Canada's Geography (Location, Human Environment Interaction) Name

SS6G5 The student will locate selected features of Canada.
a. Locate on a world and regional political-physical map: the St. Lawrence River, Hudson Bay, Atlantic Ocean, Pacific Ocean, the Great Lakes, Canadian Shield, and Rocky Mountains.
SS6G6 The student will explain the impact of location, climate, distribution of natural resources, and population distribution on Canada.
a. Describe how Canada's location, climate, and natural resources have affected where people live.
b. Describe how Canada's location, climate, and natural resources impact trade.
SS6G7 The student will discuss environmental issues in Canada.
a. Explain the major environmental concerns of Canada regarding acid rain and pollution of the Great Lakes, the extraction and use of natural resources on the Canadian Shield, and timber resources.

The Great Lakes

- 5 large freshwater lakes in central North America
  - **HOMES** (Huron, Ontario, Michigan, Erie, Superior)
  - Serve as the "industrial heartland" of the continent because of all of the factories
- One of the world's busiest shipping areas
  - Most of Canada's population lives in this region

The St. Lawrence River

- Major source of overseas and US/Canada shipping & trade
  - Shortcut that connects the Great Lakes to the Atlantic Ocean
  - Huge producer of hydroelectricity
  - The St. Lawrence Seaway
    - A canal completed in 1959 at the eastern end of the Great Lakes
    - Connects the Great Lakes with the St. Lawrence River (which flows to the Atlantic Ocean)
    - Major source of overseas and US/Canada shipping & trade
    - Closed from November to April (frozen)
    - Seaway has made cities in Eastern Canada home to many successful manufacturing companies

Hudson Bay

- HUGE inland sea in east central Canada
- "an arm" of the Atlantic Ocean
  - Grain from Alberta & Saskatchewan is shipped from Hudson Bay out to the Atlantic and on to other countries
  - Only navigable from July to October

Atlantic Ocean

- This is the 2nd largest of the earth's 5 oceans.
- It's also the most heavily traveled ocean.
- It forms the eastern border of Canada.
  - It's a major shipping route to Europe & Africa.

Pacific Ocean

- Largest & deepest of the world's 5 oceans
- Covers 1/3 of the earth's surface!

- Western border of Canada
    - Major shipping route to Asia

Canadian Shield

- Stretches from Great Lakes to Arctic Ocean; covers half of Canada!
    - Horseshoe region around Hudson Bay
- Region of mostly thin soil lying on top of rock, with many bare outcrops of rock & thousands of lakes
- Major source of natural resources: timber, minerals, & water
- Region is sparsely populated.

Rocky Mountains

- Mountains located in Western Canada
    - Includes western Alberta and eastern British Columbia
- Stretch a distance of 2,000 miles!
- Mining is the biggest industry in the region, followed closely by logging.
    - Major minerals include: iron ore, copper, coal, gold.
- Sparsely populated & contain few cities

Canada's Location & Trade

- 2nd largest country in the world (Russia is larger)
- Surrounded by three oceans: Atlantic, Arctic, & Pacific
- Southern border is the US
    - Alaska also forms part of the western border.
- Population is 33 million, which is small compared to its size (US population is 9 times larger!)
    - 90 percent of population lives within 100 miles of the US-Canadian border…WHY?
- Canada's location in the world helps it to be a leader in world trade:
    - It's uniquely located on 3 oceans, so it has opportunities to trade with Europe & Asia.
    - Great Lakes and the St. Lawrence Seaway allow goods to be shipped to and from central Canada and the Atlantic Ocean
    - A major benefit for Canada is its border with the US (#1 trading partner).
        - Share over 3,000 miles of border & trade is relatively easy
        - 80% of Canada's exports come to US

Canada's Climate & Trade

- Southeastern part of Canada has a MUCH warmer climate than the rest of the country.
    - Warm to hot summers & cold winters
    - Allows for a long growing season
- Pacific coast has a temperate climate.
    - Pacific Ocean cools the region in summer and warms it in winter.
    - Over 100 inches of precipitation per year
- Northern Canada is COLD!
    - Few people live here – temperatures can be below freezing even in summer!
- Canada's location in the world helps it to be a leader in world trade:
    - It's uniquely located on 3 oceans, so it has opportunities to trade with Europe & Asia.
    - Great Lakes and the St. Lawrence Seaway allow goods to be shipped to and from central Canada and the Atlantic Ocean
    - A major benefit for Canada is its border with the US (#1 trading partner).

