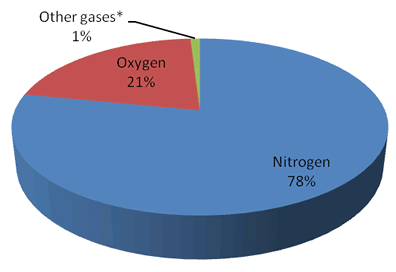
Chapter 1 Notes

1.1

* Earth’s atmosphere supports life
  + The atmosphere makes life on Earth possible
    - **Atmosphere** – a whole layer of air that surrounds Earth
      * Keep Earth warm and transports energy
  + Characteristics of the Atmosphere
    - **Altitude** – distance above sea level
      * As altitude increases, air becomes thinner (Less Dense)
    - **Density** – the amount of mass in a given volume
* Gases of the Atmosphere



* Natural processes modify the atmosphere
  + The Carbon Cycle
  + The Nitrogen Cycle
  + The Water Cycle

1.2

* The sun supplies the atmosphere’s energy
  + Energy from the sun heats the atmosphere
    - **Radiation** – energy that travels across distances in the form of certain types of waves
  + Atmosphere moves energy in 3 ways
    - **Radiation**
    - **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 gas or liquid
  + The atmosphere has temperature layers
    - **Troposphere**
    - **Stratosphere**
    - **Mesosphere**
    - **Thermosphere**

1.3

* Gases in the atmosphere absorb radiation
  + Gases can both absorb and give off radiation
    - **Ultraviolet radiation** – (UV) these waves have more energy than the light you can see. Can cause sunburn
    - **Infrared radiation** – these waves have less energy than visible light, causes materials to warm
  + The greenhouse effect keeps Earth warm
    - **Greenhouse effect** – is a process where gases in the atmosphere absorb and emit infrared radiation, keeping energy in Earth’s system
    - **Greenhouse gases** – carbon dioxide, methane, water vapor, nitrous oxide, and other gases that absorb and give off infrared radiation

1.4

* Human activities affect the atmosphere
  + Human activity can cause air pollution
    - **Air pollution** – smoke and other harmful materials added to the air
  + Types of pollution
    - **Particulates** – tiny particles or droplets that are mixed in with air
    - **Fossil fuels** – fuels formed from the remains of prehistoric animals and plants (gasoline, coal, oil)
    - **Smog** – combination of smoke and fog
  + Effects of pollution
    - Health problems
    - Environmental damage
  + Controlling pollution
    - Make car exhaust cleaner
    - Reduce number of cars on the road
    - Limit amount of pollution from factories and power plants
* Human activities are increasing greenhouse gases
* Human activities produce chemicals that destroy the ozone layer