On the following map of Canada, look at the shaded regions and their corresponding number. In the space provided below, indicate whether this region is where most of Canada's food is produced by writing "Yes" or "No." Be sure to consider the best landscape, soil, and climate for food production. (3 *marks*)

Region	Is it Where Most of Canada's Food Is Produced?
Region 1	
Region 2	
Region 3	
Region 4	
Region 5	
Region 6	

Note: For question 2 on the final examination, you will be asked to demonstrate your knowledge of major manufacturing regions in the world. A sample of this question has been provided to help you practise.

2. **Map of World Manufacturing Regions:** Based on the following map of the world, choose the 3 letters that do not identify the regions where the majority of the world's manufacturing is located. (3 marks)

Regions That Are Not Major Manufacturing Areas	Letter Label From the Map
Region 1	
Region 2	
Region 3	

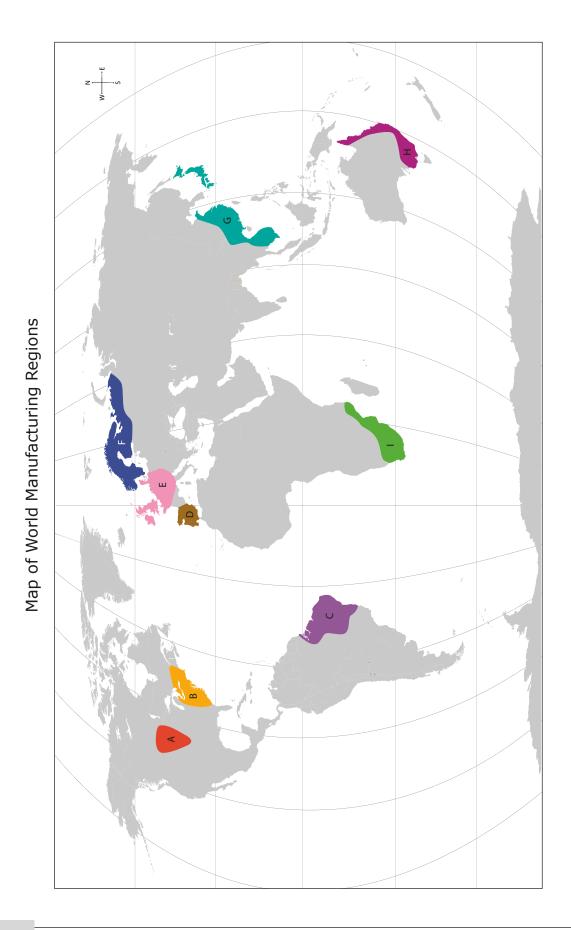
Note: For question 3 on the final examination, you will be asked to demonstrate your knowledge of urban centres of the world. A sample of this question has been provided to help you practise.

3. **Map of Urban Centres:** Based on the following map of world urban centres, write the name of each city labelled by a number. Write your answers in the space provided. (5 marks)

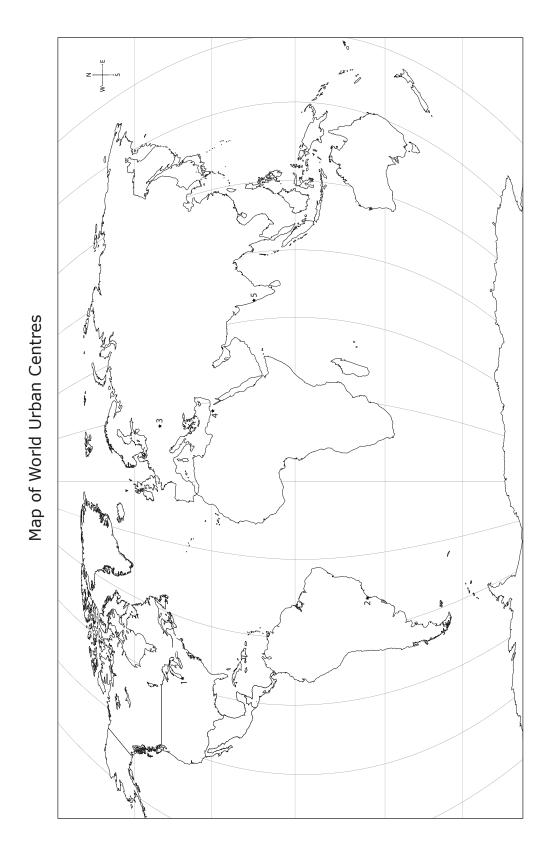
North America	1
South America	2
Europe	3
Africa	4
Asia	5

Map of Food Production in Canada





Name: _____



Part F: Short-Answer Questions (9 marks)

Answer each of the following questions in clear, concise paragraphs. Pay attention to the number of marks that each question is worth, as this may help you decide how much information to provide for full marks.

Note: On the final examination, you will be asked to answer at least 5 questions that total 20 marks. To help you practise, 1 question has been provided for Module 3, 1 question for Module 4, and 1 question for Module 5.

1.	Discuss at least three issues related to the genetic modification of plants and animals. (3 marks)
2.	What role does sustainable development play in industry? Support your discussion with at least one example. (3 marks)

Van	ne:
3.	Using Canadian examples, describe the function of at least three major urban centres. (3 marks)

Part G: Long-Answer Questions (8 marks)

Respond to the following question in a well-developed essay.

Note: On the final examination, you will be provided with three essay questions. You are to choose *two* of these questions and respond in a clear, well-developed essay. Each question will be worth 8 marks for a total of 16 marks. The essay marking rubric will be provided for you on the examination. To help you practise, one sample essay question has been provided that covers topics from Module 4.

1. What is your role as a consumer? Make a list and expand upon how your consumer choices have economic, social, and environmental impacts. (8 marks)

Marking Rubric (8 marks)		
8-6 marks	5–3 marks	2-0 marks
 Lists thoroughly consumer choices that have economic, social, and environmental consequences. Describes, in detail, how these consumer choices have economic, social, and environmental consequences. Demonstrates a strong understanding of the complexities of the ideas presented. 	 Lists consumer choices that have economic, social, and environmental consequences. Describes how these consumer choices have economic, social, and environmental consequences. Demonstrates an understanding of the complexities of the ideas presented. 	 Lists some consumer choices that have economic, social, and environmental consequences. Describes, in limited detail, how these consumer choices have economic, social, and environmental consequences. Demonstrates a limited understanding of the complexities of the ideas presented.

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Grade 10 Geographic Issues of the 21st Century (20F)

Final Practice Examination Answer Key

Note: The practice examination will provide you with a sample of the types of questions you can expect on your final examination. Your actual examination will be marked out of a total of 100 marks, whereas the practice examination will only be marked out of 50 marks. Check the answer key to assess how you did on the questions.

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY

Final Practice Examination Answer Key

	For Marker's Use Only
Name:	Date:
Student Number:	Final Mark: %
Attending Non-Attending	C mmen
Phone Number:	
Address:	

Instructions

The final examination is based on Modules 3 to 5 of the Grade 10 Geographic Issues of the 21st Century course. It is worth **25 percent** of your final mark.

Time

You will have a maximum of **2.5 hours** to complete your final examination.

Format

The format of the final examination is as follows:

■ Part A: Multiple Choice	10 marks
■ Part B: Fill-in-the-Blanks	4 marks
■ Part C: Matching	3 marks
■ Part D: Definitions	5 marks
■ Part E: Map Work	11 marks
■ Part F: Short Answer	9 marks
■ Part G: Long Answer	8 marks
Total examination value:	50 marks

Total examination value: 50 marks

Read the questions carefully so that you don't miss any marks.

Part A: Multiple Choice				
	(a)	(b)	(c)	(d)
1.		O	O	O
2.	0		0	0
3.	0	O		0
4.	0		0	0
5.	0		0	0
6.	0		O	0
7.	0	0		0
8.	0		O	0
9.	0		0	0
10.	0	0	0	

Part B: Fill-in-the-Blanks		
1.	cash crops	
2.	raw material	
3.	urban renewal	
4.	economic base	

Name: .			

Part A: Multiple Choice (10 marks)

Use the answer sheet found on page 2 to answer the multiple choice questions in this section. Shade in the circle that corresponds to your answer. *Do not* circle your answers directly on the examination. Each question is worth 1 mark.

Note: On the final examination, you will be asked to answer 20 questions. To help you practise, 10 sample questions have been provided. There are 4 questions that cover topics from Module 3, 3 questions that cover topics from Module 5.

