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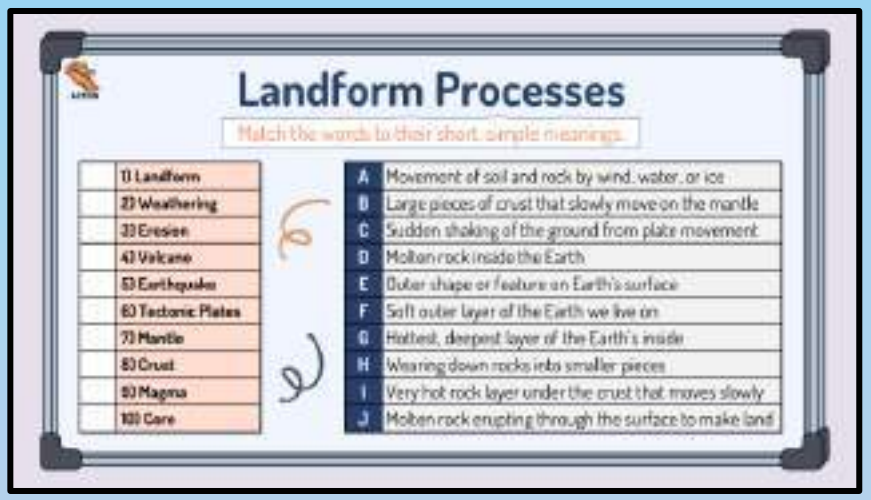
Ontario Geography

Physical Patterns in a Changing World– Grade 7

3-Part Lesson Format

Part 1 – Minds On!

- Learning Goals
- Discussion Questions
- Quotes
- And More!



Part 2 – Action!

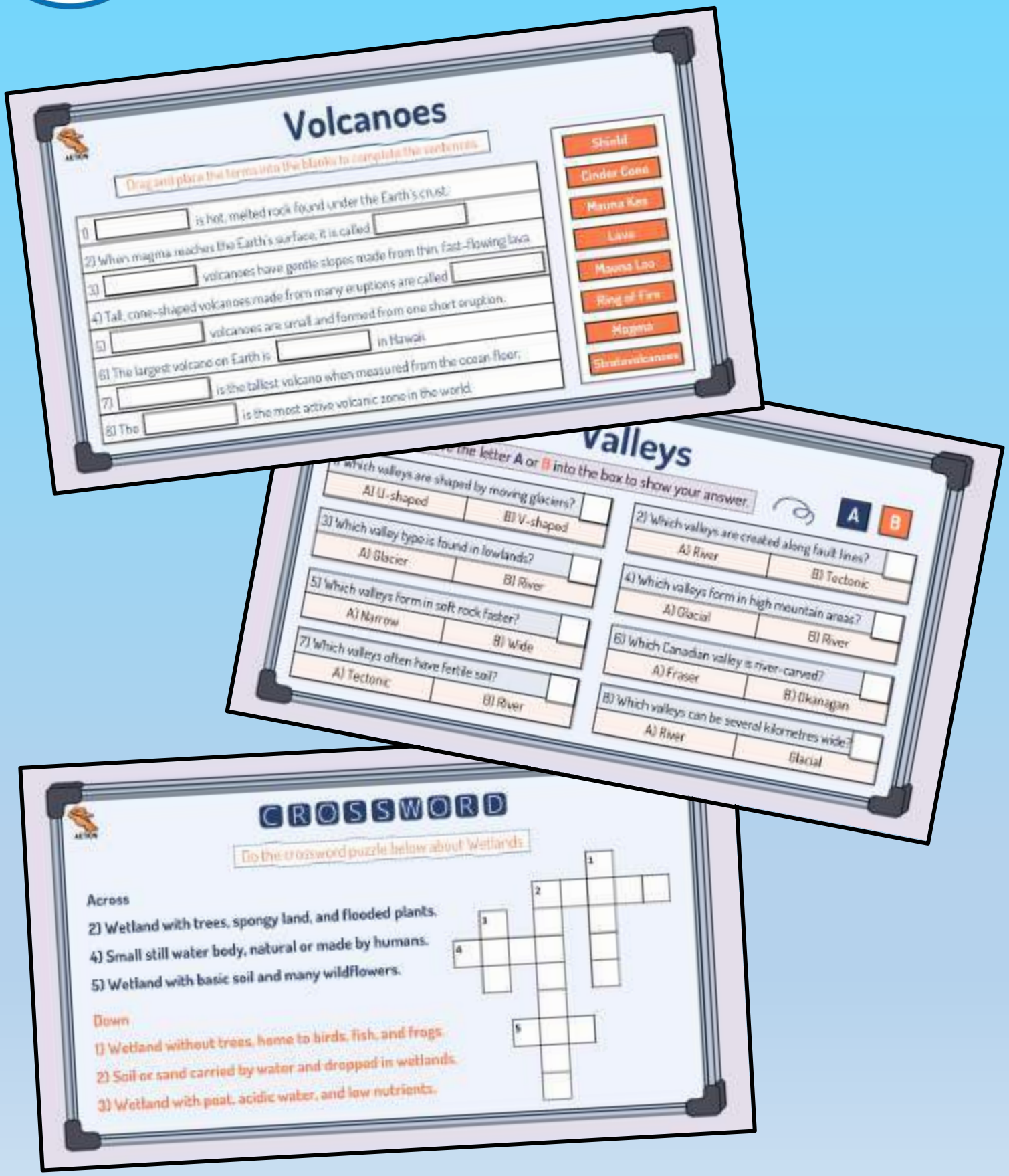
- Surveys/Polls
- Matching
- Drag and Drop
- Videos
- And More!

Part 3 – Consolidation!

- Exit Cards
- Quick Draw
- 3-2-1 Reflection
- One-Sentence Summary

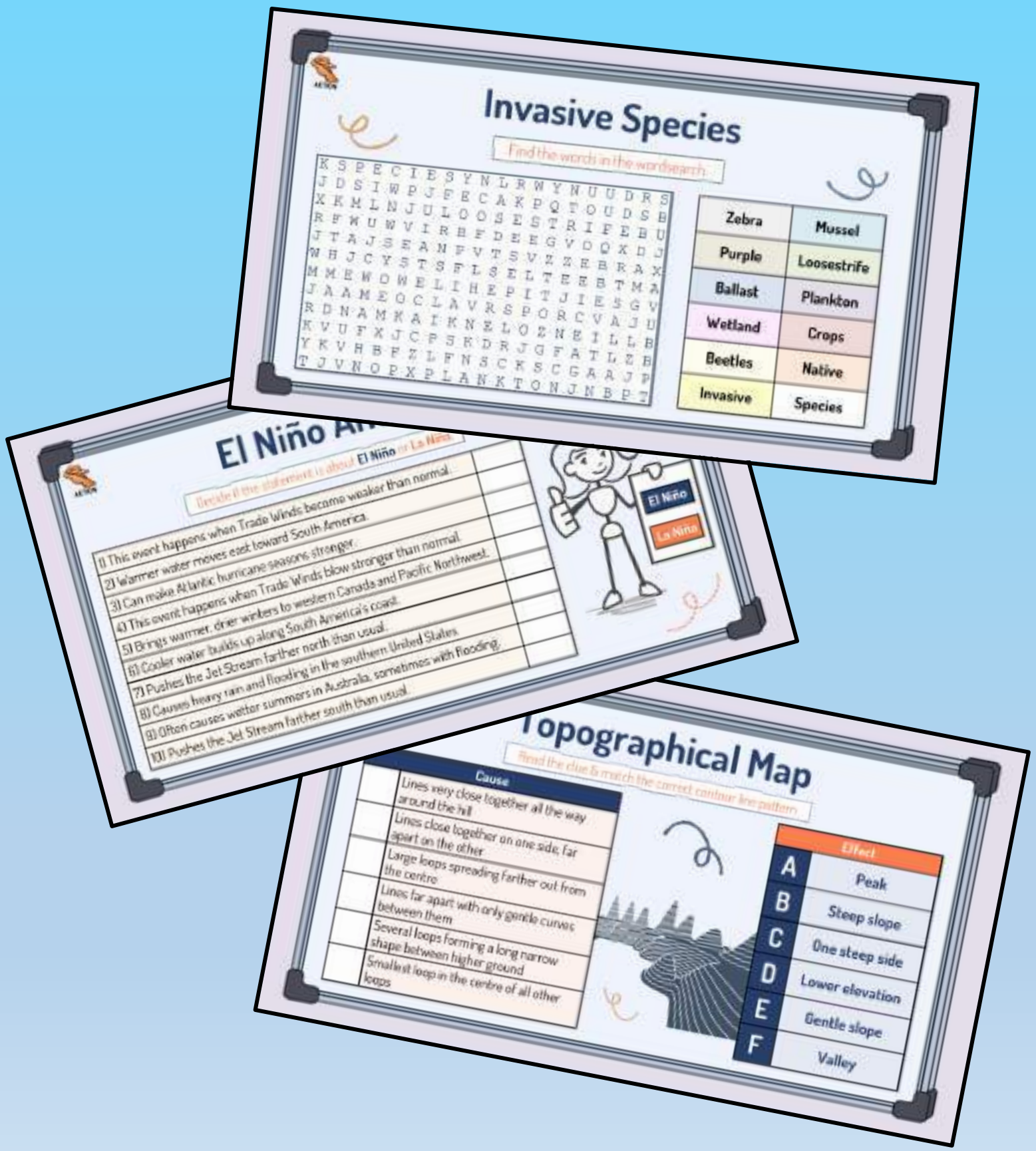
Ontario Geography

Physical Patterns in a Changing World– Grade 7



Ontario Geography

Physical Patterns in a Changing World– Grade 7



Workbook Preview

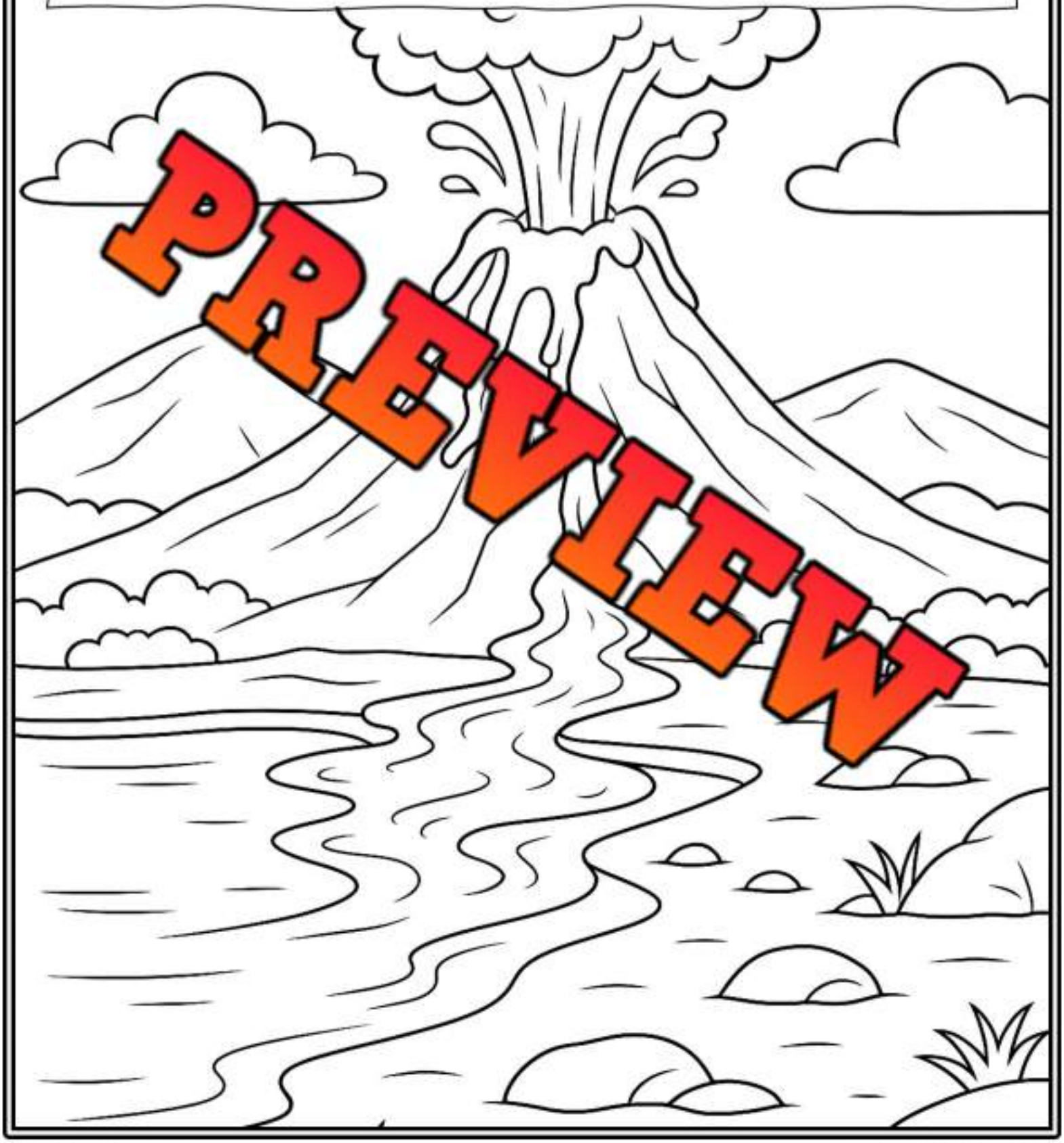
Grade 7 Geography Unit

A. PHYSICAL PATTERNS IN A CHANGING WORLD

	Curriculum Expectations	Pages
A1.1	Describe various ways in which people have responded to challenges and opportunities presented by the physical environment, and analyse short- and long-term effects of some of these responses	8-10, 18-21, 27-28, 32-38, 42-50, 59-63, 89-90, 97-102
A1.2	Compare and contrast the perspectives of some different groups on the challenges and opportunities presented by the natural environment	57-58, 91-93
A1.3	Assess the physical environment in various locations around the world to determine which environment or environments have the greatest impact on people	13-17, 22-26, 39-41, 76-78, 82-83
A1.4	A e p th	-67, -102
A2.1	F n e p	-53, , 79-81
A2.2	Gather and organize data and information from a variety of sources, and using various technologies, on the impact of natural events and/or human activities that change the physical environment, ensuring that their sources reflect more than one perspective	8-10, 15-19, 22-24, 27-28, 51-53, 68-75, 79-81, 91-93
A2.3	Analyse and construct maps as part of their investigations into the impact of natural events and/or human activities that change the physical environment, with a focus on investigating the spatial boundaries of the impact	94-96
A2.4	Interpret and analyse data and information relevant to their investigations, using various tools and spatial technologies	25-26, 51-53, 79-81, 94-96
A2.5	Evaluate evidence and draw conclusions about the impact of natural events and/or human activities that change the physical environment	20-21, 32-53, 57-83, 89-90
A2.6	Communicate the results of their inquiries, using appropriate vocabulary (e.g., climate, land use, landforms, vegetation, drought, flood, climate change, agriculture, ecotourism, land reclamation) and formats appropriate for specific audiences	54-56, 68-75, 84-88, 91-93

	Curriculum Expectations	Pages
A3.1	Identify the location and describe the physical characteristics of various landforms (e.g., mountains, plateaus, plains, valleys)	8-10, 13-17, 22-31, 54-56, 94-96
A3.2	Describe some key natural processes and human activities (e.g., tectonic forces, weathering and erosion, deposition, glaciation, mining, land-reclamation projects) that create and change landforms	8-38, 42-47, 54-56, 84-90
A3.3	Demonstrate the ability to extract information from and analyse topographical maps (e.g., construct a cross-section of a landform based on the information from a topographical map)	51-53, 94-96
A3.4	Describe patterns and physical characteristics of some major water bodies and systems around the world (e.g., river systems, drainage basins, lakes, oceans)	11-12, 18-19, 48-50, 76-78
A3.5	Describe some key natural processes and human activities (e.g., changes in rainfall, melting of glaciers, erosion, rising sea levels, climate change, constructing dams, irrigation, bottling water from aquifers) that create and change water bodies and systems	20-21, 32-50, 82-83
A3.6	Describe patterns and characteristics of major climate regions around the world (e.g., characteristics and location of tropical, dry, temperate, continental, and polar climate regions)	59-60
A3.7	Describe some key natural processes and other factors, including human activities (e.g., ocean currents, wind systems, latitude, elevation, bodies of water, landforms, deforestation, human activities that result in greenhouse gas emissions) that create and change climate patterns	76-88
A3.8	Analyse and construct climate graphs to gather information on and illustrate climate patterns for a specific location (e.g., to analyse the trend in precipitation and temperature in Singapore, Khartoum, or Warsaw over the course of a year)	76-78, 82-83
A3.9	Describe patterns and characteristics of major natural vegetation regions around the world (e.g., the location and characteristics of grasslands, boreal forests, tropical rain forests, tundra)	35-36, 39-41, 48-50, 66-67
A3.10	Describe some key natural processes and human activities (e.g., natural and human-influenced climate change, erosion of top soil, deforestation, the use of chemical fertilizers and practice of monoculture, grazing of domestic animals, activities that introduce invasive species into an environment) that create and change natural vegetation patterns	35-38, 57-60, 89-90
A3.11	Describe how different aspects of the physical environment interact with each other in two or more regions of the world (e.g., the interrelationship between vegetation, landforms, and climate in desert regions; between landforms and vegetation in a volcanic region)	57-67

PHYSICAL PATTERNS IN A CHANGING WORLD



Name: _____ 8

Curriculum Connection
A1.1, A2.2, A3.1, A3.2

Landform Processes

Understanding Landforms

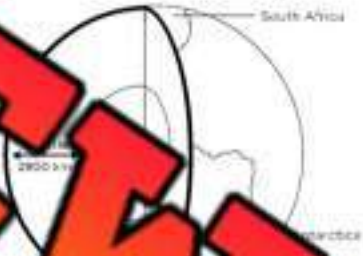
A **landform** is a natural shape or feature found on the Earth's surface. These include valleys, mountains, hills, oceans, and plains. Landforms don't stay the same forever. They are always changing, but these changes often happen very slowly. Scientists say the Earth is about 4.54 billion years old. Over this long time, landforms have shifted and moved because of powerful forces.

Some changes are small and happen slowly. For example, **Niagara Falls** is wearing away rock moving backward, or **receding**, at a rate of about 30 cm per year today. Before 19 receding much faster—1.5 metres every year. In the la Niagara Falls has moved about 11.4 km, creat e **Niagara Gorge**.

Processes that Change Landforms

Landforms cha se of n rces. These are:

- **Weathering** – th aking
- **Erosion** – movemen ro d, water, or ice
- **Volcanoes** – when mol alle rupts and hardens into land
- **Earthquakes** – sudden sha at c er land
- **Land Movement** – shifts in the earth , oft sed by the movement of plates
- **Human Activities** – like mining, buil ads or



The biggest force that changes landforms is g water, like rivers, rain, and ocean waves.

Tectonic Plates and the Earth's Layers

The Earth can be compared to an egg with three layers:

- **Core** (like the yolk): the very hot centre, with an inner and outer part
- **Mantle** (like the egg white): made of molten rock that slowly mov
- **Crust** (like the shell): the thin outer layer we live on

The **crust** is broken into large pieces called **tectonic plates**. These plates move because the hot mantle below them is slowly moving. Some plates are under land and can be 30–150 km thick. Others are under the oceans and are thinner—just 5–15 km thick.

Movement of Tectonic Plates

The plates move in different ways:

- Some move **apart** and let magma rise up (like in the middle of the Atlantic Ocean)
- Some **collide**, and one plate slides under the other. This is happening near British Columbia, where the **Juan de Fuca Plate** is going under the **North American Plate**
- Some plates **slide past each other**, causing earthquakes

These movements shape the land by forming mountains, trenches, and volcanoes. They are one of the most important reasons landforms change.

Name: _____ 9

Curriculum Connection
A1.1, A2.2, A3.1, A3.2

True or False

Is the statement is true or false?

1) Mountains, hills and skyscrapers are examples of landforms.	True	False
2) Landforms are characteristics of the earth surface.	True	False
3) Landforms stay the same forever.	True	False
4) Human actions like farming have no effect on how landforms change.	True	False
5) Tectonic plates are part of the earths mantle.	True	False
6) The Earth's crust is the thickest part of the Earth's layers.	True	False

Questions

Find information from the text to support your answer.

1) List and explain the processes that shape landforms

2) Illustrate and explain the Earth's layers

Making Connections

What does this reading remind you of in your life?

Curriculum Connection
A1.1, A2.2, A3.1, A3.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark ____

Match each part of the Earth with its correct description.

	Core
	Mantle
	Crust

A) Thick layer of slowly moving melted rock inside Earth.

B) Thin outer layer where people, plants, and animals live.

C) Deepest, hottest layer made of rock and metal.

Name: _____ Mark ____

Match each part of the Earth with its correct description.

	Core
	Mantle
	Crust

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	Mantle
	Crust

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B) Thin outer layer where people, plants, and animals live.

C) Deepest, hottest layer made of rock and metal.

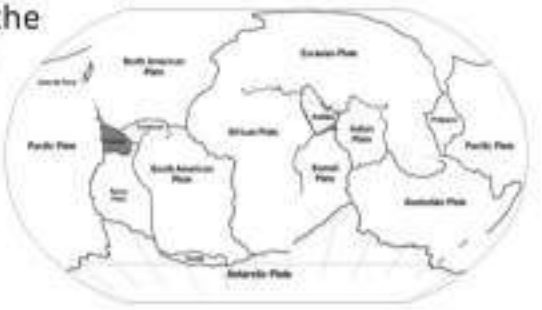
Name: _____ 11

Curriculum Connection
A3.2, A3.4

Tectonic Plates

What Are Tectonic Plates?

The outer layer of the Earth is called the **crust**, and it is not one solid piece. It is broken into giant slabs called **tectonic plates**. There are 7 main plates (like the North American Plate and Pacific Plate) and several smaller ones. These plates cover both land and ocean floors and fit together like a jigsaw puzzle. Tectonic plates float on a layer of **molten rock** called the mantle. Because the mantle moves slowly, it pushes the plates around. On average, a tectonic plate moves about 15 centime[illegible]r 6 inches) per year. That might seem small, but [illegible]ions of years, this movement has caused [illegible]to drift and change shape[illegible]**tal drift**.

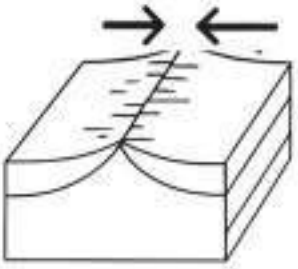


Where Plates M[illegible]nd

The edges whe[illegible]plates [illegible]e called **plate boundaries**. These boundaries are where many impor[illegible]olog[illegible]pen—like **earthquakes**, **volcanoes**, and the formation of mountain[illegible]na (m[illegible]ock) from deep inside the Earth can rise up through cracks at the plate[illegible]es ar[illegible]lcanoes.

There are three main types of tectonic p[illegible]dari

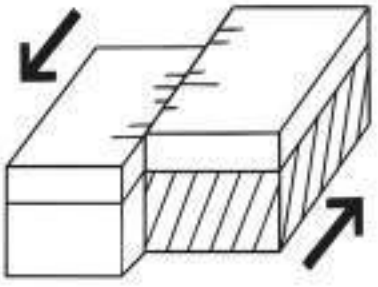
1) Convergent Boundaries (Plates Push[illegible]gether) [illegible]w plates push into each other, one of them may get pushed underneath. This is cal[illegible]**ubdu**[illegible]. These areas often have earthquakes, mounta[illegible]ding, [illegible]es. For example:



- The **Himalayas** were[illegible]ed [illegible]Plate collided with the Eurasian Plate.
- The **Mariana Trench**, the dee[illegible]an [illegible]n t[illegible]world, was formed by the Pacific Plate[illegible]ng pushed under the Philippine Plate.

2) Divergent Boundaries (Plates Moving Apart) At divergent boundaries, plates move away from each other. Magma rises to fill the gap and cools to form new crust. This often happens under oceans. An example is:

The **Mid-Atlantic Ridge**, a long mountain range on the ocean floor, formed where the Eurasian and North American plates are moving apart.



3) Transform Boundaries (Plates Sliding Past) Here, plates move sideways past each other. This sideways motion builds up pressure that is released as earthquakes. A well-known example is:

The **San Andreas Fault** in California, which causes many earthquakes in that area.

Name: _____ 12

Curriculum Connection
A3.2, A3.4

True or False Circle whether the statement is true (T) or false (F).

1) A convergent boundary is when 2 tectonic plates are pushed apart.	T	F
2) Tectonic plates move about 6 inches per year.	T	F
3) Tectonic plate boundaries are where volcanoes and earthquakes happen.	T	F
4) The San Andreas Fault is located at a divergent boundary.	T	F
5) The Mariana Trench is formed by subduction.	T	F
6) Most vol[illegible]es and earthquakes happen far from plate boundaries.	T	F

Question [illegible]nd explain the three main types of tectonic plate boundaries:

Questioning Write at least two questions you have after reading the text.

1)	
2)	

Name: _____ 13

Curriculum Connection
A1.3, A3.1, A3.2

Mountain Landform

What Are Mountains?

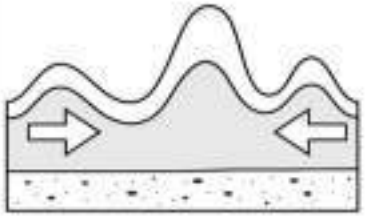
A **mountain** is a type of **landform** made of earth and rock that rises much higher than the land around it. Mountains must rise at least 300 metres above the land to be called a mountain. If the land is shorter than that, we call it a hill. A mountain has two main parts: the **sloped side**, which is the steep part that people often climb, and the **summit**, which is the very top of the mountain. Most mountains are not found alone. Instead, they form in long lines with many peaks. This is called a **mountain range**.

The highest mountain in the world is **Mount Everest**, which is 8,850 metres high. It is part of the Himalayan Mountain Range in Asia. This range continues to grow taller because of tectonic activity. Mount Everest rises about 40 centimetres every 100 years.

How Mountains Are Formed

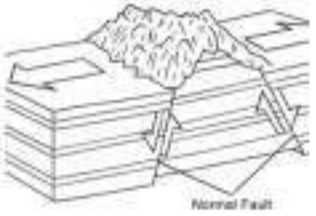
Mountains form in different ways depending on how the earth's tectonic plates move. These plates are pieces of the earth's crust that move slowly. There are 3 main types of mountains, and they are made:

A) Fold Mountains



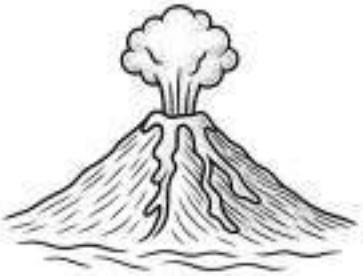
- Form when tectonic plates push together (a convergent boundary).
- Rock layers are squeezed and forced upward.
- Often made of sedimentary rock.
- Found at the edges of continents.
- Tallest type of mountain.
- Examples: Himalayas (Asia), Mount [illegible] (Canada/USA)

B) Fault-Block Mountains



- Form when tectonic plates pull apart.
- Cracks or faults cause some blocks of rock to [illegible] and others to rise.
- The mountains are made from the blocks that were pushed up.
- Example: Sierra Nevada (California and Nevada)

C) Volcanic Mountains



- Made when **magma** rises through the Earth's crust.
- Two kinds: dome mountains and volcanoes.
  - Dome mountains: Magma pushes up but doesn't break through. It cools and hardens into rock.
  - Volcanoes: Magma escapes and becomes **lava**. Lava builds up and forms cone-shaped mountains.
- Example: Mount St. Helens (Washington, USA)

Name: _____ 14

Curriculum Connection
A1.3, A3.1, A3.2

Questions Use information from the text to support your answer.

