SS9 UNIT 7:

PHYSIOGRAPHIC FEATURES OF CANADA AND GEOLOGICAL PROCESSES

LO: COMPARE AND CONTRAST PHYSICAL FEATURES AND NATURAL RESOURCES IN DIFFERENT REGIONS OF CANADA

ENERGY

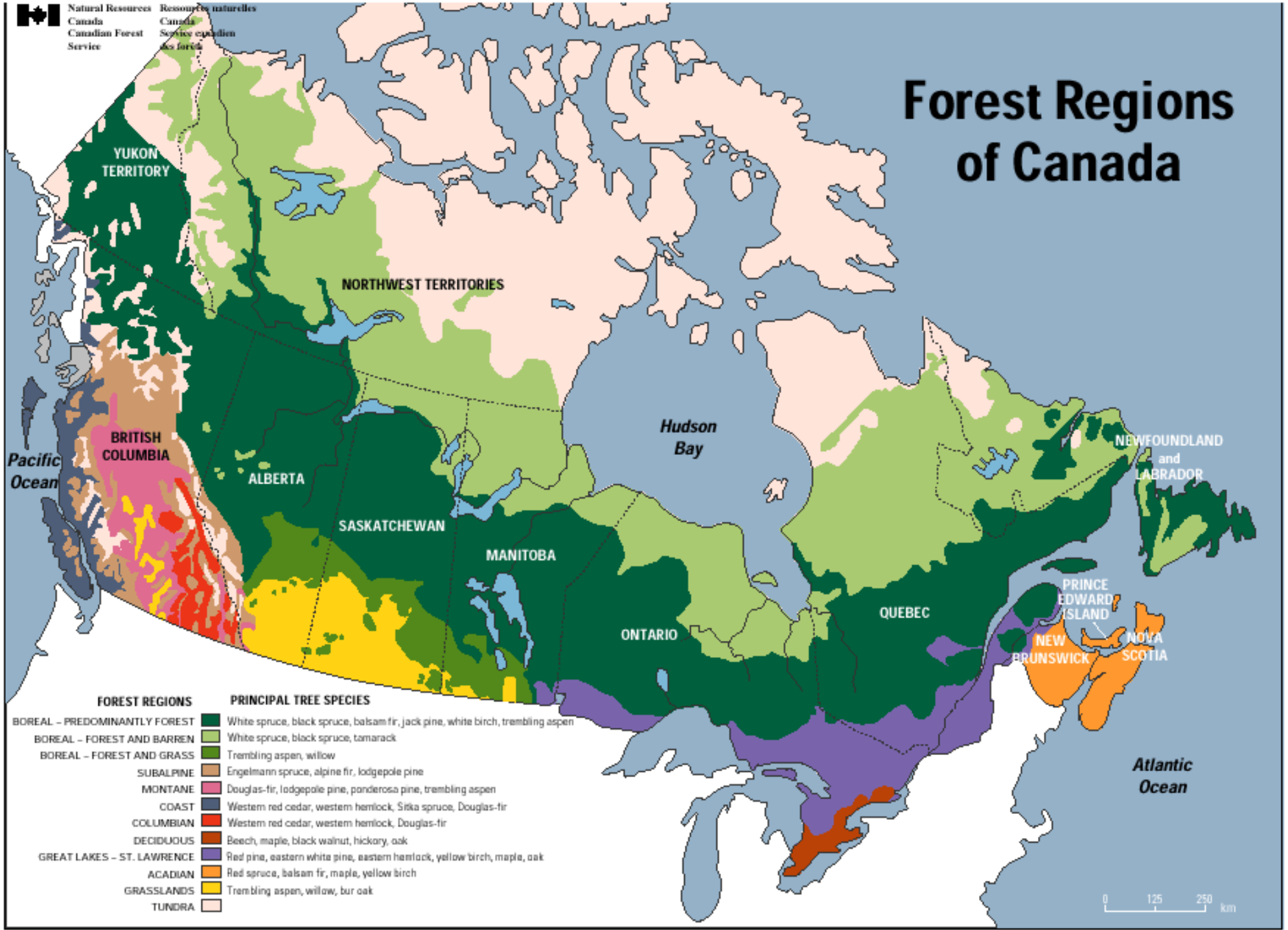
- Types of Energy Resources found in Canada:

