

# Climate and Weather

SOL WG.2a

# Climate

- ◉ Climate is the condition of the atmosphere over a long period of time.

# Think!

- What is the difference between a desert and a tropical rainforest?
- What is the difference between Antarctica and a desert?

If you said temperature and rainfall (precipitation) you are right!

# Climate

- ◉ Three characteristics of climate are:
  - A. Temperature
  - B. Precipitation
  - C. Seasons



# Think!

- ◉ Why do some places get more or less rain?
- ◉ Why are some places hot and some places cold?
- ◉ Why do some places have seasons that are equal in length and some places don't?

# Climate

- ◉ Four factors or elements that affect climate are:
  - A. Latitude
  - B. Wind Currents
  - C. Proximity to Water
  - D. Elevation

# Wind Currents

- ◉ Wind and ocean currents distribute the sun's heat through convection, the transfer of heat in the atmosphere through upward motion of the air.



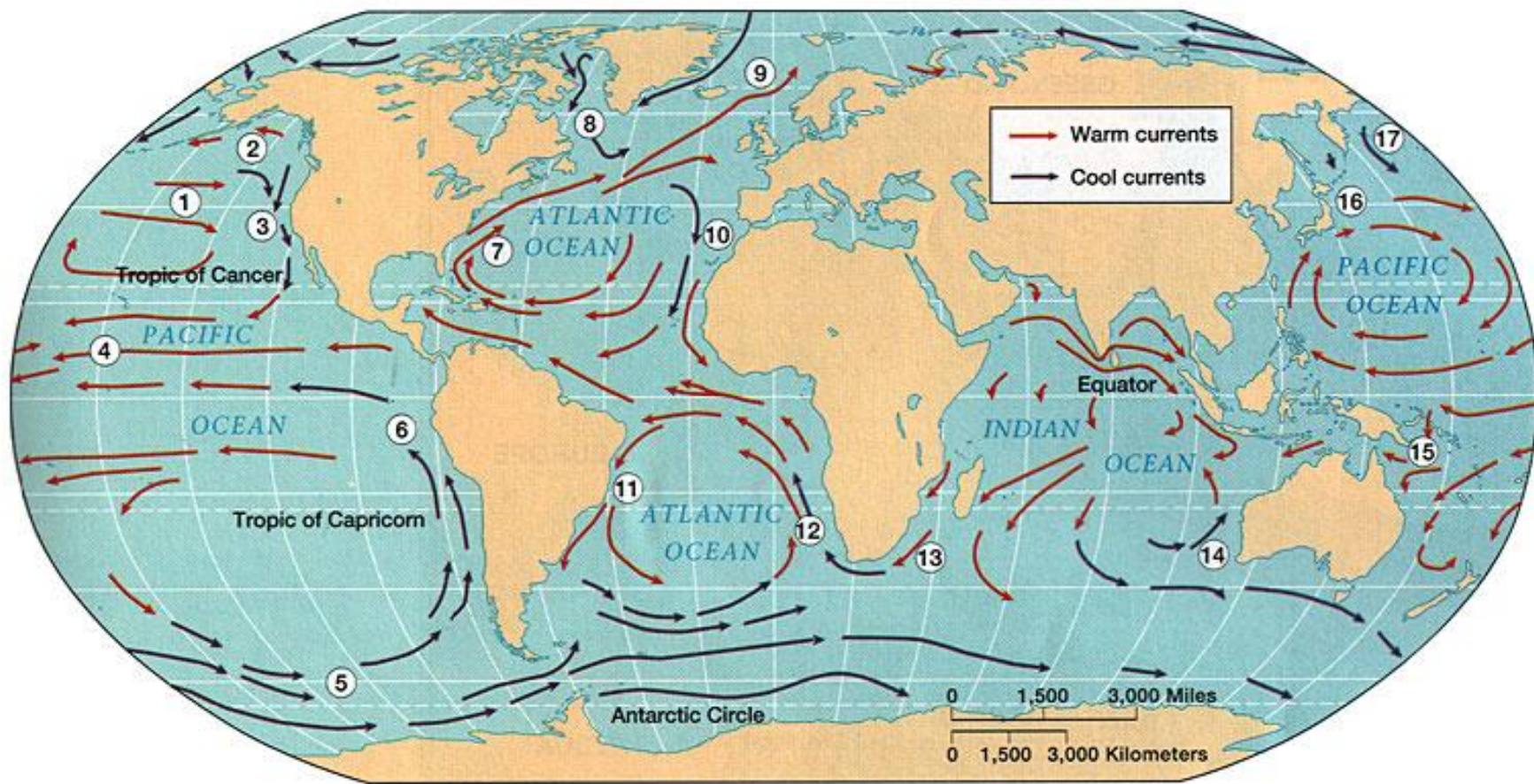
# Proximity to Water

- Areas near the ocean have a milder winter and a cooler summer.
- Ocean currents are like rivers in the ocean. Warm water flows away from the equator and cold water flows toward the equator.