1) What are the characteristics of a mountain?

2) Explain the differences between fold mountains and fault-block mountains.

Visualization What[illegible] you were reading? Describe your picture.

Yes or No Circle whether the statement is true or not.

1) Do mountains need to be 300 metres tall to be called mountains?	Yes	No
2) Are the three types of mountains called fold, tectonic, and volcanic?	Yes	No
3) Is the summit the flat part at the bottom of a mountain?	Yes	No
4) Are fold mountains usually made of soft sedimentary rock?	Yes	No
5) Is Mount Everest getting shorter by 40 cm every 100 years?	Yes	No
6) Do mountain ranges have only one tall mountain peak?	Yes	No

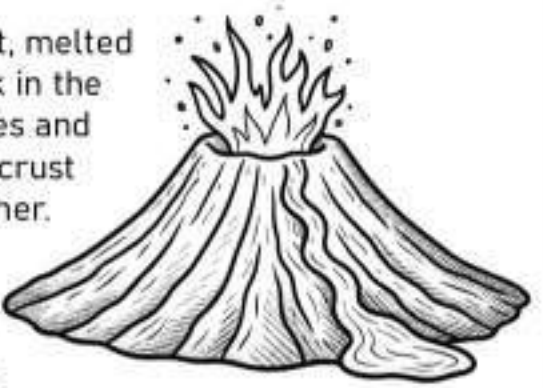
Name: _____ 15

Curriculum Connection
A1.3, A2.2, A3.1, A3.2

Volcanoes

How Volcanoes Form

Volcanoes are special landforms made when **magma** (hot, melted rock) from deep inside the Earth rises up through a crack in the Earth's outer layer, called the **crust**. When magma escapes and reaches the surface, it is called **lava**. These cracks in the crust often happen where **tectonic plates** push against each other. One plate, usually an ocean plate, is pushed underneath another pl it sinks, it melts into magma. The pressure b until the magma bursts out through the crac ption. Most volcanoes are found along t plates.



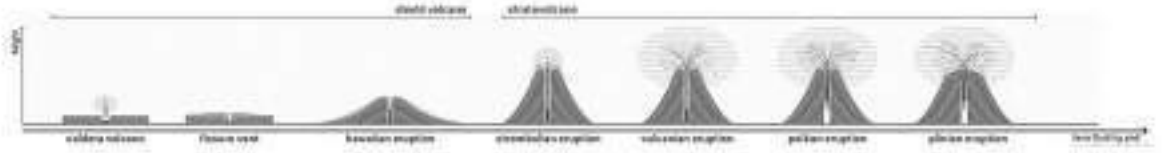
The Ring of Fire

The Pacific Ring of Fire is the most active volcanic area in the world. It is a horseshoe-shaped zone with more than 250 active noes. It stretches along the coasts of the Ocean, including places like Japan, and the Philippines. About 500 d are active today, but many e—ab all volcanoes—are under the ocea d ne seen.

Three Types of Volcanoes

There are three main types of volcanoes, and each one a differ y.

1) **Shield Volcanoes** – These are formed from thin, fas lava lava flows far from the vent and creates wide volcanoes with gentle s s. Th all, but they can cover a huge area.
2) **Stratovolcanoes** – Also called composite volcanoes, these are t a shaped. They can be nearly 2,500 metres high. They are built over thousands ars by many eruptions, which create layers of lava, ash, and cinder that harden into rock.
3) **Cinder Cone Volcanoes** – These are the smallest type, usually under 400 metres. Made from one short eruption of ash and rocks around a single vent.



Massive Volcanoes in Hawaii

Hawaii is home to the two biggest volcanoes on Earth. **Mauna Loa** is the largest volcano by volume and is a **shield volcano**. **Mauna Kea** is the tallest when measured from its base on the ocean floor—it is taller than Mount Everest when measured this way. Both formed on the ocean floor from lava building up over time.

Name: _____ 16

Curriculum Connection
A1.3, A2.2, A3.1, A3.2

True or False

Circle whether the statement is true or false.

1) Most volcanoes form at tectonic plate edges.	True	False
2) The Pacific Ring of Fire has over 250 volcanoes.	True	False
3) Volcanoes only occur on land.	True	False
4) Magma rises through cracks in Earth's crust during an eruption.	True	False
5) Mauna Kea is the world's tallest volcano.	True	False
6) The Ring [illegible] is located in the Atlantic Ocean.	True	False

Questi[illegible]

[illegible] from the text to support your answer.

1) What is the [illegible] we[illegible] magma and lava?

2) What are the three types of volcanoes, and how i[illegible] or[illegible]ferent from the others?

Summarize

Summarize the reading by writing the important information.

Curriculum Connection
A1.3, A2.2, A3.1, A3.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark ☐

Draw a line from each word to its correct meaning.

Magma ☐	☐ Flat volcano formed from runny lava with gentle slopes
Lava ☐	☐ Hot melted rock beneath the Earth's surface
Shield Volcano ☐	☐ A cone-shaped volcano built from many eruptions
Stratovolcano ☐	☐ Melted rock that flows on the surface after eruption

Name: _____ Mark ☐

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Stratovolcano ☐	☐ Melted rock that flows on the surface after eruption

Name: _____ 18

Curriculum Connection
A1.1, A2.2, A3.2, A3.4

Blog Post: The Ring of Fire

Top 5 Things You Didn't Know About the Ring of Fire's Volcanoes

Date: August 7, 2025 *Author: Jasmine K.* *4-minute read*

Have you ever heard of the Ring of Fire? No, it's not just a song—it's a real place on Earth, full of fire and danger! The Ring of Fire is a giant circle of volcanoes and earthquake zones around the Pacific Ocean. It has over 250 active volcanoes and is home to 75% of the world's vol es. Here are 5 wild facts you probably didn't know:

1) **Japan r 100 active volcanoes!**
Japa dge of four tectonic plates. That's why it has so many earthquakes a . Fuji is the most famous one, and it's still active, even though it h rupted .

2) **The Philippin ive lcano is very dangerous.**
Mount Ma Philipp pts often. It's known for its perfect cone shape, but it's also dead s erup times in the last 400 years.

3) **The west coast o**
From California to Br lumbia, like Mount St. Helens and Mount Rainier sit quietly now, b an n 1980, Mount St. Helens had a huge eruption that destroyed fores and

4) **Tectonic plates make volcanoes er**
The Earth's crust is cracked into big ces cal ctor tes. Where they push together (called convergent boundaries), m ses les as lava. This is how most Ring of Fire volcanoes are formed

5) **Many volcanoes are underwater!**
Most of the Ring of Fire's volcanoes are actually und cific . Th e underwater volcanoes can still erupt and even cause ts is!

Comments:

Ethan P. – August 7, 2025

This is cool! I didn't know most volcanoes are under the ocean. That explains all the tsunamis near the Philippines and Japan. In 2004, an underwater earthquake caused a tsunami that killed over 200,000 people.

Like Reply 1d ago

Leila M. – August 8, 2025

Great blog, but I think the volcanoes on land are more dangerous to people than the ones underwater. Land volcanoes like Mount Pinatubo caused ash to fall hundreds of kilometres away when it erupted in 1991!

Like Reply 10m ago

Name: _____ 19

Curriculum Connection
A1.1, A2.2, A3.2, A3.4

Questions Answer the questions below using evidence from the text.

1) What is the Ring of Fire and where is it located?

2) Explain how tectonic plates cause volcanoes to erupt.

3) How would you [illegible] von? Why?

Two Truths and a Lie Check only the two tru[illegible]n ea[illegible]

	The Ring of Fire has over 250 active volcanoes around the Pacific.
	The Ring of Fire wraps all the way around the Atlantic Ocean.
	Volcanoes in the Ring of Fire form mostly at convergent boundaries.

	Vo[illegible]n't er[illegible]der the ocean becaus[illegible] w[illegible]ter.
	The Ring of Fire[illegible]es in Canada and the U[illegible].
	Lava comes from deep underground, where magma pushes through cracks.

My Opinion Do you think underwater volcanoes or land volcanoes are more dangerous?

Name: _____ 22

Curriculum Connection
A1.3, A2.2, A3.1, A3.2

Plateaus

What Are Plateaus?

Plateaus are one of the four major landforms on Earth, along with mountains, plains, and hills. A plateau is a flat area of land that rises sharply above the surrounding land. It looks like a large, flat surface sitting high up, almost like a table. Plateaus can be found all over the world, and they cover more than one-third of all land on Earth. There are also landforms under water, incl**ceans**, **rivers**, and **lakes**. But plateaus can form **nd** and under the sea.

Types by

There a**o** mai**lateaus** based on where they are found:

- **Continenta**: **ese** plateaus that are found on land. They exist on every continent. **Plate**ia is the largest and highest plateau in the world. It is 2.5 million s**kilom** and sits at a very high elevation.
- **Ocean Plateaus**: **found** under the sea. The largest underwater plateau is **ralia** **th** Pacific Ocean. It is 1.5 million square kilometres, which is larger **the** **of** British Columbia!

How Plateaus Are Formed

Plateaus are also grouped by how they were made. **Earth** moves and changes, which forms different types of plateaus:

1) **Dissected Plateaus** – These are made when **t** **c** **push** land upward. Example: the **Deccan Plateau** in India.
2) **Volcanic Plateaus** – These form from **lava** that flows **olc** **many** eruptions. Each time the lava cools and hardens, it create **ne** **me**, these layers build up into a raised, flat area. Example: the **North Island Volcanic Plateau** in New Zealand.

Types Based on Environment

Plateaus can also be grouped by what is around them:

- **Intermontane** – Located between mountain ranges
- **Piedmont** – Located beside a mountain on one side and a plain or body of water on the other
- **Continental** – Surrounded by land or water with steep sides

Natural Resources on Plateaus

Many **minerals** can be found on plateaus, like gold, coal, iron, copper, and diamonds. These minerals are easier to mine from plateaus than from mountains because plateaus have flat land that is easier to reach.

Name: _____ 23

Curriculum Connection
A1.3, A2.2, A3.1, A3.2

True or False

Circle whether the statement is true or false.

1) Mountains, valleys, hills and plateaus are major landforms.	True	False
2) Plateaus are rich in minerals.	True	False
3) Plateaus are only found on continents.	True	False
4) Plateaus have at least one side that has a steep drop to land or water.	True	False
5) The Tibetan Plateau is the world's largest.	True	False
6) Plateaus are found on land and under the sea.	True	False

Questions

Use information from the text to support your answer.

1) What is a plateau? How are oceanic and continental plateaus different?

2) What are two ways that plateaus are classified? Give an example of each?

Matching

Match the plateau with the correct description from the list below.

Deccan Plateau ◯	◯ A plateau found underwater
Tibetan Plateau ◯	◯ The highest and largest plateau in the world, found in Asia
Volcanic Plateau ◯	◯ A dissected plateau in India formed by tectonic movement
Ocean Plateau ◯	◯ A plateau formed by lava from many volcanic eruptions

Curriculum Connection
A1.3, A2.2, A3.1, A3.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____
Circle Yes or No for each question.

Mark

1) Can plateaus be found both above and below sea level?	Yes / No
2) Are minerals easier to mine on plateaus than on mountains?	Yes / No
3) Is the Tibetan Plateau the lowest plateau on Earth?	Yes / No
4) Can ocean plateaus be larger than Canadian provinces?	Yes / No
5) Do tectonic plates help form dissected plateaus?	Yes / No

Name: _____
Circle Yes or No for each question.

Mark

1) Can plateaus be found both above and below sea level?	Yes / No
2) Are minerals easier to mine on plateaus than on mountains?	Yes / No
3) Is the Tibetan Plateau the lowest plateau on Earth?	Yes / No
4) Can ocean plateaus be larger than Canadian provinces?	Yes / No
5) Do tectonic plates help form dissected plateaus?	Yes / No

Name: _____
Circle Yes or No for each question.

Mark

1) Can plateaus be found both above and below sea level?	Yes / No
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3) Is the Tibetan Plateau the lowest plateau on Earth?	Yes / No
4) Can ocean plateaus be larger than Canadian provinces?	Yes / No
5) Do tectonic plates help form dissected plateaus?	Yes / No

Name: _____ 29

Curriculum Connection
A3.1, A3.2

Fact Or Fiction: Extreme Landforms

Objective

What are we learning about?

To help students learn about extreme landforms by hearing surprising true or false statements about mountains, volcanoes, plateaus, valleys, and hills. After each guess, students w[illegible]iscuss the real natural processes that shaped each landform.

Materi[illegible]

[illegible]ou need for the activity?

- Fact or Fic[illegible]nts
- A 'Fact' sign and [illegible]tion[illegible]ish the two sides of the room
- Designated areas in the classroom [illegible]e 'Fact' and 'Fiction' signs, allowing sp[illegible]for students to move to either side

Instructions

How will you complete the activity?

1. Your teacher will read statements. Pay close attention as each [illegible]ared.
2. Consider carefully whether you think the statement is true or false.
3. If you decide the statement is true, walk to the 'Fact' side of the room.
4. If your guess is that it's not true, move to the 'Fiction' side of the room.
5. Stay on your chosen side and listen attentively for the correct answer to be revealed.
6. When the right answer is announced, return to your seat, ready for the next round.
7. Have fun getting up and moving!

Name: _____ 30

Curriculum Connection
A3.1, A3.2

Fact or Fiction Read the statements to the class.

#	Statement	
1	Mount Everest grows about 40 centimetres taller every 100 years.	Fact
2	All mountains are formed by volcanic eruptions.	Fiction
3	The Andes Mountains stretch across seven countries in South America.	Fact
4	Plate[illegible] always found between two rivers.	Fiction
5	Th[illegible] is the largest and highest plateau in the world.	Fact
6	Do[illegible] mount[illegible] hen magma pushes up but doesn't break through.	Fact
7	River valley[illegible] when r[illegible] wear away rock and soil.	Fact
8	All valleys have the [illegible] shape.	Fiction
9	Hills are lower than mount[illegible] but [illegible] and around them.	Fact
10	All hills are made by people piling [illegible] irt and [illegible].	Fiction
11	Volcanic mountains form when lava builds [illegible] ha[illegible]	Fact
12	Shield volcanoes are the smallest type of volcano.	Fiction
13	The Pacific Ring of Fire has over 250 active volcanoes.	[illegible]act
14	All volcanoes are found on land, never underwater.	Fiction
15	Fault-block mountains form when crust cracks and blocks of rock rise.	Fact
16	Plateaus never form under the ocean's surface.	Fiction
17	Cinder cone volcanoes are usually less than 400 metres tall.	Fact
18	Fold mountains form when plates pull apart from each other.	Fiction
19	The Rocky Mountains are an example of fold mountains.	Fact
20	Hills can form when glaciers drop piles of rock and soil.	Fact

Name: _____ 31

Curriculum Connection
A3.1, A3.2

Quiz Check-In This quiz will assess students' understanding of the concepts covered in the Fact or Fiction activity. Cut along the lines and give each section to a student.

Name: _____

Mark

Is the statement true (T) or false (F)?

1) The Andes Mountains stretch across seven countries in Africa.	T	F
2) The Rocky Mountains are an example of fold mountains.	T	F
3) Fault-block mountains form when crust cracks and blocks of rock rise.	T	F
4) Fold mountains form when magma pushes up but doesn't break through.	T	F
5) River valleys form when rivers slowly wear away rock and soil.	T	F
6) Plateaus never form under the ocean's surface.	T	F

Name: _____

Mark

Is the statement true (T) or false (F)?

1) The Andes Mountains stretch across seven countries in Africa.	T	F
2) The Rocky Mountains are an example of fold mountains.	T	F
3) Fault-block mountains form when crust cracks and blocks of rock rise.	T	F
4) Fold mountains form when magma pushes up but doesn't break through.	T	F
5) River valleys form when rivers slowly wear away rock and soil.	T	F
6) Plateaus never form under the ocean's surface.	T	F

Name: _____

Mark

Is the statement true (T) or false (F)?

1) The Andes Mountains stretch across seven countries in Africa.	T	F
2) The Rocky Mountains are an example of fold mountains.	T	F
3) Fault-block mountains form when crust cracks and blocks of rock rise.	T	F
4) Fold mountains form when magma pushes up but doesn't break through.	T	F
5) River valleys form when rivers slowly wear away rock and soil.	T	F
6) Plateaus never form under the ocean's surface.	T	F

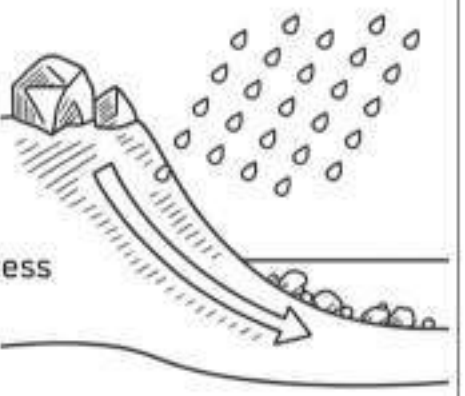
Name: _____ 32

Curriculum Connection
A1.1, A2.5, A3.2, A3.5

Erosion

Understanding Erosion

Erosion is the wearing away of the land by natural forces such as wind, water, ice, and gravity. It also involves moving these particles or larger pieces of the Earth to a new location. Over millions of years, erosion has shaped many of the Earth's most impressive **landforms**, including mountains, valleys, hills, plateaus, and coastlines. While erosion can take thousands of years to noticeably reshape a landscape, it is a continuous process that never stops. Some landforms, like the Grand Canyon in the United States, were carved almost entirely by erosion from the Colorado River.



There are several types of erosion:

- **Water erosion** – caused by rivers, waves, and flooding.
- **Wind erosion** – common in areas with little vegetation.
- **Ice erosion** – caused by glaciers scraping and carrying away rock.
- **Mass movement** – landslides and rockfalls caused by gravity.

Water Erosion – The Most Powerful Force

Water is the leading cause of erosion worldwide. It can wear away solid rock, carry large amounts of soil, and change the shape of coastlines and riverbeds. The speed and amount of erosion depend on the strength of the water, the slope of the land, and the type of rock or soil.

Major forms of water erosion include:

1) **Rainfall (Splash Erosion)** – Raindrops hitting the ground can break apart soil particles. Water gathers into small streams that carry these particles downhill.
2) **Rivers** – River water breaks up rock and soil at its bed and banks, moving **sediment** downstream. Many property owners along rivers lose land each year as the banks are worn away.
3) **Waves** – Constant wave action can polish stones smooth and grind pebbles into sand through abrasion. This can expand river mouths, reshape beaches, and deepen bays.
4) **Flooding** – Floodwaters move quickly and can cause severe erosion in hours, destroying roads, farmland, and protective **levees**.

The Role of Climate in Erosion

Climate plays a big role in the rate of erosion. Areas with frequent heavy rain, storms, or strong winds experience erosion more quickly. In Canada, coastal regions like Nova Scotia see strong wave erosion, while the Prairie provinces can experience intense wind erosion during dry seasons. In the North, melting glaciers contribute to erosion by releasing massive amounts of water and carrying rocks over long distances.

Name: _____ 33

Curriculum Connection
A1.1, A2.5, A3.2, A3.5

True or False

Circle whether the statement is true or false.

1) Erosion has helped create the awesome landforms around the world.	True	False
2) The Grand Canyon was shaped mostly by wind erosion over time.	True	False
3) Climate has no effect on erosion.	True	False
4) Sediment moved by rivers is usually left behind at the source.	True	False
5) Erosion causes particles of earth to be moved from one place to another.	True	False
6) Wind er[illegible]s most common in wet areas with many trees.	True	False

Questi[illegible]nation from the text to support your answer.

1) What is erosi[illegible]are [illegible]four main types?

2) Which type of erosion do you think is the stro[illegible]Why?

Fill in the Blanks

Fill in the blanks with the missing word.

1) Ice erosion is caused by _____ scraping and carrying away rock.

2) A protective wall built along rivers to prevent flooding is a _____.

3) The grinding action of waves that wears away rocks is called _____.

4) The small pieces of rock or soil moved by rivers are called _____.

5) Erosion caused by raindrops hitting the ground is called _____ erosion.

Curriculum Connection
A1.1, A2.5, A3.2, A3.5

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark

List the 4 main types of erosion explained in the text.

1	
2	
3	
4	

Name: _____ Mark

List the 4 main types of erosion explained in the text.

1	
2	
3	
4	

Name: _____ Mark

List the 4 main types of erosion explained in the text.

1	
2	
3	
4	

Name: _____ Mark

List the 4 main types of erosion explained in the text.

1	
2	
3	
4	

Name: _____ Mark

List the 4 main types of erosion explained in the text.

1	
2	
3	
4	

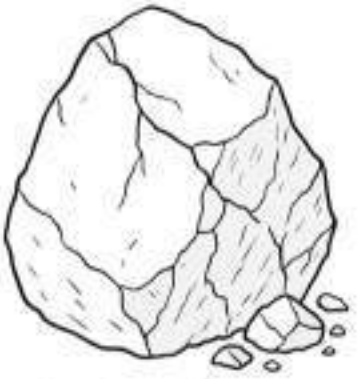
Name: _____ 37

Curriculum Connection
A1.1, A2.5, A3.2, A3.10

Weathering

Weathering – Breaking Down Rocks

Weathering is the process where rocks are broken into smaller pieces while staying in the same location. It changes the size and shape of the rock and can also change its chemical makeup. This process is different from erosion, where the broken material is carried away by wind, water, ice, or gravity. Weathering plays a key role in shaping Canada's landscapes, from the Rocky Mountains to the shores of the Great Lakes.



Physical Weathering – The Seven Main Types

Physical weathering occurs when rocks are broken apart without changing their composition. It is caused by temperature changes, water, wind, plants, animals, and gravity. There are seven main types:

1) **Freeze-thaw** – Water enters cracks in rocks. When temperatures drop below 0°C, the water freezes and expands by 9%. This expansion pushes the cracks wider. Over many winters, this freezing and thawing can break large rocks apart.
2) **Crystal formation** – Salt water seeps into cracks in rocks. When the water evaporates, salt crystals form. As the crystals grow, they push against the rock, forcing it to split.
3) **Unloading and exfoliation** – Rocks that are deep underground are under pressure from layers above. If glaciers melt or erosion removes these layers, the pressure decreases. The rock expands and cracks, sometimes peeling in layers like an onion.
4) **Thermal expansion and contraction** – Rocks heat up and expand during hot summer days or in wildfires. At night or in cold seasons, they cool and contract. Repeated cycles cause cracks to form.
5) **Abrasion** – Wind carrying sand or small particles blasts against surfaces. Over many years, this wears the rock smooth or breaks it into smaller pieces.
6) **Gravitational impact** – Rocks fall from cliffs or steep slopes because of gravity. When they hit other rocks, both can break apart.
7) **Biological activity** – Plant roots grow into cracks in rocks, pushing them apart. Burrowing animals loosen rock material as they dig.

Chemical Weathering – Changing Rock Composition

Chemical weathering happens when water and air cause chemical changes in rocks. Minerals in the rock can dissolve, or new substances can form. For example, rocks with iron can rust when exposed to oxygen and water. Acids form naturally when water mixes with carbon dioxide or other gases in the air, and these acids slowly dissolve certain rocks, such as limestone. Warm, humid climates speed up chemical weathering, while cold, dry regions experience more physical weathering.

Name: _____ 38

Curriculum Connection
A1.1, A2.5, A3.2, A3.10

Questions

Use information from the text to support your answer.

1) What is the difference between erosion and weathering?

2) Describ ds can naturally form and break down rocks.

Fill in the blanks

Fill in the bl ks w e of physical weathering.

	Rocks crack from repeated h g in s nd cooling in winter.
	Rocks fall from cliffs and br her
	Pressure is removed, and rock cra ls in
	Plant roots or burrowing animals break r ks a
	Wind carrying sand slowly wears away rock su ces
	Water freezes in cracks and expands by 9%, breaking r ck.
	Saltwater dries, leaving crystals that grow and split rock.

Questioning

Write at least two questions you have after reading the text.

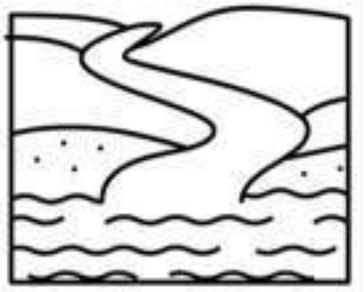
1)	
2)	

Name: _____ 39

Curriculum Connection
A1.3, A2.5, A3.4, A3.5, A3.9

Deltas

How Rivers Form Deltas



Rivers are moving streams of water that travel from higher land to lower areas, eventually emptying into lakes or oceans. As they flow, they pick up and carry small pieces of rock, **sand**, and soil called **sediment**. This movement of material is part of the process known as **erosion**, which has three stages:

1) **Detachment** – Material breaks away from its original place. For example, soil can wash off riverbanks during heavy rain or be blown into the river by wind.
2) **Transportation** – The river current carries the sediment downstream.
3) **Deposition** – Sediment is dropped in a new location when the water slows down.

When the river reaches its mouth, where it meets a lake or ocean, the water slows because it is pushing against still water. With less force, the river can no longer carry sediment, so the sediment settles. Over time, this builds up into a landform called a **delta**.

Features and Formation of Deltas

A **delta** is made of nutrient-rich sediment deposited over thousands of years. The deposition can create small islands within the river's mouth, splitting the main river into smaller channels called distributaries. This process also causes the mouth of the river to widen.

Deltas often change shape because they are **prone to flooding**, which moves and redistributes sediment. Not all rivers form deltas. Rivers with slower flow, like the Mississippi River in the United States or the Nile River in Egypt, create large deltas. In contrast, deep and fast rivers, such as the St. Lawrence River in Canada, carry less sediment and do not form deltas.

The Nile Delta

Importance of Deltas

Because delta soil is full of nutrients, it is highly fertile, supporting wetlands and a variety of wildlife. These wetlands provide shelter and food for birds, fish, amphibians, and many other animals. Deltas are also important for people, offering farmland and fishing areas.

Key Facts about Deltas:

- Form at the mouth of rivers where they meet still water.
- Built over thousands of years through deposition.
- Often split into smaller distributary channels.
- Prone to flooding and constant shape change.
- Found in slow-moving, sediment-rich rivers.

Name: _____ 40

Curriculum Connection
A1.3, A2.5, A3.4, A3.5, A3.9

Multiple Choice

Circle the correct answer.

1) The final stage of erosion is...	Detachment	Deposition
2) A landform at a river's mouth is called a...	Plateau	Delta
3) Sediment in a delta is rich in...	Nutrients	Salt
4) A river splits into smaller channels called...	Distributaries	Tributaries
5) The Nile River delta is found in...	Egypt	Canada

Questions

formation from the text to support your answer.

1) Wha delta? rmed?

2) Explain why nutrient-rich soil in a del import

True or False

Circle whether the statement is true or false.

1) A delta is a lake or ocean that leads to a river.	True	False
2) A delta happens when sediments travel by a river to a lake or ocean.	True	False
3) Sediments are huge pieces of rock.	True	False
4) A delta is a landform that is a wetland outside of a lake or ocean.	True	False
5) Rivers are streams, that flow into lakes and oceans.	True	False
6) Deltas are built quickly, usually forming in less than one hundred years.	True	False

Curriculum Connection
A1.3, A2.5, A3.4, A3.5, A3.9

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Mark

Fill in the blanks using the word bank.

1) A delta forms at the _____ of a river.
2) The process of dropping sediment in a new place is called _____.
3) Small rivers that branch off from a main river are called _____.
4) Deltas are important for farming because they have _____ soil.

Name: _____

Mark

Fill in the blanks using the word bank.

1) A delta forms at the _____ of a river.
2) The process of dropping sediment in a new place is called _____.
3) Small rivers that branch off from a main river are called _____.
4) Deltas are important for farming because they have _____ soil.

