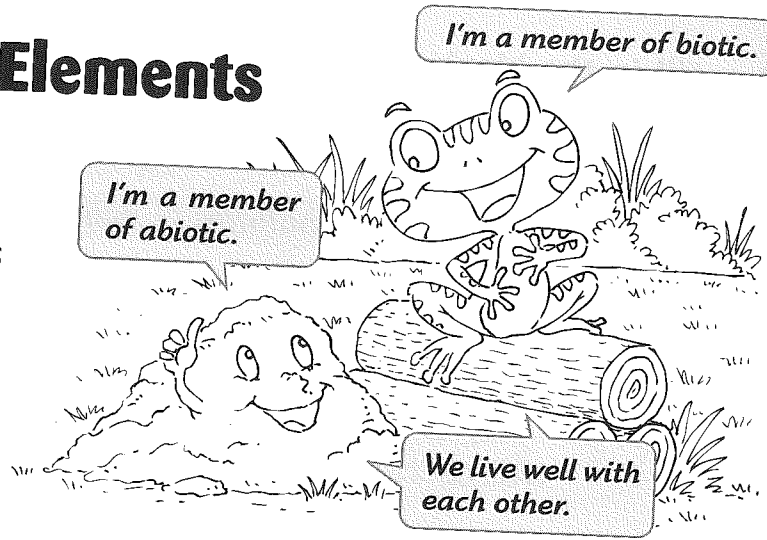


Biotic and Abiotic Elements in Ecosystems

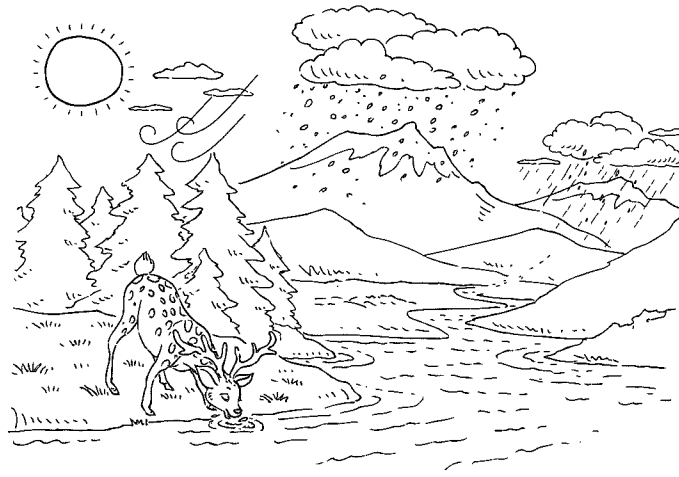
- Living or having lived members of an ecosystem are called biotic, and non-living or never having lived members are called abiotic.
- Biotic or abiotic members of an ecosystem affect each other.



A. Fill in the blanks. Then identify five biotic and five abiotic elements of the ecosystem shown.

abiotic water ecosystem microorganisms biotic

- _____ : a habitat in which plants, animals, and microorganisms interact with one another and their surroundings
- _____ : the living elements of an ecosystem, such as plants, animals, and _____
- _____ : the non-living elements of an ecosystem, such as soil, air, and _____



Biotic Elements	Abiotic Elements

B. Each sentence describes a relationship between two elements of an ecosystem. Highlight the biotic elements blue and the abiotic elements yellow. Then describe their relationships.

