

Unit 1

Canada, Geography and you

What is Geography?

Geography is the study of how the earth works and how people interact with their earthly home. Since geography is about the world that you live in, it is all about you.

Geography is all **about connections or interactions**. Every day you interact with other people and your environment. You communicate with other people and depend on products and information. **You use geography skills for things such as;**

1. Determining your route to a particular place.
2. Deciding where to shop or go on vacation.
3. Understanding current events.
4. Learning about your country.
5. Learning about controversial issues that affect Canada.
- 6.

Geographers investigate both positive and negative effects of people's interaction with their environment. **Three types of interaction** include the following;

- a. Nature has an impact on people.
- b. People have an impact on their environment.
- c. People's action may affect other people.

By studying how natural events affect people, we can prepare for these events so that there are fewer lives lost and less damage. Likewise, by studying how people affect their environment can help us manage our resources in a **sustainable** way (last and be used for future generations).

Why is Geog Important?

Geographers use their skills to investigate problems and resolve issues related to what is happening in the world. In fact, geography can teach you;

1. Where natural features, human features, people, and species are located
2. Why they are located there
3. The imprints (effects) and patterns made by these features
4. The economic, environmental, and social consequences of changes to the environment
5. Geog can help you improve your spatial skills.

Geographers:

Study shapes and patterns made on the landscape by natural features, such as rivers, forest.

They study flooding, glaciations, and erosion.

They examine imprints of human activities such as farming, settlement, logging and waste disposal.

Canadian Geography

Canada is the second largest country in the world at 9,970,600 km²

- 5,514 km between the eastern most (Cape Spear) and Westernmost points(Yukon-Alaska border)
- Most northern settlement is Alert on Ellesmere Island
- Most Southern place is Middle Island in Lake Erie

Canada is divided into ten provinces and three territories

Provinces	Capitals
British Columbia	Victoria
Alberta	Edmonton
Saskatchewan	Regina
Manitoba	Winnipeg
Ontario	Toronto
Quebec	Quebec City
New Brunswick	Fredericton
Nova Scotia	Halifax
Newfoundland	St. John's
Prince Edward Island	Charlottetown
Yukon	Whitehorse
Northwest Territories	Yellowknife
Nunavut	Iqaluit

Boundaries

Political boundaries are of two types:

1. **Natural Boundaries:** These boundaries may take the form of mountains, rivers, lakes, seas or deserts.
2. **Artificial (human) Boundaries:** These boundaries are not established by any physical features.

Natural Political Boundaries:

Physical Feature	Separates
Rocky Mountains/Great Divide	British Columbia and Alberta
Ottawa River	Ontario and Quebec
Cabot Strait	Nova Scotia and Newfoundland

Artificial Political Boundaries

49°N USA and Canada

2.5 Regions

Region - an area that shares certain features or characteristics

- Can be created through the physical landscape.

Regions can either separate people, as mountains and rivers do OR they can unite them through common characteristics such as the sea.

Canada has 8 distinct landform regions that include:

- a. Western Cordillera
- b. Interior Lowlands
- c. Arctic Lowlands
- d. Innuitian Mountains
- e. Canadian Shield
- f. Hudson Bay Lowlands
- g. Appalachian Mountains
- h. Great Lakes-St Lawrence Lowlands