Name: _____

Mark

Fill in the blanks using the word bank.

1) A delta forms at the _____ of a river.
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Name: _____

Mark

Fill in the blanks using the word bank.

1) A delta forms at the _____ of a river.
2) The process of dropping sediment in a new place is called _____.
3) Small rivers that branch off from a main river are called _____.
4) Deltas are important for farming because they have _____ soil.

Name: _____ 54

Curriculum Connection
A2.6, A3.1, A3.2

Pictionary: Name that Landform

Objective

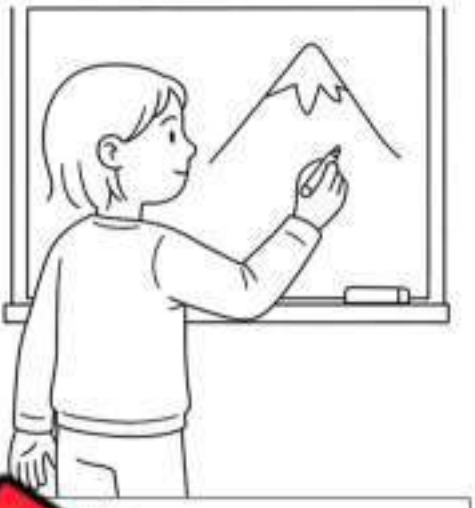
What are we learning about?

Students will learn about different landforms, including mountains, valleys, plateaus, plains, deltas, glaciers, and more. They will draw and guess these landforms while learning about their physical features and the natural processes that shape them.

Materials

What will you need for the activity?

- Markers or pencils
- Landform cards (examples: mountains, valleys, plateaus, plains, deltas, glaciers, volcanoes)



Instructions

How will you complete the activity?

1. Split the class into two teams, maybe by rows or groups of desks.
2. Have one student from Team A come up and pick a card. They should keep the card a secret from everyone else.
3. The student then draws what's on the card on a whiteboard or large paper.
4. Start a timer for 2 minutes. During this time, Team A tries to guess what is being drawn.
5. If Team A guesses the drawing correctly before the timer goes off, they earn a point.
6. Next, it's Team B's turn. A student from Team B picks a card and draws, while their team guesses.
7. Alternate turns between the two teams, letting different students draw each time.
8. Continue the game until all the cards have been used. Keep track of points for each team.
9. At the end, count up the points. The team with the most points is the winner of Name that Landform Pictionary!

Name: _____ 55

Curriculum Connection
A2.6, A3.1, A3.2

Pictionary Cards | Cut out the cards below.

Mountain	Valley
Plateau	Plain
Delta	Glacier
[illegible]	Hill
[illegible]on	River
Desert	Cliff
Lake	[illegible]land
Swamp	[illegible]
Waterfall	Oc[illegible]
Beach	Forest
Coast	Marsh
Stream	Cave
Wetland	Tundra

Name: _____ 57

Curriculum Connection
A1.2, A2.5, A3.10, A3.11

Human-Caused Changes To Habitats

Human Impact on Habitats

As the human population continues to grow, more land is cleared for homes, businesses, farming, and roads. This process destroys or changes **habitats**—the natural environments that plants and animals need to survive. When a habitat is damaged, species lose their sources of food, water, and shelter. In addition to destroying habitats, humans often introduce **invasive species**—plants or animals from other parts of the world—into these areas. Invasive species compete with native species for food and space, sometimes spreading disease or preying on native animals. Both habitat destruction and invasive species can lead to **extinction** and the loss of **biodiversity**.

Research shows humans have caused 322 animal species to go extinct in the past 500 years. Extinction means no individuals remain anywhere on Earth. Examples include sabre-toothed cats, woolly mammoths, dodo birds, and Tasmanian tigers. In Canada, the Vancouver Island wolverine, last seen in 1992, is believed

Endangered Species in Canada

An **endangered species** is a plant or animal that is seriously at risk of extinction. The Canadian government has officially listed 55 endangered species. Examples include sea otters, beluga whales, and wolverines. The main causes are habitat destruction, overhunting, pollution, and climate change. Many endangered animals have small populations, which makes them more vulnerable to disease, predators, and natural changes.

Examples of endangered animals in Canada:

- **Sea otter** – harmed by oil spills and hunting for fur
- **Beluga whale** – threatened by pollution and noise in Arctic wa
- **Wolverine** – affected by shrinking wilderness areas and hunting

Human Actions Threatening Wetlands

Wetlands—such as marshes, swamps, bogs, and fens—are highly productive ecosystems. They filter water, store carbon, prevent floods, and provide homes for hundreds of species. However, human activity is changing wetlands in damaging ways.

1) **Pollution:** Chemicals from homes, farms, and factories—such as pesticides, fertilizers, and waste—enter wetlands through surface or groundwater. These pollutants make water unsafe for plants and animals, causing death or reduced growth.
2) **Water Flow Changes:** Humans sometimes reroute water for farming, drinking water supply, or flood control. This disrupts fish populations, which rely on constant water flow for migration and for laying eggs.
3) **Habitat Loss:** Wetlands are often drained or filled to create land for building or agriculture, removing vital habitat for birds, amphibians, and fish.

Name: _____ 58

Curriculum Connection
A1.2, A2.5, A3.10, A3.11

True or False Circle whether the statement is true or false.

1) Humans caused animals to become extinct in the distant past but now species are not at risk because we know better.	T	F
2) Water pollution does not affect plants.	T	F
3) Over hunting is a problem that threatens certain species.	T	F
4) People need to make a living so we should not be concerned about endangering species.	T	F
5) Farmers often threaten certain wildlife species because of their farming practices.	T	F
6) The Vancouver Island wolverine was last officially seen in 1992.	T	F

Question Use information from the text to support your answer.

1) Animals are endangered and extinct because of us. Do you think we need to stop developing land because of species? Explain?

2) How are wetlands being affected by human actions?

Questioning Write at least two questions you have after reading the text.

1)	
2)	

Name: _____ 59

Curriculum Connection
A1.1, A2.5, A3.6, A3.10, A3.11

Invasive Species

The Threat of Invasive Species

Habitat loss is the greatest danger to native plants and animals, but **invasive species** are the second biggest threat. These are plants, animals, or organisms that arrive in an area where they do not naturally live. They often come through human activity, sometimes by accident. For example, **zebra mussels** invaded the St. Lawrence River and the Great Lakes in the late 1980s. Native to the Black Sea region in Europe and Asia, they were brought to Canada in the ballast water of ocean-going ships.

Zebra Mus st Spread and Major Impact

Zebra m extremely quickly, with one female laying up to 1 million eggs in a sing ater for **plankton**, which is food for many native fish, reducing food su s for th s. They also attach to water intake pipes at treatment plants, causing costly

In the St. Law Riv ls have made the water much clearer. This has turned the area into a pop or diving because visibility has improved. However, clearer ows plants to grow faster and taller, changing fish habitats. Ze hus o native animals like clams and crayfish and can cut swimme ecau eir sharp shells. Their waste can make drinking w mell a easant.

Key Facts about Zebra Mussels:

- First discovered in Lake St. Clair in 1988.
- Can survive for days out of water in damp conditi
- Each mussel can filter up to 1 litre of water per day.
- Have no natural predators in Canadian waters

Purple Loosestrife – A Wetland Invader

Purple loosestrife, native to Europe and Asia, arrived in North America in sh ballast soil and as an ornamental garden plant. It spreads in wetlands, forming dense clusters that block other plants from growing. It is not eaten by local wildlife, and its tall, thick growth prevents animals from using it for shelter. When it spreads into farm fields, it lowers the value of livestock feed crops because animals will not eat it.

Controlling Purple Loosestrife with Beetles

Scientists found a beetle in Europe and Asia that feeds only on purple loosestrife. After confirming that it would not harm other plants or the environment, these beetles were released in North America. The beetles eat the plant's leaves, often killing it before it flowers and produces seeds. This method is more environmentally friendly than chemical herbicides or pulling the plants, which can disturb wetlands.

Name: _____ 60

Curriculum Connection
A1.1, A2.5, A3.6, A3.10, A3.11

Sorting Decide if each fact describes Zebra Mussels or Purple Loosestrife.

1) First discovered in Lake St. Clair in 1988.	
2) Spreads in wetlands and blocks other plants from growing.	
3) Lowers the value of livestock feed crops.	
4) Can filter up to 1 litre of water per day.	
5) Controlled by beetles that eat only its leaves.	
6) Sharp sh[illegible]an cut swimmers' feet.	

Questio[illegible] [illegible]from the text to support your answer.

1) Why is habit[illegible]em

2) What are the main benefits of using beetles i[illegible]f her[illegible]and pulling?

True or False Circle whether the statement is true or false.

1) Invasive species are always animals.	True	False
2) Zebra mussels increase water clarity in the St. Lawrence River.	True	False
3) Invasive species are very difficult to control.	True	False
4) Invasive species compete with plants and animals for food and space.	True	False
5) Zebra mussels first entered Canada through soil in ship cargo.	True	False
6) One zebra mussel can filter more water than a goldfish.	True	False

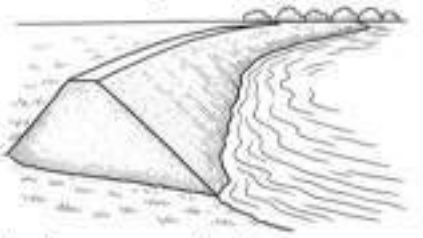
Name: _____ 61

Curriculum Connection
A1.1, A2.5, A3.5, A3.11

Human Impact On Water Landforms

Human Activities that Affect Water Landforms

Humans need water to survive. People use water for drinking, washing, waste disposal, watering crops, generating power, fishing, transportation and recreation. People like to live near water, so they have a convenient source of water for their needs. Because landforms are constantly changing sometimes people live too close to water and they have to build something to make the water flow where they want it to go. For this reason, people build dykes, dams and levees.



What is a L

A **levee** i nt or a wall constructed to keep land that i ooding when there are heavy rains, meltin w or st that could cause water levels to rise temporarily. Levees are also used to co of s. They are usually constructed parallel to the shores of a body of wa a rive . A levee built along the edge of a river keeps the river from overflo bank areas where people live.

Levees prevent ero widen iver. The levee causes the river to stay within it banks and makes the eep flowing. Levees prevent rivers from carrying sediment, so deltas do form tlands.

What is a Dyke?

A **dyke** is a wall or ridge of raised earth that is co ed to w lying land from being flooded. The difference be a dy levee is that a levee protects land that is normally f ng A dyke keeps land dry that would be wet if not for the and levees have water on one side. When dykes are built it redu lan

What is a Dam?

A **dam** is a structure or barrier across a strea er that is built to create a reservoir of water used to cre access to a regular supply of water, for flood control or to generate hydro electric power. Dams can be small. A farmer may make a dam across a small stream just by dumping a few loads of earth into the stream, to create a pool which can be used by farm animals for drinking water. Dams can also be enormous concrete structures such as the Hoover Dam which is built across the Colorado River in United States.

The Hoover Dam was built to control flooding, provide irrigation water and provide hydroelectric power. The Hoover Dam is a 221 meters tall concrete structure that created Lake Meade as its water reservoir. A dam has water on both sides. When huge dams are built large areas of land are flooded causing people and animals to have to relocate.

Name: _____ 62

Curriculum Connection
A1.1, A2.5, A3.5, A3.11

Matching Match each structure to its correct description.

Levee ◯	◯ A structure or barrier built across a stream or river to store water, control floods, or make hydroelectric power.
Dyke ◯	◯ A wall or ridge of raised earth that keeps low land dry that would be wet without it, usually with water on one side.
Dam ◯	◯ An embankment or wall built parallel to a river or lake to protect normally dry land from flooding and to control river flow.

Questions information from the text to support your answer.

1) Wh of ative impacts of humans changing landforms when they build levees, s and

2) How has the ability to build levees, da and dyk hefi umans?

Mini-Story Write a mini-story about a city saved by a levee.

Curriculum Connection
A1.1, A2.5, A3.5, A3.11

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark

Is the statement true (T) or false (F)?

1) A levee keeps water out of areas that are usually dry.	T / F
2) Dykes are made of concrete and built across rivers.	T / F
3) Dykes keep land dry that would otherwise be underwater.	T / F
4) The Hoover Dam is built in British Columbia, Canada.	T / F
5) Levees make river water deeper and move it faster.	T / F

Name: _____ Mark

Is the statement true (T) or false (F)?

1) A levee keeps water out of areas that are usually dry.	T / F
2) Dykes are made of concrete and built across rivers.	T / F
3) Dykes keep land dry that would otherwise be underwater.	T / F
4) The Hoover Dam is built in British Columbia, Canada.	T / F
5) Levees make river water deeper and move it faster.	T / F

Name: _____ Mark

Is the statement true (T) or false (F)?

1) A levee keeps water out of areas that are usually dry.	T / F
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3) Dykes keep land dry that would otherwise be underwater.	T / F
4) The Hoover Dam is built in British Columbia, Canada.	T / F
5) Levees make river water deeper and move it faster.	T / F

Name: _____ Mark

Is the statement true (T) or false (F)?

1) A levee keeps water out of areas that are usually dry.	T / F
2) Dykes are made of concrete and built across rivers.	T / F
3) Dykes keep land dry that would otherwise be underwater.	T / F
4) The Hoover Dam is built in British Columbia, Canada.	T / F
5) Levees make river water deeper and move it faster.	T / F

Name: _____ 64

Curriculum Connection
A1.4, A2.5, A3.5, A3.11

Social Media Post – Hydroelectric Dams

JoshPonderer

Should we stop building large hydroelectric dams that flood huge areas of land and destroy animal habitats? These dams provide clean energy, but they also wipe out forests, wetlands, and entire ecosystems.

11:30 AM – 21/03/2025 – 1,529 SHARES 5,921 LIKES

2 LIKES **Hydr[illegible]**: Large dams give us renewable hydroelectric power. Canada gets over 60% [illegible]tricity from water. These dams also reduce air pollution by replacing co[illegible] power plants across many provinces.

5 LIKES **[illegible]ice_Kid**: [illegible]y bring energy, but they flood massive forests and wetlands. Thi[illegible]estroy [illegible]me and wipes out habitats for moose, wolves, frogs, birds, and even [illegible]hat [illegible]row back.

0 LIKES **ThinkItThroug[illegible]**: [illegible]me d[illegible] [illegible]usands of square kilometres of land. If we plan better and build [illegible]d [illegible]nergy but save more forests, animals, and freshwater ecosyste[illegible]ing

9 LIKES **EcoVoice_Kid**: Wetlands a[illegible]ura[illegible] protectors. When large dams drown these areas, we lose clean [illegible]h ha[illegible]d breeding grounds for ducks, turtles, insects, and amphibians. It[illegible] just a[illegible]

6 LIKES **HydroFan55**: Dams also store water for fa[illegible]nd d[illegible]ry seasons or emergencies, these reservoirs help commu[illegible] su[illegible]re than make power—they provide safety during droughts and [illegible]ooding[illegible].

12 LIKES **ThinkItThrough7**: We could invest more in solar and w[illegible]ns.[illegible]ss space and don't destroy rivers or flood forests. Clean ene[illegible]gy s[illegible] destroying entire ecosystems to keep lights on.

25 LIKES **EcoVoice_Kid**: Once forests and wetlands are flooded, they don't ret[illegible]pecies can go extinct. Some dams even force people to move from their homes, including Indigenous communities living near the rivers and forests.

7 LIKES **HydroFan55**: Wind and solar aren't always reliable. Hydroelectric dams work year-round, even in winter. They're one of the only renewable energy sources that can provide stable power during all seasons and weather conditions.

85 LIKES **EcoVoice_Kid**: There are more than 90,000 large dams worldwide. That's millions of hectares of land underwater. Most of that land was once animal habitat, forest, or farmland. We should not ignore that damage.

32 LIKES **ThinkItThrough7**: Instead of building more giant dams, we should study each case. If a dam floods too much or destroys wildlife, it's not worth it. Energy plans must include nature in the decision.

Name: _____ 65

Curriculum Connection
A1.4, A2.5, A3.5, A3.11

Questions Answer the questions below using evidence from the text.

1) Explain why some people believe dams are necessary for energy.

2) Explain how building a dam could change an ecosystem forever.

3) Expl[illegible]ny Ind[illegible]mmunities may be affected by dams.

True or False Is the statement true o[illegible]

1) Canada gets most of its electricity from fossil f[illegible]	True	False
2) Hydro dams are the only clean power that wo[illegible]sum[illegible]	True	False
3) Flooded forests can grow back after the dam is built[illegible]ue		False
4) Large dams help protect some cities during drought seas[illegible]		alse
5) Over 90,000 big dams exist around the world today.		alse
6) Hydro power is the only clean energy that works in Canada.		False

Opinion Write a comment that you would add to this conversation.

Username: _____ Date: _____

Name: _____ 66

Curriculum Connection
A1.4, A2.5, A3.5, A3.9, A3.11

Newspaper Article: Hurricane Katrina

Hurricane Katrina Brings Historic Flooding to New Orleans

Published: August 29, 2005

Hurricane Katrina struck the Gulf Coast this morning with devastating force, becoming one of the most powerful storms in U.S. history. Winds reached 280 kilometres per hour (175 mph) when it was at Category 5 strength. The storm made landfall, the storm surge passing, killing at least 1,[illegible] people and causing an estimated $10[illegible] damage.

New Orleans, located in the Mississippi River Delta, was hit especially hard. About 80% of the city is now under water, with flood levels reaching up to 6 metres (20 feet) in some neighbourhoods. The city's levees, built to protect against rising river water, failed when the storm surge pushed in from the Gulf.

Experts have warned for years that human changes to the delta made New Orleans more vulnerable. Dr. Elaine Roberts, a coastal scientist, explained,

> *"Wetlands and barrier islands are a natural defence. Every mile of wetland can absorb 7 to 20 centimetres of floodwater. But decades of levee building have blocked sediment from reaching the delta, causing wetlands to disappear at a rate of 60 square kilometres a year."*

New Orleans was already built on low ground, but pumping water and oil from the earth caused the land to sink even further—a process called subsidence. Most of the city now sits about 1.8 metres (6 feet) below sea level.

[illegible] local [illegible] James Harris [illegible] rising water:

> *"[illegible] street was w[illegible] water was a[illegible] climbed onto th[illegible] and waited all night for rescue."*

Before the city expanded, marshes acted like a sponge to protect against flooding. Scientists estimate that if the wetlands near the Mississippi's mouth had been left to grow naturally, they could have reduced the storm surge from over 20 metres (25 to 66 feet) to 7.6 meters. Katrina's surge reached deadly levels, overwhelming both natural and man-made defences.

Name: _____ 67

Curriculum Connection
A1.4, A2.5, A3.5, A3.9, A3.11

True or False

Circle whether the statement is true or false.

1) Wetlands and marshes cause flooding during storms.	True	False
2) Hurricane Katrina was a category 5 hurricane.	True	False
3) Levees and dams prevent wetlands from forming because they hold the sediment that would normally deposit in the river delta.	True	False
4) Subsidence is when the earth sinks because oil or water is removed from the earth.	True	False
5) Levees [illegible]vent damage from happening during hurricanes.	True	False

Questi[illegible]

[illegible] from the text to support your answer.

1) What chang[illegible] landforms that caused the damage from Hurricane Katrina to be wo[illegible]t wou[illegible]en if humans hadn't made these changes?

2) What are the benefits of wetlands?

Reaction

How do you feel about what happened in New Orleans during Hurricane Katrina?

Name: _____ 68

Curriculum Connection
A2.1, A2.2, A2.5, A2.6

Human Footprint Case Study

Objective

What are we learning about?

Students will explore a real-world example of how human activity has changed the environment. They will investigate what humans are doing, the environmental problems caused, po[illegible]le solutions, and interesting facts. This will help them understand the two-way relati[illegible]tween humans and the environment and encourage them to think about [illegible]

Materials

[illegible]u [illegible] for the activity?

- Example case stud[illegible]
- Research page with guid[illegible]ion[illegible]
- Planning page (provided)
- List of optional topic ideas (provide[illegible]
- Report writing page (provided)

Instructions

How will you complete the activity?

1) Read the example case study to understand how human activit[illegible] environment.
2) Choose one topic from the provided list or think of your own.
3) Use the research page with guiding questions to collect key facts and examples.
4) Record notes about what humans are doing and the effects on the environment.
5) Find information on possible solutions or actions that could reduce harm.
6) Add at least one interesting fact about your topic to make it unique.
7) Use the planning page to organize your information before writing.
8) Write your final report on the provided report page and include drawings, maps, or images if possible.

Name: _____ 69

Curriculum Connection
A2.1, A2.2, A2.5, A2.6

Criteria Use the criteria below to complete the activity.

Criteria	Description
Topic Choice	The student selected a relevant human footprint case study topic from the list or created their own.
Research Quality	The student used the guiding questions to collect accurate and detailed information about their topic.
Environmental Impa	The student clearly explained how humans are affecting the environment and how the environment is affecting humans.
Solution	The student included at least one possible solution and one esting fact about the topic.
Pres on & Visuals	nt wrote their report clearly, included a drawing, map, or wed understanding of the topic.

Case Study Topics case study topics below for your research.

Alberta Oil Sands (Mining)	Larg rta that extracts oil from sand and clay, cha ging a lot of water.
Amazon Rainforest Deforestation	Cutting down areas rming, cattle ranching, and logging, reducing bi sity.
2010 Deepwater Horizon Oil Spill	Massive oil spill in the Me d sea life and coastlines.
Great Pacific Garbage Patch	A huge area of floating plastic an in an harming marine animals.
Aral Sea Drying (Water Diversion)	Once a large lake, now mostly dry because verted for farming.
Melting Glaciers in the Himalayas	Glaciers shrinking due to climate change, affecting rivers and water supply for millions.
Purple Loosestrife in Canadian Wetlands	Tall plant from Europe that spreads fast, crowding out native wetland plants.
Palm Oil Plantations in Indonesia	Clearing tropical forests to grow palm oil, affecting wildlife like orangutans.
Three Gorges Dam, China	World's largest dam providing power but flooding villages and changing river habitats.
Coral Reef Damage from Climate Change	Warming oceans and pollution causing coral to die, affecting fish and tourism.

Name: _____ 70

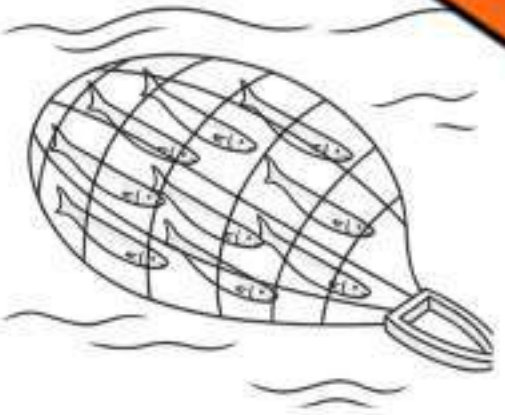
Curriculum Connection
A2.1, A2.2, A2.5, A2.6

Example Case Study | Nathan's Case Study on Overfishing in the Atlantic Ocean

Overfishing in the Atlantic Ocean

Ever since I went fishing with my grandfather on a summer trip to Newfoundland, I've been fascinated by the ocean. I still remember pulling up my first codfish and feeling so proud. But last year, my grandfather told me that we can't fish for cod the way he used to when he was my age. He explained that too many fish have been taken from the ocean, and their numbers are much lower. That made me want to learn more about overfishing and why it's such a big problem.

Overfishing happens when we catching more fish than the ocean can replace naturally. In the Atlantic Ocean, this has happened with several species, like cod, tuna, and swordfish. Big fishing boats with advanced equipment can catch thousands of fish at once using giant nets or long lines with hundreds of hooks. While this seems efficient, it doesn't give the fish enough time to reproduce and grow their numbers. Some fishing methods also harm other animals, like dolphins, turtles, and seabirds, which get caught by accident.



This is very serious because when a fish population becomes too small, it can collapse. In the 1990s, the Canadian government had to ban cod fishing in Newfoundland because the population had dropped so much. Thousands of communities that depended on the ocean for jobs suffered. Overfishing also changes the whole marine ecosystem, because removing too many predators or prey can throw the food chain off balance.

There are ways to help. Governments can set strict limits on how many fish can be caught each year and protect certain areas as "no fishing zones" so fish can recover. People can also choose seafood from sustainable sources, where fishing is done in a way that doesn't harm the long-term health of the species.

One interesting fact I found is that some scientists are using satellite tracking to watch fishing boats and make sure they follow the rules. That makes me feel hopeful that technology can help solve the problem.

Learning about overfishing has made me see the ocean differently. The next time I go fishing with my grandfather, I'll be thinking not just about catching fish, but about making sure there will be fish for future generations too.

Name: _____ 71

Curriculum Connection
A2.1, A2.2, A2.5, A2.6

Research Answer the questions below about your chosen topic.

1) Which topic did you choose?	

2) Describe the human activity. What are the humans doing and why?

3) De... ...g caused in the environment.

4) How is the environment affecting hu... ...n this s...?

5) What can be done to stop or reduce the problem?

6) Other interesting facts about this topic.

Name: _____ 72

Curriculum Connection
A2.1, A2.2, A2.5, A2.6

Draft | Write a rough copy of your Case Study

Name: _____ 73

Curriculum Connection
A2.1, A2.2, A2.5, A2.6

Name: _____ 74

Curriculum Connection
A2.1, A2.2, A2.5, A2.6

Peer Compliment Card | Write a kind note or compliment

Instruction
Write a kind note to a classmate about their Human Footprint Case Study presentation. Mention something they shared, like what human activity they researched, how it affects the environment, possible solutions they suggested, or an interesting fact they included.

To: _____

From: _____

Example Compliment

To: Nathan
From: Sarah

I really enjoyed your case study on overfishing in the Atlantic Ocean. I didn't know that cod fishing was banned in Newfoundland in the 1990s because of low fish numbers. I liked how you explained both how humans affect the ocean and how the loss of fish affects people. Your solution ideas were clear and realistic.

Awesome job!

Name: _____ 75

Curriculum Connection
A2.1, A2.2, A2.5, A2.6

Rubric How did you do on the activity?

Criteria	1 Point	2 Points	3 Points	4 Points
Topic Choice	Topic missing or unclear	Topic chosen but not from list or unclear relevance	Topic chosen from list and somewhat relevant	Topic clearly chosen and relevant to human footprint
Research Quality	Little or no information collected	Basic information with few details	Clear information with some examples	Detailed, accurate research with strong examples
Environmental Impact	[illegible]	Only one side of impact explained (human on [illegible]onment OR [illegible]ment on [illegible])	Both sides explained simply	Both sides explained clearly with examples or research
Solutions & Facts	No solution[illegible] fact included	Eith[illegible] [illegible]utio[illegible] fact	One solution and one fact [illegible]luded	Multiple solutions and interesting facts included
Presentation & Visuals	Report incomplete or hard to follow, no visual	Report complete[illegible] but unclear[illegible] minimal visual	[illegible]lear [illegible] with [illegible]	Clear, well-organized report [illegible]ith strong and [illegible]iled visual

Teacher Comments

_____

_____

_____

_____

Mark

Student Comments – What Could You Do Better?

_____

_____

_____

_____

Name: _____ 76

Curriculum Connection
A1.3, A2.5, A3.4, A3.7, A3.8

Ocean Currents

The Five Oceans and Their Currents
The Earth has five oceans. From largest to smallest, they are the Pacific, Atlantic, Indian, Southern (Antarctic), and Arctic Oceans. Together, they cover about 71% of the planet's surface, making oceans the largest physical feature on Earth. Within each ocean, there are permanent streams of water called **ocean currents**. These currents move in a set direction from one part of the ocean to another and can be thousands of kilometres long and up to 200 kilometres wide.