# Proximity to Water

- ◉ Some important ocean currents are:
  - A. The North Atlantic Drift - This ocean current warms Western Europe.
  - B. The East Australian Current





# Elevation

- ◉ Elevation influences temperature. As you go up in elevation the temperature becomes colder because the atmosphere is thinner. Areas with very high elevations can have vegetation similar to the arctic.

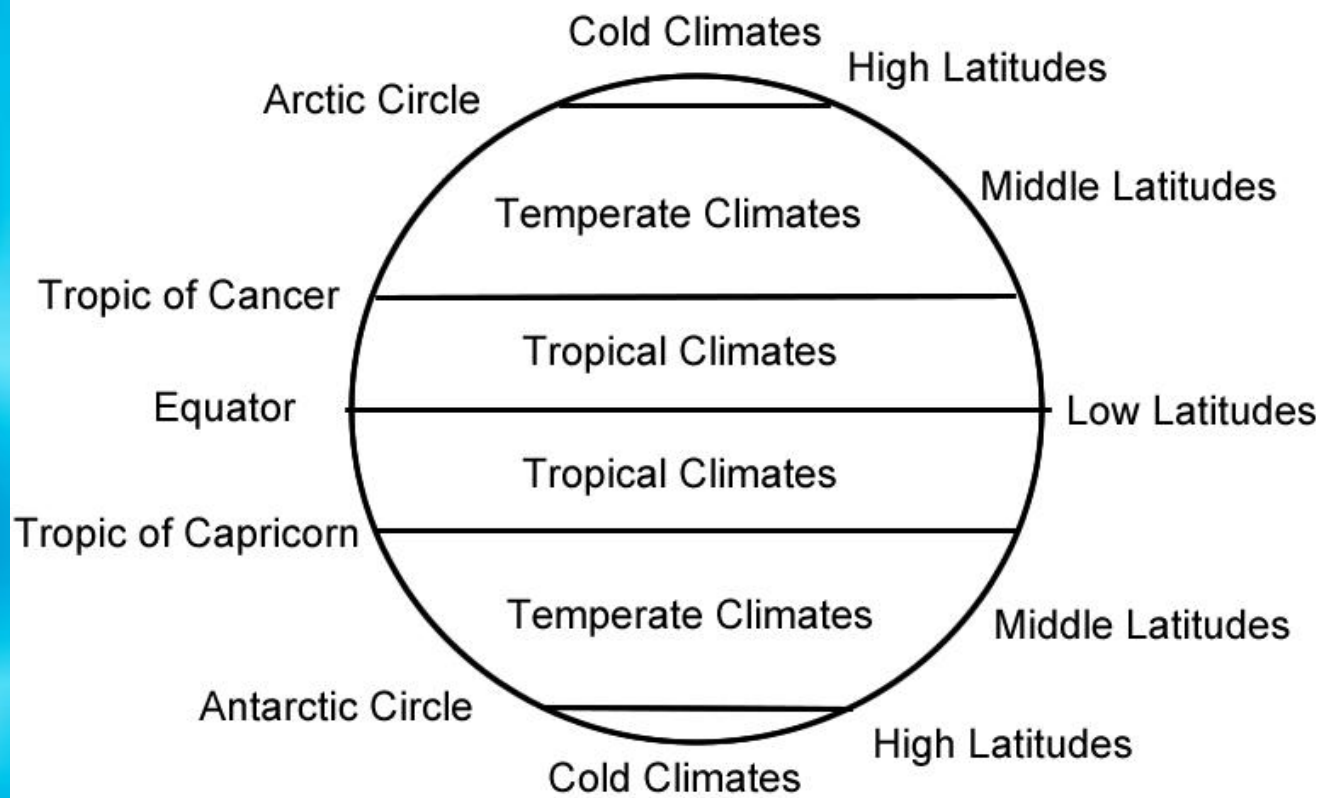


# Climate Zones

- ◉ Climate zones are classified by temperature and precipitation.

# Climate Zones

- Low Latitudes - Tropical Wet and Tropical Wet and Dry.
- Middle Latitudes - Mediterranean, Humid Subtropical, Humid Continental, Marine West Coast.
- High Latitudes - Subarctic, Tundra, Icecap
- Varies - Semiarid, Arid, Highland





# Deserts

- Deserts are based on precipitation. There are hot and cold deserts. Some hot deserts are: The Sahara, The Namib, The Atacama, and The Gobi.