Canada's place in space

Weather and Climate: The earth, itself

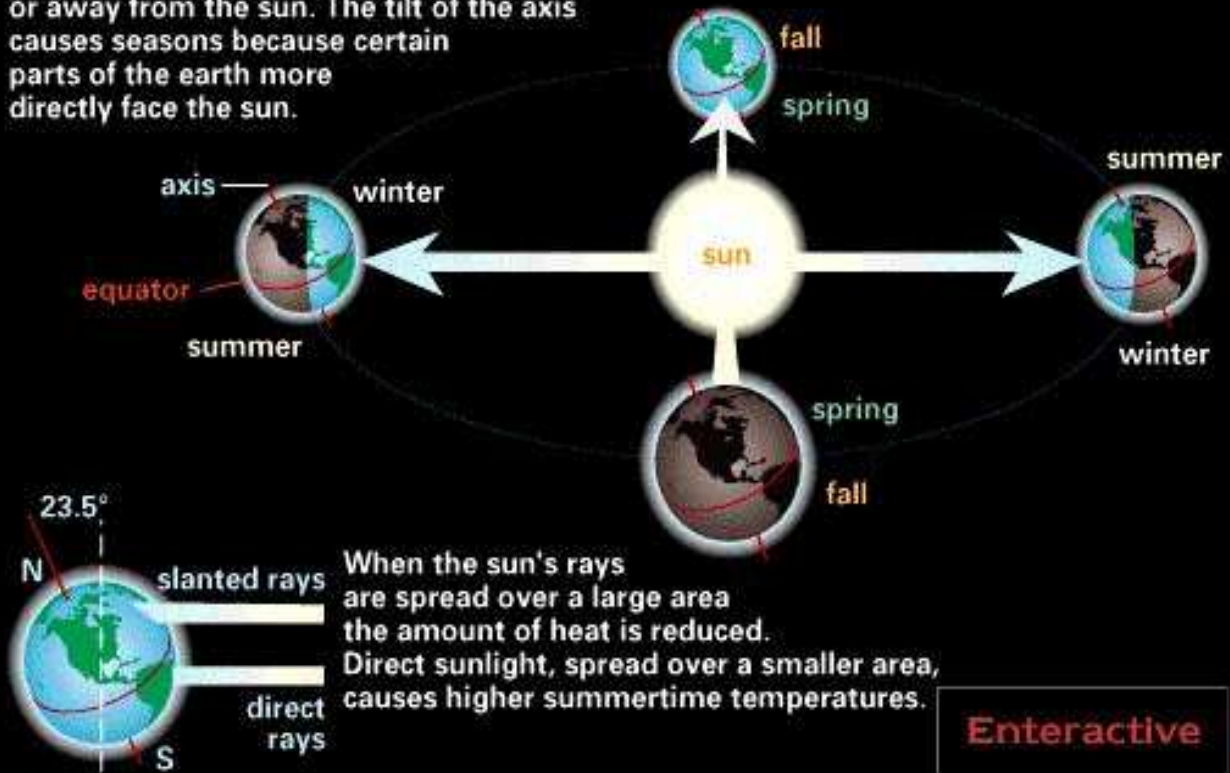
The diagram illustrates Earth's orbit around the Sun. The Sun is at the center, and Earth orbits in a clockwise direction. Earth's axis is tilted at an angle. Four positions are marked: A (September), B (December), C (March), and D (July). Labels include 'Earth's tilted axis', 'North pole', and 'South pole'. The Sun is labeled 'Sun'.

Equinox: Refers to the period in the year when day and night are equal (12 hours long). This occurs twice a year, in March and September.

Solstice: Refers to the period in the year when daylight is longest (or daylight is shortest) depending on the hemisphere: This occurs twice a year, in June and December

What Causes Seasons

As the earth moves around the sun, its axis points in the same direction, causing the North Pole to lean toward or away from the sun. The tilt of the axis causes seasons because certain parts of the earth more directly face the sun.



[Interactive](#)

The Earth and the angle of sunlight

- **Direction of rotation:**
 - If you were looking down at the Earth from the North pole, the Earth is spinning counterclockwise.
 - One complete rotation of the Earth takes 24 hours (1 day, 1 night).
- **The axis of rotation:**
 - The Earth is tilted on its axis at an angle of 23.5° .
- **Direction of revolution:**
 - The Earth revolves around the sun in a counterclockwise manner.
 - The Earth takes 365.25 days to revolve around the sun once = one year. Every four years we have a “leap year” on Feb 29th.
 - Seasons are determined by the position of the Earth in its ORBIT as it revolves around the sun (average distance 93 000 000 miles).

The seasons and the angle of sunlight

- **Warming the Earth's surface:**
 - As the Earth tilts towards the sun, more heat is absorbed because the angle of sunlight is more direct.
 - And vice versa...
- **The equinoxes:**
 - Occur when the sun's rays directly strike the Earth's surface at the equator.
 - Day and night are of equal length.
 - Vernal equinox (northern spring) begins around March 21.
 - Autumnal equinox (northern fall) begins around September 23.
- **The summer solstice:**
 - Sun is over the Tropic of Cancer - sun's rays hit us most directly now.
 - Northern summer begins around June 21, the longest day of the year.
- **The winter solstice:**
 - Sun is over the Tropic of Capricorn - sun's rays hit us at a steep angle now.
 - Northern winter begins around December 21, the shortest day of the year.