Warm and Cold Currents
Ocean currents are either **warm** or **cold**. Warm currents form near the **equator**, where the water is warmer. Cold currents start near the **North or South Pole**, where water is much colder. These temperature differences create patterns that affect both the climate and marine life in coastal areas.

Causes of Ocean Currents
Currents are moved by several factors, including:

- **Wind** pushing water across the surface
- **Earth's rotation** (the Coriolis effect)
- **Tides** caused by the Moon's gravity
- **Water temperature** changes
- **Salt content** in the water

Warm water is lighter and rises, while cold water is heavier and sinks. Salt also affects density—when saltwater evaporates or freezes, the water that remains becomes saltier and sinks, pushing less salty water up. This creates powerful convection currents.

Impact on Weather and Rainfall
Warm ocean currents heat the air above and cause rain clouds. Since most of the world's rain comes from ocean water, these currents play a major role in controlling weather. They can bring warm, wet weather to some areas and cool, dry conditions to others.

Example: The Gulf Stream
One of the most famous currents is the **Gulf Stream** in the Atlantic Ocean. It starts in the Gulf of Mexico, flows along the U.S. coast to Newfoundland, then crosses the Atlantic to Europe. Driven by convection, it pulls **cold Arctic water** southward while sending **warm tropical water** northward, helping to balance heat and rainfall worldwide.

Direction of Currents
In the **Northern Hemisphere**, currents move in a **clockwise** direction. In the **Southern Hemisphere**, they move **counterclockwise**, due to the Earth's rotation.

Name: _____ 77

Curriculum Connection
A1.3, A2.5, A3.4, A3.7, A3.8

True or False Circle whether the statement is true (T) or false (F).

1) Most of the world's rain originates from water evaporating over oceans.	T	F
2) Cold currents always begin near the equator where water is cooler.	T	F
3) The Gulf Stream helps move warm tropical water north toward Europe.	T	F
4) In the Southern Hemisphere, ocean currents rotate in a clockwise direction.	T	F
5) The amount of salt in ocean water affects ocean currents.	T	F

Questions rmation from the text to support your answer.

1) Na d explai ings that can change how ocean currents move.

2) Describe how salt content can create water urrents.

Did You Know? The Gulf Stream moves enough water daily to fill over 100 million Olympic pools. It carries heat from the tropics to northern Europe, keeping winters warmer. How might Europe's climate change if it slowed or stopped?

Name: _____ 79

Curriculum Connection
A2.1, A2.2, A2.4, A2.5, A3.7

Experiment: Ocean Current

Objective — What are we learning about?

Students will explore how temperature differences in water create ocean currents. They will observe how warm and cold water interact, helping them understand how ocean currents m[illegible] heat and affect global weather.

Materials — [illegible] will you need for the activity?

- 1 clear dish [illegible] container
- Cold water ([illegible] reha[illegible] ubes in final setup)
- Hot water (recent[illegible]
- Blue food colouring and [illegible] col[illegible]
- 2 separate cups or small con[illegible]
- Spoon for stirring and towel to pre[illegible] spills

Instructions — How will you complete the acti[illegible]

1) Pour cold water into one container and add 2–3 drops of [illegible] fo[illegible] until evenly mixed.
2) Pour hot water into the second container and add 2–3 drops of red fo[illegible] louring. Stir until mixed.
3) Carefully pour the blue cold water into the clear dish until it is about one-third full.
4) Make sure there are no ice chunks in the dish, as these can change the results.
5) Slowly pour the red hot water into one corner of the dish.
6) Watch how the red and blue water move and swirl around each other.
7) Continue adding a small amount of hot water to see how the pattern changes.
8) Discuss how this model shows what happens in real oceans when warm and cold water meet.

Name: _____ 80

Curriculum Connection
A2.1, A2.2, A2.4, A2.5, A3.7

Step-by-Step Guide Follow the steps below to do the Ocean Current

Step		What to Do	Details & Tips
1	**Prepare Your Area**	Choose a flat workspace and put a towel under your dish.	Make sure the area is well-lit so you can see the colours.
2	**Prepare Cold Water**	Fill a cup with cold water and ice for 5 min. Remove ice. Add 2–3 drops of blue food colouring and stir.	Colour should be bright but not too dark. No ice chunks in final water.
3	**[illegible]**	Heat water until boiling. Pour [illegible]o a cup. Add 2–3 drops of [illegible] food colouring and stir.	Ask an adult for help with hot water. Be careful—it can burn skin.
4	**Fill the Di[illegible]**	Slow[illegible] the cold blue wate[illegible] dish until [illegible]	Pour gently so the surface stays still.
5	**Add Hot Water**	Pic[illegible] Slowly p[illegible] of hot red w[illegible] surfa[illegible]	Let it slide in without splashing. Watch the colours move.
6	**Observe Movement**	Look for swirling patterns warm and cold water mix.	[illegible] will rise, cold [illegible] water w[illegible]—this is like [illegible] o[illegible] currents.
7	**Add More if Needed**	If movement slows, pour a little more hot red water.	This can he[illegible] [illegible]rling p[illegible]
8	**Clean Up**	Pour water down the sink. Wash and dry all items.	Wipe up any spill[illegible] to avoid stains from food colouring.
-	**Safety Tips**	Always handle hot water carefully. Ask for help if needed.	Keep food colouring away from clothes—it can stain.

Experiment Video You can watch this experiment on YouTube:

Title: Ocean Currents Activity

Link: https://www.youtube.com/watch?v=aB-gBvX-524

Name: _____ 81

Curriculum Connection
A2.1, A2.2, A2.4, A2.5, A3.7

Understanding Check | Experiment: Ocean Current

Name: _____

How well do you understand the topics discussed below? Rate your understanding from 1 to 5 stars, with 1 being "I don't understand" and 5 being "I understand very well."

1) Why ocean currents are important for the Earth's climate	☆☆☆☆☆
2) How warm water and cold water move differently	☆☆☆☆☆
3) How t[illegible]erature and density affect water movement	☆☆☆☆☆
4) How [illegible]ts can affect rainfall and storms	☆☆☆☆☆
5) [illegible]dels real ocean currents	☆☆☆☆☆

Name: _____

How well do you unde[illegible]d below? Rate your understanding from 1 to 5 stars, with 1 being "I d[illegible]ing "I understand very well."

1) Why ocean currents are imp[illegible]ate	☆☆☆☆☆
2) How warm water and cold water m[illegible]differe[illegible]	☆☆☆☆☆
3) How temperature and density affect water [illegible]ent	☆☆☆☆☆
4) How ocean currents can affect rainfall and storms	☆☆☆☆☆
5) How this experiment models real ocean currents	☆☆☆☆☆

Name: _____

How well do you understand the topics discussed below? Rate your understanding from 1 to 5 stars, with 1 being "I don't understand" and 5 being "I understand very well."

1) Why ocean currents are important for the Earth's climate	☆☆☆☆☆
2) How warm water and cold water move differently	☆☆☆☆☆
3) How temperature and density affect water movement	☆☆☆☆☆
4) How ocean currents can affect rainfall and storms	☆☆☆☆☆
5) How this experiment models real ocean currents	☆☆☆☆☆

Name: _____ 82

Curriculum Connection
A1.3, A2.5, A3.5, A3.7, A3.8

El Niño And La Niña

How the Cycle Works

Warmer or colder than average ocean temperatures in certain regions can cause major shifts in weather patterns around the world. This is called the **El Niño Southern Oscillation (ENSO)** Cycle. It is caused by the **Trade Winds**, which normally blow near the equator from the west coast of South America toward Asia. The ENSO Cycle is a repeating back-and-forth change in which warm and cool water in the Pacific Ocean trade places as the winds change strength and direction. **El Niño** is the warm phase, and **La Niña** is the cold phase.

Normal Conditions

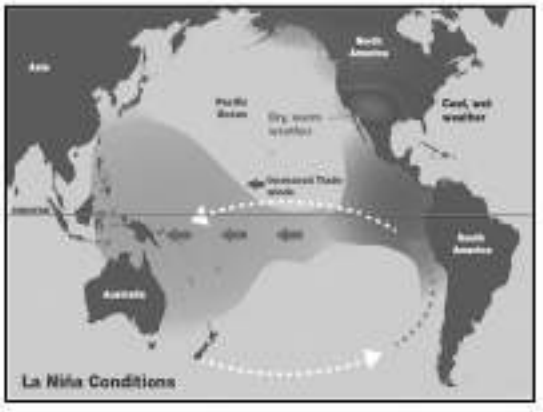
During a [illegible] strong Trade Winds push warm surface water west toward Asia and A[illegible] huge pool of warm water in the western Pacific. Along South America[illegible]ast, c[illegible] from the deep rises to the surface in a process called **upwelling**, whic[illegible]ent[illegible]t feed marine life. Rain tends to form over warm water, so countr[illegible]he we[illegible]ific receive heavy rainfall, while the west coast of South America rem[illegible]uch

El Niño – The Warm Phase

When the Trade Winds weaken, [illegible] su[illegible] drifts east toward South America. This is [illegible]. The warmer water pulls the **Jet Stream** [illegible] farther south than usual. As a result:

- Heavy rain and flooding occur in the southe[illegible] United States.
- Warmer, drier winters happen in the Pacific Northwest and western Canada.
- Australia experiences drought because cooler water is on their side of the Pacific, reducing rainfall.

La Niña – The Cold Phase

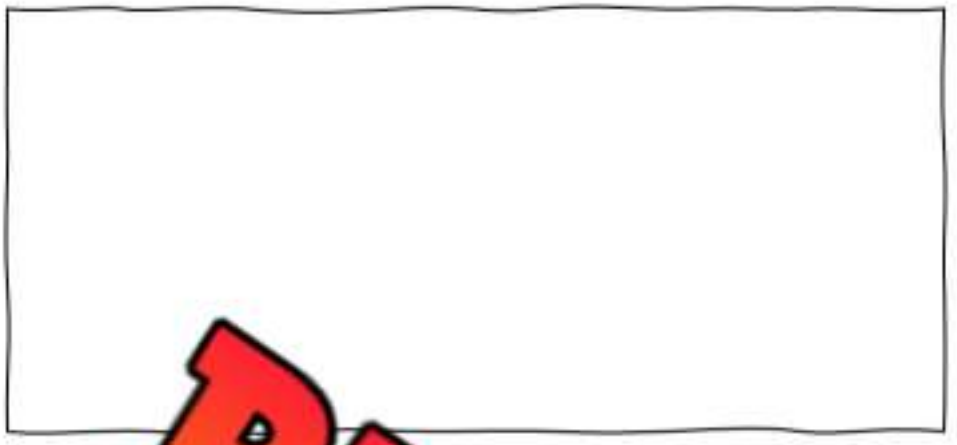


When the Trade Winds blow stronger than normal, more cool water builds up along the coast of South America. This is **La Niña**. The colder Pacific water pushes the Jet Stream northward, bringing drought to the southern United States and heavy rain with flooding to the Pacific Northwest. In Australia, La Niña often causes wetter summers, sometimes leading to flooding. It can also make Atlantic hurricane seasons stronger, as warmer water remains in the Atlantic to fuel storms.

Name: _____ 83

Curriculum Connection
A1.3, A2.5, A3.5, A3.7, A3.8

Visualization What were you picturing while you were reading? Describe your picture.



Questi from the text to support your answer.

1) What is the cha cause El Niño and La Niña?

2) Does El Niño affect different continents in di ways not, why not?

True or False Circle whether the statement is true (T) or false (F).

1. El Niño happens when warm water drifts east toward South America.	T	F
2. Strong Trade Winds push warm water toward Asia and Australia normally.	T	F
3. La Niña pushes the Jet Stream farther south than normal.	T	F
4. Upwelling brings cold water and nutrients to South America's coast.	T	F
5. El Niño brings wetter summers to Australia most of the time.	T	F

Name: _____ 84

Curriculum Connection
A2.6, A3.2, A3.7

Memory Game – Natural Processes

Objective

What are we learning about?

Students will learn about natural processes that shape the Earth, such as erosion, deposition, glaciation, weathering, and ocean currents, by playing a memory match game. Each card will show a term or image, and students will match it with the correct definition. This will help them understand how each process changes the physical environment.

Materials

What materials do you need for the activity?

- Set of Memory Match cards per group (provided)
- A small table or clear area on the floor

Instructions

How will you complete the activity?

1. Divide the class into groups of 3 or 4. Give each group a set of Memory Game cards. (provided)
2. Have each group lay all the cards face down in a grid on the table.
3. The students take turns flipping over two cards at a time, trying to find matching term and its definition.
4. If a student finds a match, they remove those cards from the grid and keep them.
5. If the cards do not match, they are turned back over, and the next student takes a turn.
6. The game continues until all the cards have been matched.
7. After the game, review the terms and definitions with the class.
8. Discuss why these terms are important to understand and how they relate to the topic.

Name: _____ 85

Curriculum Connection
A2.6, A3.2, A3.7

Cards | Memory Game Cards

Erosion	Movement of rock, soil, or sand by wind, water, ice, or gravity forces.
D	When wind, water, or ice drops and builds up materials in new locations.
Glaciation	For[illegible]n and slow movement of [illegible]ciers [illegible]arve valleys and [illegible]urface.
Weathering	Breaking dow[illegible] into smaller pieces by wind, water, temperature, or chemicals.
Subduction	One tectonic plate sinks under another, forming trenches, volcanoes, and mountain ranges.

Name: _____ 86

Curriculum Connection
A2.6, A3.2, A3.7

Cards | Memory Game Cards

Volcanic Activity	Eruption of magma through Earth's crust forming mountains, islands, and changing landscapes.
Ea[illegible]s	Sudden ground shaking caused by tectonic plate movement releasing energy deep within Earth.
Flooding	O[illegible]w of water onto land [illegible]ed b[illegible]y rain, melting [illegible]ms.
Landslides	Rapid downhi[illegible]d[illegible]t of rock, soil, or debri[illegible] due to gravity and weather.
Tsunamis	Huge ocean waves triggered by underwater earthquakes, landslides, or volcanic eruptions displacing water.

Name: _____ 87

Curriculum Connection
A2.6, A3.2, A3.7

Cards | Memory Game Cards

Tectonic Uplift	Raises sections of Earth's crust, forming mountains and changing land elevation.
Avalanches	Sudden rush of snow, ice, and debris down a mountain slope due to gravity.
Hurricanes	Powerful rotating storms with strong winds and heavy rain that form over oceans.
El Niño	Warm phase of Pacific Ocean cycle that changes weather, causing floods or droughts.
La Niña	Cool phase of Pacific Ocean cycle that shifts weather, increasing rain or dryness.

Name: _____ 88

Curriculum Connection
A2.6, A3.2, A3.7

Quiz Check-In	This quiz will assess students' understanding of the concepts covered in the memory game activity.

Name: _____ Mark

Pick two terms from the memory game. Write one sentence about each one.

Name: _____ Mark

Pick two terms from the me ne. ntence about each one.

Name: _____ Mark

Pick two terms from the memory game. Write one sentence about each one.

Name: _____ 89

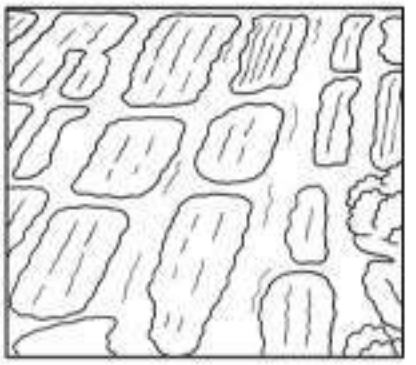
Curriculum Connection
A1.1, A2.5, A3.2, A3.10

Land Reclamation

Land Reclamation

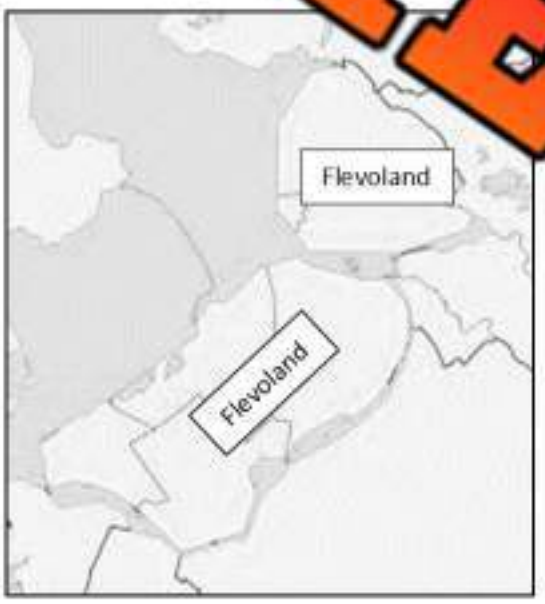
Land reclamation refers to either:

- creating new land from **marshes**, **riverbeds** or **oceans**
- returning land that has been disturbed by mining or use as a landfill and returning it to an improved condition.



Polders in the Netherlands

The larges[illegible]ple of the first type of land reclamation is the **polder**[illegible]Netherlands. A polder is a piece of land that has [illegible]from a body of water. The Nethe[illegible]ountry in Europe. Polders are created by building **dykes** that hold ba[illegible]e larg[illegible]ater and then draining the inland section of land with a series of drainage ca[illegible]e c[illegible]Netherlands have been using windmills to pump water from one [illegible]land i[illegible]r for hundreds of years.



[illegible]the 1920s, a land reclamation project began in Ne[illegible]ds. Another province called **Flevoland** was [illegible]ea[illegible]rea that used to be a lake called the **Ijsse**[illegible]imed 1620 square kilometers of lan[illegible]er 40[illegible]ople live in this province.

Notre Dame Is[illegible]n Mo[illegible]

Notre Dame[illegible] is a[illegible]land in the St Lawrence Rive[illegible]was built using 15 million tons of [illegible]was [illegible]to create the Montreal Metro underg[illegible]ail[illegible]67 was built on the island. Since then, th[illegible] removed, and the island has be[illegible]park with gardens and a lake for swimming[illegible]mmer and skating in winter. The island is 62 acres.

Reclaiming land used for Natural Gas Wells.

Natural Gas wells are usually used for 20 to 30 years before they are no longer productive. After that companies have the responsibility to restore the land to its condition before the well was opened. The land needs to be reshaped with drainage systems added. The layers of soil that were removed for the well need to be replaced and topped with topsoil and then trees and grass need to be replanted.

The site needs to be monitored to check soil and water quality and to make sure the replanted vegetation is growing. The process is the same when landfills are closed. They need to be returned to their former or improved condition and monitored to make sure they are not a source of groundwater or air pollution from methane gas.

Name: _____ 90

Curriculum Connection
A1.1, A2.5, A3.2, A3.10

True or False Circle whether the statement is true or false.

1) Land reclamation is taking land back from previous owners.	True	False
2) Notre Dame Island was formed from soil removed for the Montreal Metro.	True	False
3) Flevoland was reclaimed from an area that used to be ocean.	True	False
4) Polders in the Netherlands are created by flooding low-lying farmland.	True	False
5) Restoring used wells includes replacing topsoil and planting vegetation.	True	False
6) Land re[illegible]ion can return damaged areas to their former condition.	True	False

Questi[illegible] [illegible]ion from the text to support your answer.

1) What are the[illegible]d r[illegible]mation project after an oil well is no longer in use?

2) What are the benefits of land reclamation?

Summarize Summarize the reading by writing the important information.

Name: _____ 91

Curriculum Connection
A1.2, A1.4, A2.2, A2.6

Interview With An Indigenous Knowledge Keeper

Jamie: Hi! I'm learning about how people protect the environment. Can you tell me how Indigenous communities take care of the land?

Knowledge Keeper: Of course, Jamie. Indigenous communities have cared for the land for thousands of years. They follow traditional knowledge passed down through Elders, stories, and ceremony. This helps them understand how to live in balance with nature.

Jamie: What is traditional knowledge?

Knowledge Keeper: Traditional knowledge is the wisdom that comes from observing the land, water, animals, and weather over many generations. It's not written in books. It comes from experience, stories, and deep respect for the Earth.

Jamie: How do Indigenous people respond to changes in the land?

Knowledge Keeper: They pay close attention to signs in nature. For example, if berries grow late, they know the season is changing. If water levels drop, they may change how or when they fish to protect spawning areas.

Jamie: That's amazing. Are there examples of how they protect the land?

Knowledge Keeper: Yes. In British Columbia, the Haida Nation protects forests using traditional harvesting rules. In northern Ontario, many Cree communities check ice conditions and monitor moose populations before hunting. These actions help keep ecosystems healthy.

Jamie: Do Indigenous people work with scientists too?

Knowledge Keeper: Absolutely. Today, many Indigenous communities work with researchers to track climate change. Elders share knowledge about rising temperatures, melting permafrost, and species that are disappearing. This teamwork helps everyone make better decisions for the future.

Jamie: Why is it important to learn from the land?

Knowledge Keeper: Because the land teaches us how to live. It gives us food, water, medicine, and shelter. When we respect it, it continues to provide. That's why many Indigenous Peoples say, "The land is our teacher."

Jamie: I really liked learning this. I want to help take care of the land too.

Knowledge Keeper: That's wonderful, Jamie. Learning is the first step. Keep listening, observing, and respecting nature—just like our ancestors always have.

Name: _____ 92

Curriculum Connection
A1.2, A1.4, A2.2, A2.6

True or False

Is the statement true or false?

1) Indigenous knowledge is mainly learned from printed books and maps.	True	False
2) The Haida Nation protects forests with traditional harvesting rules.	True	False
3) Cree communities hunt moose without checking population levels.	True	False
4) Learning from land means taking only what is needed.	True	False
5) Listening to nature is part of being an informed citizen.	True	False
6) Indigen mmunities have protected the land for thousands of years.	True	False

Questi s e questions below.

1) How do Indi lun respond to environmental changes?

2) What does the phrase "the land is our teach an?

Journal Entry

Pretend you're Jamie—write a journal entry about the interview.

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class

Name: ______________________ | Mark: ____

2 Truths and a Lie – Can you find the one that's not true?

	The Haida Nation uses traditional harvesting rules today.
	Indigenous people predict seasons by watching nature.
	Indigenous land practices harmed ecosystems in the past.

Name: ______________________ | Mark: ____

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Name: ______________________ | Mark: ____

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Name: ______________________ | Mark: ____

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	The Haida Nation uses traditional harvesting rules today.
	Indigenous people predict seasons by watching nature.
	Indigenous land practices harmed ecosystems in the past.

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Name: _____ 94

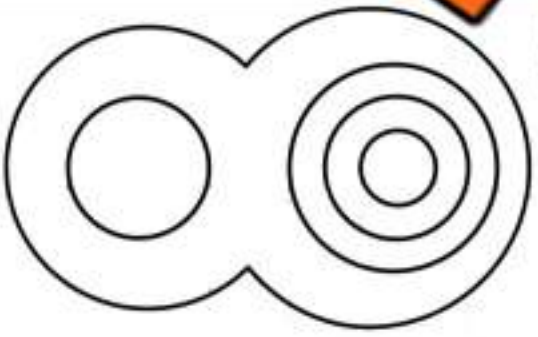
Curriculum Connection
A1.4, A2.3, A2.4, A3.1, A3.3

Topographical Map

A **topographical map** is a special type of map that shows the shape and height of the land. It uses contour lines to represent elevation. **Each contour line connects points that are the same height above sea level.** When the lines are close together, it means the land is steep. When they are far apart, it means the land is flat or gently sloping.

In the picture, the model shows a hill with several steps going up to the peak. On the topographical map, each step is shown as a separate contour line. The smallest loop in the centre shows the highest point of the hill. As you move outward from the centre, each larger loop represents a lower elevation. This is how contour lines help [illegible] the 3D shape of the land on a flat map.

Exercise Draw the sh[illegible] of [illegible] matches this co[illegible]



In this picture, the lines go around each hill or mountain, showing how high or low the land is. **The smallest loops at the top show the highest points, and the bigger loops lower down show where the land is closer to the ground.** The lines are closer together on steep slopes and farther apart where the land rises slowly. Because **each line shows one height level**, we can see the shape of the land without needing to see it in real life.

Name: _____

Curriculum Connection
A1.4, A2.3, A2.4, A3.1, A3.3

Reading A Topographical Map

Research Take a close look at the map below and answer the questions

1) What information does this topographical map tell us?

2) What specifically do you noti[illegible]on (Ex. Where are the roads and railway mainly located)?

Name: _____ 96

Curriculum Connection
A1.4, A2.3, A2.4, A3.1, A3.3

Word Search

Find the words from the word bank.

Word Bank: Physical Geography Terms					
Erosion	Weathering	Glacier	Delta	Volcano	Mountain
Plateau	Valley	Tectonic	Magma	Lava	Sediment
Fault	Mantle	Crust	Earthquake	Climate	Landform

Word Scramble

Unscramble the words from the word bank.

DLRAFMON		EDNSEMTI	
LAAPUTE		OUIMATNN	
MNEALT		ETNWIEGARH	
LAEGRCI		GAAMM	
ATKEAQERUH		ECITNOCT	

Name: _____ 97

Curriculum Connection
A1.1, A1.4

Role-Play: Humans And The Environment

Objective What are we learning about?

Students will explore how the environment affects human life and how human actions impact the environment, by acting out real-world scenarios and reflecting on both short-term and long-term effects for people and nature.

Materials What we need for our activity?

- Scenario cards (different situations) (provided)
- Props or costumes (optional)
- Timer or stopwatch

Instructions How will we complete our activity?

1) Divide the class into small groups of 4 to 5 students.
2) Provide each group with a scenario card that outlines a specific situation related to the topic being studied.
3) Give out roles to each student in the group, assigning them a character within the scenario, or let them decide and take roles.
4) If available, distribute props or costumes that may help students embody their roles more effectively.
5) Set the timer to allocate a specific amount of time for the groups to discuss and act out their scenarios.
6) Allow each group to present their role-play to the class.
7) After all groups have presented, initiate a class discussion to reflect on the different approaches and outcomes observed during the role-plays.
8) Distribute reflection sheets for students to express what they learned and felt during the activity.

Name: _____ 98

Curriculum Connection
A1.1, A1.4

Criteria Use the criteria below to complete the activity.

Criteria	Description
Creativity	Show what your character thinks and feels. Use ideas that make the role-play more real and interesting.
Voice	Speak clearly and loudly so others can hear. Change your voice to match your character's feelings.
Actions	Use body movements, facial expressions, and actions that match your character's story.
Stay in R	your character. Don't break role until you're finished.
Tea	lpful. Take turns and make sure everyone joins.

Scenario Card ut t cs below.

Scenario		Description
1	**Hurricane in the Coastal Town**	A small coastal town as be ful hurricane. Homes are damaged, streets are flood nd many been evacuated to a local school gym. The mayor is mee th co aders to decide how to get food and clean water to families. p of volunteers is trying to rescue stranded pets. ore is set because his shop was destroyed, and he wants hel reb wildlife officers are worried about seabirds whose nests ere away.
2	**The Logging Dispute**	In a forested area, a logging company has started cutting down large sections of trees. Workers are happy for the steady jobs, but hunters and campers are upset because the forest trails are gone. Heavy logging trucks are damaging small roads and creating noise. A nearby river has become muddy from soil washing into it, and fish numbers are dropping. Environmental groups are arriving to protest, while the company promises to plant new trees in the future.

Name: _____ 99

Curriculum Connection
A1.1, A1.4

Scenario Cards | Cut out the topics below.