- 1. Based on the land survey conducted by the federal and provincial governments during the 1960s and 1970s, which class of land had deep soils and was excellent for farming? (Module 3)
 - a) Class 1
 - b) Class 3
 - c) Class 5
 - d) Class 7
- 2. What would have been the average farm size in Canada in 1900 if the average farm size today is about 295 hectares? (Module 3)
 - a) 27 hectares
 - b) 50 hectares
 - c) 389 hectares
 - d) 503 hectares
- 3. Where in Canada can one find the least amount of dependable agricultural land? (Module 3)
 - a) British Columbia
 - b) Ontario
 - c) Newfoundland
 - d) Manitoba

- 4. As food proceeds through the stages of production, what stage would it enter directly after the marketing stage? (Module 3)
 - a) processing
 - b) consuming
 - c) transporting
 - d) marketing
- 5. Which country is Canada's primary trading partner? (Module 4)
 - a) Mexico
 - b) United States of America
 - c) United Kingdom
 - d) China
- 6. Which of the following would be the best example of a primary industry? (Module 4)
 - a) doctor
 - b) fisher
 - c) carpenter
 - d) scientist
- 7. Based on the information below, in what year did "Country-Y" experience a trade balance? (Module 4)
 - a) 2002: Imports = \$64.2 billion and Exports = \$78.3 billion
 - b) 2004: Imports = \$78.3 billion and Exports = \$64.2 billion
 - c) 2006: Imports = \$78.3 billion and Exports = \$78.3 billion
 - d) 2008: Imports = \$78.3 billion and Exports = \$78.4 billion
- 8. What is gentrification? (Module 5)
 - a) The continual modification of a city's layout
 - b) The process of renewing and rebuilding formerly run-down residential or commercial areas
 - c) Laws passed controlling the type of development in a city
 - d) The construction of a completely planned urban unit

Name: _		

- 9. Which of the following is considered a world/global city? (Module 5)
 - a) Regina, Canada
 - b) Paris, France
 - c) St. Louis, United States of America
 - d) Brisbane, Australia
- 10. What is end-state planning? (Module 5)
 - a) The continual modification of a city's layout
 - b) The process of renewing and rebuilding formerly run-down residential or commercial areas
 - c) Laws passed controlling the type of development in a city
 - d) Urban planning where plans are fixed from the start

Part B: Fill-in-the-Blanks (4 marks)

cash crops

Use the answer sheet found on page 2 of this examination to answer the fill-in-the-blank questions of this section. Write your answer in the space provided that corresponds to the question. *Do not* write your answers directly on the examination.

Using a term from the word bank provided below, complete each of the statements that follow. Each blank is worth one mark. There are *more* terms provided than you need, so read over the list carefully and choose the terms you want to use.

Note: On the final examination, you will be asked to answer 8 questions. To help you practise, 4 sample questions have been provided. There is 1 question that covers topics from Module 3, 1 question that covers topics from Module 4, and 2 questions that cover topics from Module 5.

global warming

raw material

			migrant labourers natural resource	
l.	Non-food crops, rather than used			en grown to be sold or traded
2.	n more finished sta	2	something used by	an industry to be processed into a
3.	*	1 0	eriorated section of a (Module 5)	city, often through demolition and
ł.	Major industries of the community as		rovide employment ((Modul	opportunities essential to support

Name:			

Part C: Matching (3 marks)

In the spaces provided, write the letter of the term that best corresponds with the statement.

Note: On the final examination, you will be asked to answer 6 questions. To help you practise, 3 sample questions have been provided which cover topics from Modules 3, 4, and 5.

a) entrepreneur (Module 4)	С	1. The use of micro-organisms, such as bacteria or yeasts, or biological substances, such as enzymes, to perform specific industrial or manufacturing processes
b) rural (Module 5)	Α	2. A person who takes a risk by setting up a business in order to make a profit
c) biotechnology (Module 3)	В	3. Communities located in the country (outside large urban centres) usually with smaller populations

Part D: Definitions (5 marks)

Choose *five* of the following terms and write the definition of each in the space provided. Each question is worth one mark.

Note: On the final examination, you will be asked to choose and define 10 terms from a list of 12. To help you practise, 7 terms have been provided, 3 of which cover topics from Module 3, 2 from Module 4, and 2 from Module 5.

1. Bedrock (Module 3)

It is the solid rock of Earth's crust.

2. Plantation (Module 3)

It is a large estate or farm on which crops are raised, often by resident workers.

3. Growing Season (Module 3)

It is the number of days between spring and fall when temperatures exceed 5.5° C, allowing plants to grow.

4. Industrial Revolution (Module 4)

It is the period in history when manufacturing by machine overtook handcrafting: it began in the 19th century in Britain.

5. Globalization of Manufacturing (Module 4)

It is a shift in recent years in the traditional areas of manufacturing—USA, Canada, Europe, and Japan—to less developed countries.

6. Pluralism (Module 5)

It is a condition in which numerous and distinct ethnic, religious, or cultural groups are present, and seen as an asset, within a society.

7. Remote (Module 5)

It is a community that is out of the way, or located far from the main centres of population and society.

Name:		
-		

Part E: Map Work (11 marks)

Follow the directions for each question. Mark values are provided at the end of each question.

Note: For question 1 on the final examination, you will be asked to demonstrate your knowledge of food production in Canada. A sample of this question has been provided to help you practise.

1. **Map of Food Production in Canada:** On the following map of Canada, look at the shaded regions and their corresponding number. In the space provided below, indicate whether this region is where most of Canada's food is produced by writing "Yes" or "No." Be sure to consider the best landscape, soil, and climate for food production. (3 marks) (Module 3)

Region	Is it Where Most of Canada's Food Is Produced?
Region 1	Yes
Region 2	Yes
Region 3	Yes
Region 4	No
Region 5	No
Region 6	No

Note: For question 2 on the final examination, you will be asked to demonstrate your knowledge of major manufacturing regions in the world. A sample of this question has been provided to help you practise.

2. **Map of World Manufacturing Regions:** Based on the following map of the world, choose the 3 letters that do not identify the regions where the majority of the world's manufacturing is located. (3 marks) (Module 4)

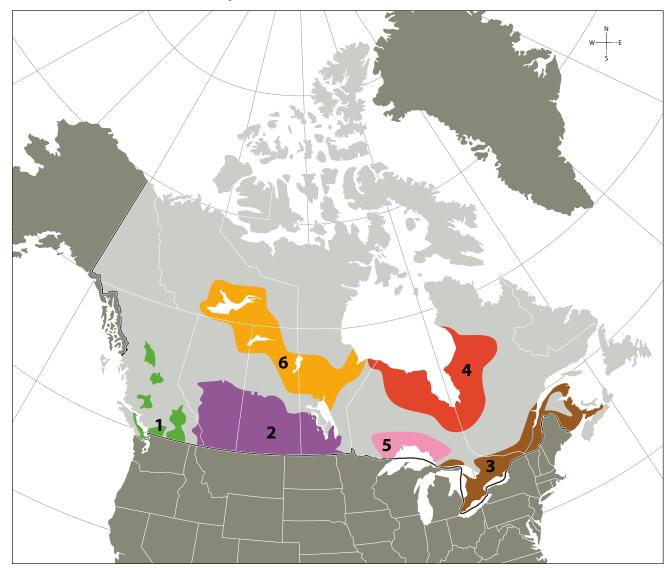
Regions That Are Not Major Manufacturing Areas	Letter Label From the Map
Region 1	Answers could include any one
Region 2	of the following:
Region 3	A, C, F, I, H

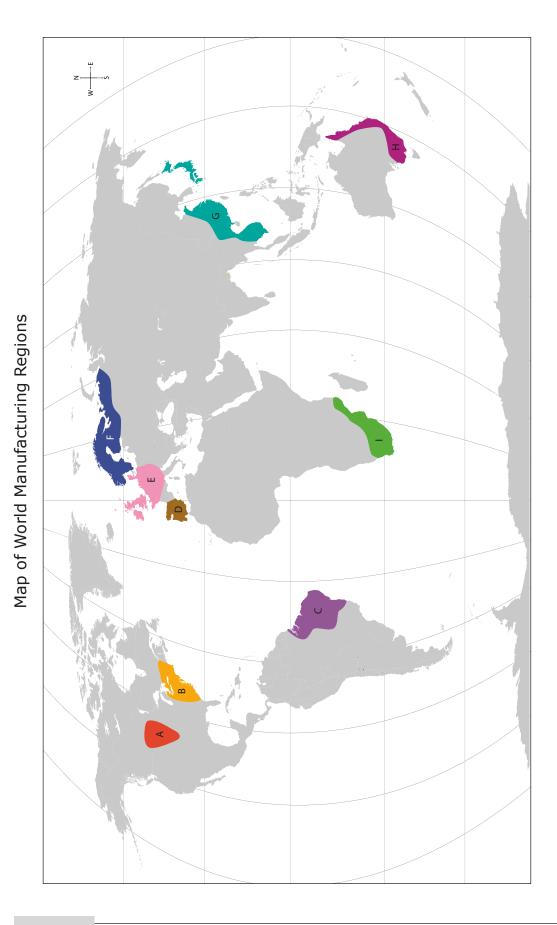
Note: For question 3 on the final examination, you will be asked to demonstrate your knowledge of urban centres of the world. A sample of this question has been provided to help you practise.