# Tropical Grasslands

- ◉ Savanna - Africa
- ◉ Llanos - Colombia and Venezuela
- ◉ Cerrados - Brazil

# Temperate Grasslands

- ◉ Prairie - The United States and Canada
- ◉ Pampas - Argentina
- ◉ Steppe - Central Asia





Yurts, portable houses, on the Mongolian steppe.

# Cold Grasslands

- Tundra - The Tundra is a flat treeless plain located in the far north on the coast of Alaska, Canada, and Russia. The Tundra has short grasses, a few shrubs, mosses, and some flowers. Underneath the tundra there is **permafrost**, permanently frozen subsoil.



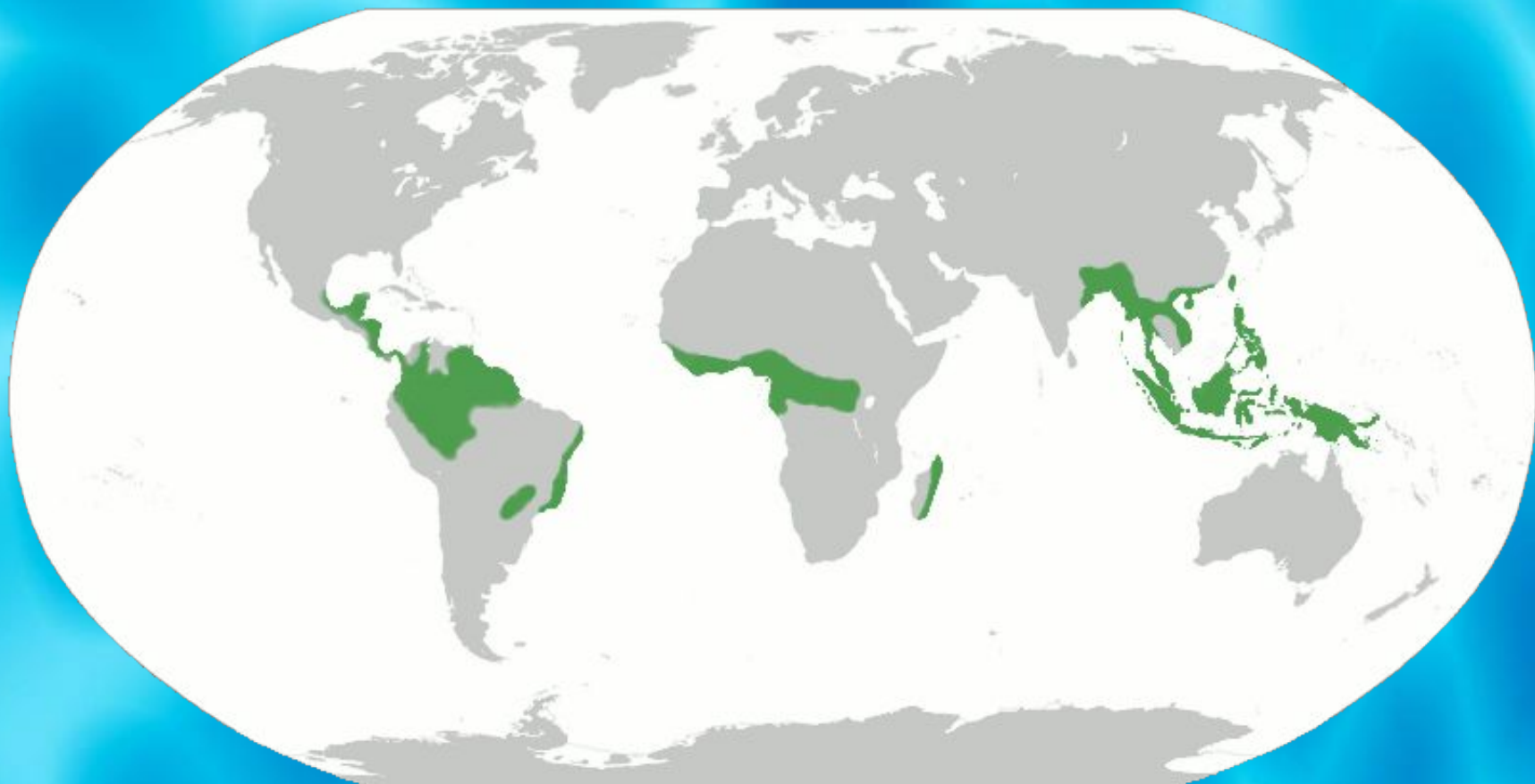


# Forests

- ◉ Forests near the equator have more broadleaf trees and the leaves are larger because the area receives more sunlight.
- ◉ Forests in the high latitudes have more coniferous trees because they grow better with less sunlight.