Scenario		Description
3	**Pesticide Problem**	A farming community has been using chemical pesticides to protect crops. The crops look healthy, but bees and butterflies are disappearing at an alarming rate. A beekeeper is losing many hives, and the honey harvest is the smallest in years, leaving her worried about the future. Some residents fear chemicals are [illegible] into drinking water and harming families. Local farmers argue they [illegible]des to survive financially and feed the community. Scientists arrive to test th[illegible]d water, while anxious parents start petitions to reduce chem[illegible]re[illegible] too late.
4	**The Melting Glacier**	A north[illegible]mmu[illegible]lacier has noticed that the glacier is melting faster each su[illegible]ers re[illegible]r when the ice covered the whole valley, shining bright even[illegible]sun[illegible]ting ice is causing the river to flood each spring, damaging road[illegible], and[illegible]nd. A group of hunters is concerned because the animals they de[illegible]on f[illegible]d are moving farther away into the mountains. Local lead[illegible] deb[illegible]s to build a protective wall or move the village entirely[illegible]ground[illegible]guides are losing work because fewer tourists are coming [illegible]the[illegible]ting beauty, and some fear the loss will destroy the town's ec[illegible]
5	**The Plastic Waste Crisis**	A lakeside town is seeing more and more plastic bottles, bags[illegible]wrappers in the water and along the shoreline. Tourists leave trash behind after picnics, and strong winds blow it into the lake, scattering it far and wide. Fish swallow small pieces of plastic, and a local fishing business is struggling because customers worry about contaminated fish reaching their tables. Volunteers try to organize clean-up days, but the trash keeps returning faster than it can be removed. Store owners debate switching to paper bags, but some think it will cost too much and hurt profit. Wildlife rescuers are finding more injured animals trapped in discarded plastic every week.

Name: _____ 100

Curriculum Connection
A1.1, A1.4

Scenario Cards | Cut out the topics below.

Scenario		Description
7	**The Factory Smoke**	A new factory on the edge of town is producing steel for construction. While it brings many jobs, it also releases thick black smoke into the air. People living nearby complain about a strong smell and soot covering their houses. The local clinic sees more patients with breathing problems. Children are not [illegible]ed to play outside on bad days. Company leaders say they are following [illegible] residents demand better air filters and reduced emissions.
8	**Lake Taken Over**	A lake [illegible] has been overrun by an invasive species of fish. These fish are eat[illegible] that [illegible] species need to survive. The fishing industry is strugg[illegible]d ma[illegible] are losing their jobs. Scientists are trying to figure out a w[illegible]ove th[illegible]ive fish without harming other wildlife. A local festival that [illegible]es [illegible]ive fish is in danger of being cancelled. At the same time[illegible]ants [illegible]ing to create new dishes using the invasive fish to attract visitors.
9	**Wetland at Risk**	A wetland on the edge of a town is b[illegible]rain[illegible]houses. The project is bringing jobs, but the wetland is [illegible]o many b[illegible]ogs, and plants. Bird watchers and scientists are upset a[illegible]t th[illegible]acted. Construction workers are clearing trees and digging cha[illegible]o drain away. Heavy trucks are making the roads busy and noisy[illegible]e families are happy about new homes being built, but others worry about losing the natural flood protection the wetland provides.
10	**The Oil Spill**	A coastal community depends on fishing, but a recent oil spill has covered the harbour in thick sludge. Boats cannot leave, and the smell is strong. Fishermen fear losing the season's income. Volunteers scrub seabirds and clean the shoreline. The company responsible offers compensation, but some residents say it's not enough. Tourists cancel trips, and the local seafood restaurant struggles to find clean fish to serve.

Name: _____ 101

Curriculum Connection
A1.1, A1.4

My Role Draw a picture of what your character did during the role-play.

Name: _____ 102

Curriculum Connection
A1.1, A1.4

Rubric | How did you do on the activity?

Criteria	1 Point	2 Points	3 Points	4 Points
Creativity	Did not try to pretend.	Tried a little but didn't add ideas.	Used imagination and helped make the scene better.	Used great ideas and made the role-play exciting and real.
Voice	Hard to hear or too quiet.	Sometimes clear, but not loud or strong.	Clear and matched the feelings of the character.	Loud, clear, and showed strong feelings with voice.
Action	Did [illegible]	A few actions, not always connected to role.	Used actions that matched the character's role.	Used many strong actions that were clear and realistic.
Stay in Role	A[illegible]ke themselves[illegible] the charact[illegible]	[illegible] acted [illegible] cha[illegible]	Mostly stayed in character during the scene.	Stayed in character the whole time.
Teamwork	Did not help or listen.	Hel[illegible]tle [illegible]	[illegible]ed others [illegible]d with the[illegible]	Shared, listened, and helped make the group's work better.

Teacher Comments

[illegible]rk

Student Comments – What Could You Do Better?

Name: _____ Date: _____

Unit Test: Physical Patterns In A Changing World

Total	Mark
/	/

1) When two tectonic plates push together... a) Divergent Boundaries b) Convergent Boundaries c) Transform Boundaries d) All of th ove	2) These mountains have magma inside... a) Fold Mountains b) Fault Block Mountains c) Volcanic Mountains d) All of the above
3) Which i jor type of volcano? a) Shi b) Strat canoe c) Cinder Cone d) Ash Volcano	4) What is the number one cause of erosion? a) Wind b) Storms c) Water d) Humans
5) Which of the following ategy control soil erosion? a) Windbreaks b) Deltas c) Terracing d) Reforestation	Which country has undergone many land ation projects? The lands b) C ne d) Aus
7) Which landform is built from layers of lava? a) Shield Volcano b) Plateau c) Fold Mountain d) Delta	8) Which typ tey glaciers? a) V-Shaped b) Flat-Bottom c) Crater d) U-Shaped
9) What landform is built by river sediment? a) Trench b) Glacier c) Delta d) Plateau	10) What side of a mountain is dry and windy? a) Windward b) Summit c) Leeward d) Glacier Side

Define What do the terms below mean?

Mark /

Term	Definition – What does it mean?
Tectonic Plate	
Dyke	
Glacier	

Short Answer Answer the q[illegible]ns

Mark /

1) What is erosion? Provide at least one [illegible]mple.

2) What is the water cycle? How do mountains affect the water cycle?

3) What is a wetland? Provide 4 examples of wetlands.

Long Answer | Answer the questions below.

Mark /

1) How have human activities affected our physical environment? Make sure to include at least 5 ways in which humans have changed our environment.

2) How do ocean currents affect weather around the world? Include examples like the Gulf Stream, El Niño, or La Niña.

Google Slides Lessons Preview

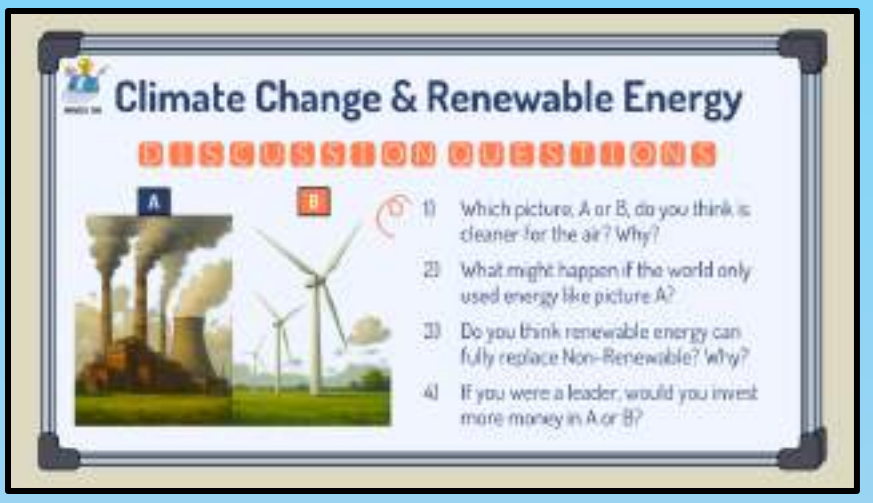
Ontario Geography

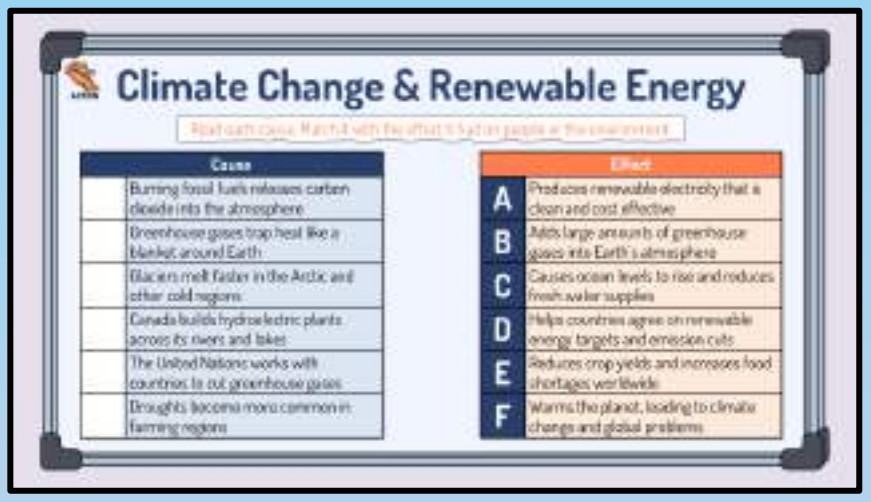
Natural Resources Around the World– Grade 7

3-Part Lesson Format

Part 1 – Minds On!

- Learning Goals
- Discussion Questions
- Quotes
- And More!



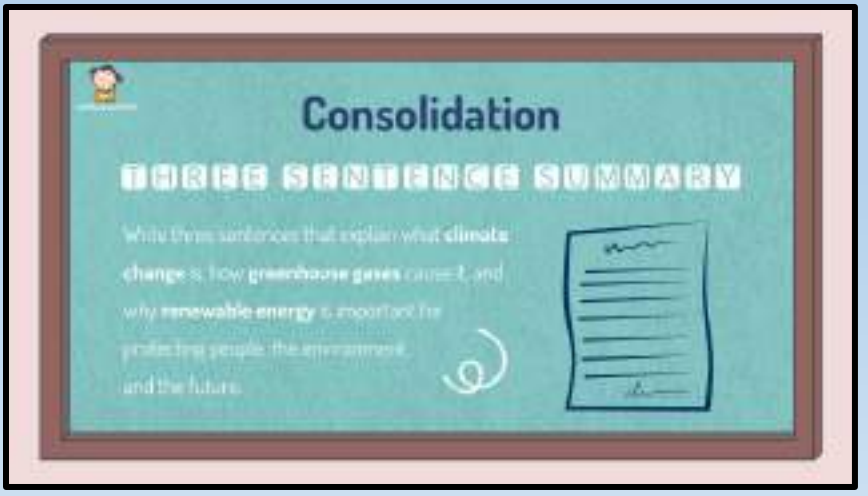


Part 2 – Action!

- Surveys/Polls
- Matching
- Drag and Drop
- Videos
- And More!

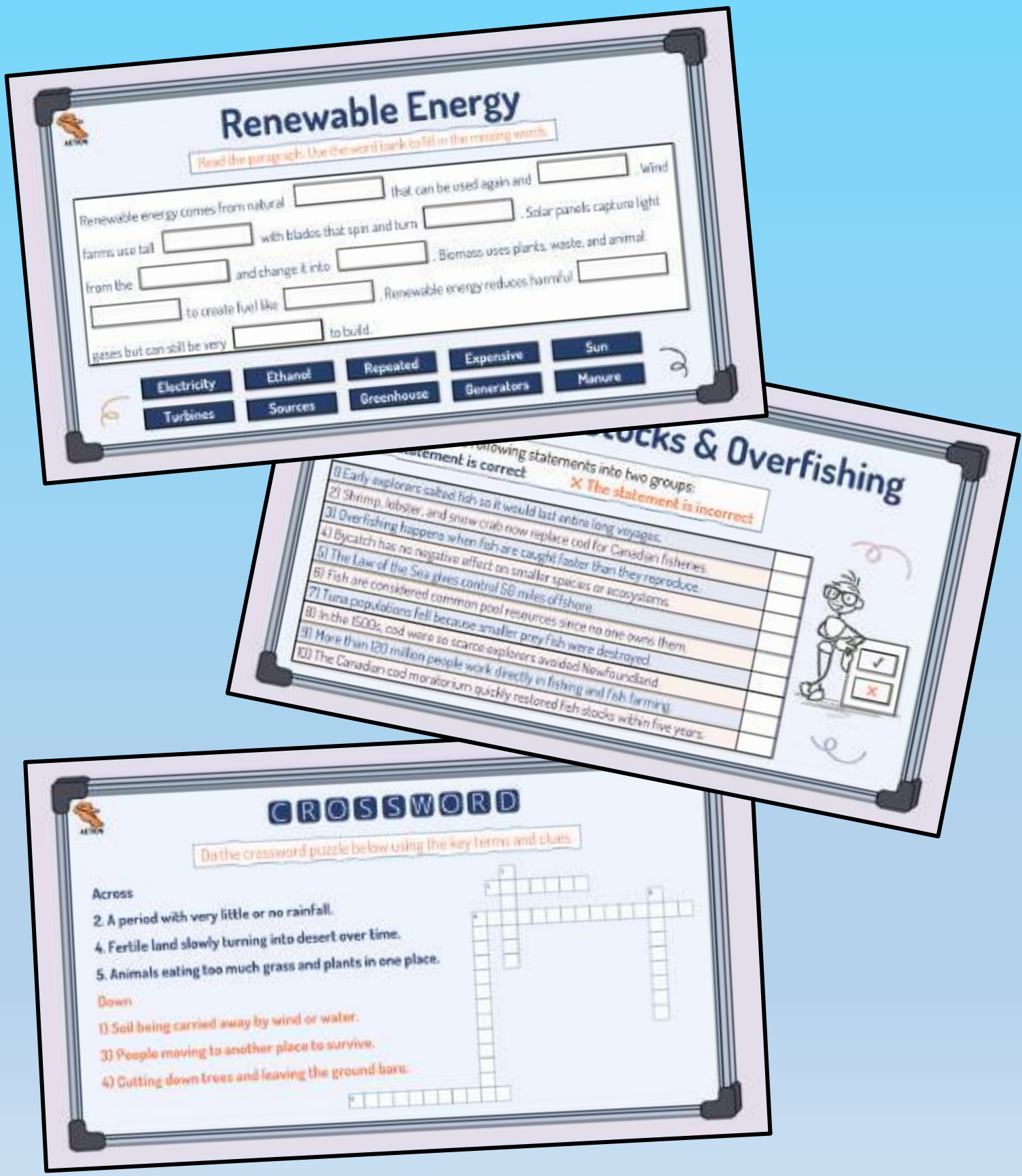
Part 3 – Consolidation!

- Exit Cards
- Quick Draw
- 3-2-1 Reflection
- One-Sentence Summary



Ontario Geography

Natural Resources Around the World– Grade 7



Ontario Geography

Natural Resources Around the World– Grade 7

Workbook Preview

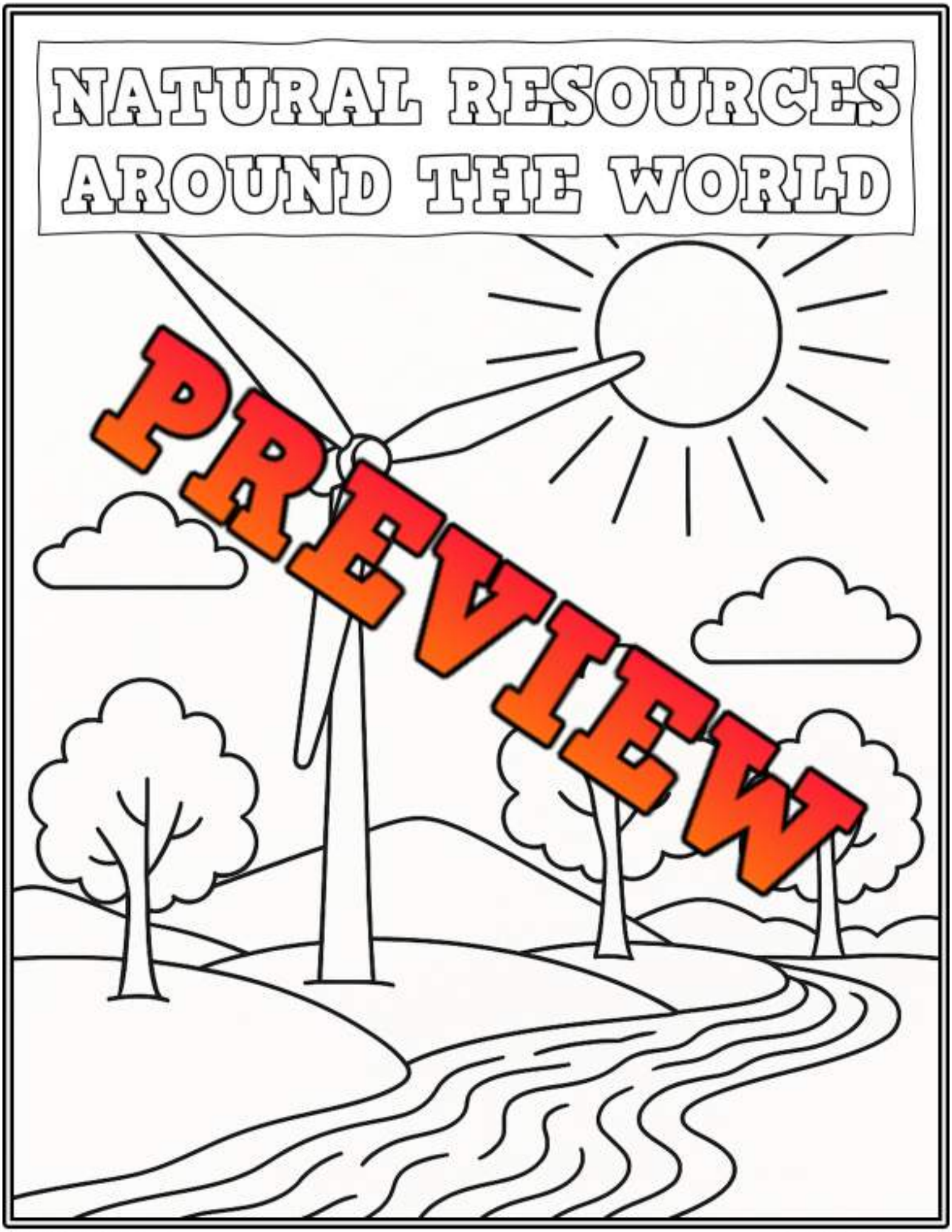
Grade 7 Geography Unit

B. NATURAL RESOURCES AROUND THE WORLD: USE AND SUSTAINABILITY

	Curriculum Expectations	Pages
B1.1	Analyse interrelationships between the location/accessibility, mode of extraction/harvesting, and use of various natural resources	8-10, 16-17, 21-24, 44-47, 62-64, 69-70, 79-80, 89-94
B1.2	Analyse natural resource extraction/harvesting and use in some specific regions of the world, including the sustainability of these practices	14-15, 18-20, 25-26, 30-37, 48-51, 60-61, 65-68, 71-73, 86-87, 95-100
B1.3	Assess the efforts of some groups, agencies, and/or	11, 13, 27-29, 78
B1.4		52-59, 86-88, 100
B2.1		94
B2.2	Gather and organize data and information from a variety of sources on the impact of resource extraction/harvesting and/or use, ensuring that their sources reflect more than one perspective	7-10, 8-10, 16-17, 21-22, 32-33, 62-64, 77-78
B2.3	Analyse and construct maps as part of their investigations, with a particular focus on exploring the spatial boundaries of and, where applicable, patterns relating to their topics	18-20, 23-24, 69-70
B2.4	Interpret and analyse data and information relevant to their investigations, using various tools and spatial technologies	16-17, 27-29, 67-68, 74-76
B2.5	Evaluate evidence and draw conclusions about issues related to the impact of natural resource extraction/harvesting and/or use around the world	14-15, 25-26, 30-31, 34-37, 48-51, 60-61, 62-66, 71-73, 79-87, 95-100
B2.6	Communicate the results of their inquiries using appropriate vocabulary and formats appropriate for specific audiences	7, 11-13, 38-47, 52-59, 88-100

	Curriculum Expectations	Pages
B3.1	Identify Earth's renewable, non-renewable, and flow resources (e.g., renewable: trees, natural fish stocks, soil, plants; non-renewable: fossil fuels, metallic minerals; flow: solar, running water, ocean currents, tides, wind), and explain their relationship to Earth's physical features	8-24, 30-37, 44-47, 52-59
B3.2	Describe ways in which people use the natural environment, including specific elements within it, to meet their needs and wants (e.g., rock is quarried to make building materials, roads; trees are used for lumber for buildings, wood for furniture, pulp for paper, logs for fuel; fossil fuels are used for heating and cooling, to generate energy for industry, to power vehicles, to make plastics; water is used for drinking, irrigation, to produce electricity, to cool nuclear reactors; animals are used for food, clothing, recreation; the natural environment enables people to live off the land and provides opportunities for relaxation, education, and/or recreation)	8-13, 21-26, 44-47, 52-59, 60-61
B3.3	Identify significant short- and long-term effects of natural resource extraction/harvesting and use on people and the environment (e.g., deforestation, desertification, smog, acid rain, climate change, soil contamination, habitat destruction, flooding)	14-17, 27-29, 38-43, 48-51, 60-61, 62-68, 71-76, 79-83
B3.4	Describe the perspectives of different groups (e.g., a traditional indigenous community, an environmental organization, a multinational mining or forestry company, the residents of a resource town) regarding the use of the natural environment to meet human needs	25-26, 38-43, 48-51, 62-66, 77-80, 84-87
B3.5	Describe some responses to social and/or environmental challenges arising from the use of natural resources (e.g., the increased use of wind, solar, or tidal energy; reduced consumption; promotion of energy-saving strategies such as the use of energy-efficient appliances; promotion of fair trade; marketing of "ethical" products such as "ethical oil" or "ethical diamonds"; boycotting less sustainable products or companies using unsustainable practices)	18-20, 27-37, 67-78, 81-85
A3.6	Demonstrate the ability to extract information from, analyse, and construct GIS maps relating to natural resources around the world *(e.g., to determine the location of oil refineries and their proximity to population centres and agricultural land; to show areas of deforestation and current land use on previously forested land)*	69-70

NATURAL RESOURCES AROUND THE WORLD



Name: _____ 8

Curriculum Connection
B1.1, B2.2, B3.1, B3.2

Natural Resources

Why People Depend on Natural Resources

People need many things to live safely and comfortably. They must have housing, food, and water to meet their basic needs. They also use other items to enjoy life, like cars, phones, computers, and televisions. All of these require raw materials to build them, and many need power or fuel to work.

Natural resources are things found in nature, such as air, water, plants, sunlight, soil, rocks, anim and oil. Some are found underground. A material becomes a **natural resource** w mans find it useful. For example, minerals like gold, silver, copper, and aluminiu n Earth since it was formed, but they only became resources when peopl act and use them.

resou spread evenly around the world. People often settle in areas where im rce h as clean water and fertile soil for food, are available.

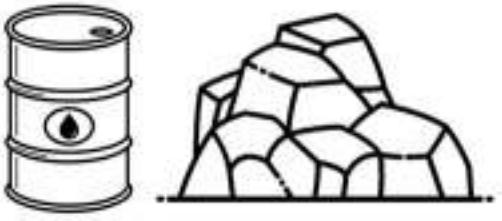
Three Main Types of N

Natural resources are gro reney urces, **non-renewable resources**, an eso s.

1. Renewable Resources

These can be replaced naturally ove allowi repeated use. Examples include:

- Water recycled through the water cycle
- Trees and plants that can be replanted
- Animals that reproduce



2. Non-renewable Res

These have a limited supply or ars to form, so they cannot be repl human lifetime. Examples include oil, coal, a tural gas. Minerals are also non-renewable.

3. Flow Resources

These are available only where and when they occur in nature. Examples include waterfalls for **hydroelectric power**, sunlight for **solar panels**, wind for **wind turbines**, and tides for **tidal energy**. They cannot be stored unless special technology is used.

How Humans Value and Use Resources

Resources gain value when humans recognize their usefulness. People create technologies and systems to collect and process them. Water treatment plants, mining operations, and hydroelectric dams are all examples of how humans access and use resources. The choice of which resources to use—and how to use them—affects the environment and the **sustainability** of life for future generations.

Name: _____ 9

Curriculum Connection
B1.1, B2.2, B3.1, B3.2

True or False

Circle whether the statement is true or false.

1) Flow resources can be stored for later use without technology.	True	False
2) Non-renewable resources can take millions of years to form naturally.	True	False
3) Things in nature become natural resources when humans value them.	True	False
4) Flow resources are non-renewable resources.	True	False
5) Flow resources include sunlight, tides, and waterfalls in certain places.	True	False
6) All renewable resources are always replaced instantly after being used.	True	False

Questions

Use information from the text to support your answer.

1) Describe how human populations can be influenced by resources.

2) Explain how flow resources are different from renewable resources.

Making Connections

What does this reading remind you of in your life?

Curriculum Connection
B1.1, B2.2, B3.1, B3.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ | Mark

What is a natural resource, and give three examples each for renewable and non-renewable resources?

Name: _____ | Mark

What is a natural resource, and give three examples each for renewable and non-renewable resources?

Name: _____ | Mark

What is a natural resource, and give three examples each for renewable and non-renewable resources?

Name: | Mark

What is a
give three exa
and non-renewable

Name: _____ 11

Curriculum Connection
B1.3, B2.6, B3.1, B3.2

Pictionary: Name That Resource

Objective What are we learning about?

Students will learn about natural resources, including renewable, non-renewable, and flow resources. They will draw and guess these resources while learning about their characteristics, uses, and how people depend on them.

Materials What will you need for the activity?

- Markers or pencils
- Resource cards (examples: coal, diamond, sun, wind)

Instructions How will you complete this activity?

1) Split the class into two teams, maybe by rows, groups, or desks.
2) Have one student from Team A come up and pick a card. They should keep the card a secret from everyone else.
3) The student then draws what's on the card on a whiteboard or large piece of paper.
4) Start a timer for 2 minutes. During this time, Team A tries to guess what is being drawn.
5) If Team A guesses the drawing correctly before the timer goes off, they earn a point.
6) Next, it's Team B's turn. A student from Team B picks a card and draws, while their team guesses.
7) Alternate turns between the two teams, letting different students draw each time.
8) Continue the game until all the cards have been used. Keep track of points for each team.
9) At the end, count the points. The team with the most points is the winner of Name that Resource Pictionary!

Name: _____ 12

Curriculum Connection
B1.3, B2.6, B3.1, B3.2

Pictionary Cards | Cut out the cards below.

Tree	River
Fish	Coal
Wind	Bison
[illegible]	Iron
Oce[illegible]Way	Corn
Coffee	Glacier
Oil	[illegible]mond
Gold	[illegible]
Waterfall	Bar[illegible]
Salt	Sun
Sand	Timber
Sheep	Lake
Silver	Gravel

Name: _____ 13

Curriculum Connection
B1.3, B2.6, B3.1, B3.2

Draw & Label Draw 4 resources from the Pictionary activity and label each picture.

Name: _____ 14

Curriculum Connection
B1.2, B2.5, B3.1, B3.3

Renewable Resources

Renewable Resources

Renewable resources are natural materials or living things that can replace themselves within a short period of time. For example, crops like wheat are planted in the spring, harvested in the summer or fall, and then replanted the next year. Wheat is used for bread, pasta, and cereals, and farmers can usually grow the same amount again the following season as long as soil and water are available. This cycle makes crops an excellent example of renewable resources.

Trees

Trees ar le resource, but their growth time is very different from crops. We cut tr es e, and paper. A tree planted today may take decades—or even centuri o grow gh to replace the one cut down. For example:

- A **hardw** e c ke 150–200 years to reach full size.
- A **pine tre** to ha 5–40 years, depending on conditions infa ity.
- **Bamboo**, a fast-g e, can vested in only 7 years.

These different growth tim show ning is needed when using forests.