3. **Map of Urban Centres:** Based on the following map of world urban centres, write the name of each city labelled by a number. Write your answers in the space provided. (5 marks) (Module 5)

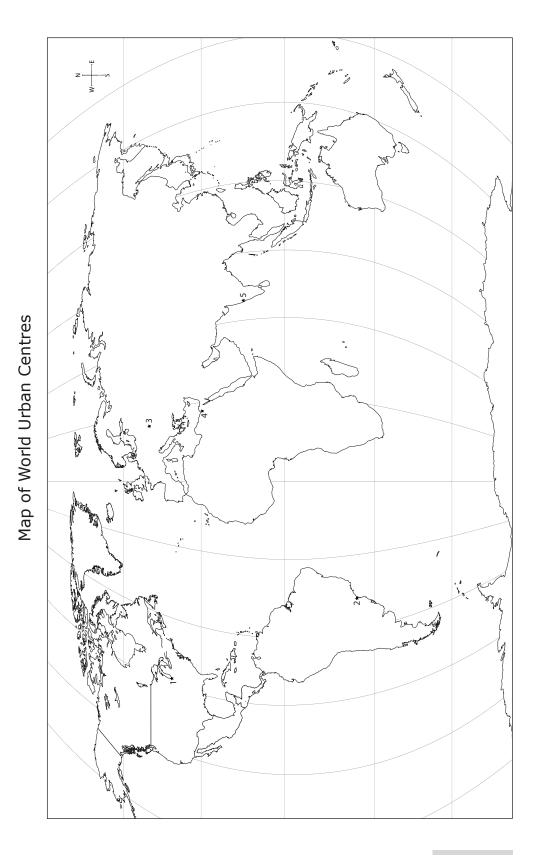
North America	1. Chicago
South America	2. São Paulo
Europe	3. Moscow
Africa	4. Cairo
Asia	5. Mumbai

Map of Food Production in Canada





Name: _____



Part F: Short-Answer Questions (9 marks)

Answer each of the following questions in clear, concise paragraphs. Pay attention to the number of marks that each question is worth, as this may help you decide how much information to provide for full marks.

Note: On the final examination, you will be asked to answer at least 5 questions that total 20 marks. To help you practise, 1 question has been provided for Module 3, 1 question for Module 4, and 1 question for Module 5.

1. Discuss at least three issues related to the genetic modification of plants and animals. (3 marks) (Module 3)

Students should list and expand upon 3 of the following points.

- Some people are against the use of GMO's in the production of food.
- Some people see the use of GMO's as a natural step in the evolution and improvement of food science and production.
- Farmers may have to use (or not use) GMO's in order to compete globally.
- The cost of GM seeds and products may be subject to monopoly as companies vie for new scientific methods and markets.
- There are few laws governing the use of GMO's: governments may need to enact laws concerning the use and labeling of GMO's as consumers become more aware and/or concerned about their use.
- GMO's appear to have become a mainstay in agricultural production even though their future is uncharted.

2. What role does sustainable development play in industry? Support your discussion with at least one example. (3 marks) (Module 4)

Role of sustainable development in industry

In regards to industry, sustainable development means an approach to industrial production that can be maintained indefinitely without harming the environment, society, and Canada's economic prosperity.

Sustainable development means that producers and manufacturers are able to meet market demands, but at the same time:

Students should include at least one of the following examples in their discussion.

- reduce the rate at which natural resources are being used
- reduce the amount of pollution created
- decrease the amount of energy used
- provide enough products, such as food, to satisfy the needs of the population

Name:			

3. Using Canadian examples, describe the function of at least three major urban centres. (3 marks) (Module 5)

Student answers may vary. Possible answers may include the following:

- Halifax, Nova Scotia
 - defence, trade
- Toronto, Ontario
 - administration, finance
- Thompson, Manitoba
 - resources
- Ottawa, Ontario
 - administration
- Vancouver, British Columbia
 - trade

Part G: Long-Answer Questions (8 marks)

Respond to the following question in a well-developed essay.

Note: On the final examination, you will be provided with three essay questions. You are to choose *two* of these questions and respond in a clear, well-developed essay. Each question will be worth 8 marks for a total of 16 marks. The essay marking rubric will be provided for you on the examination. To help you practise, one sample essay question has been provided that covers topics from Module 4.

1. What is your role as a consumer? Make a list and expand upon how your consumer choices have economic, social, and environmental impacts. (8 marks) (Module 4)

Marking Rubric (8 marks)					
8–6 marks	5–3 marks	2–0 marks			
 Lists thoroughly consumer	 Lists consumer choices	 Lists some consumer			
choices that have economic,	that have economic,	choices that have economic,			
social, and environmental	social, and environmental	social, and environmental			
consequences.	consequences.	consequences.			
 Describes, in detail, how	 Describes how these	 Describes, in limited detail,			
these consumer choices	consumer choices	how these consumer			
have economic, social,	have economic, social,	choices have economic,			
and environmental	and environmental	social, and environmental			
consequences.	consequences.	consequences.			
 Demonstrates a strong	 Demonstrates an	 Demonstrates a limited			
understanding of the	understanding of the	understanding of the			
complexities of the ideas	complexities of the ideas	complexities of the ideas			
presented.	presented.	presented.			

Sample Response (in point form):

 Consumers not only make decisions about a product's price, quality, and colour, but they also may take into consideration where the product comes from, as well as how and under what conditions it was produced.

Student opinion answers will vary.

- Economic
 - outsourcing and resultant unemployment
- Social
 - workers may not be paid fairly in foreign countries (just so that Canadian consumers can have access to cheap goods)
 - human rights issues concerning goods produced by foreign workers
 - migrant labourers
 - Americanization

Name: .		
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Environmental

- resource depletion
- most manufacturing industries contaminate the environment in one way or another in their processes: chemicals, exhaust fumes, heat, as well as solid and liquid waste contaminate the air, land, and water.
- acid precipitation is caused by a variety of exhaust gases, chemicals, and minute particles emitted from factory smokestacks
- global warming is the heating of the atmosphere by trapped solar energy and heat from industrial processes

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

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References ■ 3

Notes

GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Glossary

GLOSSARY

absolute location

The exact location of a feature on Earth, usually described by its latitude and longitude.

acid precipitation

Precipitation such as rain or snow that is contaminated with sulphur, nitrous oxides, and other chemical compounds.

agrichemical

A chemical compound that improves the production of crops.

alpine

Refers to mountains and the conditions found in high elevations.

Americanization

To make American in form, style, or character; to absorb or assimilate into American culture.

aquaculture

The production and harvesting of fish and shellfish in land-based ponds or coastal pens.

BCE

Before the Common Era; the method of numbering years whereby the current internationally recognized year at the time of publication of this document is 2013; formerly known as BC or Before Christ.

bedrock

It is the solid rock of Earth's crust.

biochemistry

The chemical characteristics of a particular living organism.

biodiesel

Vegetable oil- or animal fat-based diesel fuel.

biomass

Plant material, vegetation, or agricultural waste used as a fuel or an energy source.

biome

Another term for a global environment type that has a large area with specific landforms, and plant and animal communities named after the main vegetation. For example, grasslands, tundra, forests, and deserts.

biotechnology

The use of micro-organisms, such as bacteria or yeasts, or biological substances, such as enzymes, to perform specific industrial or manufacturing processes.

blood diamonds

Diamonds sold for the purpose of purchasing weapons to fight in civil wars.

boreal forest

Coniferous (needle-leaved) forests found throughout most of the Canadian Shield.

calorie

A unit of energy (being the amount of heat needed to raise the temperature of 1 gram of water by 1°C) used in nutrition.

carbon dioxide

A by-product of burning fossil fuels that, in large quantities, can be harmful to the atmosphere.

carrying capacity

The ability to support a population at current living standards.

cartographer

Someone whose job it is to make maps.

cash crop

A farm crop grown (often not for food) to be sold or traded rather than used by the farm family.