1. Humans cannot live more than three or four days without water.

Relationship: _____

2. Tiny wild berries are a major food source for the lumbering black bear.

Relationship: _____

3. Wind is one of the forces responsible for soil erosion.

Relationship: _____

4. The beaver builds its shelter, a partially submerged lodge, out of logs harvested from trees in its own habitat.

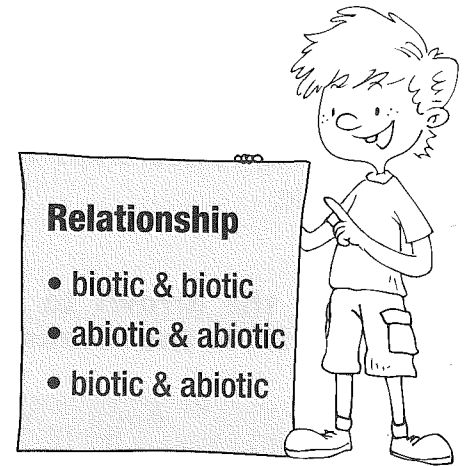
Relationship: _____

5. Snakes and other reptiles use the warmth of the sun to raise their body temperatures after a cool night.

Relationship: _____

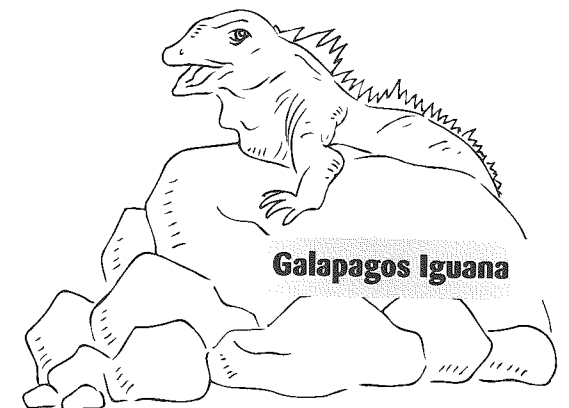
6. For a typical meal, the "cleaner fish" cleans the gills and teeth of other bigger fish, which, in turn, become cleaner.

Relationship: _____



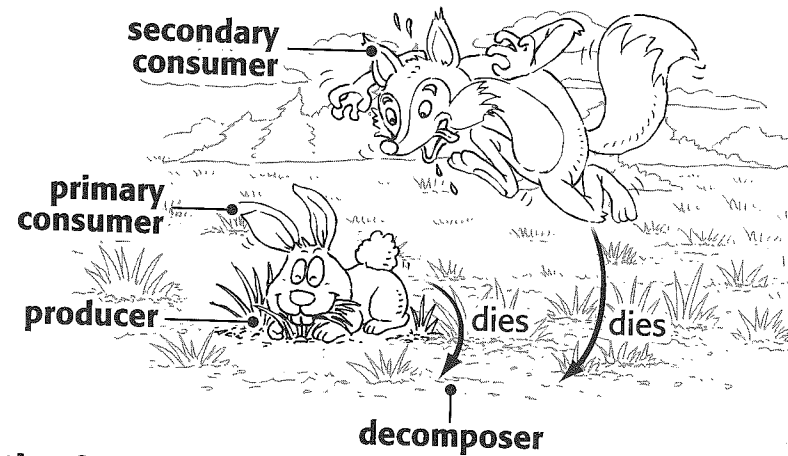
Science Fact

The most unique animals and plants on Earth are found in ecosystems that developed far from neighbouring ecosystems, such as the Galapagos Islands.



Food Cycle

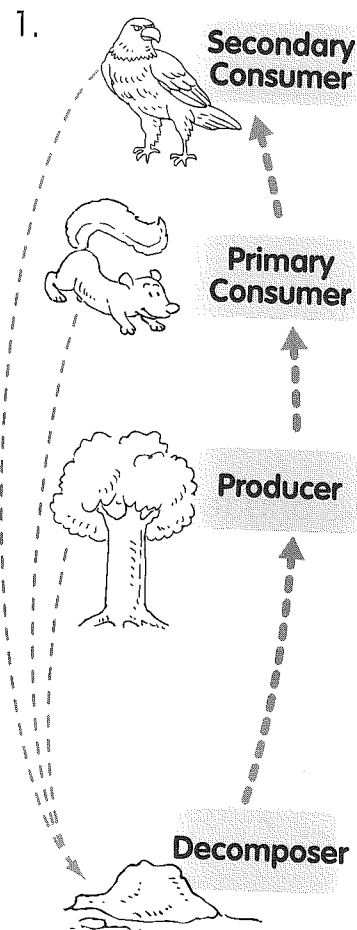
- The food cycle is made up of producers, consumers, and decomposers.
- Different models have different ways of showing relationships within the food cycle.



A. Trace the arrows to complete the food cycle. Then fill in the blanks with the given words.

fungi decomposer nutrients omnivore
 plant primary consumer herbivore producer food

Food Cycle



1. A secondary consumer consumes a primary consumer that has consumed a 2. _____.

A primary consumer eats plants. It can be a 3. _____ or an 4. _____.

A producer is a 5. _____. It uses the sun's energy to make its own 6. _____.

A decomposer causes the decomposition of anything that was once living. It converts all organic matter into carbon dioxide and 7. _____. These nutrients become part of the soil. More plants can grow as a result. Bacteria and 8. _____ are primary decomposers.