Managed Forests

In Ontario, about 90% of forests are on **Crown la** ich r owned by provincial or federal governments. Out of these fore **manag ests**. A managed forest is not just about planting and cutting tr con wildlife habitat, public use, and the voices of Aboriginal communitie **sta** one where a new tree is planted for every tree cut. This ensures resourc future generations.

Wildlife

Wildlife can also be a renewable resource if protected properly. In the 1800s, there were nearly 30 million bison in North America. Indigenous peoples hunted bison for food, clothing, and shelter. When Europeans arrived, the use of guns and horses made hunting far more efficient, and the bison were nearly wiped out. **Reserves** and **conservation laws** eventually helped protect the species. A similar story happened with cod fish. In 1497, John Cabot described the waters of Newfoundland as so full of cod that they could be scooped with a basket. By 1992, due to overfishing, the cod fishery was shut down, and thousands of fishers lost their jobs.

Renewable resources must be carefully managed. Without sustainable practices, they risk becoming non-renewable.

Name: _____ 15

Curriculum Connection
B1.2, B2.5, B3.1, B3.3

Questions

Use information from the text to support your answer.

1) Why is bamboo more sustainable as a wood source than sugar maple trees?

2) Why is it important to have protection for wildlife?

True or False

Circle whether the statement is true or false.

1) Renewable resources will always be available for humans.	True	False
2) About 90 percent of Ontario's forests are located on Crown land.	True	False
3) Ontario has laws that protect forests on Crown land.	True	False
4) All renewable resources can be replaced in a human lifetime.	True	False
5) When well managed, renewable resources will always be available.	True	False
6) A sustainable forest plants a new tree for every tree removed.	True	False

Questioning

Write 3 questions you have about the reading.

1)	
2)	
3)	

Name: _____ 16

Curriculum Connection
B1.1, B2.4, B3.1, B3.3

Non-Renewable Resources

What Are Non-Renewable Resources?

Non-renewable resources are natural materials that take millions of years to form. They cannot be replaced in a human lifetime. The best examples are **fossil fuels** such as oil, natural gas, and coal. These fuels began as plants and animals that lived millions of years ago. When they died, their remains were buried and squeezed under the earth's surface. Over time, slimy plants and animals from oceans and lakes turned into oil, while woody plants turned into coal. Both types of matter can also create natural gas. Minerals, like copper and [illegible] are also non-renewable because they cannot reform quickly.

How Fos[illegible]

For f[illegible] special conditions are needed:

- A[illegible] environ[illegible] a swamp, with little or no oxygen.
- A heavy w[illegible]s o[illegible]ter pressing down.
- High hea[illegible] earth's

Millions of yea[illegible] p, t[illegible] f the earth were covered with dense forest[illegible] ea lev[illegible] these forests often flooded and turned into swamps. Dead plants a[illegible] nk[illegible] where sediment covered them. Over time, more layers of sediment p[illegible] up. T[illegible] these layers, along with heat from deep underground, slowly change[illegible] d pla[illegible] animals into coal, oil, and gas.

Different Types of Fossil Fuels

Each fossil fuel has unique features and uses. **C**[illegible] blac[illegible] urns easily and has powered factories and trains for centuries. **Oil** is a [illegible] fined into gasoline, diesel, and jet fuel, making it essential for tra[illegible]n. **Nat[illegible]s** is a cleaner-burning fuel often used for heating homes and ge[illegible] ele[illegible] W[illegible] they are all important, oil and gas provide most of the world's ener[illegible] tod[illegible] transportation and industry.

Where Fossil Fuels Are Found

Fossil fuels are usually located underground, from about 10 metres to several kilometres below the surface. Oil and natural gas are often discovered near tectonic plate boundaries where earth movements trap the fuels. In Canada, Alberta is the largest producer of oil and gas, with huge deposits in the oil sands.

Why They Are a Problem

Humans are using fossil fuels far faster than they can ever reform. In 2019, about 84% of the world's total energy came from them. This shows our heavy dependence. When burned, these fuels release **greenhouse gases** that trap heat in the atmosphere. This causes global warming and extreme climate change. Burning them also creates **air pollution**, which leads to smog and respiratory diseases like asthma.

Name: _____ 17

Curriculum Connection
B1.1, B2.4, B3.1, B3.3

Visualization What were you picturing while you were reading? Describe your picture.

Question ...mation from the text to support your answer.

1) How ar... fossil ...d?

2) Why are fossil fuels considered a problem for ...viron...

True or False Circle whether the statement is true or false.

1) Oil is formed mainly from woody plants buried under pressure.	True	False
2) Fossil fuels can be replaced within a normal human lifetime.	True	False
3) About 84 percent of world energy came from fossil fuels in 2019.	True	False
4) Coal is a black rock that has been burned for centuries.	True	False
5) Minerals like copper and iron are considered renewable resources.	True	False
6) Ontario is the largest Canadian producer of oil and gas.	True	False

Name: _____ 18

Curriculum Connection
B1.2, B2.3, B3.1, B3.5

Flow Resources

What Are Flow Resources?

A **flow resource** is a natural resource that does not fit into the category of renewable or non-renewable. These resources must be used at the place and time they occur, because they cannot be stored for later use. There is an unlimited supply of flow resources, and they are not influenced by humans. Common examples are **sunshine**, **tides**, **wind**, **running water**, and **geothermal heat**. These resources will not be exhausted over time. This is not because they replace themselves, but because their sources are either massive, such as the sun, or ongoing processes in nature, such as rainfall, wind, and ocean tides.

Why Flow Resources Matter

Flow resources are important because they are clean and cause fewer harmful effects than fossil fuels. With no risk of running out, they are sustainable. Unlike coal, oil, or gas, flow resources do not release large amounts of greenhouse gases that cause climate change. Many worldwide invest in flow resources because they are reliable and safe for long-term use.

Tidal Power in Canada

Another example of a flow-resource use is tidal power. Although Canada once had the Annapolis Tidal Plant, it was decommissioned in 2019, much of the tidal energy effort is focused on the Bay of Fundy. At the Fundy Ocean Research Centre for Energy (FORCE) in Nova Scotia, several companies are developing tidal stream turbines in the Minas Passage. In 2025, the province launched a competitive process to select new projects totaling up to 13 megawatts at FORCE, enough power for about 9,000 homes.

Hydroelectricity in Action

Flow resources are part of everyday life. In Ontario, about 25% of electricity comes from the Niagara Falls Ontario Hydro plant. Niagara Falls also produces 2 gigawatts used in New York State. **Hydroelectricity** is made when gravity pulls water down, spinning turbines that create energy. The greater the drop of water, the stronger the force, and the more energy is made.

Benefits and Problems of Hydroelectric Power

Hydroelectric power has many benefits:

- It is clean and does not pollute the air
- It is reliable and efficient
- It is cost effective and sustainable

However, there are challenges. Large hydro projects use vast amounts of land and destroy plant and animal habitats. Ontario Hydro has a 750-acre reservoir at Niagara Falls to ensure steady water flow. In other countries, huge dams flood entire valleys. For example, when the **Three Gorges Dam** was built in China, 13 cities and over 1,000 villages were flooded, forcing 1.2 million people to move.

Name: _____ 19

Curriculum Connection
B1.2, B2.3, B3.1, B3.5

True or False

Circle whether the statement is true or false.

1) Flow resources are renewable resources.	True	False
2) Sunshine, wind, rain and running water are examples of flow resources.	True	False
3) There are no negative environmental impacts from using flow resources.	True	False
4) Humans can control flow resources.	True	False
5) We use over 80% fossil fuels for our energy needs because flow resources cannot provide enough power to meet our needs.	True	False

Questions

...rmation from the text to support your answer.

1) Why ...low re... important source of energy?

2) What are some of the positive and neg...ve impa... hyd...ctric power?

Summarize

Summarize the reading by writing the important information.

Curriculum Connection
B1.2, B2.3, B3.1, B3.5

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ | Mark

Circle Yes or No for each question.

1) Can flow resources be stored for future human use?	Yes / No
2) Is sunshine an example of a common flow resource?	Yes / No
3) Do flow resources create less pollution than fossil fuels?	Yes / No
4) Do flow resources eventually run out from human use?	Yes / No

Name: _____ | Mark

Circle Yes or No for each question.

1) Can flow resources be stored for future human use?	Yes / No
2) Is sunshine an example of a common flow resource?	Yes / No
3) Do flow resources create less pollution than fossil fuels?	Yes / No
4) Do flow resources eventually run out from human use?	Yes / No

Name: _____ | Mark

Circle Yes or No for each question.

1) Can flow resources be stored for future human use?	Yes / No
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4) Do flow resources eventually run out from human use?	Yes / No

Name: _____ | Mark

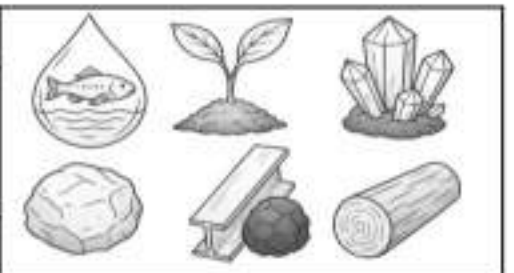
Circle Yes or No for each question.

1) Can flow resources be stored for future human use?	Yes / No
2) Is sunshine an example of a common flow resource?	Yes / No
3) Do flow resources create less pollution than fossil fuels?	Yes / No
4) Do flow resources eventually run out from human use?	Yes / No

Name: _____ 21

Curriculum Connection
B1.1, B2.2, B3.1, B3.2

What Are The Most Valued Resources?

What are the Most Valued Resources?	
Natural Resources are resources because people value them. Some resources are necessary to support life on our planet and some resources make our life easier.	
Some of the most important resources on earth are:	

Air	necessary for life on our planet. Without access to clean air people become pollution is a major threat to our environment.
Wat	eeded by people, animals, and plants. Only 2.5% of Earth's water enewable through the water cycle, but groundwater is being ed fas replaced.
Salt	Salt al m ecessary for life of people and animals.
Soil	Soil lets w fo er, and supports plants that take in carbon dioxide and thin 1–2 metre layer around Earth and is at risk from pollu rosi
Timber	Timber is used in const tion aper as well as for fuel. When forests are managed respons ber is able, sustainable and economical resource.
Oil	Oil is a non-renewable resource that es ov r energy needs. It is also used in making plastics. At the curr he world will run out of oil in 53 years.
Natural Gas	Natural Gas supplies 22% of our energy needs. It is us ic. At the current rate of consumption, the world will run out of ears.
Coal	Coal is a fossil fuel for energy. The world may run out in 100 ye ning it causes air pollution, while sludge and ash pollute groundwater.
Iron	Iron is the most used metal, making up 5% of Earth's crust. It is used for steel in buildings, pots, and pans. Most iron comes from Australia, Brazil, South Africa.
Bauxite	Bauxite is used to make aluminum. The largest Bauxite producing countries are Australia, China, Guinea and Brazil.
Helium	Helium is used as a cooling medium in MRI machines and satellite instruments. It is also used in making fiber optics and it is used to inflate airbags in vehicles.
Copper	Copper is used in pipes, wire and roofing as well as nutritional supplements. The largest producers are Chile, Peru, China and the USA. Copper can be recycled without any loss of quality, so recycled copper is as large a source of copper as newly mined copper.

Name: _____ 22

Curriculum Connection
B1.1, B2.2, B3.1, B3.2

True or False

Circle whether the statement is true (T) or false (F).

1) Coal burning creates ash and sludge that harms groundwater supplies.	T	F
2) Soil is only an important resource because of the minerals we mine from it.	T	F
3) Air, water and salt are all important because we need them to live.	T	F
4) Some resources that are renewable are mismanaged and could run out.	T	F
5) Drinking water is a plentiful resource that could run out because of pollution.	T	F

Questions

information from the text to support your answer.

1) W you think are the most valuable? Why?

2) Why is water a natural r ls it r or non-renewable? Why do we need to be careful with water as a nat sou

Word Search

Find the words in the wordsearch.

Air	Water
Salt	Soil
Timber	Oil
Coal	Iron
Bauxite	Helium
Copper	Gold

E S R K T S E K C O P P E R H W Q D
N Y U B O L F P D Q V P B C D O R C
I U Q T I S Y M K U H F J N G M E E
T U B L T L E C E T I X U A B I B J
H J D A L I C C Z G J J I W S R M X
K P A S R O L O G V P H A A O O I G
J M U I L E H T A O Y O J T I N T R
G C D D J X T Y X L M X W E L N N R
X H W Q C C A X K C Z K F R L H O I
C B B F D C Q D L Q R H V G O L D A

Name: _____ 25

Curriculum Connection
B1.2, B2.5, B3.2, B3.4

Blog Post: Canada's Natural Wealth

Top 5 Natural Resources That Shape Canada's Economy

Date: August 18, 2025 *Author: Daniel R.* *5-minute read*

When you think about Canada, you might picture hockey, snow, or maple syrup. But did you know that Canada's economy depends heavily on its natural resources? From oil in Alberta to fish in the Atlantic, these resources create jobs, support trade, and impact daily life. Here are 5 ...portant resources that shape Canada's economy:

1) **Oil in A... ...wers the nation.** Alberta's oil sands are the world's third-largest oil reser... ...about 60% of Canada's crude oil. The oil industry supports over 1... ...jo... ...illions in exports each year.
2) **Fre... ...ter in ... Quebec is vital.** Canada holds about 20% of the world's fresh water. Lakes ... an... ...tario supply drinking water to millions. Hydroelectric dams in Que... ...make th... ...ce the top producer of hydro power in Canada, exporting clean ...city ...
3) **Timber in British Co... ...th...** Forestry in B.C. provides over 50,000 jobs. Canada is one of the wo... ...est lu... ...rters, with softwood used for houses, paper, and furniture. Respo... ...fore... ...t helps balance jobs with sustainability.
4) **Fish in the Atlantic feed the econom...** ...centuri... ...ster, and crab have supported communities in Newfoundland, Nova ...a, an... Brunswick. Today, seafood exports bring in more than $6 billio... ...year.
5) **Minerals in the North fuel technology.** Canada's ...th i... ...monds, nickel, and rare earth minerals. These resources are esse... ...ectron... ...teries, and even renewable energy technology. Mining creates tho... ...f jo... ...ko, Nunavut, and the Northwest Territories.

Comments:

Sophie T. – August 18, 2025

Canada's oil may create jobs, but it also produces huge greenhouse gas emissions. In 2019, oil and gas made up 26% of Canada's emissions. We should focus more on renewable energy instead.

Like Reply 1d ago

Michael B. – August 19, 2025

I disagree. Oil is still Canada's largest export, worth over $100 billion in 2022. Without it, thousands would lose jobs, and Canada's trade balance would collapse. We can't replace oil overnight.

Like Reply 15m ago

Name: _____ 26

Curriculum Connection
B1.2, B2.5, B3.2, B3.4

Questions

Answer the questions below using evidence from the text.

1) How do natural resources shape Canada's identity around the world?

2) Why mig[illegible]newable energy become more important for Canada's future?

3) What challe[illegible]think[illegible]a faces with oil exports?

Two Truths and a Lie

Check only the two tru[illegible]in ea

	Alberta's oil sands are the third-largest oil reserve worldwide.
	Canada provides about 80% of the world's crude oil.
	Quebec exports hydroelectric power mainly to the United States.

	Fo[illegible]in British [illegible]mbia is mainly used f[illegible]t p[illegible]
	Cod, lobster, a[illegible]t to Atlantic fishing econ[illegible]
	The Northwest Territories are known for gold, diamonds, and nickel.

My Opinion

Do you believe Canada depends too much on its natural wealth? Explain.

Name: _____ 27

Curriculum Connection
B1.3, B2.4, B3.3, B3.5

Climate Change And Renewable Energy

The Problem of Climate Change

One of the biggest problems the world will face in the next century is **climate change**. This happens when the average temperature of the earth keeps rising. The earth is getting warmer because gases such as **carbon dioxide** are released into the air and gather in the atmosphere. These gases act like a blanket, trapping heat and making the planet warmer. Human activities such as making and using energy account for about 70% of all **greenhouse gas** emissions worldwide.

Effects of g Planet

Climate serious problems. **Storms**, **hurricanes**, and **heat waves** are beco common. Glaciers in places like the Arctic are melting quickly. cause els to rise, which puts countries like the Netherlands at risk of flooding. Me n there is less fresh water available for people. Without enough eas of face drought, crop failure, and food shortages.

Global Efforts to Act

Since the 1980s, the **United (UN)** with many countries to create agreements to lower greenho em currently gets 18.9% of its total energy from renewable resources such wate solar power. By 2018, most countries had renewable energy targets crease clean energy. Governments help meet these goals by giving ince and For example, businesses may get financial help for building w solar alling solar panels, or switching lighting systems to energy-saving LE bs.

Types of Renewable Energy

Renewable energy plays an important role in reducing emissions. Different forms include:

- ✓ Solar power
- ✓ Wind energy
- ✓ Hydroelectric power
- ✓ Geothermal energy
- ✓ Ocean power
- ✓ Biomass energy

Hydroelectric Power in Canada

Hydroelectric energy is the largest renewable energy source in the world. In 2019, Canada was the second largest hydroelectric producer after China. Hydroelectricity does not release greenhouse gases, making it a clean source of energy. It is also reliable, since it can produce electricity 24 hours a day, unlike solar power which depends on sunlight. Hydroelectric plants are cost effective with low operating costs, and in Canada, they supply over 60% of the nation's electricity.

Name: _____ 28

Curriculum Connection
B1.3, B2.4, B3.3, B3.5

True or False

Circle whether the statement is true or false.

1) Rising ocean levels put mountain countries most at flood risk.	True	False
2) Using renewable resources helps reduce climate change.	True	False
3) Around 70% of greenhouse gases come from how humans make energy.	True	False
4) Hydroelectricity is the only green renewable energy source.	True	False
5) Carbon dioxide in the atmosphere works like a blanket trapping heat.	True	False
6) Canada produces less than 5% of its energy from renewables.	True	False

Questions

tion from the text to support your answer.

1) How s burni els contribute to climate change?

2) How can melting glaciers cr ate ome regions?

3) Why is global cooperation important in fighting clim e?

Word Scramble

Unscramble the words from the word bank.

Word Bank

Drought	Carbon	Climate	Emission	Energy
Change	Atmosphere	Renewable	Greenhouse	Hydroelectric

YRRHTLCDCOEEI		ENLRBWEEA	
LITCEMA		ROHDTUG	
SEOMSNII		EHEOGUSREN	

Curriculum Connection
B1.3, B2.4, B3.3, B3.5

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____
Is the statement true (T) or false (F)?

Mark

1) Carbon dioxide traps heat in Earth's atmosphere like blankets.	T / F
2) Melting glaciers increase the fresh water supply worldwide.	T / F
3) Canada ranks second in world hydroelectric production.	T / F
4) Hydroelectric power depends only on sunlight during daytime.	T / F
5) The Netherlands faces flood risks from rising ocean levels.	T / F

Name: _____
Is the statement true (T) or false (F)?

Mark

1) Carbon dioxide traps heat in Earth's atmosphere like blankets.	T / F
2) Melting glaciers increase the fresh water supply worldwide.	T / F
3) Canada ranks second in world hydroelectric production.	T / F
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5) The Netherlands faces flood risks from rising ocean levels.	T / F

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5) The Netherlands faces flood risks from rising ocean levels.	T / F

Name: _____
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1) Carbon dioxide traps heat in Earth's atmosphere like blankets.	T / F
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3) Canada ranks second in world hydroelectric production.	T / F
4) Hydroelectric power depends only on sunlight during daytime.	T / F
5) The Netherlands faces flood risks from rising ocean levels.	T / F

Name: _____ 32

Curriculum Connection
B1.2, B2.2, B3.1, B3.5

Ocean Power

What is Ocean Power?

Ocean power is a type of **flow resource**. This means it cannot be stored for later use but must be captured as it happens. Ocean power comes from the natural motion of **waves** and **tides**. Tides occur twice every day because of the moon's gravitational pull on Earth and the Earth spinning on its axis. Unlike some other energy sources, tides are predictable, which makes tidal energy a very reliable source of power.

How Tidal Power Works

Tidal power is possible in certain coastal areas where ocean water can be trapped in a reservoir. As the tide comes in, the water flows over turbines, causing them to spin and generate energy. Later, when the water is released back to the ocean, it again turns turbines to create power.

- The largest tidal plant in South Korea, which produces electricity from incoming tides only.
- In France, a tidal plant uses underwater turbines to generate power both when tides flow in and out, powering about 65,000 households each year.
- Canada has tried tidal power at the Annapolis Royal Generating Station in Nova Scotia, which supplied power to about 4,000 homes at its peak but has been closed since 2019.

Environmental Studies

Scientists continue to study **tidal plants** to measure how they affect fish, shorelines, and ecosystems. This research also looks at how to make the systems more efficient.

Global Potential

Experts estimate that tidal and wave power together could provide up to 10% of the world's electricity needs if technology improves. Countries with long coastlines, like Canada, the UK, and Australia, have the greatest potential.

Wave Energy

Ocean power also comes from **waves**. Devices that float on the surface of the water or rest on the sea floor capture the up-and-down movement of waves to generate power. Portugal created the first and largest **wave farm**, which was meant to supply electricity for about 1,500 homes. However, after four months, mechanical problems forced the project to shut down.

Many companies are building new prototypes to improve wave power. Like wind and solar power, wave energy depends on weather conditions, which makes it less reliable. Another challenge is cost: the technology is still expensive to build and maintain, which slows down its widespread use.

Name: _____ 33

Curriculum Connection
B1.2, B2.2, B3.1, B3.5

True or False

Circle whether the statement is true or false.

1) Ocean power is non-renewable energy.	True	False
2) Ocean power can be stored for later use after capture.	True	False
3) Tides are caused by the moon's pull and Earth's spin.	True	False
4) Ocean power can be created anywhere there is a shoreline.	True	False
5) The largest tidal plant in South Korea uses both tide directions.	True	False
6) Flow re[illegible]s must be used at the moment they occur.	True	False

Questi[illegible]

[illegible]nation from the text to support your answer.

1) Why is tidal p[illegible]red flow resource?

2) Why is tidal energy considered [illegible]eliab[illegible]er energy sources?

3) How can tidal energy and hydroelectric power be see[illegible]r?

Summarize

Summarize the reading by writing the important information.

Name: _____ 34

Curriculum Connection
B1.2, B2.5, B3.1, B3.5

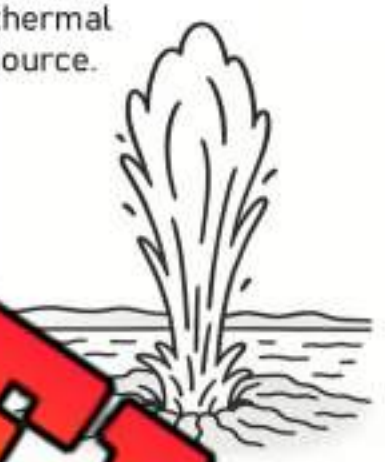
Geothermal Energy

What is Geothermal Energy?

Geothermal energy is a type of **renewable energy** that comes from the natural heat stored inside the earth. The earth's core is as hot as the surface of the sun, and this heat rises upward through rock and water. The supply of heat is so large that using it does not reduce what is available. For thousands of years, people such as the Chinese, Romans, Greeks, and Indigenous North Americans used geothermal energy from hot springs for cooking and bathing.

Where is G l Energy Found?

Geother nd everywhere, but it is easiest to use in certain areas. It is most acces te boundaries where volcanoes and earthquakes occur. The **Pacific of Fir** les the Pacific Ocean, has many geothermal sites. In Iceland, where heat is f out 90% of homes use geothermal heating, and 26% country' ergy comes from this source.

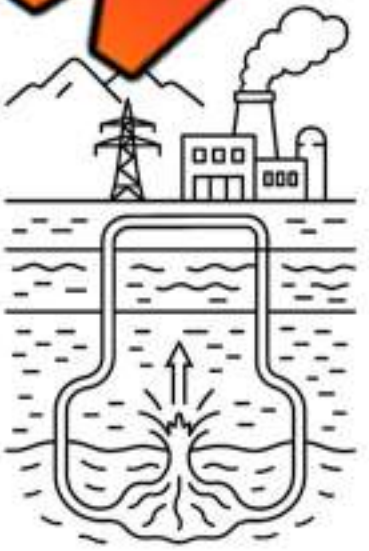


How We Use Geotherma

There are three main ways the

- **Hot springs**: Water heate rgr the surface and can be used for heat g.
- **Geothermal power plants**: These eam fr underground to spin turbines and make elec
- **Heat pumps**: Pipes are buried undergrou e temperatures stay around 10–15°C year-rou

In Canada and the United States, many homes use g al h mps. In winter, liquid in the pipes absorbs warmth from the ground and tran it i summer, the process reverses: heat from the house is sent into the reduces the use of furnaces and air conditioning, saving energy.



Advantages and Disadvantages

Geothermal energy is clean and sustainable, but it has challenges.

Advantages

- Does not run out
- Produces less pollution than fossil fuels
- Works all year round

Disadvantages

- Geothermal plants are expensive to build
- Underground water may bring up toxic chemicals like arsenic or mercury
- Some plants release greenhouse gases
- Large amounts of land are required

Name: _____ 35

Curriculum Connection
B1.2, B2.5, B3.1, B3.5

Questions

Use information from the text to support your answer.

1) What are 3 ways in which we get geothermal energy?

2) What are the disadvantages of geothermal energy plants?

3) Why [illegible] daries make geothermal energy easier to access?

True or False

Circle whether the sta[illegible] true[illegible]se.

1) Geothermal generating plants are renewable [illegible] sour[illegible]do not make greenhouse gases.	True	False
2) The Pacific Ring of Fire is an important geothermal [illegible]rldwid[illegible]	rue	False
3) A hot spring is a geothermal energy source.	[illegible]	False
4) Geothermal energy is a new form of energy.	[illegible]	False
5) Geothermal energy is a sustainable source of energy.	[illegible]e	False
6) Geothermal energy can only be used where volcanoes are found.	True	False

Fill in the Blanks

Fill in the blanks with the missing word.

1) The earth's _____ is as hot as the surface of the sun.

2) It is easiest to access geothermal energy near _____ boundaries.

3) About _____ percent of Iceland's homes are heated with geothermal energy.

4) Geothermal plants can sometimes release harmful _____ gases.

5) Hot underground water coming to the surface is called a hot _____.

Curriculum Connection
B1.2, B2.5, B3.1, B3.5

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____

Mark

Multiple Choice: Circle the correct answer.

1) Geothermal energy is best described as...	2) Which area has many geothermal sites?
a) Energy from the sun's rays	a) Atlantic Coast
b) Heat stored deep inside the earth	b) Arctic Circle
c) Power made only by volcanoes	c) Pacific Ring of Fire
d) Gas collected under the ocean	d) Sahara Desert
3) What do geothermal power plants mainly use to make electricity?	4) Which is one advantage of geothermal energy?
a) Ocean tides	a) It never runs out
b) Underground steam	b) It produces no pollution
c) Strong winds	c) It is easy and cheap to build plants
d) River currents	d) It only works in summer

Name: _____

Mark

Multiple Choice: Circle the correct answer.

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b) Heat stored deep inside the earth	b) Arctic Circle
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d) Gas collected under the ocean	d) Sahara Desert
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a) Ocean tides	a) It never runs out
b) Underground steam	b) It produces no pollution
c) Strong winds	c) It is easy and cheap to build plants
d) River currents	d) It only works in summer

Name: _____ 37

Curriculum Connection
B1.2, B2.5, B3.1, B3.5

Debate: Fossil Fuels vs Renewable Energy

Objective

What are we learning about?

Students will explore the benefits and challenges of fossil fuels and renewable energy in Canada. They will learn how oil and gas create jobs and money for the economy, but also how burnin ssil fuels harms the environment and adds to climate change. Students will also discu newable energy is cleaner and more sustainable. They will decide if Canad fossil fuels or switch fully to renewable energy.