CE

Common Era; the method of numbering years whereby the current internationally recognized year at the time of publication of this document is 2013; formerly known as AD or Latin anno Domini, in the year of our Lord, used to specify numbered years counting from the estimated birth of Christ in AD 1.

certificate of origin

A document that details where and under what conditions a product was cultivated, mined, or produced.

clear-cutting

A type of lumber harvest that involves the cutting of all the trees in the forest.

climate

Weather patterns typical for an area over a long period of time.

climate change

Changes in the Earth's climate, especially those produced by global warming.

colonizing

The establishing of settlements or colonies in another country; often the colonial power imposes power on the colonized country.

commercial forests

Forests that contain trees that grow fast and large enough to be harvested easily for the production of lumber products, and pulp and paper.

coniferous trees

A classification of tree species that is cone-bearing with needle leaves. Examples include spruce, pine, and fir trees.

conservation

The protection, preservation, management, or restoration of natural resources such as forests, soil, and water.

consumer society

A society in which the consumption of mass-produced goods is encouraged through mass communication.

consumerism

An economic structure based on the increasing consumption of goods.

consumption

The using of a resource.

Continental Shelf

A geographic location where large oil and gas deposits exist off the Atlantic coast in the Beaufort Sea in the Arctic region.

core-periphery theory

The notion that as one region expands in economic prosperity it must engulf regions nearby to ensure ongoing economic and political success. The area of high growth becomes known as the core while the neighbouring area is the periphery. This is also known as the heartland-hinterland concept.

crop rotation

A type of farming practice that involves planting different crops on the same land in successive years to improve soil fertility and help control insects.

crude oil

Dark oil consisting of hydrogen and carbon. It is often referred to as hydrocarbons.

cylindrical projection map

A map projection formed by wrapping a sheet of paper like a cylinder around a globe, tracing outlines of the world, and then flattening the sheet to create a map.

deciduous trees

A classification of trees that are broad-leaved and lose their leaves over winter. Examples include poplar, maple, and birch.

depopulation

The decline of the total population of an area often brought about by outmigration rather than a fall in fertility or excessive mortality.

desert

A dry, arid landscape that may be covered in sand with sparse vegetation consisting of shrubs, grasses, and cactus plants.

developed nation

A country with a large amount of technology and manufacturing.

developing world

It is made up of countries with poorly developed economies. The citizens of a developing country have low incomes and experience shortages of food. They also have poor housing and cannot afford luxuries. The developing world is sometimes referred to as the less developed world.

diet

The food and beverage a person or animal consumes.

disenfranchisement

The removal of the rights and privileges of people associated with a particular group.

distortion

This is an appearance that is out of shape. For example, countries on a flat map will not have the same shape as they do on a globe.

distribution

Where things are located in relation to each other; the distribution is how they are spread out or dispersed over a region.

diverse

Different or varied.

drought

A period with substantially lower than normal precipitation.

economic base

Major industries within a geographic area that provide employment opportunities essential to support the community.

ecosystem

- The complex community of interdependent living things in a given environment.
- Another term for global environmental type or biome. See biome or global environmental type.

emissions

Harmful substances that enter the atmosphere when fossil fuels are burned.

end-state planning

Urban planning where plans are fixed from the start.

environment

Our physical surroundings (landforms, soils, vegetation, atmosphere, resources).

Glossary ■ **5**

erosion

The wearing away of Earth's surface by wind, water, frost, chemical action, and gravity, as well as the removal of materials to a different location.

ethanol

A type of automotive fuel derived from grain and corn.

European Union

An economic organization whose goal is to unite Europe so that goods, services, and workers can move freely among member countries.

exploit

To make full use of a resource without concern for other people, the planet, or the future.

export

To send or transport to another country, especially for trade or sale.

extraction

The removal of minerals from Earth.

fair trade

A system of trading that promotes more equitable global trade; especially with regard to sellers and producers in poorer areas, but also to the environment.

fallowing

The practice of allowing ploughed or cultivated land to remain uncultivated for one or more growing seasons.

famine

Extreme and general scarcity of food in a region.

fertility

The state of soil with respect to the quality of the soil for plant growth.

fertilizer

A substance applied to the soil on agricultural land in order to make it able to produce more.

First Nation(s)

"A term that came into common usage in the 1970s to replace the word Indian, which many people found offensive. Although the term First Nation is widely used, no legal definition of it exists. Among its uses, the term First Nations peoples refers to the Indian peoples in Canada, both Status and Non-Status. Many Indian peoples have also adopted the term First Nation to replace the word band in the name of their community." (Indian and Northern Affairs Canada) (Integrating Aboriginal Perspectives into Curricula, Manitoba Education, Citizenship and Youth)

Food and Agricultural Organization (FAO)

A UN agency whose purpose is to improve nutrition and eliminate hunger by coordinating the efforts of governments in agriculture, forestry, and fisheries. It also assists countries through research, training, development, and field missions and has helped with disaster and emergency relief.

food security

A situation that exists when every person in a particular area has physical and economic access at all times to healthy and nutritious food in sufficient quantity to cover the needs of their daily ration and food preferences, in order to live a healthy and active life.

foreign investment

An investment by a government or a company in other countries. For example, a multinational company might develop a mine in another country.

forest

A natural vegetation region covered in trees.

fossil fuels

Minerals, formed from plant and animal fossil remains in sedimentary rock, which are burned to produce energy. Examples include petroleum, natural gas, and coal.

fresh water

Water found in lakes, rivers, wetlands, and groundwater.

gathering

A form of survival where one collects what is needed from the Earth's resources.

Genetically Modified Organism (GMO)

Organisms whose genetic structure has been changed to give them characteristics that are seen as desirable.

gentrification

The renewal or upgrading of deteriorating urban property, often as higher-income groups move into the area.

Geographic Information System (GIS)

Integrated computer software for the input of data and the display, analysis, and management of geographic information.

geographic viewpoint

The viewpoint of a geographer that asks questions about locations, why things are where they are, and the relationships between different aspects of the world.

geography

- The study of Earth's physical and human systems and the relationship between them.
- Gritzner's definition, "what is where, why there, and why care."

geologist

A person whose work involves the study of the formation, structure, and content of rocks.

geology

The science concerned with the formation, structure, and content of rocks.

geothermal

Energy produced by the internal heat of Earth.

global citizen

An individual who demonstrates knowledge and concerns about the well-being of Earth as a whole.

global city

A city acting as a focus for the flow of world culture, finance, and trade. Twenty-five cities effectively control almost all the world's financial transactions. New York, London, and Tokyo are at the top of the hierarchy. A global city can also be referred to as a world city.

global environmental type

Another term for biome or ecosystem; a large area with certain landforms and plant and animal communities, named after the main vegetation, such as grasslands, tundra, forests, and deserts.

Global Positioning System (GPS)

A system, based on satellite technology, that accurately records the exact latitude and longitude of any place on Earth; also refers to a small hand-held unit that collects and displays this information.

global warming

A gradual warming of Earth and its atmosphere that may be caused in part by pollution and the increased greenhouse effect.

Glossary ■ **7**

globalization

Globalization is the process by which the economies of countries around the world become increasingly integrated over time. This integration occurs as technological advances expedite the trade of goods and services, the flow of capital, and the migration of people across international borders. Globalization can also refer to the efforts of businesses to expand their operations to new countries and markets.

globalization of manufacturing

A shift in recent years from the traditional countries of manufacturing—United States of America, Canada, various European countries, and Japan—to less developed countries.

globe

A spherical model of Earth, usually mounted on an axis attached to a frame to allow for rotation.

gradient

A slope or drop in elevation.

grain

A cereal grass.

grassland

Natural vegetation consisting of grasses; a region too dry to support forest growth; the Canadian Prairies.

green electricity

A form of electricity that strives to meet the energy needs of today without compromising the ability of future generations.

greenhouse effect

The capacity of certain gases in the atmosphere to trap heat, thereby warming Earth.

greenhouse gases

Any of the atmospheric gases that contribute to the greenhouse effect, These include water vapour, carbon dioxide, methane, nitrous oxide, and ozone. The majority of greenhouse gases are derived from natural sources; however, they are also contributed to by human activity.

