

Vocabulary: Heat Transfer by Conduction



Vocabulary

- Conduction – the transfer of heat through a material or from one object to another by direct contact.
 - Conduction occurs when energy is transferred from energetic molecules to less energetic neighboring molecules.
- Convection – the transfer of heat through the movement of matter.
 - In a *convection current*, a hot material rises while a cool material sinks. For example, heated air inside a hot-air balloon causes the balloon to rise.
- Insulate – to isolate or separate in order to prevent change.
 - If a material is well-insulated, very little *thermal energy* will be lost to or absorbed from the surrounding environment.
- Radiation – the transfer of energy through space or matter in the form of electromagnetic waves.
 - Different types of radiation are distinguished by the wavelength of the waves.
 - Types of radiation (from longest to shortest wavelength) include radio waves, microwaves, infrared, visible light, ultraviolet, X rays, and gamma rays.
 - Most hot objects radiate heat in the infrared portion of the electromagnetic spectrum.
- Thermal conductor – a material that readily allows heat to flow through.
 - Most metals are good thermal conductors.
- Thermal energy – energy in the form of heat.
 - The thermal energy of a substance is equal to the total kinetic energy of its atoms and/or molecules.
- Thermal insulator – a material that resists the flow of heat.
 - Nonmetals are usually good thermal insulators.