# Rainforests

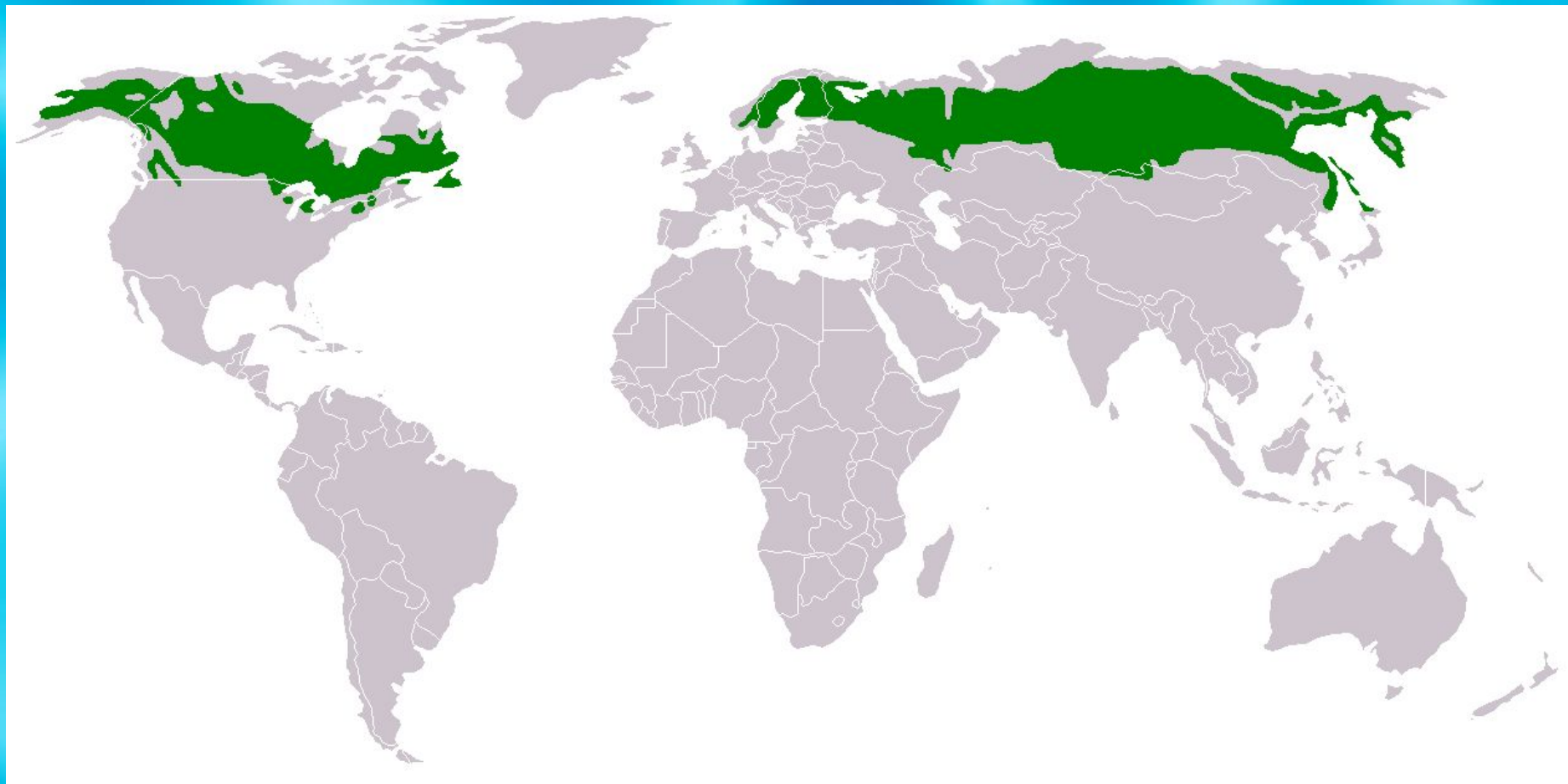
- ◉ Rainforests are found in tropical wet climate zones in the low latitudes. What countries do you think have rainforests?
  - A. Brazil - Amazon Rainforest
  - B. Congo
  - C. Indonesia
  - D. Most of Central America





# Taiga

- The Taiga is a large coniferous forest that covers most of Siberia.



# Middle Latitude Forests

- ◉ Middle latitude forests have a mix of coniferous trees and deciduous trees. Deciduous trees are broadleaf trees that lose their leaves in the winter time.