Gross Domestic Product (GDP)

The value of goods and services created within a country in a year.

groundwater

The water that is found in soil, sand, gravel, and porous rock below the surface of Earth.

growing season

The number of days between spring and fall when temperatures exceed 5.5°C, allowing plants to grow.

hardwood lumber

Lumber from deciduous trees.

heartland

A term used in geography to refer to the central areas of a country; a central region, especially one that is politically, economically, or militarily vital to a nation, region, or culture.

heartland-hinterland concept

The notion that, as one region expands in economic prosperity, it must engulf regions nearby to ensure ongoing economic and political success; the area of high growth becomes known as the core, and the neighbouring area is the periphery; also known as the core-periphery theory.

hectare

A metric unit of area equal to 100 acres (2.471 acres).

herbicide

A chemical designed to kill unwanted plants (weeds).

horticulture

The science of cultivating one's own fruits, vegetables, and flowers.

human geography

Refers to features created by people (settlements, farms, transportation networks, stores, schools, etc.) and human economic activities (farming, industry, mining, tourism, etc.).

humus

Dark, upper layer of soil made up of partially decayed plant material.

hybrid vehicles

Vehicles that use more than one type of fuel source as means to reduce the burning of fossil fuels.

hydrocarbons

Organic compounds that contain hydrogen and carbon. Often referred to as crude oil.

hydrogen fuel cells

An electrochemical cell that converts a source fuel into an electrical current.

hydrologic (water) cycle

The cycle of evaporation and condensation that controls the distribution of Earth's water as it evaporates from bodies of water, condenses, precipitates, and returns to those bodies of water.

identity

Who we are and what makes us different from others and which is influenced by geography.

igneous rock

Rocks in which metallic minerals are found.

immigrant

Someone who departs from their native land to settle in another country.

impermeable rock layers

Rock layers that are non-porous.

import

To bring in goods or materials from a foreign country for trade or sale.

industrial hemp

Industrial hemp is a name used for cannabis sativa (the same annual herb or plant species as marijuana but without psychoactive properties) when it is grown for industrial purposes.

Industrial Revolution

The period of history when manufacturing by machine overtook handcrafting; it began in the 19th century in Britain.

industrialization

Transition from an agricultural society to one based on industry.

inflation

An economic condition characterized by an increase in prices and wages, and declining purchasing power.

inherent rights

The rights of First Peoples to use their land based on their ancestry.

instream

The use of water without removing it from rivers and lakes.

interest groups

Groups of individuals with a similar cause or purpose.

Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change (IPCC) was established to assess scientific, technical, and socio-economic information relevant for the understanding of climate change and its potential impacts, as well as options for adaptation and improvement.

Inuit

Indigenous people living north of the treeline in northern Canada.

irrigation

The artificial application of water to the soil to produce plant growth.

issue

A point or matter of discussion, debate, or dispute.

kilojoule

A unit of energy; one kilojoule (kJ) equals 1000 joules; it is the amount of heat required to raise the temperature of 239 g of water by 1°C; approximately 4.2 joules equal one calorie.

latitude

The angular distance north or south of the equator measured in degrees (the equator is 0 degrees, the poles are at 90 degrees) expressed as North or South of the equator.

line of latitude

An imaginary line running east to west around the globe or on a map, parallel to the equator, representing the distance north or south of the equator, also called parallels.

line of longitude

An imaginary line running north to south around the globe or on a map, converging on the poles, representing the distance east or west of the Prime Meridian, also called meridians.

livestock

Farm animals raised for use and profit.

location

Where things are located or positioned may be absolute or relative, location is a central theme in geography.

longitude

The angular distance east or west of the Prime Meridian measured in degrees: the Prime Meridian is 0 degrees; the maximum longitude is 180 degrees at the International Date Line.

magma

Molten rock found deep beneath Earth's crust.

malnutrition

A condition in which health is damaged by an unbalanced diet that includes either too much or too little of one or more essential nutrients over an extended period.

mangrove

Subtropical and tropical coastal swamps dominated by mangrove trees.

map

A representation of all or part of Earth drawn on a flat surface to a specific scale.

market

Any place where goods and services can be bought or sold.

mechanization

A process whereby machinery takes over the work of humans or animals.

mental maps

Images we have in our minds related to directions in space and where things are located.

Mercator

A Dutch geographer known for developing a common map projection of the world in 1569. In this map projection, land areas in higher latitudes are greatly exaggerated in size. This projection, named after him, is still in use.

Métis

People of mixed First Nation and European ancestry.

migrant

A person who moves regularly in order to find work.

migrant labourers

Individuals who work in a foreign country without initially intending to settle there and without the benefits of citizenship in the host country.

minerals

Non-living substances found in and among rocks.

multinational

International companies that operate throughout the world and in several countries.

natural resources

Materials that are found in the natural environment in the form of raw materials.

natural vegetation

Plant life that grows in a certain area if people have not changed the natural environment.

non-commercial forests

Forests that have small trees that take a long time to grow.

Non-Governmental Organizations (NGO)

Organizations that are not part of the government and are run on a not-for-profit basis.

non-metallic minerals

Minerals that produce non-metal materials when processed. Examples include sand, gravel, potash, and diamonds.

non-porous rock layers

Rock layers that are impermeable.

non-renewable resource

A resource that is not renewable and can be used only once. Examples include oil and gas.

ore bodies

Concentrations of minerals.

organic

Animals or plants raised or grown without the use of drugs, hormones, or synthetic chemicals.

Oriented Strand Board

Also referred to as OSB. A building material composed of wood strands and arranged in layers.

outsourcing

Contracting with organizations outside your country for work that could otherwise be done by employees within your company.

overfishing

Occurs when the quantity of fish harvested exceeds the amount that can be resupplied by natural growth and reproduction.

pasture

Land on which vegetation grows, especially that which is set aside for use by domestic grazing animals.

patterns

The order or arrangement of features may be regular, irregular, concentrated, dispersed, linear, etc.

perspective

One's point of view.

pesticides

Chemicals used to kill harmful insects in plants and animals.

Peters

A German cartographer who developed the Peters map projection in 1974. The Peters map projection shows the areas of countries and continents accurately, but distorts the shapes.

photosynthesis

The process of removing carbon dioxide from the atmosphere and returning oxygen to the atmosphere.

physical geography

Features that exist in the natural environment or that make it up, including landforms, natural vegetation, soils, weather, climate, rivers, lakes, and natural resources. These features exist without the need for a human presence.

place

A location on Earth's surface such as a community, town, or region is defined by specific physical and human characteristics that make it different from any other place.

place attachment

A strong connection to a familiar place, a feeling of comfort and familiarity with the place where you live, part of your identity.

plains

An area of relatively flat grassland, with few trees: prairie.

plantation

A large estate or farm on which crops are raised, often by resident workers.

pluralism

A condition in which numerous and distinct ethnic, religious, or cultural groups are present—and seen as an asset—within a society.

precipitation

All moisture—solid and liquid—that falls to Earth from the atmosphere.

Prime Meridian

A line of longitude that serves as the starting point (0 degrees) for measuring longitude; it runs through Greenwich, England.

produce

Farm products, especially fresh fruits and vegetables.

projection

A method of transferring the features of the curved surface of Earth onto a flat surface to create maps.

raw material

Something used by an industry to be processed into a more finished state.

recycling

To use again or to convert materials into something usable instead of disposing of them.

region

A geographical area that has similar characteristics throughout and is different from other areas; for example, the prairie region.

regolith

The layer of loose rock resting on bedrock.

relationships

A connection or association between or among different things. In geography, the relationship may be between physical and human elements. Physical geography has a major influence on human geography.

relative location

The location of something in relation to other known features.

remote

A community that is out of the way or located far from the main centres of population and society.

renewable

Something that can be used over again.

renewable resource

A resource that can be used over again (wind, water) or can be renewed if managed carefully (trees, soil).

Robinson

An American cartographer who developed the Robinson projection in 1972. His map resembles a globe as it attempts to show shapes relatively accurately without too much distortion of size or area.

run-off

Water in streams, rivers, ponds, and lakes.

rural

Communities outside large urban centres, usually with smaller populations and located in the country.

sacred

Associated with religion or the divine.

salt water

Water with a high saline (salt) content found in oceans and seas.

sedimentary rock

Rock formed by sediments.

sediments

Naturally occurring materials that are broken down by processes of weathering and erosion, transported by wind or water, and deposited on the land or in water where they eventually become rock.

selective cutting

A type of lumber harvest that involves cutting only those trees of a specific size or species.

shellfish

A type of marine life that includes lobster and shrimp.

shelterwood logging

A type of lumber harvest that involves clear-cutting small areas while other trees are left standing to reseed the open spaces.

shield

A large area of exposed Precambrian (igneous) rock; the Canadian Shield.

softwood lumber

Lumber from coniferous trees.

starvation

The result of a serious or total lack of nutrients needed for maintenance of life.

stewardship

To look after something; to manage resources carefully and leave enough for future generations.

structure planning

The continual modification of a city's layout.

subsistence

Providing oneself with required essentials such as food.

subsoil

The layer or bed of earth beneath the topsoil.

sustainable

Able to maintain at the current level.

sustainable development

Using resources in such a way that they meet present needs without longterm, negative consequences on the environment.

sweatshops

Factories that employ children, have long shifts, and pay low wages.

tar sands

A location where oil seeps upward into sand deposits. The Athabasca tar sands are in northern Alberta.

temperate region

A zone located between the Tropics and the Arctic; a region of moderate climates.

thematic map

A map produced to highlight a theme or a specific purpose, also known as a special purpose map.

thermal electricity

Electricity generated by heating water to create pressurized steam, which turns turbines, which create electricity.

topography

The surface features of a place or region.

topsoil

The upper part of the soil.

trade deficit

A situation in which a country has bought (imported) more goods or services than it has sold in exports.

trade surplus

A situation in which a country has bought (imported) fewer goods or services than it has sold in exports.

transnational

A corporation that has its facilities and other assets in at least one country other than its home country.

transnational manufacturing

A situation where a corporation has its facilities and other assets in at least one country other than its home country; these corporations are sometimes referred to as transnational corporations.

traps

Areas among sedimentary rock where oil and gas deposits accumulate.

trawler

A fishing boat that uses a trawl net or dragnet to catch fish.

treeline

The upper limit of tree growth in mountains or northern latitudes.

tundra

A vegetation zone in northern regions where it is too cold for trees to grow. The vegetation consists of shrubs, grasses, mosses, and lichens.

undernourished

A form of malnutrition caused by a lack of one or more vital nutrients in the quantity needed for the body to develop and function properly.

unemployment rate

The percentage of the total labour force that is unemployed but actively seeking employment and willing to work.