Oil	Natural Gas	Hydroelectricity
Coal	Nuclear (uranium)	Solar
Wind	Tidal	Biomass

FORESTRY

- Canada has many forests which cover approximately half of Canada's land mass

- The forests themselves play specific roles
  - Ecology (home for many plants, animals, and microorganisms as well as the carbon and water cycles)
  - Culture (Traditional Practices by First Nations Peoples including building totem poles and canoes)
  - Economy (Raw materials for industry, opportunities for hunting, fishing, and tourism)


Natural Resources Canada
Canadian Forest Service
Ressources naturelles Canada
Service canadien des forêts
Forest Regions of Canada
YUKON TERRITORY
NORTHWEST TERRITORIES
Hudson Bay
Pacific Ocean
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
NEWFOUNDLAND and LABRADOR
PRINCE EDWARD ISLAND
NEW BRUNSWICK
NOVA SCOTIA
Atlantic Ocean
FOREST REGIONS
PRINCIPAL TREE SPECIES
BOREAL – PREDOMINANTLY FOREST
White spruce, black spruce, balsam fir, jack pine, white birch, trembling aspen
BOREAL – FOREST AND BARREN
White spruce, black spruce, tamarack
BOREAL – FOREST AND GRASS
Trembling aspen, willow
SUBALPINE
Engelmann spruce, alpine fir, lodgepole pine
MONTANE
Douglas-fir, lodgepole pine, ponderosa pine, trembling aspen
COAST
Western red cedar, western hemlock, Sitka spruce, Douglas-fir
COLUMBIAN
Western red cedar, western hemlock, Douglas-fir
DECIDUOUS
Beech, maple, black walnut, hickory, oak
GREAT LAKES – ST. LAWRENCE
Red pine, eastern white pine, eastern hemlock, yellow birch, maple, oak
ACADIAN
Red spruce, balsam fir, maple, yellow birch
GRASSLANDS
Trembling aspen, willow, bur oak
TUNDRA
0 125 250 km

