Chapter 1 Study Guide

Earth’s Changing Atmosphere

*There will be 30 to 40 multiple-choice questions, and will cover all pages in your new notebook.*

Vocabulary (define the following terms):

Atmosphere – the whole layer of air that surrounds Earth and supports life

Altitude- Distance above sea level

Density – The amount of mass in a given volume of substance. This decreases as attitude increase

Cycle – processes that repeat over and over

Radiation – Energy that moves across distances in the form of electromagnetic waves

Conduction- The transfer of heat energy from one substance to another by direct contact

Convection – the transfer of energy from place to place by the motion of a gas or liquid

Ozone- A protective layer of gas that is made of 3 atoms of oxygen

Air Pollution – Harmful materials that are added to the air.

Fossil Fuel – Formed from the remains of prehistoric animal and plants and used by cars, power plants and factories.

Particulates – Tiny particles or droplets that are mixed in the air with the air.

Ultraviolet Radiation- Waves that have more energy than the light you can see.

Infrared Radiation- Waves that have less energy than visible light.

Greenhouse Gas- The gases that absorb and give off infrared radiation

Greenhouse Effect – The process that keeps energy in Earth’s system by gas absorbing and emitting infrared radiation.

What are the two most common gases in our atmosphere? Nitrogen and Oxygen

What happens with density as altitude increases? Density decreases

What are the three main fossil fuels? coal, gas and oil

What can we do to reduce greenhouse gases? Living in houses that use less energy

What events can cause changes in our atmosphere? An eruption of a volcano and Forest Fires

Give examples of greenhouse gases. Carbon dioxide, methane, Nitrous Oxide, and water vapor

In what ways are pollutants harmful? 1. Add harmful gases to the air 2. harm humans, plants, and other living things 3. Decrease the amount of ozone in the atnmosphere.

Name some examples of air pollution. Smog, pollen and carbon dioxide

Give examples of what can contribute to the greenhouse effect – Driving everywhere, deforestation and driving cars that burn fossil fuels.

How does infrared radiation act as a blanket in our troposphere? Traps the heat and sends it back down towards Earth’s surface.

Explain how our Earth/atmosphere are heated using radiation, conduction, and convection. The sun heats the ground through radiation. The air touches the ground and heats up through conduction, and the warm air rises and cold air sinks – Convection.

What are the four layers of the atmosphere what happens to temperature as altitude increases in each one? What also occurs in each layer? Troposphere – weather, life, most dense, thinnest layer and temperature decreases with altitude. Stratosphere – ozone located here, weather balloons, jets fly at the bottom, and temperature increase with altitude. Mesosphere – meteors burn up here, coldest layer, temperatures decrease with altitude. Thermosphere – Hottest layer, space shuttles orbit here, temperatures increase with altitude and aurora borealis. Exosphere – least dense layer, considered outer space, satellites orbit here.

Where is ozone (what layer(s) of the atmosphere) and what does it do in each layer?

Ozone is a protectant in the stratosphere and a pollutant in the troposphere

Name three examples of CFC’s and explain why they are bad for our environment.

Styrofoam, cooling systems, and aerosol cans. CFC’s break down in the stratosphere and release chlorine, destroying ozone

Give three examples about why our planet is getting warmer. Chemicals like CFC’s released into our atmosphere disturbs the ozone/oxygen cycle Greenhouse gases are being emitted at a much faster rate than before the 1700’s. Loss of trees and plant life means more carbon dioxide stays in our atmosphere.