

## BIG IDEAS

Incorporating data from a variety of sources allows us to better understand our globally connected world.

Natural processes have an impact on the landscape and human settlement.

Interactions between human activities and the atmosphere affect local and global weather and climate.

## Learning Standards

Curricular Competencies	Content
<p><i>Students are expected to be able to do the following:</i></p> <ul style="list-style-type: none"> <li>• <b>Use geographic inquiry processes and geographic literacy skills to ask questions; gather, interpret, and analyze data and ideas from a variety of sources and spatial/temporal scales; and communicate findings and decisions (evidence and interpretation)</b></li> <li>• <b>Assess the significance of places by identifying the physical and/or human features that characterize them (sense of place)</b></li> <li>• <b>Assess the interpretations of geographic evidence after investigating points of contention, reliability of sources, and adequacy of evidence (evidence and interpretation)</b></li> <li>• <b>Draw conclusions about the variation and distribution of geographic phenomena over time and space (patterns and trends)</b></li> <li>• <b>Evaluate how particular geographic actions or events affect human practices or outcomes (geographical value judgments)</b></li> <li>• <b>Evaluate features or aspects of geographic phenomena or locations to explain what makes them worthy of attention or recognition (geographical importance)</b></li> <li>• <b>Identify and assess how human and environmental factors and events influence each other (interactions and associations)</b></li> <li>• <b>Make reasoned ethical judgments about controversial actions in the past and/or present, and determine whether we have a responsibility to respond (geographical value judgments)</b></li> </ul>	<p><i>Students are expected to know the following:</i></p> <ul style="list-style-type: none"> <li>• structure of, feedback within, and equilibrium of natural systems</li> <li>• distinguishing features of the atmosphere, hydrosphere, cryosphere, lithosphere, biosphere, and anthroposphere</li> <li>• connections and interactions between the spheres</li> <li>• features and processes of plate tectonics and their effects on human and natural systems</li> <li>• features and processes of gradation and their effects on human and natural systems</li> <li>• natural disasters and their effects on human and natural systems</li> <li>• features and processes of Sun–Earth interactions and resulting patterns of climate, landscapes, and ecosystems</li> <li>• climate, weather, and interactions between humans and the atmosphere</li> <li>• characteristics of global biomes, including climate, soil, and vegetation</li> <li>• features and processes of the anthroposphere and their effects on natural systems.</li> <li>• natural resources and sustainability</li> </ul>

Curricular Competencies – Elaborations

- **Use geographic inquiry processes and geographic literacy skills to ask questions; gather, interpret, and analyze data and ideas from a variety of sources and spatial/temporal scales; and communicate findings and decisions (evidence and interpretation):**

*Sample activities:*

- Undertake a field site visit to compare and contrast different plant communities.
- Use topographic maps to understand modern terrain patterns associated with historical events (e.g., glaciation).
- Use satellite imagery of cloud cover to look at atmospheric circulation patterns.
- Use GIS to map flood potential.
- Use air photos to view mountainous environments in order to examine life zones and hydrological patterns and processes.
- Use regional weather charts to explain current and near future local weather conditions.
- Develop an understanding of the concept of spatial scale by examining an issue at three scales (e.g., how is a changing climate impacting local water use, regional precipitation patterns, and global distribution of moisture?).

- **Assess the significance of places by identifying the physical and/or human features that characterize them (sense of place):**

*Sample activities:*

- Identify unique characteristics that help to make a place stand out, and determine how they were formed (e.g., river valleys and flood plains, volcanic activity).
- Develop boundaries on a map to delineate areas of regional differentiation (e.g., climate regions).

- **Assess the interpretations of geographic evidence after investigating points of contention, reliability of sources, and adequacy of evidence (evidence and interpretation):**

*Sample topics:*

- environmental issues around:
  - resource development
  - urban sprawl
  - infrastructure development in the form of dams or pipelines

- **Draw conclusions about the variation and distribution of geographic phenomena over time and space (patterns and trends):**

*Key topics:*

- Recognize patterns – geographic or environmental phenomena that repeat over time and space.
- Recognize trends – variations in the consistency of a natural phenomenon in a particular setting over a period of time.

*Sample activities:*

- Research the Ring of Fire, which encircles the Pacific, and how it has affected life in coastal British Columbia.
- Examine the impact of urban growth on soil erosion, the water cycle, agricultural land.
- Study the location of the world’s jungles or deserts: why are they there, how long have they been there, and how are they currently changing?
- Research how mountains are formed and where they are found.

Curricular Competencies – Elaborations

- **Evaluate how particular geographic actions or events affect human practices or outcomes (geographical value judgments):**

*Sample topic:*

- climate change and rising sea levels, and how they affect the planet and people in different regions

- **Evaluate features or aspects of geographic phenomena or locations to explain what makes them worthy of attention or recognition (geographical importance):**

*Sample topics:*

- landforms and how they occurred (e.g., glaciated landscapes, volcanic features, stream drainage patterns, deserts)
- weather patterns, and possible changes to them
- extreme weather (hurricanes, tornadoes, hail, ice storms) and distribution of these events

- **Identify and assess how human and environmental factors and events influence each other (interactions and associations):**

*Sample topics:*

- human modification of the lithosphere for resource extraction, settlement, agriculture
- human modification of the atmosphere by changing the rate of exchange of gases (e.g., release of CO<sub>2</sub> through burning of fossil fuels)
- human modification of the biosphere by hunting, domesticating, bio-altering, and geographically relocating other species
- storm protection of coastal cities by wetlands
- settlement patterns associated with access to natural resources (e.g., risk of farming on a flood plain in rich soils developed by river flooding)
- global climate change and ocean acidification
- deforestation
- coral reef bleaching
- depletion of ozone layer
- global atmospheric circulation patterns
- acid precipitation
- wild species at risk
- drainage patterns, agriculture, and coastal dead zones
- weather modification

- **Make reasoned ethical judgments about controversial actions in the past and/or present, and determine whether we have a responsibility to respond (geographical value judgments):**

*Key questions:*

- How much responsibility do we have for the environment?
- Should people sacrifice some of their standard of living to halt global climate change?
- Can the oceans survive human impacts?
- What are the reasons for and against limiting natural resource extraction? Do you think we should limit extraction?