Finding your way around

A) Latitude and Longitude

The world is divided into 4 hemispheres:

1. Northern
2. Southern
3. Eastern
4. Western

Each hemisphere is divided by imaginary lines:

1. Parallels of Latitude
2. Meridians of Longitude

1. Parallels of Latitude

- Lines of latitude run horizontally around the earth and are measured in degrees from north to south.
- These parallels of latitude indicate the angle created by the equator and the earth's axis.
- They are called parallels because they are always the same distance apart and they never meet.
- The Equator is labeled 0° since it does not make an angle with itself.
 - Places north of the Equator – Northern Hemisphere
 - Places south of the Equator – Southern Hemisphere
- The highest measurement of latitude is either 90°N or 90°S .
- We read $75^{\circ} 63\text{N}$ latitude as 75 degrees, 63 minutes north latitude.
- Each parallel is $1^{\circ} = 111$ km on the earth's surface.

2. Meridians (Lines of Longitude)

- Drawn from north to south and unlike parallels, the lines of longitude all meet at the poles.
- Longitude – Imaginary vertical lines drawn between the poles showing positions measured in degrees, minutes and seconds, east and west from the Prime Meridian.
- Lines are measured in degrees from east to west from a line at 0° called the Prime Meridian.

Places to the west of PM – Western Hemisphere

Places to the east of PM – Eastern Hemisphere

Latitude and Longitude:

- Latitude and longitude make it possible to locate any place in the world.
- When giving a position, the degree of latitude is given first, followed by the degree of longitude. Example: Ottawa – located at $45^{\circ}\text{N } 75^{\circ}\text{W}$.
- Lines of latitude and longitude are called co-coordinates.

Absolute Location:

- The exact location of a place or feature is called the Absolute Location.
- Coordinates enable us to give absolute locations.
- Remember – degrees of latitude are 111km apart.
- Different places between degrees of latitude can be far apart yet still have the same coordinates.
- Therefore, to be more specific in pinpointing location, each degree of latitude and longitude is further divided into sixty minutes.
- Example: Ottawa – located $45^{\circ}25' \text{ W } 75^{\circ}38' \text{ W}$

Relative Location:

- Shows that way places are connected to others places.
- Could be by land, sea or transportation route
- Gonzaga is located south east of the Avalon Mall

Maps

Just as there are rules of grammar for speaking all map-makers follow the same rules, known as *Map conventions* when making a map. They include;

A title

Legend

Direction

Scale

Date

Name of map-maker

B) Topographic Maps

- These maps show the distribution of natural and human features on Earth.
- They reveal Relief profile (side view of the land that's shows height)
- They use contour intervals (difference in elevation between contour lines).

- **They are used to;**
 - a. Find distance on road trips
 - b. Locate a suitable route by ie, hikers
 - c. Find the best way to control floods or forest fire
 - d. Resolve environmental issues
 - e. Where to build a new housing development

C) GIS Geographic information system

Where questions are called geomatics and are broken down into 4 main areas including;

- a. GIS
- b. REMOTE SENSING
- c. SURVEYING AND MEASURING
- d. CARTOGRAPHY

G Geography
I Information
S System

Technology that provide answers to spatial questions such as;

1. How many parks are within 15 kms of my home?
2. What is the fastest route from home to school?
3. Where should the nest cell phone tower be placed

Forces that build up the earth

Plate Tectonics

- The earth's landforms are never static: That is to say, they are constantly in a state of change due to forces at work that both wear down the land, as well as build up and shape the land.
- First, we are going to look at forces that build up and shape landforms,....

Forces that shape the earth's land formations

- The face of the earth is shaped by tectonic activity.
- Tectonic activity can be described as *the movement of the earth's crust, or "plates" as a result of the pull of gravity; convection currents, or the circulating movement of fluid rocky material in the mantle.*

What are tectonic plates?

- tectonic plates are made of either oceanic or continental crust and the very top part of the mantle, a layer of rock inside the earth.

Seismic Activity:

Earth movements that cause earthquakes

Relate selected plate movements to compressional and tensional forces

- An **earthquake** is a sudden movement of the earth's surface.
- Earthquakes are caused by the movement of the earth's tectonic plates.
 - Earthquakes occur where the earth's plates meet along plate boundaries