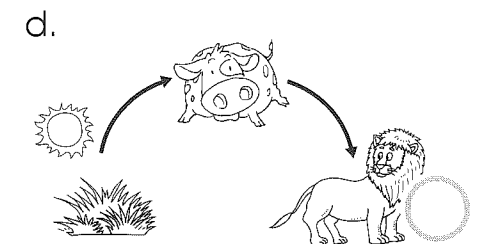
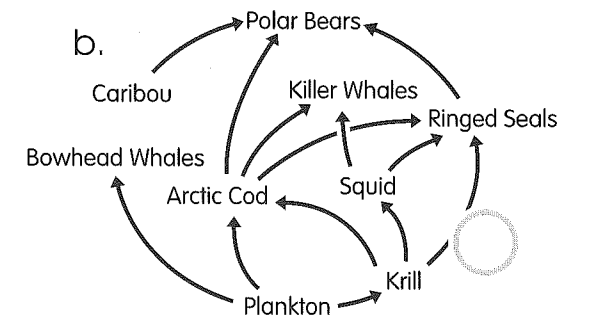
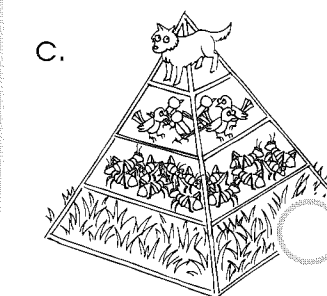
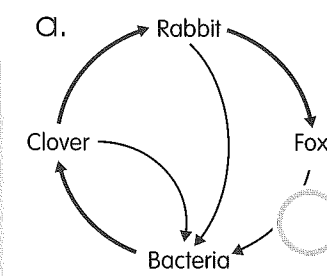
B. Construct a food cycle with one of the food chains below. Check the food chain. Then add a decomposer to complete the cycle.

- (A) zooplankton → krill → seals
- (B) grass → zebra → lion
- (C) leaf → dragonfly → frog → snake

C. Match each model with its name. Write the letters. Then answer the questions.

1.

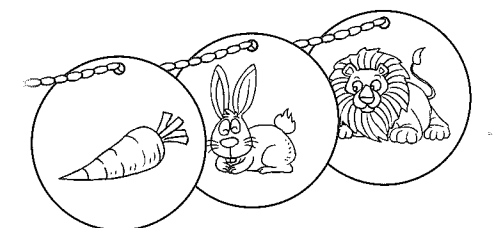
- (A) food web
- (B) food cycle
- (C) food chain
- (D) energy pyramid



2. Which model would you use to show
- a. a straight-line relationship from the food source to the food consumer? _____
 - b. how members of different food chains depend on each other? _____

Science Fact

Food chains are usually not very long because some of the food energy is lost from one link to another.

