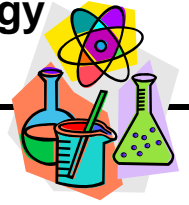


Science 10-4 Unit D: Investigating Matter and Energy in Environmental Systems



Examining Ecosystems

A biome is a large ecosystem that includes plants, animals, weather, precipitation, soil and topography.



There are seven biomes in Alberta.

1. Locate a map displaying the biomes of Alberta. Individually or with a group, select two of the biomes and illustrate and describe their characteristics. Prepare a poster, brochure, dramatization or other presentation to share your findings.



Use Tools [Preparing for Group Work](#) and [Thinking About Form for Presentations](#).

2. Define an ecosystem, e.g., tundra, wetlands, forest, by describing its biotic (living) and abiotic (nonliving) parts. Create and fill in a chart like the following:

Ecosystem: _____

	Description
BIOTIC	
flora	
fauna	
lower life forms	
ABIOTIC	
water	
soil	
rock	

3. Investigate how various abiotic (nonliving) elements of an ecosystem affect the biodiversity of the things that live there. For example, how do the following affect what kinds of creatures and plants live there:

- temperature
- elevation
- geology (e.g., types of rock and formations)
- climate (e.g., seasons)
- water formations and distribution.



4. Discuss with a group, investigate and explain how the following affect the size of the populations of animals and plants that live in an area.

	The Population ...
immigration	
emigration	
birth rate	
death rate	
food supply	
predation	
disease	
climate change	

5. Discuss with a group, investigate and explain how the following interactions among organisms can limit populations.

Predation

Definition: _____

How it can limit populations:

Parasitism

Definition: _____

How it can limit populations:

Describe other interactions between organisms that can limit populations:

6. Examine the relationship between human land-use practices and altering ecosystems. How do humans change the environment through their use of the land? Consider the following examples of human land use:

- swamp drainage and fill to build and expand communities
- slash and burn forestry
- big business agriculture (corporate farming)
- damming of rivers for power and water use
- mining the land for ore and oil.



Create a presentation that describes how human land use has changed the ecosystems in and near your community. If possible, contact local First Nations Elders as an information source on what the ecosystems were like in the past (before the land-use practice).



Use Tools [Thinking About Purpose for Presentations](#), [Thinking About Audience for Presentations](#) and [Thinking About Form for Presentations](#).

7. Examine the purpose of environmental laws created to protect the community, province, country and world. Find news stories that demonstrate why these laws are necessary. Discuss the stories and the purposes of the laws. Ideas for stories include:

- disposal of harmful chemicals
- corporate responsibility for environmental damage (e.g., land reclamation, oil/chemical spills)
- emissions levels for industrial plants
- packaging and manufacturing laws.