United Nations

An international organization composed of most of the countries of the world. It was founded in 1945 to promote peace, security, and economic development.

urban renewal

The process of redeveloping a deteriorated section of a city, often through demolition and new construction.

urban sprawl

The uncontrolled spreading of cities.

urbanization

The growth and expansion of cities; people leaving rural areas and moving to cities.

weather

Conditions of the atmosphere in one place during a short period of time.

wind farms

A group of wind turbines in the same location used for the production of electric power.

withdrawal use

Water removed from rivers and lakes that is usually returned after use; often used in electrical generating stations.

world city

A city acting as a focus for world finance and trade flows. Twenty-five cities effectively control almost all the world's financial transactions. New York, London, and Tokyo are at the top of the hierarchy. This is also known as a **global city**.

zoning

Laws passed by city governments controlling the kind and amount of development in an area.

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GRADE 10 GEOGRAPHIC ISSUES OF THE 21ST CENTURY (20F)

Appendix A Very Brief Guide to Writing an Essay

APPENDIX: A VERY BRIEF GUIDE TO WRITING AN ESSAY

Writing an essay can be divided into the following three stages:

- Stage 1—Planning
- Stage 2—Writing
- Stage 3—Revising

Within each stage of the process, there are various steps to follow. Each step is important.

Stage 1—Planning

To plan out your essay, complete the following steps:

- A. *Determine what kind of essay you are writing.* Different types of essays require different approaches. What is your essay's purpose? Are you trying to explain, define, classify, argue, describe a process, compare and/or contrast, establish cause and/or effect, narrate, or describe?
- B. *Figure out your thesis.* Where do you want to go with your essay topic? Create a thesis statement. A thesis statement is a sentence that tells the reader what the topic of the essay is and what the author wants to say about that topic. A good thesis statement is precise, concise, and attempts to explore or prove only one major point.
- C. *Gather ideas*. Brainstorm. Establish what you already know and what you want to know about your topic. Go to the library or use the Internet and do some preliminary research. Paraphrase and summarize researched material and keep track of your sources as you go.
- D. *Evaluate your ideas*. Choose which ideas you want to use to support your thesis. Make sure that you eliminate irrelevant and redundant ideas. Look at which ideas you would like to keep and group common ideas by theme. Consider how many examples and details you actually need to support your thesis. Do NOT copy and paste information from research material.
- E. *Organize your ideas.* Make an outline. Keep it in point form and make sure it is accessible to you at all times as you write your essay.

Stage 2—Writing

To write your essay, complete the following steps:

- A. Write an introduction. Write a clear, interesting essay introduction that includes an attention grabbing hook, a brief outline of your main points, and your thesis statement.
- B. Write the body paragraphs. Write your body paragraphs and ensure that each one has a topic sentence and sufficient supporting details or examples so that the reader can understand your main points. As you write, constantly think about whether your ideas are pointing the reader toward your thesis. Follow your outline.
- C. *Include transitions to connect your thoughts.* Ensure that your ideas connect together in a clear, smooth way by using transitions between thoughts and paragraphs.
- D. Write a conclusion. Complete your essay with a solid conclusion. Remind your audience why your essay was worth reading and synthesize the important things you had to say. Leave them with an inspirational thought, a challenging question, or a call to action.

Stage 3—Revising

To revise your essay, consider the following:

- A. *Content*—Ensure your essay discusses ONE specific topic and has an introduction, a body, and a conclusion. The introduction should have a sharp hook, a clear thesis statement, and an explanation of how the thesis will be discussed in each paragraph. Ensure body paragraphs contain topic sentences, transitions throughout, and sufficient details and examples to support the thesis. The essay should have a solid conclusion that goes beyond merely repeating what the audience just read. Be certain that every idea in the essay helps to prove or explain the thesis.
- B. *Organization*—The essay should have an introduction, a body, and a conclusion. The thesis should be divided into several sub-topics for the sake of explanation. Each body paragraph should contain a topic sentence to outline how that sub-topic supports the thesis, followed by specific details and examples to help the reader understand the thesis. Transitions should be present within paragraphs and from one paragraph to another. Paragraphs should be balanced in length and detail.

C. *Style*—Proofread the essay for parallel structure. Make sure that the essay is filled with specific terms, strong verbs, precise nouns, and descriptive adjectives and adverbs. Revise any spelling errors, sentence fragments, and run-on sentences. Correct any mistakes in agreement (in other words, subjects and verbs all match, tenses and perspectives—1st person, 2nd person, 3rd person—are consistent throughout).

Sample Outline for Five-Paragraph Essay

Topic:
Purpose (position):
Audience:
Introduction:
Hook (quotation, statistic, question, fact, etc)
Thesis statement:
Supporting point A:
Supporting point B:
Supporting point C:
Body Paragraph A = Supporting Point A
Topic sentence:
Supporting detail/example 1:
Supporting detail/example 2:
Supporting detail/example 3:
Notes:
Body Paragraph B = Supporting Point B
Topic sentence:
Supporting detail/example 1:
Supporting detail/example 2:
Supporting detail/example 3:
Notes:
Body Paragraph C = Supporting Point C
Topic sentence:
Supporting detail/example 1:
Supporting detail/example 2
Supporting detail/example 3:
Notes:
Conclusion:
Restate the thesis IN DIFFERENT WORDS
Summarize main points IN DIFFERENT WORDS
Leave audience with a call for action, comment, quotation, prediction, or inspirational idea.
What is the overall message? What do you want readers to take from reading this essay?

Sample Complete Essay

According to *The Canadian Veterinary Journal*, approximately one-third of Canadian households have a cat as a pet. Why is it that these animals are so popular? Although many people prefer dogs because of their loyal natures and teachable qualities, cats make better pets. Cats are clean, low-maintenance, and personable creatures that provide a great source of companionship for those who own them.

Although pets can bring a lot of joy to a home, they can also bring a lot of mess. When people are pondering which pet to choose, one of the first considerations is how much mess the pet will create. Cats are, therefore, an appealing choice because they are fairly clean animals. First, cats are easy to toilet train. Whereas training a puppy to do its business in the right place can feel like a tedious chore for the pet owner, training a kitten to do the same takes merely a few days. While training a puppy can involve countless trips outdoors and a great deal of carpet shampooing in the process, training a cat requires little more than showing the animal where to locate its litter box. Provided that you keep its box clean, a cat will respectfully make its deposits where it should. Cats take great pride in their personal hygiene. They groom themselves regularly, they almost never need a bath, and they will never leave a puddle of drool on your floor or your furniture.