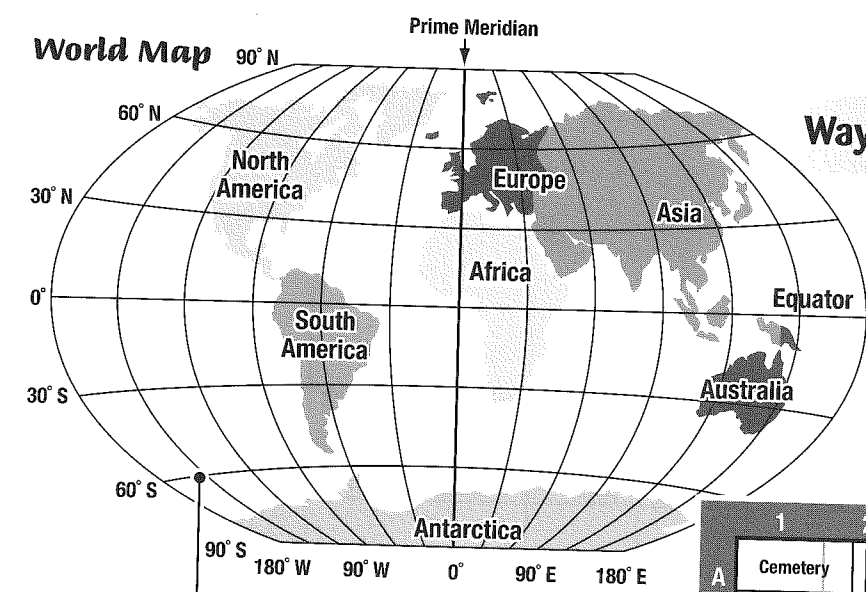




Themes of Geographic Inquiry: Location/Place

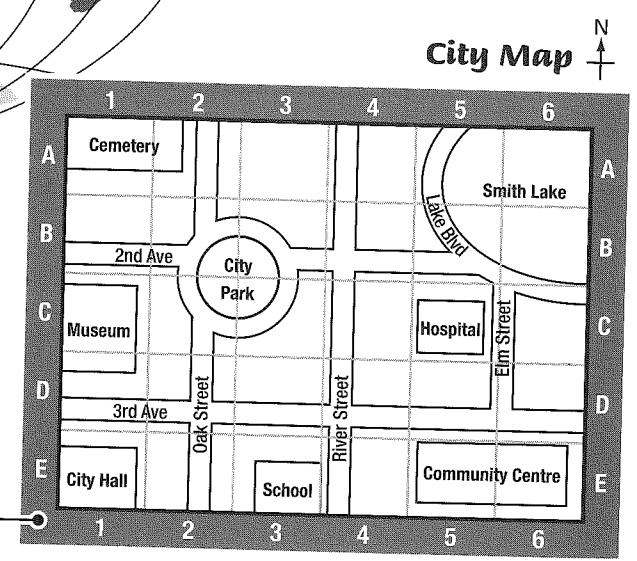
There are different ways to describe a specific place. We can use maps to tell its location and to describe its characteristics.

A. Identify the axis gradation used for each map. Write the answers in the boxes. Then write which map you should use to answer the questions.



Ways to Make Maps:

- the imaginary lines of latitude and longitude
- an alphanumeric grid



1. using _____

2. using _____

3. Which continents have land below the 30° S latitude line?
(_____ map) _____
4. Name one continent that has the equator or 0° latitude run through it.
(_____ map) _____

5. Name two roads found in the coordinates D2.
(_____ map) _____
6. In which coordinates would City Park be found?
(_____ map) _____
7. In which continent are the coordinates 60° N, 120° W?
(_____ map) _____
8. What buildings are west of the community centre? What are their coordinates?
(_____ map) _____

B. Check the circle if the sentence gives directions that are a relative location. Then write a sentence in your own words, giving a relative location.

- The lost sailors were found at 53° N, 129° W.
- The dog was last seen two blocks north of the airport.
- _____

A relative location tells us where a place is in relation to something else.



C. Match the descriptions with the correct places. Then underline the physical characteristics.

Northern Canada Montreal Tropical rainforest

- | | | |
|---|---|---|
| 1. _____
• majority speak French
• small island
• tall buildings | 2. _____
• wet and warm climate
• many different species of animals and plants
• wooden bridge spans a river | 3. _____
• permafrost
• travel by snowmobile
• low-growing plants with short life cycles |
|---|---|---|

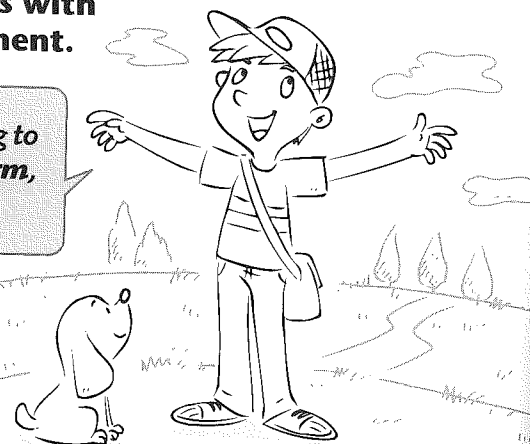


Themes of Geographic Inquiry: Environment

The environment is our physical surrounding. We can describe its characteristics, and we can also use thematic maps to illustrate certain aspects of the environment.

A. Read what Cayden says. Then fill in the blanks with one of the five characteristics of the environment.

When we talk about environment, we could be referring to any one of these five different characteristics: **landform, climate, water, soils, and natural vegetation.**



- The _____ of an area is a good clue of which animal species call it home.
- All through history, human settlement has depended on the availability of _____.
- The form of transportation for our trip, whether it is ferry, foot, car, or canoe, will depend on the _____ we travel across.
- _____ can make a place more or less desirable as a habitat, though humans and animals have adapted to almost any kind.
- We rely on healthy, unpolluted _____ to provide us with most of our food.

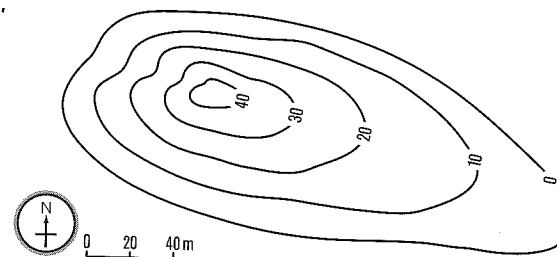
B. Describe your natural environment using the five characteristics in part A. Which parts of your environment have been altered by humans?

C. Thematic maps tell us more about a place than simply its location. Identify the types of thematic maps. Then choose the correct map for each situation.

