
6.3 CLIMATES AND BIOMES

P. 141-146

1) CLIMATE

A. Factors that affect climate

- **Climate is the type of weather pattern that a place has, on average, over a long period of time.**
- **Climate describes the average temperature and amount of precipitation of an area.**
- **Climate depends on these factors: latitude, precipitation, elevation, topography, and distance to large bodies of water.**

2) CHARACTERISTICS OF BIOMES

A. What is a biome?

- a major climate region with particular plants and animals. Earth has 6 major biomes.
- These major biomes differ in their latitude, weather and humidity, amount of sunlight, & topography.
- Each biome has a set of plants and animals that is known to make up that biome.

B. Latitude, humidity & biodiversity

- **relative humidity – a measure of how much water vapor an air mass contains.**
- **biodiversity – the measure of the variety and number of organisms that live in an area.**
- **Humidity and the biodiversity of plants and animals increases as you go from poles to equator.**

C. Sunlight at the equator vs. high latitudes.

- **Earth is hottest near the equator because it gets the most direct sunlight.**
- **Earth is coldest at the poles because it does not receive much direct sunlight.**
- **This is due to the fact that light travels in a straight parallel line.**

D. Latitude and solar radiation

- **at the equator sunlight is direct and intense.**
- **Generally as latitude increases (example = 30 degrees to 60 degrees) temperature decreases because you are decreasing your amount of direct sunlight.**
- **This is due to the tilt of the earth towards or away from the sun at different periods throughout the year.**

3) OTHER FACTORS BESIDES LATITUDE THAT CAN AFFECT CLIMATE

A. Temperatures in inland regions

- Two cities at the same latitude with very different temperatures (why??)

B. Water helps regulate temperature

- Because of its high specific heat water warms up and cools down slowly.
- In contrast land warms up and cools down quickly because of its low specific heat.
- Therefore regions near water do not get the extreme temperature differences that inland areas get.

C. Elevation

- Elevation is the height or distance of an object or area from sea level.
- Temperature decreases as elevation increases.

4) TYPES OF BIOMES

A. Deserts

- averages less than 35 centimeters of rainfall per year.
- most are located near 30° N and 30° S.
- have a large variation of daily high and low temperatures

B. Grasslands

- are located on every continent except Antarctica.
- there are 2 kinds of grasslands: savannas and temperate grasslands.
- Savannas = lots of rain but not enough to create a rainforest.
- Temperate grassland = receive most of their precipitation in the spring and summer.

C. Temperate Deciduous Forest

- found at the middle latitudes where there are 4 distinct seasons.
- average yearly rainfall is 75 to 150 cm to support the growth of deciduous trees like the maple tree.
- deciduous means these trees lose their leaves.

D. Rainforests

- near the equator between 23.5° N & 23.5° S.
- average rainfall is at least 200 cm.
- temperatures stay pretty constant year round and range between 68°f and 77°f.

E. Taiga

- this is the largest biome
- it is found between 50°N and 70°N in North America, Europe, & Asia.
- the average temperature in this biome is below freezing (32°f) for 6 months of the year.

F. Tundra

- the coldest biome on earth.
- Tundra is the Finnish word for “treeless land”

5) PLANTS AND ANIMALS IN BIOMES

A. Communities

- a biome is characterized by the plants and animals in it.
- plants and animals in a community interact with each other to survive in a shared environment.

B. Adaptations

- animals learn adapt to their surroundings.

C. Ecosystems

- within a biome there are ecosystems.
- an ecosystem is made up of the plants and animals that live there but also non living things such as soil, air, water, sunlight, and nutrients.
- living and non-living things in ecosystems work together.