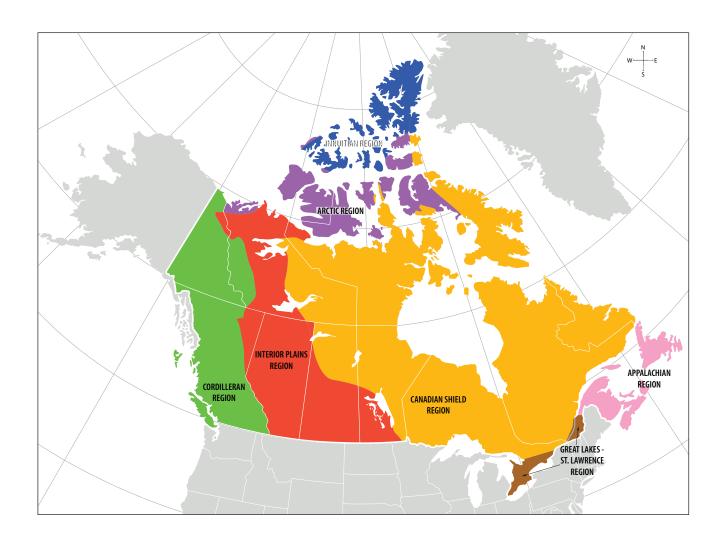
Cats are low-maintenance pets, not only because of their no-fuss bathroom routines, but also because of their independent nature. This makes them an attractive pet for people who are busy, but who like the idea of having a furry friend with whom they can cuddle at the end of the day. As opposed to their canine counterparts, cats do not require walking and they will find their own sources of exercise. They may have random bouts of energy and be seen scurrying from one corner of the house to another. Outdoor cats will roam the neighbourhood (chasing squirrels and ladybugs) and they generally return home when their adventure is done for the day. Furthermore, cats do not require human interaction for amusement, nor do they need complicated or expensive playthings to keep themselves entertained. They will find fun swatting a twist-tie across the kitchen floor or watching the birds in the trees from the living-room window. Finally, for those who travel, a cat is a suitable pet because, aside from putting out a daily dose of food and fresh water, and a quick tidying of the litter box, a cat can largely take care of itself for a few days.

Although a cat is a fairly self-sufficient being, it has a lot to offer in terms of companionship. Whereas a dog will demand your attention and repay you with its undying loyalty, a cat will come to you on its own terms. Their independent spirit may cause cat-skeptics to assume that cats are aloof and unfeeling. On the contrary, cats can be extremely lovable, comforting animals that bond with their owners and demonstrate affection in numerous ways. For instance, cats will rub up against people they like and purr with contentment when they are enjoying your company. As well, cats can be a source of comfort when one is feeling lonely, ill, or sad. This is perhaps one reason why they are frequently chosen to grace the halls of personal care homes for elderly people. Cats can be frisky and playful, or calm and consoling. Cats may take time to get to know you, but they will let you know in their own quiet ways that you are loved.

When choosing a pet, careful consideration must be made in terms of the suitability of one's lifestyle and the habits, needs, and personality of the animal. For many, a cat is an ideal choice because it offers a lot of companionship in return for relatively little care. People nowadays are busy. We rush around from school, to work, to the gym, to music lessons, and to the store. At the end of the day, it's nice to come home to the greeting of a furry friend at the door without feeling guilty about not having the time to take him for a walk or the energy to clean up the mess in the backyard. A cat is like that perfect college roommate who keeps his corner of the apartment neat and generally minds his own business, but who is still a solid friend when you need him. Next time you are looking to add to your family, consider sharing your home with a cat. You might be surprised how much these quiet, noble creatures can brighten your life.

Notes

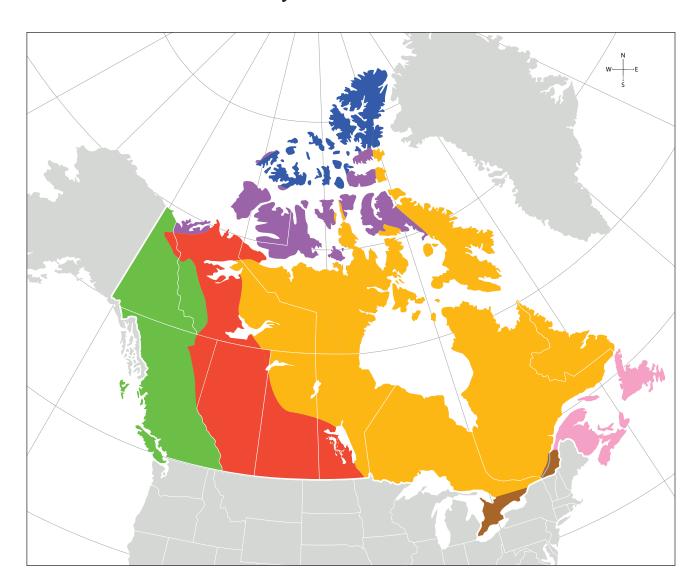
Module 1, Lesson 2, Page 22 Major Landform Regions in Canada



Module 1, Lesson 2, Page 26 Learning Activity 1.4: Mapping North America Major Landform Regions in North America



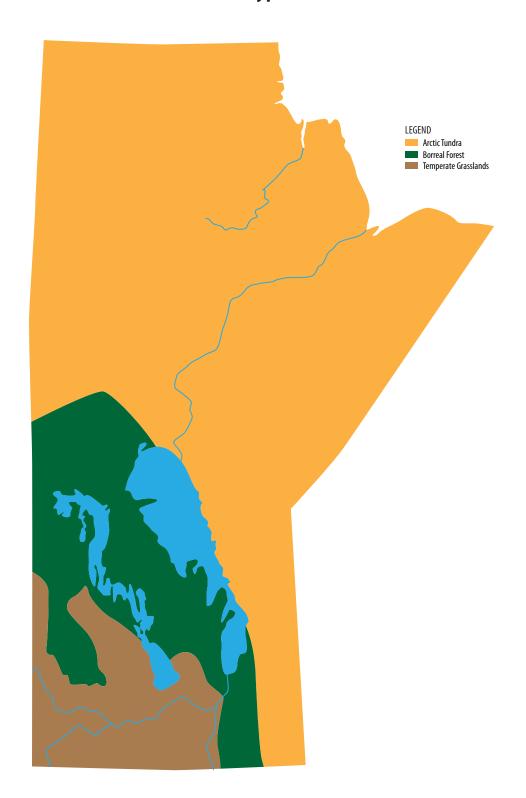
Module 1, Page 49
Assignment 1.1: Branches of Geography, and Place and Identity
Political and Major Landform Features in Canada



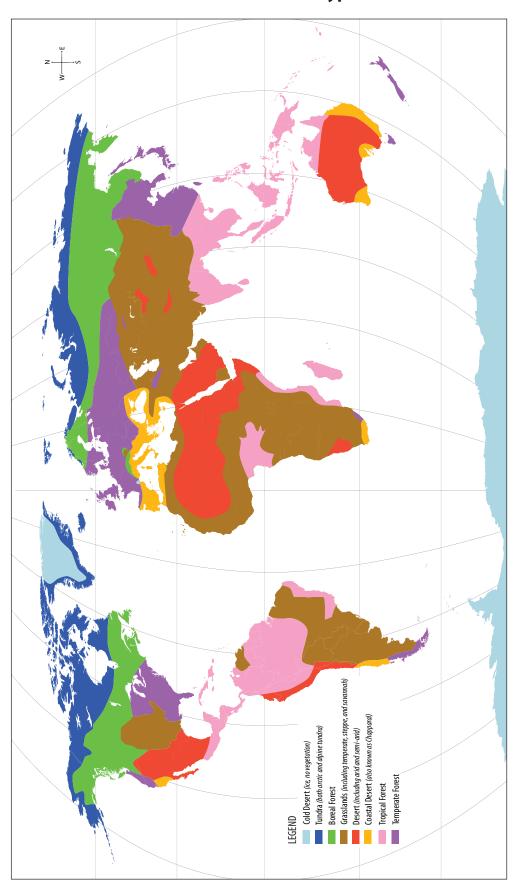
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Assignment 1.1: Branches of Geography, and Place and Identity
Political and Major Landform Features in North America



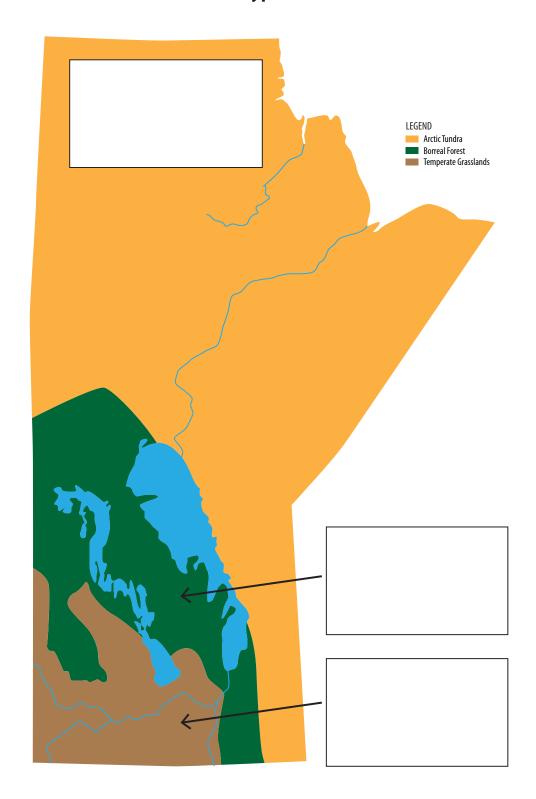
Module 1, Lesson 4, Page 59
Learning Activity 1.7: Manitoba Environmental Types
Environmental Types in Manitoba