Materials

W ee the activity?

- Sentence starters
- Planning page
- Debate prompt

Instructions

How will you complete the activity?

1) Read the debate question: **Should Canada keep using fos uels renewable energy?**
2) Talk as a class about why Canada uses fossil fuels (jobs, exports, ene and what renewable energy offers (clean air, sustainability, long-term benefits).
3) Divide the class into 2 teams:
   - **Team A:** Canada should keep using fossil fuels.
   - **Team B:** Canada should switch fully to renewable energy.
4) Each team fills out their debate planning sheet.
5) Use sentence starters to help with ideas.
6) Sit in a circle and take turns sharing your side. Speak clearly and respectfully.
7) After the debate, students can draw or write what they learned.

Name: _____ 38

Curriculum Connection
B1.4, B2.6, B3.3, B3.4

Topic Should Canada keep using fossil fuels, or switch fully to renewable energy?

Side	Description
Team A – Canada Should Keep Using Fossil Fuels	Some people think Canada should continue using fossil fuels. Here's why: • Oil and gas create thousands of jobs in Canada. • Fossil fuels bring in money from exports around the world. • Canada has huge oil and gas reserves that are valuable. • Many communities depend on oil and gas for their economy. • Switching quickly could raise energy costs for families. • Renewable energy projects also require fossil fuels to build at first. • Oil and gas are reliable sources of energy day and night. • Canada's economy would struggle if we stop selling oil. • New technology is making fossil fuels cleaner to use. • Other countries will keep using oil, so Canada should too.
Team B – Canada Should Switch Fully to Renewable Energy	Some people think Canada should move to renewable energy. Here's why: • Burning fossil fuels causes climate change and air pollution. • Renewable energy sources like wind and solar never run out. • Renewables are cleaner and better for people's health. • Canada has strong potential for hydro, wind, and solar power. • Switching creates new jobs in renewable energy industries. • Fossil fuels will eventually run out, renewables are sustainable. • Using renewables helps Canada meet climate change targets. • Renewable energy reduces dependence on oil and gas markets. • Renewable energy protects wildlife and natural habitats from oil spills. • Future generations will benefit from cleaner air and stable energy.

Name: _____ 39

Curriculum Connection
B1.4, B2.6, B3.3, B3.4

Brainstorming Should Canada keep using fossil fuels, or switch fully to renewable energy?

Use this page to help you think about both sides of the issue.

1) Why do some people think Canada should keep using fossil fuels?

- _____
- _____
- _____
- _____

2) Why do [illegible]ople think Canada should switch fully to renewable energy?

- _____
- _____
- _____
- _____

3) What are some differe[illegible]s peop[illegible]t have?

We should keep fossi[illegible]	[illegible]e should switch to renewables

4) What is your opinion?

Name: _____ 40

Curriculum Connection
B1.4, B2.6, B3.3, B3.4

Planning Answer the questions below.

1) Do you think Canada should keep using fossil fuels or switch fully to renewable energy? Explain why.

2) Wh[illegible]ur opinion?

-
-
-
-
-

3) What might the other side say?

-
-
-
-
-

4) What facts or examples make your opinion stronger?

-
-
-
-
-
-
-
-
-

Name: _____ 41

Curriculum Connection
B1.4, B2.6, B3.3, B3.4

Sentence Starters Use the sentence starters to help get you thinking.

1	I believe that...
2	In my opinion...
3	I think that...
4	From my point of view...
5	My perspective is...
6	It seems to me...
7	I feel strongly that...
8	To me, it looks like...
9	I am convinced that...
10	Based on what I know...
11	After considering the situation...
12	Listening to others, I realize...
13	When I think about it more...
14	Reflecting on this, I understand...
15	Given the circumstances...

Name: _____ 42

Curriculum Connection
B1.4, B2.6, B3.3, B3.4

Disagreeing Use these sentence starters when you disagree with a classmate.

1	I see what you're saying, but I think...
2	That's an interesting point, however...
3	I understand your perspective, but I feel...
4	I'm not sure I agree with you because...
5	From my experience, I've found that...
6	Can I offer a different view? What if...
7	I respect your opinion, but I have a different thought...
8	It's good you brought that up, however consider...
9	I see it differently because...
10	That's one way to look at it, but what about...
11	I appreciate your point, but I think...
12	Let's look at it from another angle...
13	That makes sense, but I read that...
14	I hear what you're saying, but my view is...
15	I'm not convinced because...

Name: _____ 43

Curriculum Connection
B1.4, B2.6, B3.3, B3.4

Draw

Draw your idea that shows your opinion on this debate. What would Canada look like if your side was true? Add details to show how keeping fossil fuels or switching fully to renewable energy would help or hurt the country. Think about jobs, the environment, money, health, or the future.

Name: _____ 48

Curriculum Connection
B1.2, B2.5, B3.3, B3.4

Story: Life Beside A Giant Dam

Draw Draw pictures to illustrate the story.

The Johnson family lived along a northern river in Manitoba. Their Cree community had hunted moose, fished, and gathered berries there for centuri[illegible] land was more than just home. It held the graves of their gra[illegible]e stories of their people.

One day, workers arrived with machines. The government had approved a hydroelectric dam on the river. Canada is the second-largest producer of hydroelectricity in the world, after China. In Manitoba, almost 97% of electricity comes from hydro dams. To make this power, huge dams flood wide areas of land.

Curriculum Connection
B1.2, B2.5, B3.3, B3.4

The Johnsons were told they must leave. The new dam would flood 1,000 square kilometres of forest, including their traplines and cabins. Similar projects have displaced thousands of Indigenous people in Canada. When the Wuskwatim Dam was built in 2012, more than 200 square kilometres of land were flooded.

Mary Johnson cried as she packed her family's belongings. She worried about the animals. Beavers, muskrats, and ducks would lose their wetlands. Scientists say hydro dams can destroy fish habitat, especially for species like lake sturgeon, which are already at risk.

Curriculum Connection
B1.2, B2.5, B3.3, B3.4

Her son David tried to look at the other side. The dam would create jobs. Building one dam can employ hundreds of workers for several years. Once finished, it would provide electricity for over 100,000 homes. Hydroelectricity is also clean energy because it does not release greenhouse gases like coal or oil.

Still, the loss was heavy. The family's new house was in town, far from the forest. They no longer had easy access to traditional foods. Studies show that when Indigenous communities are relocated, hunting and fishing often decline, and people must rely more on store-bought food.

Curriculum Connection
B1.2, B2.5, B3.3, B3.4

Years later, the Johnsons visited the dam. The wall of concrete rose higher than a 20-storey building. The water behind it stretched like a giant lake. Tour guides explained how turbines spun to make electricity. David listened, but he thought about the moose trails now deep underwater.

The story of the Johnson family shows both sides of hydro power. It can bring jobs and renewable electricity. But it can also mean lost homes, lost culture, and lost habitat. For Indigenous families like the Johnsons, the true cost is measured in more than money.

Name: _____ 52

Curriculum Connection
B1.4, B2.6, B3.1, B3.5

Miniature Model: Renewable Energy Models

Objective

What are we learning about?

Students will work in groups to build models of renewable energy sources. They will explore how solar, wind, hydro, geothermal, biomass, and tidal power work, and explain their benef challenges, and importance in helping Canada reduce fossil fuel use and support s ity.

Mater

What eed for the activity?

- Cardboard, e, or
- Scissors, markers,
- Simple household items (spo bottles, fans, jars)
- Reference cards or diagrams of rene able energy types

Instructions

How will you complete the activity?

1) Divide the class into groups. Each group will get one renewabl
2) Read or look at a reference card to learn about your group's energy e.
3) Make a plan for your model and list what materials you will need.
4) Use the materials to build the model of your renewable energy type.
5) Add details like arrows, colours, or moving parts to make it clear.
6) Write a short label that explains what your model shows.
7) Present your model to the class and explain how the energy works.
8) All finished models will be displayed together in a "Renewable Energy Gallery."

Name: _____ 53

Curriculum Connection
B1.4, B2.6, B3.1, B3.5

Criteria Use the criteria below to complete the activity.

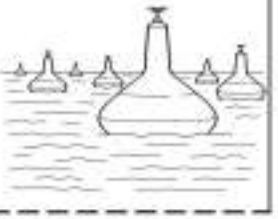
Criteria	Description
Creative Use of Materials	The student built their renewable energy model in a creative and thoughtful way.
Explains the Energy Source	The student explained how their renewable energy source works and why it matters.
Matches the Energy So	The model clearly shows the parts and features of the energy source.
Good Us	The student used paper, cardboard, and other tools carefully and with purpose.
Adde Detail	student included extra parts like labels, arrows, or moving at improved the model.

Example Model Renewable Power

Name: _____ 54

Curriculum Connection
B1.4, B2.6, B3.1, B3.5

Assign | Renewable Energy Models

	Energy	Description	Model Ideas	
1	Solar Energy	Uses sunlight to create electricity or heat. Solar panels turn sunlight into usable power.	Build a pizza-box solar model using foil for reflection, black paper for heat absorption, and plastic wrap to show how sunlight is captured.	
2	Wind Energy	s moving air to turn nes and generate Works best areas.	Create a paper pinwheel taped to a straw, then attach it to cardboard to represent how wind spins turbine blades in real life.	
3	Hydro Energy	wat es an Riv waterfalls used.	Make a small water wheel from spoons and a bottle cap, attach cardboard, and show how water can turn the	
4	Geothermal Energy	Uses heat from inside the Earth to warm buildings or create electricity. Works best near volcanoes or hot springs.	d diagram straws a pes, ng hot w ng u cooler w fl downward in th.	
5	Biomass Energy	Uses organic waste like plants, wood, or food scraps to create heat or fuel.	Build a jar model u pap cut-outs and arrows, show food or plant waste transforming step by step into energy through decomposition.	
6	Tidal Energy	Uses ocean tides moving in and out to spin turbines and produce electricity.	Construct a small cardboard turbine placed in a shallow tray of water, moving it back and forth to represent the action of changing tides.	
7	Wave Energy	Uses the motion of ocean surface waves to move devices and generate power.	Build a floating plastic device attached to a stick in a tub, then move water to show how waves push and lift the model.	

Name: _____ 55

Curriculum Connection
B1.4, B2.6, B3.1, B3.5

Model Building Checklist

Check each box when your group finishes that step.

Check	Step	Description
☐	**Learn About Your Energy Source**	We read or looked at pictures to learn how our renewable energy source works.
☐	**Make a Plan**	We planned how we would build our model and what parts to include.
☐	**ck Your rials**	We chose cardboard, paper, straws, spoons, jars, plastic bottles or other tools we needed.
☐	**Build th**	We shaped or built our renewable energy model using the materials we picked.
☐	**Ad**	W d extra parts like arrows, colours, labels, or s to improve it.
☐	**Label the Model**	e ade a wrote a short note explaining what our so
☐	**Work as a Team**	We help h other ure everyone had a job.
☐	**Check Your Work**	We looked at the a pa thing needed to be improved.

Group Roles

Decide what each group member will do for act

Student's Name	Task

Name: _____ 56

Curriculum Connection
B1.4, B2.6, B3.1, B3.5

Planning Answer the questions below.

1) The name of your assigned renewable energy source...	

2) What are the benefits and challenges of this renewable energy source?

3) Plan your m... Will yo... ...r shape your renewable energy model?

4) Pick your materials: What materials will you use?

5) Add details: What small or extra parts will you include to make your model better?

Name: _____ 57

Curriculum Connection
B1.4, B2.6, B3.1, B3.5

Sketch Your Model	Draw your renewable energy model. Show the main parts and add labels so others can understand how it works.

Name: _____ 58

Curriculum Connection
B1.4, B2.6, B3.1, B3.5

Self-Assessment Checklist | Building our renewable energy model

1) What was your group's renewable energy source?		
2) Did I help my group understand how this energy source works?	Yes	No
3) Did I look at pictures or examples of the energy source?	Yes	No
4) Did I help plan how we would build our model?	Yes	No
5) Did I he r the materials we needed?	Yes	No
6) Did d the renewable energy model?	Yes	No
7) Did I re my wh to add to the model?	Yes	No
8) Did I listen to of m mbers?	Yes	No

9) Strengths: What was t or he model?

10) Areas for Improvement: What could I do better next time?

11) How do I feel about our model?

Amazing	Great	Good	Okay	Poor

Name: _____ 59

Curriculum Connection
B1.4, B2.6, B3.1, B3.5

Rubric How did you do on the activity?

Criteria	1 Point	2 Points	3 Points	4 Points
Creative Use of Materials	Model is unclear or missing key parts.	Model shows a little of the energy source.	Model mostly shows the energy source clearly.	Model clearly and creatively shows the full energy source.
Explains the Energy Source	No explanation is given.	Some explanation is given.	Explanation is mostly clear and makes sense.	Explanation is strong, clear, and easy to understand.
Matches the Energy Source	Model does not match the real source.	Some parts match the real source.	Most parts match the real source.	Model matches the real source well, with many features.
Good Use of Tools and Materials	Materials not used well or not finished.	Some materials used with effort.	Most materials used carefully and with thought.	All materials used very well to make the model great.
Added Details	Few or no extra details are included.	Some extra details added.	Many details are added to improve the model.	Model includes great, thoughtful extras like arrows, moving parts, or labels.

Teacher Comments

_____

_____

_____

_____

_____

Mark

Student Comments – What Could You Do Better?

_____

_____

_____

_____

_____

Name: _____ 62

Curriculum Connection
B1.1, B2.2, B3.3, B3.4

Overfishing

What Is Overfishing?

Overfishing happens when fish are caught faster than they can reproduce. Coastal communities have depended on fish as a main food source for thousands of years. In the past, fishing methods such as spears, hooks and lines, and throw nets were **sustainable** because they allowed fish populations to recover. As human populations grew, the demand for fish increased. Fish became a major industry because they were an important source of protein. People also learned to preserve fish for long periods by drying, salting, or pickling.

Fish as a Sh[illegible]source

Unlike lan[illegible]es which have clear ownership, ocean fish are different. Fish swim across [illegible]an[illegible] depending on water temperature, food, and predators. Because of this, [illegible]re know[illegible]**mon pool resources**—they belong to no one, yet everyone can use them. [illegible] earli[illegible]shi[illegible] could travel freely to wherever fish were found and catch as much [illegible]ted.

The Grand Banks and [illegible]

From the 1500s until the 1[illegible]hi[illegible]s from [illegible]s such as Russia and Japan fished on the Grand Banks off Newfoundlan[illegible]an[illegible] once one of the richest fishing areas in the world. New technology, like [illegible]rge [illegible] allowed fishers to catch in 15 years what had once taken over 100 yea[illegible]980, a[illegible]% of the world's **fish stocks** were already being overfished.

International Agreements and Canadian Response

The **United Nations Convention of the Law of the Sea** [illegible]n 198[illegible]e each country control over natural resources within 200 nautica[illegible]the[illegible]tlin[illegible] This stopped foreign fleets from fishing on the Grand Banks. Howe[illegible]Can[illegible] increased their catches. By 1992, the North Atlantic cod population h[illegible]an 10% of its original size. That year, the Canadian government declared [illegible]n[illegible], or pause, on cod fishing. Even though cod stock have not returned to previou[illegible]els, in 2024 Canada ended the moratorium and is allowing cod fishing with strict quotas on the catch.

UN Treaty Status: Ratified (dark grey) / Signed but Not Ratified (medium grey) / Not Signed (light grey)

The Shift to New Fisheries

Cod was once the backbone of Atlantic Canadian fisheries, but today other species provide similar revenue. The most valuable are:

- Lobster
- Snow crab
- Shrimp

These shellfish now make up most of the income once earned from cod, though the collapse of the cod fishery caused tens of thousands of job losses in 1992.

Name: _____ 63

Curriculum Connection
B1.1, B2.2, B3.3, B3.4

True or False Circle whether the statement is true (T) or false (F)

1) Fish are a renewable resource that will always be available.	True	False
2) Thirty percent of the world's fish stocks are being overfished which will lead to fish populations becoming extinct.	True	False
3) Fishing boats only fish off the shorelines of their own country.	True	False
4) Lobster, snow crab and shrimp have replaced the cod fisheries in Atlantic Canada.	True	False
5) When a ban was placed on cod fishing on the Grand Banks, the cod fish r their former numbers after 15 years.	True	False

Question Use from the text to support your answer.

1) What is overfis

2) Why are ocean fish called common po esourc

3) What is the United Nations Convention of the Law of the Sea

Questioning Write at least two questions you have after reading the text.

1) _____

2) _____

Curriculum Connection
B1.1, B2.2, B3.3, B3.4

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark ☐

Draw a line from each word to its correct meaning.

Common Pool Resource ☐	☐ Catching fish faster than they can reproduce
Overfishing ☐	☐ A government pause or stop on fishing activities
Sustainable Fishing ☐	☐ A resource shared by everyone but owned by no one
Moratorium ☐	☐ Fishing methods that allow fish populations to recover

Name: _____ Mark ☐

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Name: _____ Mark ☐

Draw a line from each word to its correct meaning.

Common Pool Resource ☐	☐ Catching fish faster than they can reproduce
Overfishing ☐	☐ A government pause or stop on fishing activities
Sustainable Fishing ☐	☐ A resource shared by everyone but owned by no one
Moratorium ☐	☐ Fishing methods that allow fish populations to recover

Name: _____ 65

Curriculum Connection
B1.2, B2.5, B3.3, B3.4

Newspaper Article: Fishery Shutdown

Newfoundland Cod Fishery Collapse Forces Shutdown

Published: July 2, 1992

This morni[illegible] Government of Canada announced [illegible]lete shutdown of the Atlantic c[illegible]ding a tradition that has la[illegible] decision comes [illegible]scienti[illegible]ed that northern cod ste[illegible]en [illegible]ess than 10% of their or[illegible]s [illegible]ederal [illegible]ries Minister John Cro[illegible]d the [illegible] would last at least two[illegible] that recovery could take [illegible]er.

The Grand Banks off Newfo[illegible]dlan[illegible] were once the richest fishing grounds i[illegible] world. When explorer John Cabot arrived [illegible] 1497, he wrote that cod were so plentiful they could be scooped from the sea with baskets. For hundreds of years, cod was central to the diet and economy of Newfoundland and Labrador. By the 1980s, however, massive trawlers with advanced sonar and huge nets began to take in record catches. In 1968, landings peaked at 810,000 tonnes, but by 1992 the catch had dropped to just 38,000 tonnes.

Today's announcement puts more than 30,000 people out of work overnight, making it the largest single layoff in Canadian history. Entire towns that depended on cod are now facing an uncertain future.

Dr. Leslie Harris, a fisheries scientist, explained:

> *"The cod did not simply disappear by accident. Decades of overfishing removed too many breeding fish. Without them, the stock cannot replace itself fast enough to recover."*

In the small community of Petty Harbour, lifelong fisherman Patrick O'Neill described the shock of pulling up empty nets:

> *"For years, cod was our [illegible]d and butter. Then one summer [illegible]sh were just gone. We had noth[illegible]t to catch, and no way to [illegible]a living."*

Officials hope that with the moratorium, cod populations will rebound. But with the loss of a resource that supported Newfoundland for almost 500 years, the social and economic costs are already severe.

Name: _____ 66

Curriculum Connection
B1.2, B2.5, B3.3, B3.4

True or False

Circle whether the statement is true or false.

1) Cod stocks in 1992 fell to more than half original size.	T	F
2) John Cabot in 1497 described cod as easy to catch with baskets.	T	F
3) By 1968, cod landings on the Grand Banks reached 810,000 tonnes.	T	F
4) Cod landings peaked in 1992 at more than 800,000 tonnes.	T	F
5) Dr. Leslie Harris blamed ocean temperature for the cod collapse.	T	F
6) Fewer th[illegible]000 people lost work when the moratorium was declared.	T	F

Questions

[illegible]tion from the text to support your answer.

1) Why was cod [illegible] to [illegible]foundland's economy and history?

2) How did large trawlers change the w[illegible]ing wa[illegible]

Diary Entry

Write a diary entry as a fisherman on July 2, 1992.

Name: _____ 71

Curriculum Connection
B1.2, B2.5, B3.3, B3.5

Deforestation

Deforestation

Deforestation is when trees in a forest are cut down, so that humans can use the land for other activities. Deforestation has led to the loss of 10 million square kilometers of tropical rainforest leaving just 6 million square kilometers of rainforests. Forests are an important resource. They provide habitat for wildlife and the plants in the forests provide important ingredients for medicine. Trees are important in the battle against climate change. Trees absorb carbon dioxide in their roots and leaves and give off oxygen. Trees cool the earth providing s... When trees are cut down the carbon dioxide stored in the roots, decaying leaves and ... given off, adding to greenhouse gases. If the trees are burned, more carbon d... p...tants are released into the air. A tree that has been cut down is a signif... ...of ...dioxide.

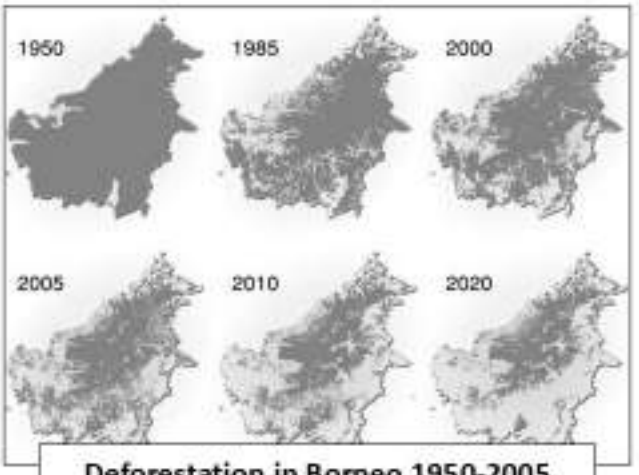
Trees in a f... i...rtant role in water management. When heavy rains fall, trees catch so... ...tting ...rip gently to the ground while some evaporates from the trees. Th... hold ... and reduce erosion and flooding. Trees let off water vapour, which r... ... rainfall.

In South America acr... fore... ...g cut down in order to raise cattle or to grow soybeans and coffee be... Unc... ...en cleared, the temperature of the soil rises causing drought like condi... ...en, a... ...y a few years, the land that has been cleared for grazing has been e... ...sted wi... ...being able to grow in the hot and dusty earth and farmers must clear additi... ...and t... ...t their cattle.

In Malaysia, rainforests are being cut down ... ...ow... ...alm oil. Another cause of deforestation is climate change. **Climate chan...** ...caused in... ...d temperatures that cause more wildfires that are more se... ...of ...tati... is the result of wildfires.

What can be Done About Deforestation?

There are several things we can do about deforestation including:



Deforestation in Borneo 1950-2005

- Eat less meat- if there is less demand for beef, less grazing land will be needed.
- Plant a tree
- Boycott products that have palm oil- Palm Oil plantations are replacing rainforests. If there is less demand for the product there will be less plantations needed.
- Go paperless as much as possible. Don't print pages needlessly.
- Reduce, reuse and recycle.
- Choose wooden items made from bamboo rather than less sustainable types of wood.

Name: _____ 72

Curriculum Connection
B1.2, B2.5, B3.3, B3.5

True or False Circle whether the statement is true (T) or false (F).

1) Trees lower earth's temperature mainly by storing oxygen underground.	T	F
2) Cutting down rainforests leads to some animals becoming extinct because they have lost their habitat.	T	F
3) Eating less meat helps prevent deforestation.	T	F
4) When trees are burned, greenhouse gases are reduced in the atmosphere.	T	F
5) Malaysian rainforests are often cut down for palm oil farming.	T	F
6) About a quarter of all deforestation comes from wildfires caused by heat.	T	F

Questi inf from the text to support your answer.

1) What is defo hat a problems caused by it?

2) Should Canadians have any say about what p n So or Malaysia do with their land? Why or Why not?

Inferencing What do you think might be the best solutions to deforestation?

Curriculum Connection
B1.2, B2.5, B3.3, B3.5

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ | Mark

List four harms caused by deforestation.

1	
2	
3	
4	

Name: _____ | Mark

List four harms caused by deforestation.

1	
2	
3	
4	

Name: _____ | Mark

List four harms caused by deforestation.

1	
2	
3	
4	

Name: _____ | Mark

List four harms caused by deforestation.

1	
2	
3	
4	

Name: _____ | Mark

List four harms caused by deforestation.

1	
2	
3	
4	

Name: _____ 74

Curriculum Connection
B1.3, B2.4, B3.3, B3.5

Fact or Fiction: Environmental Impacts

Objective — What are we learning about?

To help students learn about environmental impacts through true or false statements on deforestation, desertification, overfishing, pollution, smog, acid rain, and climate change. After each ...ss, students discuss how these impacts affect people and the environment.

Materi... — ...you need for the activity?

- Fact or Fi... ...nts
- A 'Fact' sign and ...tion... ...ish the two sides of the room
- Designated areas in the classroom ... ...he 'Fact' and 'Fiction' signs, allowing sp... ...for students to move to either side

Instructions — How will you complete the activity?

1. Your teacher will read statements. Pay close attention as each ... ...ared.
2. Consider carefully whether you think the statement is true or false.
3. If you decide the statement is true, walk to the 'Fact' side of the room.
4. If your guess is that it's not true, move to the 'Fiction' side of the room.
5. Stay on your chosen side and listen attentively for the correct answer to be revealed.
6. When the right answer is announced, return to your seat, ready for the next round.
7. Have fun getting up and moving!

Name: _____ 75

Curriculum Connection
B1.3, B2.4, B3.3, B3.5

Fact or Fiction Read the statements to the class.

#	Statement	
1	Overfishing never affects species like sharks or dolphins in the ocean.	Fiction
2	Desertification is completely natural and has no link to human actions.	Fiction
3	Smog in one country can drift across borders and harm neighbours.	Fact
4	Clim nge has slowed down glacier melting in the last century.	Fiction
5 M change ocean currents that control world weather.		Fact
6 Ac ain onl metal objects but never harms forests.		Fiction
7	Overfishing ean seafood prices worldwide.	Fact
8	Wildfires never rele house to the atmosphere.	Fiction
9	Rising seas from climate c ge m land nations.	Fact
10	Deforested land always heals itsel k to fo decade.	Fiction
11	Smog can block sunlight, sometimes lowe op g	Fact
12	Air pollution from cars has no effect on children's	Fiction
13	Desertification in Africa has forced millions of people to migra	act
14	Melting Arctic ice has no influence on shipping routes or trade.	Fiction
15	Overfishing can make jellyfish populations explode in certain seas.	Fact
16	Acid rain is harmless to buildings made of stone and marble.	Fiction
17	Climate change is linked to more powerful hurricanes and cyclones.	Fact
18	Deforestation lowers rainfall, sometimes turning wet areas into dry zones.	Fact
19	Desertification improves farmland by adding more nutrients into the soil.	Fiction
20	Smog can mix with fog, creating deadly air called "smog fog."	Fact

Name: _____ 76

Curriculum Connection
B1.3, B2.4, B3.3, B3.5

Quiz Check-In This quiz will assess students' understanding of the concepts covered in the Fact or Fiction activity. Cut along the lines and give each section to a student.

Name: _____

Mark

Is the statement true (T) or false (F)?

1) Overfishing in one ocean can influence seafood markets across continents.	T	F
2) Smog created in one country can travel and harm neighbouring nations.	T	F
3) Climat ge has slowed glacier melting compared to past centuries.	T	F
4) Air p cars has no measurable effect on children's health.	T	F
5) R mate change may submerge entire island nations.	T	F
6) Acid in is h ore but can damage metal objects.	T	F

Name: _____

Mark

Is the statement true (T) or

1) Overfishing in one ocean can influe od m across continents.	T	F
2) Smog created in one country can tra and ha g nations.	T	F
3) Climate change has slowed glacier melting red t ries.	T	F
4) Air pollution from cars has no measurable effec 's hea	T	F
5) Rising seas linked to climate change may submerge e nd	T	F
6) Acid rain is harmless to forests but can damage metal objects.	T	F

Name: _____

Mark

Is the statement true (T) or false (F)?

