Chapter 3 Study Guide

1. Weather
   1. Describe – short term changes in the air for a given place and time, hour to hour change of precipitation or temperature. Shaped by wind, sun, location, water, mountains.
2. Climate
   1. Describe – a region’s weather over a long period of time. Expected weather based on data or experience. Average weather conditions. Shaped by wind, water, mountains, sun, location.
3. Climate Zones (temperature, native plant life, precipitation)
   1. Temperate climates – mild temperatures, located mid-way between the equator and the poles, has 4 seasons, “moderate temperatures”, moderate amount of precipitation, (Humid Continental, Mediterranean, Humid Subtropical, Marine West Coast)
   2. Mediterranean climate – temperate, mild, mid-latitudes, mild/wet winters, sunny/warm summers, avg. rain 15-20 inches
   3. Tundra – coast and high latitudes, cold all year around, little precipitation, permafrost present
   4. Highland – mountain region, temperature and precipitation depend where you are located according to latitude (higher you go, the colder it is) , several climates in one place
   5. Steppe – semi-dry grasslands or prairies, low precipitation, hot summers, cooler winters, short grasses, boards deserts
   6. Tropical Savanna – hot summers, cooler winters, dry seasons followed with short periods of rain, not enough precipitation to support dense forests, tall grasses
   7. Subarctic – higher latitudes, long cold winters, short warm summers, little precipitation, evergreen forests, not in artic region
      1. Permafrost – permanently frozen layers of soil
   8. Desert – up to 10 inches each year, high daytime temp, cacti, mainly around 30’ latitudes, found in rain shadows, Earth’s hottest and driest climate, cool at night
   9. Tropical rain forest – lots of rain! Many species of plants and animals here than in the world, humid tropical climates here, warm with lots of rain, monsoons create wet seasons (Amazon Rain Forest in South America), humid
4. Natural Resources – (Define) anything in nature that people use and value.
   1. Renewable – resources Earth replaces naturally (water, soil, plants, forest, animals)
      1. Solar Energy – heat from the sun or light rays / solar panels / heats water in homes, turns into electricity
      2. Wind Energy – powers wind turbines which are used for electricity
      3. Water Energy – hydroelectric power – using water to make electricity, damming rivers, disrupts wildlife while creating the lake, lessens the use of fossil fuels, doesn’t pollute. Main alternative for nonrenewable.
      4. Geothermal Energy – heat from within the Earth, use steam and hot water to create electricity
   2. Nonrenewable - resources that can’t be replaced natural
      1. fossil fuels – define – resources that come from remnants of ancient plants and animals
      2. Coal – used for heat, really bad for environment, pollution, harms land, very plentiful
      3. Oil/Petroleum very valuable, can pollute air and land, gas for cars, airplanes, diesel fuel, makes everyday items – shoes, toys, make-up, plastic and rubber (tires)
      4. Natural Gas – cleanest burning fuel, used to heat and cook in homes
      5. Nuclear – splitting of atoms using uranium to create electricity. Causes horrible problems
5. Latitude – distance from the equator
   1. Highland Climate – “mountain climate”, highland can be anywhere, temperature changes
6. Winds – warm rises, cold air moves in = creating wind

Prevailing winds – winds that blow in the same direction over large areas of Earth

* 1. Earth’s rotation causes – wind to circulate (prevailing winds) to curve east or west NOT north or south
  2. Front – where 2 air masses of different temperatures mix/collide

1. Ocean currents – large streams of surface water
   1. Warm water – can raise the temperature along the coast, flows away from the equator towards the poles
   2. Cold water – lower temperatures near the coastline, flows away from the poles towards the equator
   3. Gulf Stream – warm current that flows North along the US East Coast across the Atlantic to the North Atlantic
2. Where do we find these?
   1. Tornadoes Kansas or at a front
   2. Rain forests on or near the equator
   3. Deserts near 30’ North or near 30’ South latitude
   4. Monsoons winds that shift with the season – wet or dry periods
   5. Permafrost permanently frozen layers of soil, found in the tundra
3. Ecosystem
   1. Define – group of plants and animals that depend on each other for survival and their environment
   2. Extinct - (dinosaurs) plant and animal species that has DIED out
4. Environment -
   1. Define - surroundings/ plants and animals must live where they are suited to their environment
   2. Changes in an environment – habitats are destroyed, ecosystem is destroyed by land clearing, homes built, fishing
5. Habitat place where a plant or animal lives
6. Soil – to support life soil needs minerals and humus. Rich dirt with plant decay.
   1. Humus - decayed remains of animals and plants
   2. Desertification – spread of desert like conditions. From erosion and weathering