Transfer of Heat

Heat

* A form of energy associated with the motion of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or molecules.
* Transferred from higher \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ objects to objects at a lower temperature.

Three ways heat can be transferred

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conduction

* Transfer of heat through direct \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Occurs anytime objects at different temperatures are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ each other.
* As long as the objects are in contact, transfer of heat will continue until the temperature of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the same.

Example:

Conductors and Insulators

* Some materials conduct \_\_\_\_\_\_\_\_\_\_\_\_ better than others.
* Materials that transfer heat well are called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* Metals are usually good conductors.
* Wood, paper and plastic are not.
* Materials that stop the transfer of heat are called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (styrofoam, wool, fiberglass).

Convection

* The transfer of energy in a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or gas.
* When part of a gas or liquid is heated, the particles it is made up of move\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and spread out more.
* The moving particles bump into other particles, causing them to move faster and spread out more.

Radiaiton

* Energy transferred in the form of rays or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or particles.
* We will concentrate on the type of radiation that travels as \_\_\_\_\_\_\_\_\_\_\_\_\_\_ waves.

Electromagnetic Waves

* Include visible light,\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and infrared light
* Can travel through space.
* The \_\_\_\_\_\_\_\_\_\_\_ is our major source.

More About Convection

* Convection is warmer at the earth’s \_\_\_\_\_\_\_\_\_\_\_\_\_so air near the earth’s surface is heated by the earth.
* Warmer, less dense air rises.
* It is cooler higher up in the atmosphere, so the air becomes more \_\_\_\_\_\_\_\_\_\_\_\_\_ again and begins to fall.
* Sinking air moves under warmer air and it all starts over again.

Convection Currents in the Mantle

* There is a lot of heat within the earth.
* The surface of the earth is cooler than the lower mantle.
* Heat is transferred to the upper layers.
* Spots where the material conducts more heat become hotter and less dense, so they rise towards the surface.
* Denser material falls.