1) Overfishing in one ocean can influence seafood markets across continents.	T	F
2) Smog created in one country can travel and harm neighbouring nations.	T	F
3) Climate change has slowed glacier melting compared to past centuries.	T	F
4) Air pollution from cars has no measurable effect on children's health.	T	F
5) Rising seas linked to climate change may submerge entire island nations.	T	F
6) Acid rain is harmless to forests but can damage metal objects.	T	F

Name: _____ 77

Curriculum Connection
B1.3, B2.2, B3.4, B3.5

Natural Resources Ethical Use

Natural Resources and Fairness

Every country has **natural resources** such as forests, minerals, and water. People rely on these resources for survival and for their economy. Sometimes when valuable resources are discovered, the local people are harmed. They may be forced to leave their homes, lose their land, or not receive any benefits from the developmen[t]. This unfair treatment often happens to Indigenous peoples w[ho] [a]ncestors lived on the land for thousands of years.

The Mao[ri]

The M[aori] fir[st] New Zealand around 1300. By the 1850s, European settlers confisca[ted] much [land]. For the Maori, protecting the land is part of respecting their ancestors. The[y] [be]lieve forests, forests, and animals ensures resources will still exist for future g[enerations]. Thi[s] [tradition]al knowledge is now seen as very valuable. Many Indigenous groups, [includ]ing M[aori] [oppose] large outside projects like mining, oil drilling, or dam construction that [could] destroy na[tural] and sacred spaces.

Indigenous Leadership in Conse[rva]tion

Indigenous people make up only 5% of t[he world's po]pulation but legally own about 18% of the land. Their efforts [have] shown [great] success.

- **In South America**, Indigenous-controlled land[s have] deforestation rates 2–3 times lower than oth[er] areas.
- **In Kenya,** Indigenous groups started wildlife co[nservancy] and tourism projects. These projects protect animal[s] and provide jobs, balancing losses from farming or herding.
- **In Canada,** a forest east of Winnipeg was returned to First Nations. This step protected wildlife habitat and reduced uncontrolled logging.
- **In Australia,** Aboriginal communities manage land through **fire-stick farming**, using controlled burns to reduce wildfires and encourage plant growth, protecting biodiversity and reducing carbon emissions.

These examples prove that Indigenous stewardship can protect the environment while also supporting community economies.

Global Recognition of Indigenous Rights

Governments worldwide are slowly recognizing the importance of Indigenous stewardship. The **United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)** confirms that Indigenous peoples have the right to manage their own land and resources. This recognition connects cultural values with environmental protection, showing that traditional practices are crucial for global sustainability and fighting climate change.

Name: _____ 78

Curriculum Connection
B1.3, B2.2, B3.4, B3.5

Questions

Use information from the text to support your answer.

1) Give 3 examples of indigenous people protecting the natural environment?

2) Do you [illegible]genous people should be paid for land that was taken from them over a hundred

Two Truths and a Lie

Read each gro[illegible] the [illegible]e ones. Mark ✗ the one lie.

	Indigenous peoples own about one-fifth of the world's land today.
	Indigenous ownership of land has no effect on the environment.
	Indigenous peoples' values support development.

	rote[illegible] forests, and hip[illegible]ori traditions.
	P[illegible]and [illegible]s resources for fu[illegible]he[illegible]
	South America[illegible] has higher deforest[illegible]ion

Design a Poster

Design a poster about protecting nature and explain your message.

Name: _____ 79

Curriculum Connection
B1.1, B2.5, B3.3, B3.4

The Tragedy Of The Commons

The Tragedy of the Commons

The Tragedy of the Commons is an article written by Garrett Hardin, who describes a field in a village square that is not owned by one person and on which local people can bring their cows to graze for free. At first everyone brings one cow to the field, but eventually, the users realize they will get more benefit if they bring additional animals to graze for free. If more animals are brought to the field, the grass will not recover fast enough to continue to support all the cows, and the field will be ruined. The users choose to bring extra cows because they benefit more personally from having more cows grazing today. They know they cannot control others who can also add additional cows. In the end the people of the village soon have nowhere for their cows to graze because the field no longer exists. This highlights the problem that when no one owns a resource, there is no one who will protect it.

Overfishing is an excellent example of the Tragedy of the Commons. No one owns the fish in the ocean, so every country's fisheries takes as much as they can, because if they don't take them, another country will. Because of this attitude the cod fisheries on the Grand Banks were destroyed and the bluefin tuna is in danger of extinction.

Solutions to the Tragedy of the Commons

Private Ownership - when people own something, they want to preserve and maintain it and they act to protect it, but the benefit of the resource only goes to the private owner.

Government ownership - when governments take ownership, they can regulate the use of the resource and make rules to protect it. Sometimes governments are less efficient than private owners so, prices for goods made with the resource may be more expensive.

Co-operation between users - Elinor Ostrom was the first woman to win a Nobel prize in Economic Sciences. She believed that people could work together to share a resource if they had some rules for:

- how the resource could be shared
- how to resolve disagreements
- how to monitor whether people were following the rules
- what the consequences would be if they did not follow the agreed upon rules

The United Nations is an example of a group that helps make rules for how we share resources in the world.

Name: _____ 80

Curriculum Connection
B1.1, B2.5, B3.3, B3.4

True or False

Circle whether the statement is true (T) or false (F).

1) The Tragedy of the Commons is a way to understand cattle grazing.	T	F
2) Overfishing in the ocean is another example of common resource use.	T	F
3) The phrase comes from an article written by Garrett Hardin.	T	F
4) Government control is the only solution to the Tragedy of the Commons.	T	F
5) In Hardin's example, cows were owned by one wealthy farmer.	T	F
6) Hardin's [illegible]ry shows that private ownership always protects resources best.	T	F

Question[illegible]

[illegible]rmation from the text to support your answer.

1) Wha[illegible]e Elin[illegible]amous?

2) What are the 3 solutions to the Tragedy of the Co[illegible]ns?

Ordering

Put these events of the Tragedy of the Commons in the correct order (1–6):

	The field becomes ruined and no longer produces grass.
	The grass cannot grow back fast enough.
	Garrett Hardin writes about a village field used by everyone.
	People keep adding more cows to the field.
	At first, each villager only brings one cow to graze.
	Villagers choose short-term personal benefit over long-term protection.

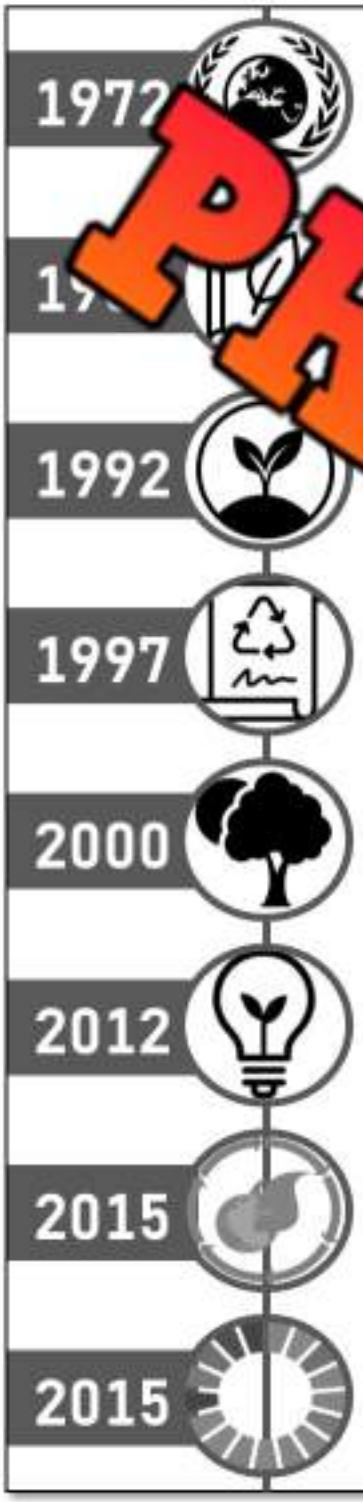
Name: _____ 84

Curriculum Connection
B2.5, B3.4, B3.5

Timeline: Global Actions On Sustainability

How Global Sustainability Has Changed

Over the years, countries worldwide worked together to protect the environment. Meetings, reports, and agreements shaped how people think about sustainability. These steps reduce pollution, fight climate change, and create a fairer future.



UN Conference on the Human Environment in Stockholm, Sweden. Attended by 113 countries, this was the first major global meeting on the environment. It created the United Nations Environment Programme (UNEP).

The Brundtland Report is published. It introduced the idea of ainability as "meeting present needs without harming e generations." This definition became the foundation for erna environmental action.

The R mit in Brazil. Leaders from 178 countries a Ag nd conventions about climate change, b and haping global sustainable deve t g

The Kyoto Pro igned greement set the first binding targets develop unt to reduce greenhouse gas emissions between 2 nd 20 ing global climate action.

The UN Millennium Develop at are ac World leaders created 8 goals to fight p mp alth nd education, and protect the environm lin development with sustainability.

Rio+20 Conference in Brazil. Countries reviewed ess since the 1992 summit and created "The Future W want," calling for stronger action on green energy and poverty reduction.

The Paris Climate Accord is signed. Almost every country agreed to limit global warming to below 2°C. Nations submitted climate action plans and promised updates every five years.

The UN Sustainable Development Goals (SDGs) are launched. Seventeen goals were set, including clean water, affordable energy, sustainable cities, and climate action, aiming for a fairer and greener world by 2030.

Name: _____ 85

Curriculum Connection
B2.5, B3.4, B3.5

True or False

Is the statement true or false?

1) The Stockholm Conference in 1972 led to creating the UNEP program.	T	F
2) Agenda 21 was agreed upon during the Rio Earth Summit in 1992.	T	F
3) Rio+20 created the document The Future We Want.	T	F
4) Countries update Paris Agreement plans every five years, not ten.	T	F
5) The UN SDGs included 17 goals, to be reached by 2030.	T	F
6) Each co updates its Paris Agreement climate plans every ten years.	T	F

Order

ng events in order. Number 1-8.

Order	Event
	UN t glob n poverty, health, environment.
	UN repo as fairness for future needs.
	UN launches 1 r a er world.
	First global meeting in St disc rotecting the environment.
	Rio+20 meeting calls for st nger gl actio ustainability.
	Leaders in Rio create Agenda 21 a adiv
	Nearly all nations agree to limit warmin C.
	Countries sign Kyoto agreement to reduce gr ous

Questions

Answer the questions below using evidence from the text.

1) Why was the 1972 Stockholm Conference such an important first step?

2) How did the Brundtland Report change how people think about sustainability?

Name: _____ 86

Curriculum Connection
B1.2, B1.4, B2.5, B3.4

Social Media Post – Fair Trade Products

DanielFerguson

Is buying fair trade products really helping workers and protecting the environment? Fair trade coffee, chocolate, and sugar promise better pay for farmers and land care. But critics say prices are too high and rules are weak.

11:30 AM – 21/08/2025 – 1,529 SHARES 5,921 LIKES

2 LIKES **Emily**: Fair trade supports over 1.7 million farmers worldwide, especially in Africa and [illegible]erica. Farmers earn 10–20% more for crops, which helps them avoid po[illegible]cting soil and forests from unsustainable farming.

18 LIKES [illegible]: Fair[illegible]ducts are often 20–40% more expensive for Canadian sho[illegible]ers. M[illegible] al[illegible]dy struggle with high food prices, and critics argue compani[illegible]oo m[illegible]rofit while farmers get only a small benefit.

12 LIKES **Sofia_21**: Inst[illegible] only [illegible] could combine local food movements and organic farming. [illegible] g[illegible]duce in Canada lowers transport emissions and still helps farme[illegible]ath s[illegible]upport sustainability.

21 LIKES **Emily_93**: Studies show fa[illegible]de c[illegible]st in schools, clean water, and healthcare. In Peru, cocoa farmer[illegible]w cla[illegible]s with funds. It's not just about money—it strengthens enti[illegible]al com[illegible]their environment.

25 LIKES **Jason_77**: Some reports show that less th[illegible]of th[illegible]ey from fair trade actually reaches farmers. Middle organizati[illegible]nd [illegible]s reduce the impact, meaning the difference is smaller than s[illegible]elieve.

19 LIKES **Sofia_21**: Maybe the best path is balance. If Canadians [illegible]me[illegible] some local products, it spreads support. Consumers should res[illegible]arch [illegible]ince not all products meet strict environmental or worker standard[illegible]

28 LIKES **Emily_93**: Coffee is one of the world's most traded crops. Fair trade[illegible]es shade-grown coffee protects bird habitats and rainforest ecosystems. Without such programs, deforestation and soil erosion increase with rising global demand.

33 LIKES **Jason_77**: Large companies sometimes use fair trade labels more as marketing than real change. If the system isn't monitored closely, workers may still face unsafe conditions and the land may not be managed sustainably.

14 LIKES **Sofia_21**: Canadians can also push for stronger rules on all global trade. For example, adding stricter environmental checks to imports could make every farmer follow better standards, not just those in fair trade programs.

26 LIKES **Emily_93**: Fair trade connects directly to the three sustainability pillars: economic fairness, social justice, and environmental care. Buying these products is one way individuals can support long-term global sustainability.

Name: _____ 87

Curriculum Connection
B1.2, B1.4, B2.5, B3.4

Questions Answer the questions below using evidence from the text.

1) Explain how fair trade helps both workers and the environment.

2) Why do some families in Canada struggle to buy fair trade?

3) Expl[illegible]ow loc[illegible] fair trade can work together.

True or False Is the statement true o[illegible]

1) Fair trade farmers always keep the full extra m[illegible]earne[illegible]	True	False
2) Coffee is one of the most traded crops in the w[illegible]	True	False
3) Farmers in Africa never benefit from fair trade prog[illegible]	rue	False
4) Some companies misuse labels as marketing instead of re[illegible]ang[illegible]		alse
5) Fair trade chocolate is mainly grown in Canada and the USA.		alse
6) Buying local food in Canada can reduce transport emissions.	e	False

Opinion Write a comment that you would add to this conversation.

Username: _____ Date: _____

Name: _____ 90

Curriculum Connection
B1.1, B2.1, B2.6

Memory Game – Natural Processes

Objective

What are we learning about?

Students will learn important natural resource vocabulary by playing a memory match game. Each card will show either a key term or its definition. Students will match the correct pair. This will help them understand how natural resources are used, managed, and protec

Mater

eed for the activity?

- Set of Mem cards group (provided)
- A small table or clear are flo

Instructions

How will you complete th vity?

1. Divide the class into groups of 3 or 4. Give ea oup y Game cards. (provided)
2. Have each group lay all the cards face down in a grid o ble
3. The students take turns flipping over two cards at a time, trying hin ching term and its definition.
4. If a student finds a match, they remove those cards from the grid and keep them.
5. If the cards do not match, they are turned back over, and the next student takes a turn.
6. The game continues until all the cards have been matched.
7. After the game, review the terms and definitions with the class.
8. Discuss why these terms are important to understand and how they relate to the topic.

Name: _____ 91

Curriculum Connection
B1.1, B2.1, B2.6

Cards | Memory Game Cards

Flow Resource	A resource used when it happens, like sunlight, wind, or ocean tides.
De[illegible]on	Cutting down forests for land or resources, causing habitat loss and climate change.
Overfishing	Ca[illegible] fish faster than they rep[illegible], reducing fish po[illegible]dwide.
Sustainability	Using resources [illegible]uture generations can also meet their needs.
Aquifer	Underground rock or soil layer that stores fresh water for people and animals.

Name: _____ 92

Curriculum Connection
B1.1, B2.1, B2.6

Cards | Memory Game Cards

Fossil Fuels	Energy sources like coal, oil, and gas formed from ancient plants and animals.
	Energy made by burning plants, wood, or waste to produce heat and electricity.
Geothermal Energy	Hea[illegible]n inside the Earth used cre[illegible]ergy or warm [illegible]ally.
Desertification	When fertil[illegible] becomes desert due to drought, deforestation, or overgrazing.
Greenhouse Gases	Gases like carbon dioxide trapping heat in Earth's atmosphere, causing warming.

Name: _____ 93

Curriculum Connection
B1.1, B2.1, B2.6

Cards | Memory Game Cards

Habitat	The natural home or environment where plants, animals, and people live.
Tragedy [illegible]ons	When shared resources are overused because no one takes responsibility to protect them.
Fair Trade	B[illegible] and selling goods in [illegible]s th[illegible] workers fairly [illegible]ture.
Carbon Footprint	The amount [illegible]se gases a person or group creates through activities.
Biodiversity	The variety of different living species in an area, such as plants and animals.

Name: _____ 94

Curriculum Connection
B1.1, B2.1, B2.6

Quiz Check-In	This quiz will assess students' understanding of the concepts covered in the memory game activity.

Name: _____ Mark

Pick two terms from the memory game. Write one sentence about each one.

Name: _____ Mark

Pick two terms from the me ne. ntence about each one.

Name: _____ Mark

Pick two terms from the memory game. Write one sentence about each one.

Name: _____ 95

Curriculum Connection
B1.2, B1.4, B2.5, B2.6

Role-Play: Perspectives On Natural Resources

Objective What are we learning about?

Students will explore how different people view and use natural resources. By acting out real-world roles—like fisher, logger, miner, Indigenous Elder, environmental activist, government official, or company manager—students will see how perspectives can clash or work together. They will reflect on how choices about resources affect people, the economy, and the environment in different ways.

Materials What do we need for our activity?

- Scenario cards (describing different situations) (provided)
- Props or costume pieces (optional)
- Timer or stopwatch

Instructions How will we complete our activity?

1) Divide the class into small groups of 3 to 4 students.
2) Provide each group with a scenario card that outlines a specific situation related to the topic being studied.
3) Give out roles to each student in the group, assigning them a character within the scenario, or let them decide and take roles.
4) If available, distribute props or costumes that may help students embody their roles more effectively.
5) Set the timer to allocate a specific amount of time for the groups to discuss and act out their scenarios.
6) Allow each group to present their role-play to the class.
7) After all groups have presented, initiate a class discussion to reflect on the different approaches and outcomes observed during the role-plays.
8) Distribute reflection sheets for students to express what they learned and felt during the activity.

Name: _____ 96

Curriculum Connection
B1.2, B1.4, B2.5, B2.6

Criteria Use the criteria below to complete the activity.

Criteria	Description
Creativity	Show what your character thinks and feels. Use ideas that make the role-play more real and interesting.
Voice	Speak clearly and loudly so others can hear. Change your voice to match your character's feelings.
Actions	Use body movements, facial expressions, and actions that match your character's story.
Stay in R	your character. Don't break role until you're finished.
Tea	elpful. Take turns and make sure everyone joins.

Scenario Cards the below.

Scenario		Description
1	**The Collapse of the Cod Fishery**	A small cod fishing for generations. Families remember when fi so pl hat you could almost scoop them out with baskets. In th st few d es, l r ships with sonar and factory freezers arrived, catching fi assive h stocks fell quickly, and the government announced a m ium fishing. Local fishers lost their jobs, and many left the new Others protested, asking for support. At the same ctivists argued the pause was needed to protect the oc me d new rules could allow the fish population to recover, but nob best path forward.
2	**Rainforest Cleared for Cattle and Crops**	In a logging region of South America, huge parts of rainforest are being cut down to raise cattle and grow soybeans. At first, families celebrated the new farmland and the money it brought. But soon the cleared land grew hot and dry, and grass no longer grew well for the cattle. Farmers began cutting down even more forest. Meanwhile, Indigenous communities living nearby lost parts of their hunting grounds and sacred sites. Environmental activists visited the area, warning that the forest loss released large amounts of carbon dioxide. Some company managers argued that palm oil and cattle exports were too valuable to stop. The debate became tense as each group claimed the forest for different reasons.

Name: _____ 97

Curriculum Connection
B1.2, B1.4, B2.5, B2.6

Scenario Cards Cut out the topics below.

Scenario		Description
3	Mining for Bauxite in the Rainforest	Deep in a tropical rainforest, a global mining company plans to dig for bauxite, used to make aluminum. Company managers promise jobs and money for the region, but local farmers fear losing their fertile soil and clean water. Indigenous Elders explain that the land holds ancient stories and animals that must be protected. Some young people from the community are divided: should they work for the mine to earn money or resist to save their [illegible]? The government struggles to decide, since the mine would bring taxes [illegible]nomic growth. Meetings become heated as voices from every side try [illegible]
4	The Spread of Desertification	[illegible]deserts of Africa, families are struggling with less rainfall each [illegible]rs depend on goats for milk and wool, but the goats eat pl[illegible] the [illegible]eaving bare soil. Without grass, the winds blow dust across [illegible]nd, and [illegible]lowly turns into desert. Children walk longer distances [illegible] [illegible]ecall when the land once supported crops. A government [illegible]ar[illegible]ves t[illegible] planting trees, while an international aid group brings [illegible]ef. [illegible]e over whether to raise goats or switch to sheep, whic[illegible] graz[illegible] struggle shows how climate, animals, and human choice[illegible]nked.
5	Tidal Energy in Nova Scotia	Along the shores of Nova S[illegible]a new [illegible]nergy project is being built. Engineers show how turbines [illegible]e the [illegible]e clean electricity. Local fishers worry that the turbines w[illegible]di[illegible]a[illegible] habitats, reducing their catch. The government prom[illegible]ensa[illegible]t not everyone trusts this. An Indigenous Elder spea[illegible]t th[illegible]ect the ocean, while young activists praise renewable energy as [illegible]he turbines are tested, strange changes in currents are no[illegible]rs spread about declining fish stocks. Meetings are filled with ar[illegible]ts, each group standing firm on its point of view.
6	The Chocolate Bar Choice	In West Africa, many cocoa farmers live in poverty even though chocolate is a global industry worth billions. Some children work on farms instead of going to school because families cannot pay wages for adult workers. International companies buy cocoa at low prices, while small farmers say they cannot survive. Fair Trade groups step in, promising better pay and safe working conditions. Activists in Canada launch a campaign asking schools to sell only Fair Trade chocolate. Some students and parents are excited to help, while others argue that the bars cost too much. Local shop owners worry that customers will stop buying if prices rise. The discussion spreads, and communities are forced to choose between saving money and supporting fairness.

Name: _____ 98

Curriculum Connection
B1.2, B1.4, B2.5, B2.6

Scenario Cards | Cut out the topics below.

Scenario		Description
7	Hydroelectric Dam Proposal in Canada	A Canadian city announces plans for a large hydroelectric dam on a river. Engineers explain it will bring clean power to thousands of homes. But the project will flood villages, forests, and farmland. Local farmers and Indigenous communities protest, saying their homes and sacred sites will be underwater. The company promises to relocate families and pay for losses, but people say no amount of money can replace their heritage. Environmentalists warn that animal habitats will be destroyed. Construction workers want the jobs, while politicians promote the project as progress. Protests begin at the construction site as tension builds.
8	Meat and Deforestation Debate	In Sc[illegible]a, young people organize to reduce meat consumption, h[illegible] def[illegible]tion caused by cattle ranching. They launch a cam[illegible]lled "[illegible]More Forest." Cattle ranchers call the movement an attac[illegible]the[illegible]elihoods. Activists argue that eating less meat will sa[illegible]ests ar[illegible]e greenhouse gases. Politicians step in, unsure whether [illegible]rt [illegible]w environmental laws. Restaurants face pressure to ch[illegible]e m[illegible]mers argue about personal freedom and environmenta[illegible]nsibili[illegible]onflict grows into a national debate, splitting families an[illegible]ommuni[illegible]
9	Global Debate on Climate Change	A group of international leaders me[illegible] dis[illegible]enhouse gas emissions. Canadian officials arrive, say[illegible]try al[illegible]ses hydro and wind power, but critics point out that o[illegible]e st[illegible]g expanded. Small island nations demand urgent action, wa[illegible]the[illegible]ing under rising seas. Oil company representatives argue t[illegible]y security are more important. Protesters outside call fo[illegible]ns on fossil fuels. Inside the meeting, voices clash over who shoul[illegible] responsibility and how fast change should happen. The room [illegible]s with tension as the debate continues.
10	Pipeline Protest in the Prairies	On the Canadian Prairies, a pipeline is proposed to move oil across Indigenous lands. Company managers argue that the pipeline is safe and needed for the economy. Indigenous leaders gather to protest, saying it threatens sacred water and land. Government officials are caught in the middle, pressured by business groups and environmental activists. Families are divided, as some members hope for jobs while others join the protests. News reporters arrive, capturing images of camps, speeches, and police presence. The conflict becomes national news, with everyone demanding to be heard.

Name: _____ 100

Curriculum Connection
B1.2, B1.4, B2.5, B2.6

Rubric | How did you do on the activity?

Criteria	1 Point	2 Points	3 Points	4 Points
Creativity	Did not try to pretend.	Tried a little but didn't add ideas.	Used imagination and helped make the scene better.	Used great ideas and made the role-play exciting and real.
Voice	Hard to hear or too quiet.	Sometimes clear, but not loud or strong.	Clear and matched the feelings of the character.	Loud, clear, and showed strong feelings with voice.
Action	Did [illegible]	A few actions, not always connected to role.	Used actions that matched the character's role.	Used many strong actions that were clear and realistic.
Stay in Role	A[illegible]ke themselves[illegible] the charact[illegible]	[illegible] acted [illegible] cha[illegible]	Mostly stayed in character during the scene.	Stayed in character the whole time.
Teamwork	Did not help or listen.	Hel[illegible]ttle [illegible]	[illegible]ed others [illegible]d with the[illegible]	Shared, listened, and helped make the group's work better.

Teacher Comments

_____

_____

_____

_____

_____

[illegible]rk

Student Comments – What Could You Do Better?

_____

_____

_____

_____

_____

Name: _____ Date: _____

Unit Test: Natural Resources Around The World

Total	Mark
/	/

1) Which of the following is a renewable resource? a) Fossil Fuel b) Biomass c) Coal d) Natural	2) Which of the following is **not** a flow resource? a) Waterfalls – Hydroelectricity b) The Sun – Solar Energy c) Wind d) Fossil Fuels
3) Which ... is a non-renewable resou... a) Coal b) Biomass c) Geothermal ener... d) Solar energy	4) Which form of energy uses heat from the Earth's core? a) Biomass b) Geothermal c) Solar d) Hydroelectricity
5) Which Indigenous group in ... and ... has traditions of protecting nature... a) Inuit b) Cree c) Haida d) Maori	... form of energy uses plants or ... make electricity? a) Co... b) ...ss c) ... d) Solar
7) Which resource forms after millions of years under heat and pressure? a) Wind b) Fossil Fuels c) Timber d) Bamboo	8) Which count... produ... hydroelectric power ... a) Canada b) Brazil c) China d) USA
9) Which agreement gave countries rights to ocean resources 200 miles out? a) Brundtland Report b) Paris Climate Accord c) United Nations Law of the Sea d) Kyoto Protocol	10) Which pillar of sustainability is focused on equity and human rights? a) Economic Pillar b) Social Pillar c) Environmental Pillar d) Industrial Pillar

Define What do the terms below mean?

Mark /

Term	Definition – What does it mean?
Deforestation	
Fair Trad	
The of th Commons	

Short Answer Answer th s be

Mark /

1) What is the difference between a ren and n wable resource?

2) Why are some indigenous groups upset about how natural resou d on their land?

3) What is overfishing? Why should we be worried about it?

Long Answer	Answer the questions below.

Mark
/

1) What does sustainability mean? What kinds of things are humans doing that are not leading to sustainability? What can we do to become more sustainable?

2) What is ocean power, such as tidal and wave e... Expl... ...t works, the benefits it provides, and the challenges it faces.