This covers pages 460 through 505

1. What is a meteorologist?

They are scientists who study the causes of weather and try to predict it.

1. What are isobars?

They are lines joining places on a map that have the same air pressure.

1. What are isotherms?

They are lines joining places that have the same temperature.

1. What do standard symbols on a weather map show?

They show fronts, areas of high and low pressure, types of precipitation, and temperatures.

1. Do the interpreting skills activity on page 462.
2. What is the temperature at this station?

30 degrees F

1. What is the wind speed?

26 to 31 mph

1. Which way is the wind blowing?

From the south to the north

1. What is the air pressure?

1016 mb

1. What percent of the sky is covered by clouds?

70-80 %

1. What type of precipitation, if any, is falling?

snow

1. What is the symbol for a cold front?

Three triangles in a row

1. What are the main factors that influence temperature?

They are latitude, altitude, distance from large bodies of water and ocean currents.

1. Define the three temperature zones.

Polar zone extends from about 66.5 degrees to 90 degrees north and south latitude.

Temperate zone extends from about 23.5 degrees to 66.5 degrees north and south latitude.

Tropical zone extends from 0 degrees to 23.5 degrees north and south latitude.

1. Why would altitude be more important than latitude as a climate factor?

In the troposphere the temperature decreases as altitude increases. This causes the top of a tall mountain to be cooler than the valley.

1. How do large bodies of water impact the climate of a region?

Water heats up more slowly than the land allowing it to help moderate the temperature of the land near it.

1. How do ocean currents impact the climate of a region?

The currents either warm up or cool off these regions depending upon the temperature of the water in the ocean current.

1. What are the main factors that affect precipitation?

They are prevailing winds, the presence of mountains and seasonal winds.

1. How does prevailing winds impact precipitation?

These winds move the huge air masses creating fronts that allow for the precipitation to fall to earth. This controls where the precipitation will fail.

1. Explain the difference between the windward side and leeward side of a mountain.

The windward side of the mountain is where the majority of the precipitation falls because most of the water vapor comes out before the air can get over the top of the mountains to the leeward side. The leeward side is normally dry.

1. What causes a monsoon?

The change of temperature between summer and winter changes where the low pressure is and causes the wind to change direction. This gives us rain and wind toward the land in the summer and away from the land in the winter.

1. How do scientists classify climates?

Climates are classified according to temperature and precipitation.

1. Explain the six main climate regions.
2. Tropical rainy has a temperature that is always 18 degrees Celsius or higher. It consists of tropical wet and tropical wet and dry.
3. Dry occurs wherever potential evaporation is greater than precipitation. \*\*It can be hot or cold.
4. Temperate Marine climates are humid and have mild winters. They all have a moderating ocean influence.
5. Temperate Continental Climates are only found on continents in the Northern Hemisphere. There is very little ocean influence on these climates. They are also known for temperature extremes.
6. Polar climates are the coldest climate region. This includes the ice caps and the tundra. Most are relatively dry.
7. Highlands are colder than the regions around them because temperature drops as altitude increases.
8. What are two ways scientists study ancient climates?

They use pollen and tree rings.

1. What are some possible causes of climate change?

These include variations in the position of the Earth relative to the sun, changes in the sun’s energy output, major volcanic eruptions and the movement of continents.

1. Explain El Nino and La Nina.

El Nino occurs every two to seven years over the western Pacific. It is a warm water weather event where the trade winds reverse direction and send warm surface water in the other direction. This can bring heavy rain or droughts.

La Nina is the opposite of El Nino. It sends colder surface water to the eastern Pacific causing greater precipitation to the Pacific Northwest and part of the United States. It also causes greater hurricane activity in the western Atlantic.

1. How can they impact climate?

They can causes flooding and droughts in areas where they normally don’t happen. Basically, they affect the amount of precipitation and temperature in several regions. This is how climate is measured.

1. What causes global warming?

Global warming is a gradual increase in the temperature of Earth’s atmosphere.

1. What are some of the greenhouse gases and why are they important?

Carbon dioxide, water vapor and methane are important greenhouse gases. As their levels increase, the temperature in the atmosphere increases. These gases trap heat and do not allow it to escape back into space.

1. What caused ozone depletion?

Chlorofluorocarbons or CFCs last for decades and rise up through the atmosphere turning into chlorine atoms that break down ozone.

1. What are the effects of ozone depletion?

An increase in UV rays can cause cancer and eye diseases.