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Learning Activity 1.8: World Environmental Types and Population
Global Environmental Types



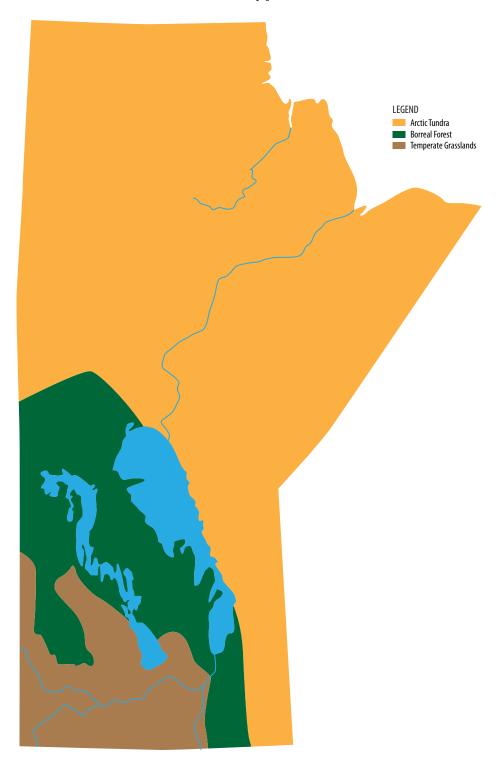
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Assignment 1.2: Global Environmental Types and Environmental Responsibility
Environmental Types in Manitoba



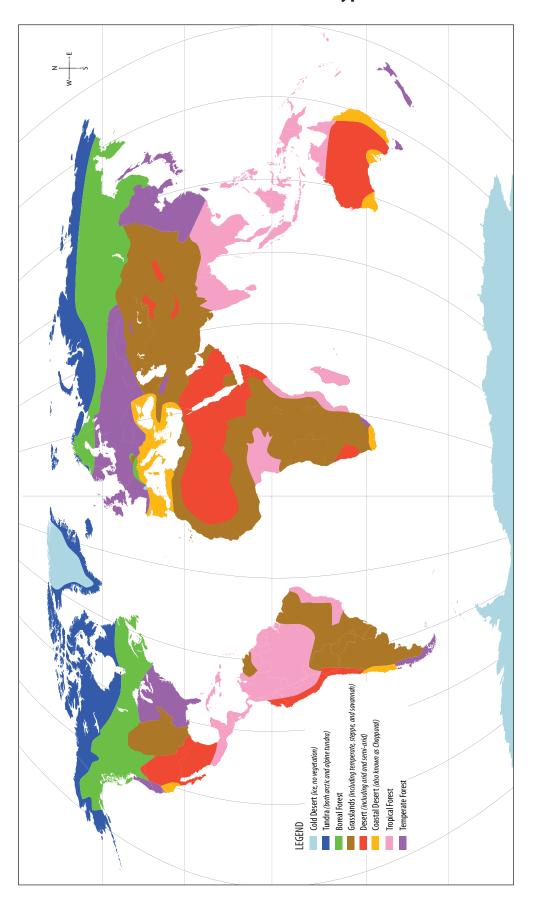
Module 1, Learning Activity Answer Key, Page 12 Learning Activity 1.4: Mapping North America Major Landform Regions in North America—Answer Key



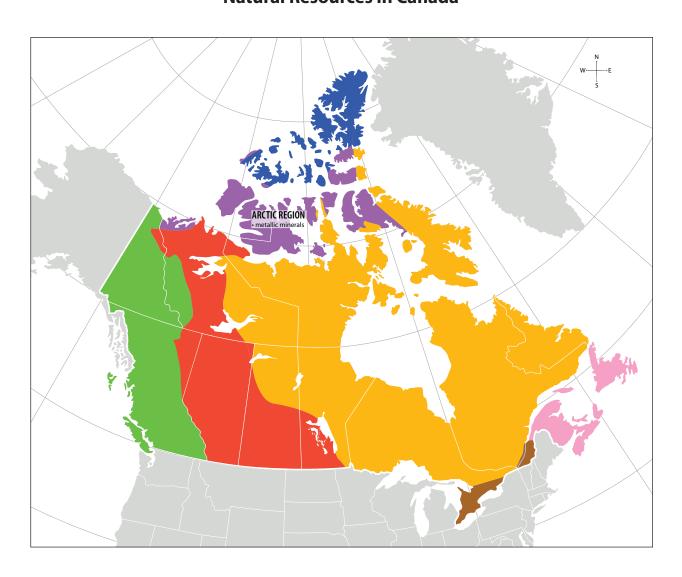
Module 1, Learning Activity Answer Key, Page 20 Learning Activity 1.7: Manitoba Environmental Types Environmental Types in Manitoba



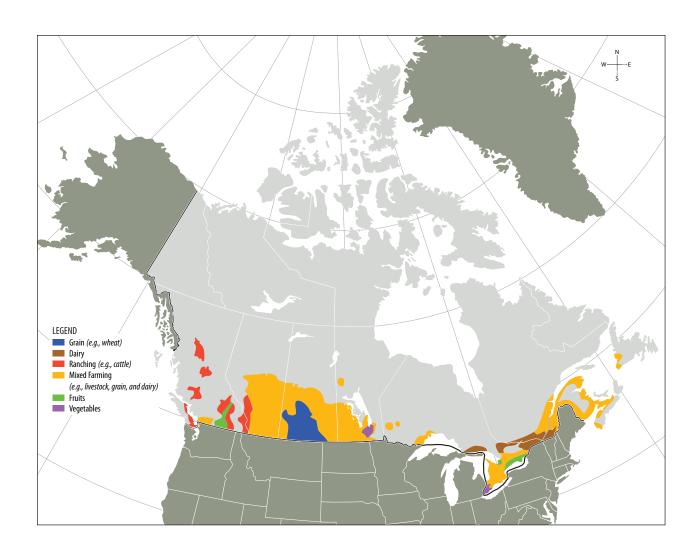
Module 1, Learning Activity Answer Key, Page 22 Learning Activity 1.8: World Environmental Types and Population Global Environmental Types



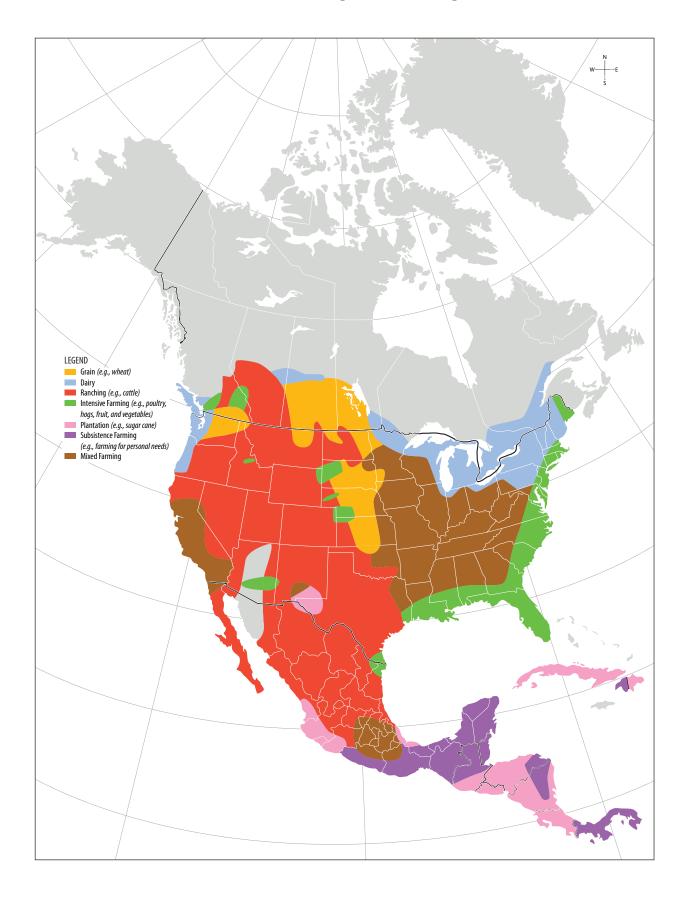
Module 2, Page 47 Assignment 2.1: Natural Resources Natural Resources in Canada



Module 3, Lesson 1, Page 9 Canada's Agricultural Regions



Module 3, Lesson 1, Page 10 North America's Agricultural Regions



Module 3, Lesson 4, Page 44 World Hunger

