Notes 1.1 and 1.2

1.1 Earth's atmosphere supports life

The _____ is the whole layer of air that surrounds the earth. The atmosphere _____ _____ and protects it. The gases of the atmosphere keep earth _____ and transport _____ to different regions of the planet. Without the atmosphere, the _____ would not exist, life would not survive, and the planet would be a cold, lifeless _____.

Characteristics of the atmosphere:

Altitude: Is the _____ _____ _____ _____. The higher you go above sea level, the _____ the air gets.

Density: Is the _____ of the thickness or thinness of _____. Density is the amount of _____ in a given volume of a substance. If two objects take up the same amount of space, then the object with more mass has a greater _____ than the one with less mass. For example, a bowling ball has a higher density than a soccer ball.

Water Cycle:

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Carbon Cycle:

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Nitrogen Cycle:

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Sudden changes modify the atmosphere

List three events that change the atmosphere:

1.
2.
3.

How do these three events change the atmosphere?

1.2 The Sun supplies the atmosphere's energy

Two main things happen to sunlight that reaches the Earth. Some is _____ and some is _____. The light that you can see is one type of radiation. _____ is energy that travels across distances in the form of certain types of _____. Visible light and other types of radiation can be absorbed or reflected.

Draw how radiation heats the earth below.

70 % of solar radiation that reaches the Earth is absorbed. Most of this energy is absorbed by _____, land forms, and living things. Think about

walking on hot sand. The sand has absorbed the solar energy from the sun. Your body may be comfortably warm, except for the burning-hot soles of your feet. The sand is much warmer than the air because sand absorbs solar energy all day and stores it in one place. The air also absorbs solar energy but moves it around and spreads it out.

The atmosphere moves energy.
Radiation, conduction and convection are processes that move energy from place to place.
Radiation:

Conduction:

Convection

Back to the sand...First, _____ from the sun warms the sand. Second, the hot sand _____ energy to the air. Third, the warm air carries energy upward in _____.

This constant motion caused by radiation from the sun is what causes our atmosphere to _____ _____. Differences in density produce the motion of air convection. Warm air has more energy, so the molecules move _____ than they do in cool air. The motion make the molecules collide more, so they stay farther apart. Cool, dense air is _____, so it tend to sink and push warm, less dense air _____.

The atmosphere has temperature layers.

Troposphere:

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Stratosphere:

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Mesosphere:

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Thermosphere:

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