

# CGC1P Unit 1: The Diversity of Canada's Natural Landscapes

## Activity 6: Climate

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### Overview

Weather and climate in Canada vary greatly from region to region and from season to season. In this activity, you will develop an understanding of the differences and similarities between weather and climate. You will also discover the wide variety of climate regions in Canada and the factors that determine those climates.

### Lesson

#### *Weather and Climate*

Weather is different than climate. **Weather** is defined as the condition of the atmosphere at a particular location and time. In other words, weather is about what happens on a day-to-day basis, where it is raining one day, sunny the next, foggy in the morning, snowing in the evening. Daily weather is the result of many factors, including solar energy, water vapor, cloud cover, landforms, bodies of water, and air movement.

There are several examples of weather extremes. Types of **extreme weather** include:

- **Hurricane** - a type of storm that forms over warm, tropical waters and transfers heat out of the tropics; also called typhoons and cyclones; they can take days to develop and spread over an area.
- **Tornado** - a powerful storm which is funnel-shaped and can develop without warning.
- **Blizzard** - A heavy snowstorm with winds over 35 miles which can dump feet of snow over a period of days.
- **Drought** - A long period of time without rain or very minimal rainfall.
- **Flood** - Occurs when water spreads out over an area not normally covered with water.

**Climate** refers to the weather conditions at a particular location over a long period of time. In other words, climate is about the average, where you can describe what it will probably be like in an area during a particular time of year. For example, it will probably be cold and snowy in Windsor in January because it often has been cold and snowy in Windsor during that time of year.

**The climate of a region is influenced by the following factors:**

#### *Wind Currents*

- Distribute heat from the one part of the world to another part of the world.
- Winds are caused by Convection or the transfer of heat in the atmosphere in an upward motion of the air.

#### *Ocean Currents*

- Similar to rivers as warm water is circulated to higher latitudes and cold water flows back to the equator.

### *Zones of Latitude*

- Low or tropical.
- Middle or temperate.
- High or polar.

### *Elevation*

- The distance above sea level.
- Temperature decreases as altitude increases.

### *Topography*

- Mountains trap moist air on one-side and cause dry conditions on the opposite side.

### *Human Activity*

- Greenhouse Effect – the amount of carbon being released into the atmosphere by human activity is gradually heating the earth.

Two ways of comparing climates are to look at continental and maritime climates.

A **Maritime climate** is milder, which means the difference in temperature between winter and summer is not as big as it is where there is no water. The ocean would slow the heating of the air in the summer, and slow the dropping of air temperatures in the winter.

A **Continental climate** is more extreme. In the winter it is extremely cold with very little precipitation. In the summer it is extremely hot with very little precipitation.

## **Assignment**

1. Explain the difference between weather and climate.
2. Identify and explain 4 forms of extreme weather.
3. Explain the factors that affect climate.
4. Compare and contrast a Maritime climate to a Continental climate.