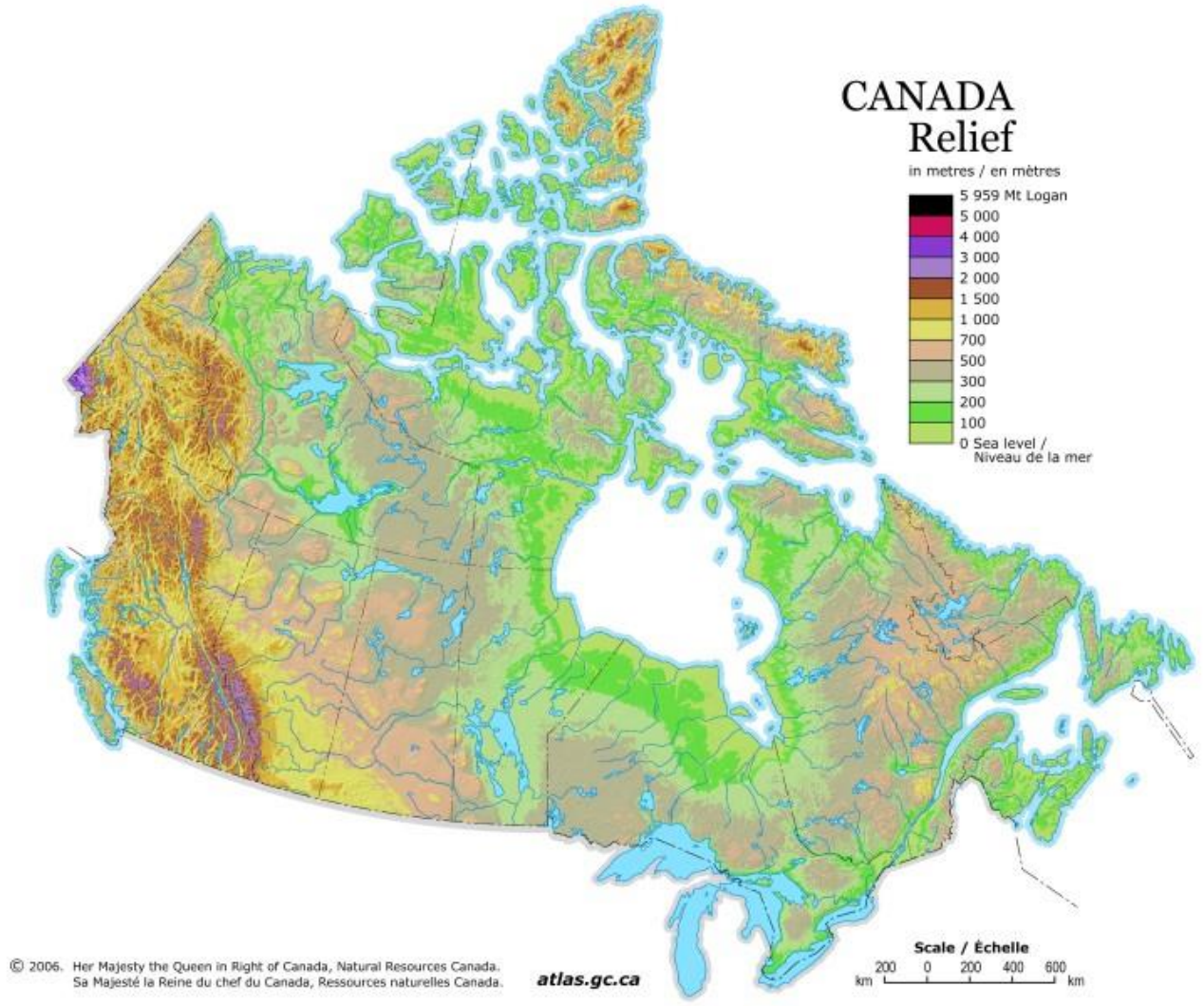
GEOLOGY AND GEOSCIENCES

- **Geology includes the study of the earth's crust, its structure, the chemical composition and the physical properties of its components.**