- Share over 3,000 miles of border & trade is relatively easy
- 80% of Canada's exports come to US

Canada's Natural Resources & Trade

- Rich in natural resources:
  - coal, oil, natural gas, iron ore, nickel, zinc, copper, gold, lead, molybdenum, potash, diamonds, & silver
- Rivers and lakes have an abundance of fish, fresh water, & hydroelectric power.
- Good soil allows farmers to grow crops for Canadians--with enough left over to trade with other countries
- Timber is also a major natural resource.
- Sells oil and natural gas, fish, agricultural products, & timber to other countries
- Hydroelectricity is used in Canada and also sold to the US.
- 5% of the land in Canada is arable (actually a large amount because there is so much land).
  - Rich soil produces valuable crops that are consumed in Canada and traded to other countries.

Canada's Environmental Issues

Acid Rain

- Coal-burning factories, cars, & trucks release chemicals that pollute the air.
- The pollutants mix with water molecules in clouds and turn the water acidic.
- High levels of acid in rain can damage or kill trees and pollute lakes enough to kill fish.
- Houses, buildings, and statues can also be damaged.
- Southern Canada (near the Great Lakes region) experiences the highest levels of acid rain.
- 50-75% of the pollution that causes acid rain actually comes from the US.
- Wind patterns tend to move the pollution from the US north into Canada.
- Canada's government has done several things to reduce pollution:
  - They are building factories that don't pollute the air.
  - Laws have been passed that require cars to produce less pollution.
  - They are encouraging people to walk or ride bikes/buses, rather than driving.

Pollution of the Great Lakes

- In the 1970s, the Great Lakes had high levels of water pollution.
- Fishing was unsafe; tons of animals and plants were harmed or killed.
- Factories around the region used the lakes as a place to dump wastes.
- Factories also used the chemical phosphorus when producing things like toothpaste, fertilizer, pesticides, detergents, etc.
- This was really bad for lakes because it caused a rapid increase in algae.
- In 1971, the Great Lakes Water Quality Agreement was signed by US and Canada (renewed in 2002).
- The goal was to restore the lakes' environment and to prevent further damage.
- The countries are working together to reduce the amount of human wastes dumped in lakes.
- They're working to make sure that chemicals (like phosphorus) are not put into lakes

Extraction & use of Resources in the Canadian Shield

- The Canadian Shield is a large area of thin, rocky soil that surrounds the Hudson Bay.
- Beneath the soil is one of Canada's most valuable resources: minerals (gold, silver, copper, zinc, lead, iron ore, uranium, & nickel).
- Mineral deposits are very important to Canada's economy because they provide jobs.
- 1.5 million people make their living in the mining industry in this area.
- Blasting & digging with heavy machinery causes the land around mines to be damaged and the environment is often ruined.
- Slag, or leftover rock from the smelting process, is often dumped in any convenient place.
- Mining processes release harmful chemicals into the air, which causes acid rain.
- Canada's government has made new rules about mining.
- Some rules reduce the amount of pollution allowed in waterways.
- The government hopes to keep its fish alive and safe to eat.

Timber Industry

- With almost half its land covered in forests, Canada is a leading producer of timber products.
- These products include lumber, paper, plywood, and wood pulp.
- The major timber-producing provinces include British Columbia, Quebec, and Ontario
- Citizens are concerned that logging is destroying the forests.
- Most timber companies cut all the trees in a given area, leaving large treeless gaps in the forest (called "clear-cutting").
- This reduces water quality, causes erosion, & kills animals' habitats.
- Heavy machinery leaves the forest floor compacted and makes it hard for new growth to start.
- Cutting trees down quicker than they can be re-grown is called "deforestation".
- Trees are a limited resource.
- If they continue to be overused, they will not be renewed.
- Government and industries are working together to manage use of the forests.
- Hundreds of millions of seedlings are planted each year.
- Billions of dollars are spent on managing and protecting the forests.
- Over $100 million is spent each year by the logging industry to protect wildlife & their habitats.