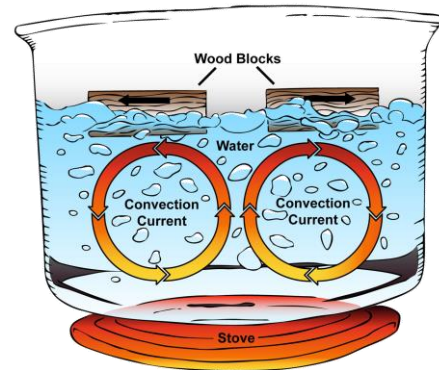
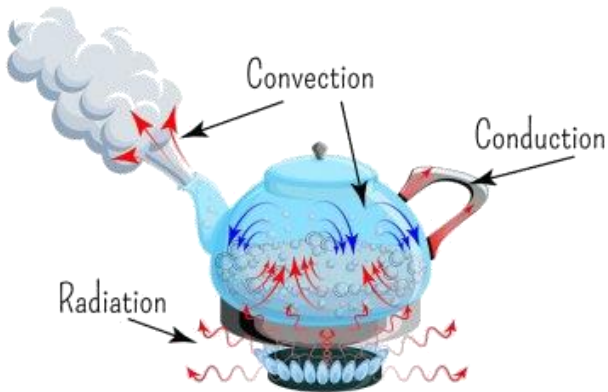


# Thermal Energy

## Section 2: Transferring Thermal Energy

### Heat transfer methods



Thermal energy is transferred in three ways: conduction, convection, and radiation. In **conduction**, the transfer of thermal energy occurs through the collision of particles in matter. Conduction is how heat travels through or between objects when they touch. Vibrating particles pass energy to nearby particles. Conduction occurs in solids, liquids, and gases. Metals are the best conductors of heat. In **convection**, the transfer of thermal energy in a fluid occurs through the movement of warmer and cooler fluids from place to place. The vibrating particles circle together in substances like liquids and gases. Convection occurs in fluids. The rising of warmer fluids and the sinking of cooler fluids forms a convection current. In **radiation**, the transfer of energy occurs from electromagnetic waves. The heat you feel from a fire is a type of radiant energy because it travels across space.

A material through which heat flows slowly is an **insulator**. Examples of materials that are insulators are wood, some plastics, fiberglass, and air. Building insulation is usually made of fiberglass that contains pockets of trapped air. The insulation is packed into the building's outer wall and attic where it reduces the flow of heat between the inside of the building and the outside environment. Insulation helps furnaces and air conditioners work more effectively, saving energy and money.