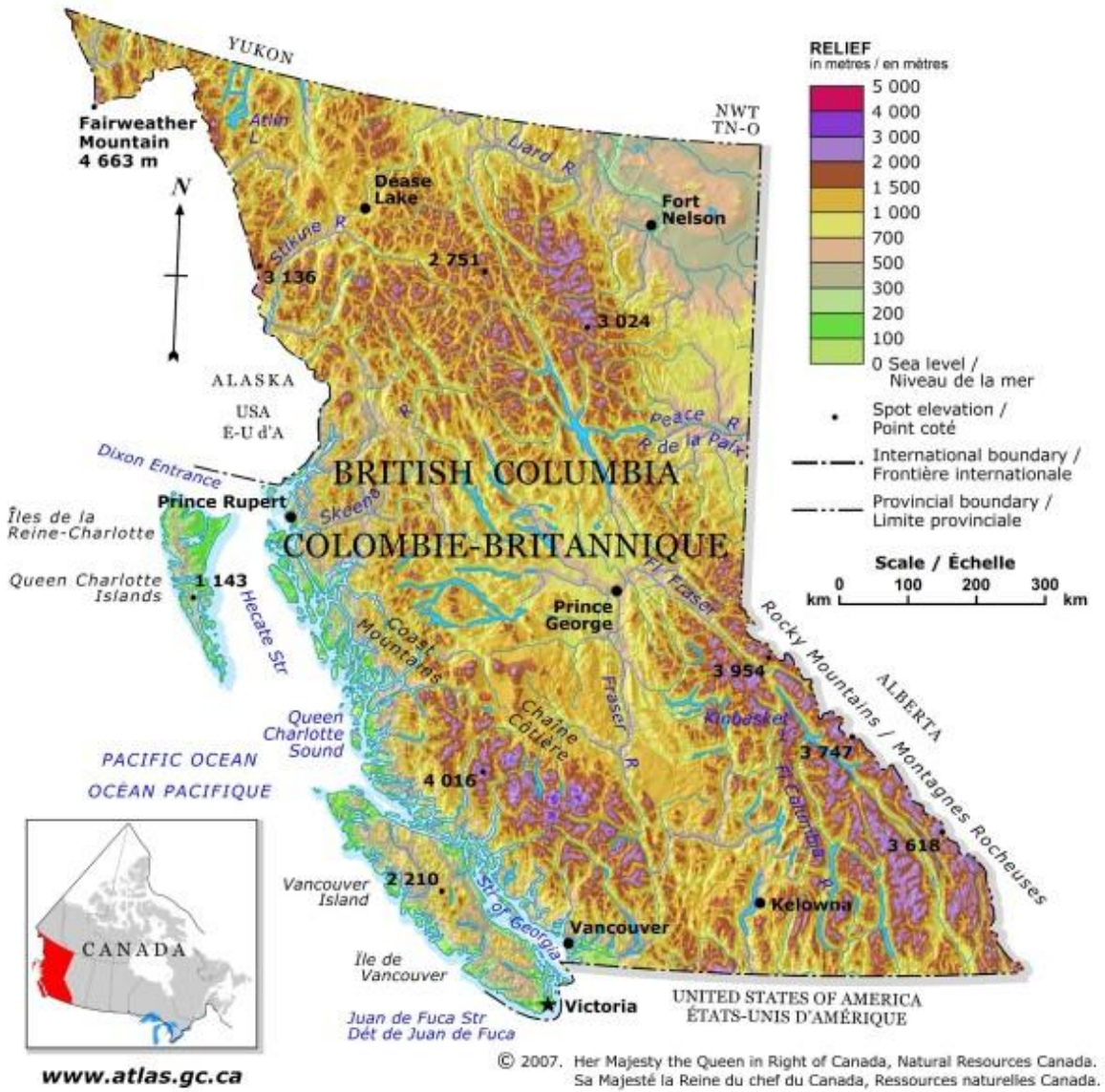
- Rock formations are located within the crust, their formation is studied and measurement is made of the forces that create, bend and shape mountains, basins, faults, volcanoes and earthquakes.

