

## Climate

- 1) Climate-the pattern of weather conditions that occur in a certain area over a long period
  - Usually described as average temperature and precipitation
- 2) There are 3 main climate regions:
  - Polar-very cold and dry
  - Temperate- mild and has big differences between seasonal weather patterns
  - Tropical- warm throughout the year
  - The main factor that determines the kind of climate is where on earth the place is located
- 3) Differences in heating patterns affect weather: areas closest to equator get the most energy from the sun
  - Equator- an imaginary line around the middle of the planet and divides the Earth into North Pole and South Pole
- 4) Latitude- measure of how far north or south of the equator a place is
  - Written in degrees north or south

## The Ocean and Climate

- Winter- *ocean is warmer* than land
- Summer- *ocean is cooler* than land

## Land Features and Climates

- Elevation- the measure of how high above the ground something is
  - Sea level: elevation is 0
  - The higher you go, the colder the temp.
  - As wind moves toward a mountain, the air slows and moves upward and over the mountain
  - The side of a mountain rain reaches first will get the most rain

## The Greenhouse Effect

- Greenhouse effect- describes how the atmosphere traps energy from sunlight and keeps Earth warm, similar to a garden greenhouse
- Greenhouse gasses- help trap some of the energy in the atmosphere
  - The rest is absorbed by the ground or water on the Earth
- Climate change- a change in *temperature, precipitation, or other weather patterns* over a long time
  - Due to natural causes-volcanoes
- Humans can also change climate:
  - We burn fuels for heat, transportation, or electricity which produces carbon dioxide (a greenhouse gas)
  - Earth is getting much warmer

## World Climates

- Classify- to make groups of
  - Scientists use precipitation and temperature to classify climates
- Dry Climates
  - Places that get little to no rain or snow (example: desert)
  - Arid- very dry
  - Plants store water for long periods of time
  - Antarctica is an example of a cold desert
- Wet Climates
  - Classified by temp.
  - Example: Tropical Climates
    - Plants grow quickly

## World Climate Zones

- 5 main types:
  - 1. Tropical- hot and humid all year
  - 2. Subtropical- summers are hot, winters are mild to cool
  - 3. Temperate- summers are very hot to warm, winters are cold (This is the climate we live in)

- 4. Subpolar- summers are short with cold or mild temps.  
Winters are long and very cold
- 5. Polar- temps are cool to very cold all year