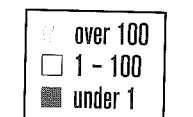
population density climate regions contour active volcano

Types of Thematic Maps:

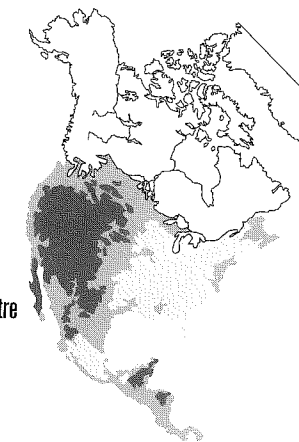
1.



a. _____



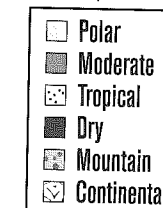
*per square kilometre



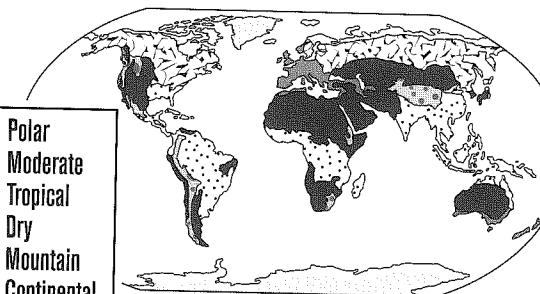
b. _____



c. _____



d. _____



Which thematic map would you use for the following situations?

- A museum display demonstrates current volcanic activity.
- A teacher wants her class to find out where human population is distributed within a country.
- A grade seven class is comparing climates of the world.
- A mountain climber is planning out how long it should take him to reach the top of a mountain.



Themes of Geographic Inquiry: Region

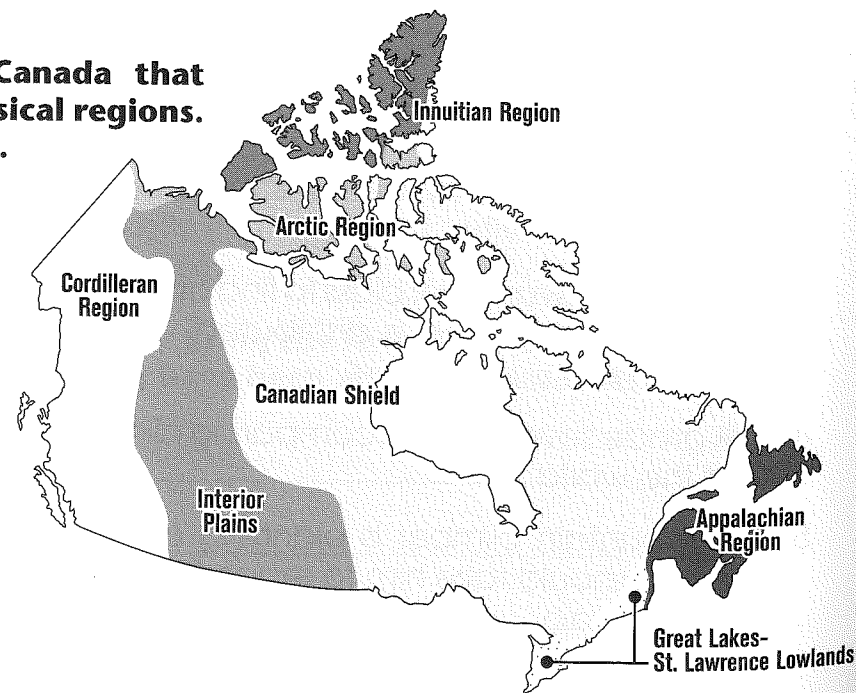
A region is a section of the Earth's surface that has some unifying characteristics.

- A. Compare contrasting regions. See which regional characteristics are being compared, what the theme is, and decide whether the characteristics are human or physical. Fill in the blanks.

human English/French physical landforms
climate purpose of buildings

- | | |
|---|--|
| 1. Characteristics of the region:
Desert/Rainforest (physical)
Theme: _____ | 2. Characteristics of the region:
_____ (human)
Theme: language |
| 3. Characteristics of the region:
Commercial/Residential (_____)
Theme: _____ | 4. Characteristics of the region:
Canyon/Badlands (_____)
Theme: _____ |

- B. Look at the map of Canada that shows the country's physical regions. List the physical regions.



- C. Look at the map of Canada that shows the political boundaries. Name any five of the regions.



- D. Look at the maps of Canada in parts B and C. Answer the questions.

1. Most physical regions have transition areas where one region turns into another. How are the boundaries between Canada's physical regions different from the boundaries between the political regions (provinces, territories, countries)?
-
-
-
2. How were Canada's political boundaries drawn? Use the map to explain how they coincide with imaginary lines or physical characteristics.
-
-
-

- E. Divide your city or town into different regions. How many different regions can you list? What is the unifying characteristic of each region?