- Geology also examines the erosion of rocks and the deposition of the loose materials. It also reveals the physical history of the Earth.

TOPOGRAPHIC MAP OF CANADA



TOPOGRAPHY BC



MINING AND MINERALS

- Rocks are composed of minerals.
- Each of the thousands of minerals found in the earth's crust contains a specific combination of elements in specific proportions.
- Although some elements can be found in an almost pure form (gold or copper, for example), most are chemically bound up in minerals.

MINING AND MINERALS

- Human societies have come to value particular elements and minerals more than others, for use as fuels, to make tools and chemicals, or to wear as jewelry.

- We have also learned to recognize these elements and the minerals that contain them in the rocks that make up the surface of the earth.

MINING AND MINERALS

- Prospecting, mining and processing minerals are complex processes that cost significant amounts of money to undertake.

- Although the return on a mining investment can be high, it can also be highly uncertain.

POPULATION

- According to Statistics Canada, Canada's population in 2011 was estimated to be 33 476 688.
- This represents a growth of 5.9% since the 2006 estimate of 31 612 897.

WATER

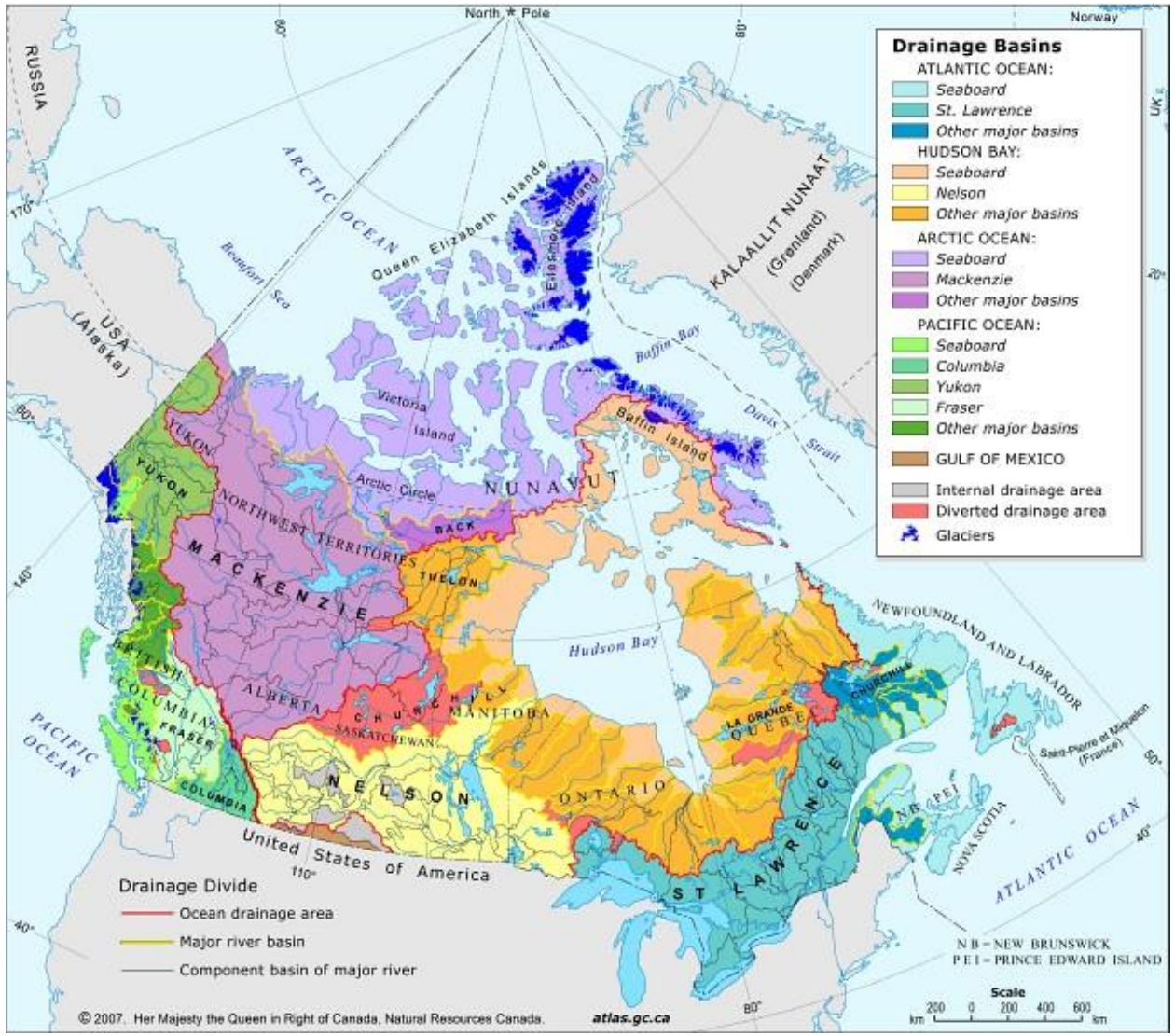
- Overall, Canada may be considered a freshwater-rich country: on an average annual basis, Canadian rivers discharge close to 9% of the world's renewable water supply, while Canada has less than 1% of the world's population.

- Water is also highly visible in Canada: probably no country in the world has as much of its surface area covered by freshwater as does Canada. Of particular note are the Great Lakes.

WATER

- This set of lakes, which is shared with the United States, makes up the largest surface area of freshwater found in one place anywhere in the world.

- Water is used in the resources and energy industries.



DRAINAGE BASINS

- A drainage basin, sometimes called a watershed, is an area where all surface water shares the same drainage outlet.
- Surface water consists of the tiny trickles of water flowing on the surface of the earth that develop into larger streams and eventually combine to form a river.

THE GREAT LAKES

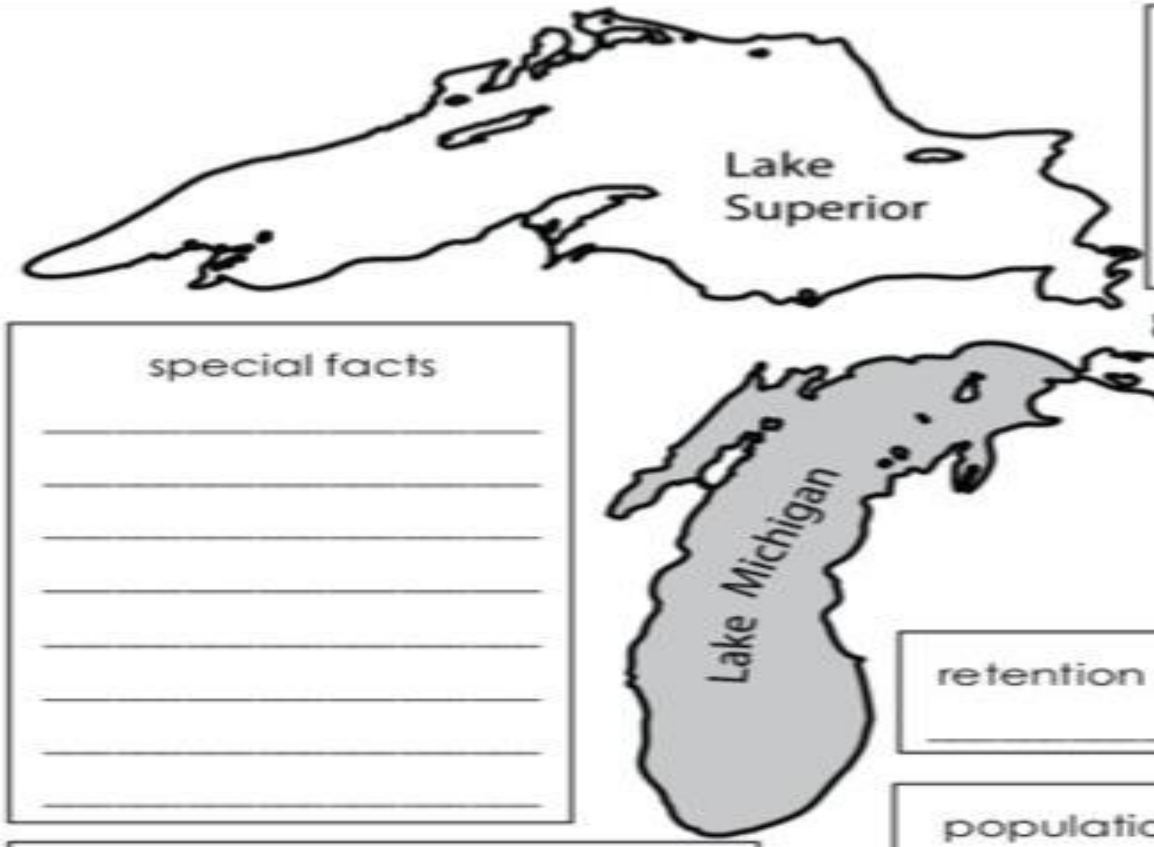
GREAT LAKES RESEARCH PROJECT

- Using the map provided select two (2) of the great lakes

- Using the two (2) lakes you have chosen identify the following information
  - Special facts
  - Maximum Depth
  - Average Depth
  - Retention time
  - Population around the lake
  - Surface area
  - Volume
  - Shoreline length
  - Boarding states/provinces
  - Major cities

Great Lakes Research Project

LAKE



major cities:

bordering states/provinces:

special facts

shoreline length:

retention time:

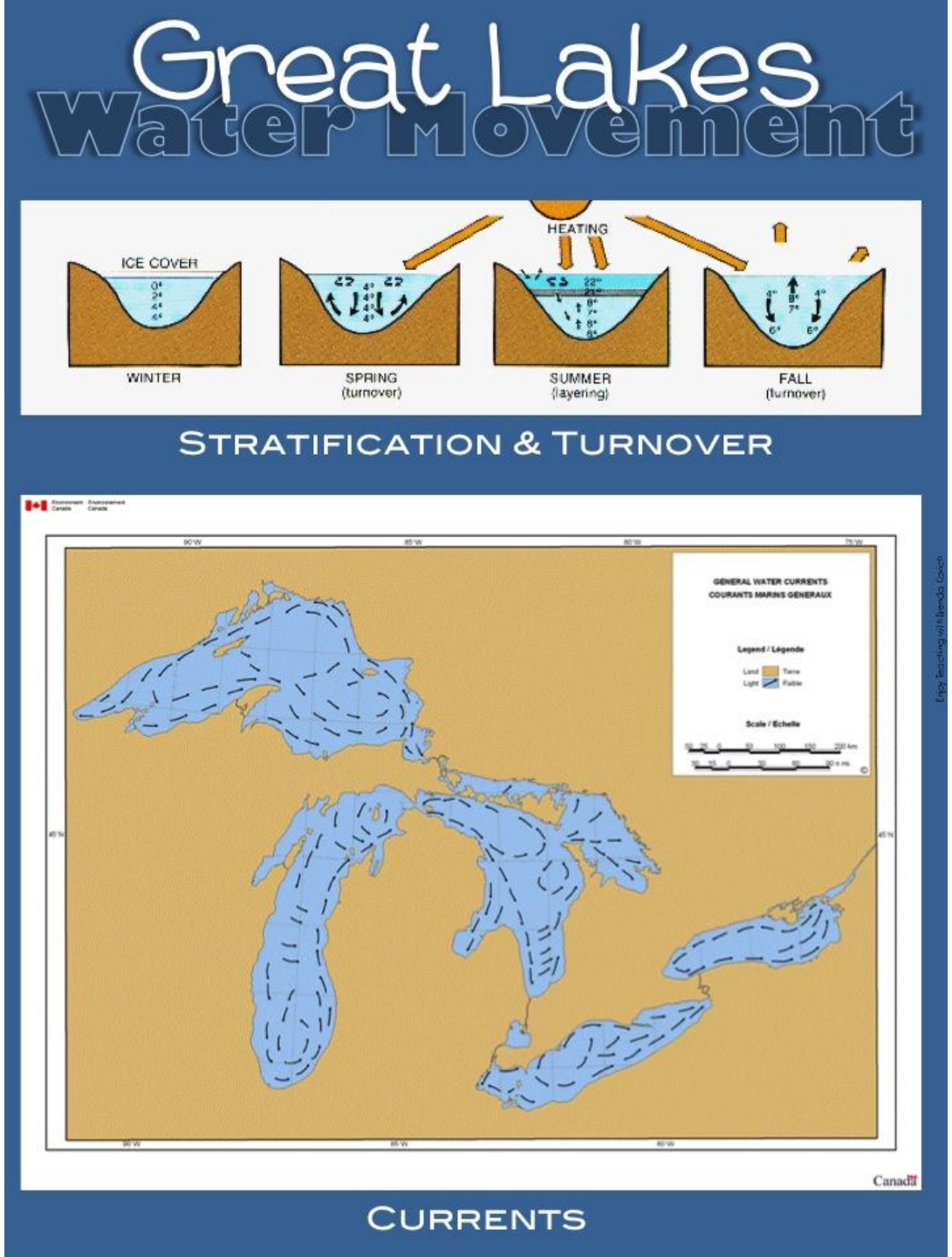
population around lake:

maximum depth:

average depth:

surface area:

volume:



GREAT LAKES WATER MOVEMENT

- The Great Lakes are huge, but water in them doesn't move like an ocean.
- They experience no tides.
- Like other lakes, stratification occurs in winter and summer, and the water turns over in spring and fall.
- Water flows from Lake Superior in the northwest to Lake Michigan and Lake Huron, through Lake St. Clair to Lake Erie, over the Niagara Falls to Lake Ontario, and down the St. Lawrence River into the Atlantic Ocean.

REFERENCES

- Selected Thematic Maps: http://www.nrcan.gc.ca/earth-sciences/geography/atlas-canada/selected-thematic-maps/16838#energy
- Maps: www.nrcan.gc.ca/earth-sciences/geography/atlas-canada/reference-maps/16846
- Topographic Map of BC: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/raster/atlas_6_ed/reference/bilingual/bc_relief.jpg
- Topographic Map of Canada: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/raster/atlas_6_ed/reference/bilingual/can_relief.jpg
- Drainage Basins: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/raster/atlas_6_ed/reference/eng/drainbasins.jpg
- Great Lakes Basin: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/raster/atlas_6_ed/reference/eng/great_lks_eng.jpg
- Great Lakes Research Activity: http://enjoy-teaching.com/wp-content/uploads/2016/07/Great-Lakes-Facts.jpg
- Forest Regions of Canada: http://cwc.ca/wp-content/uploads/visuallygraded-forest_map-big.gif