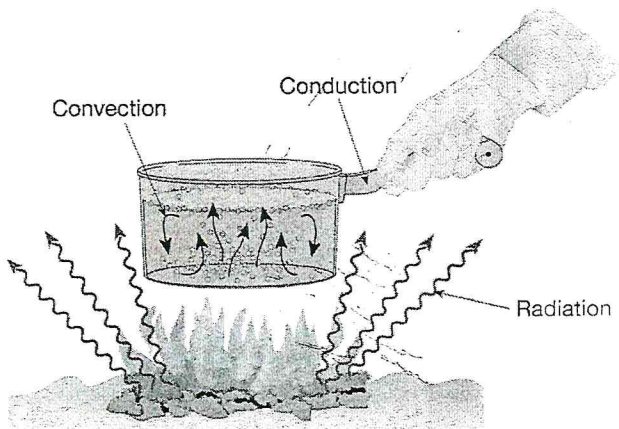


Definitions of Conduction, Convection, and Radiation



Conduction

- Heat travels along a substance from molecule to molecule (between two materials that touch each other)
- Good conductors (silver, copper, gold)
- Poor conductors (glass, paper, Styrofoam)

Examples

- water heating on an electric stove
- hot sand touching your feet
- touching a stove and being burned
- ice cooling down your hand
- boiling water by thrusting a red-hot piece of iron into it

Convection

- transfer of energy as it is carried through a liquid or gas
- heat transfer by a circulation of rising warm air (less dense) and sinking cooler air (denser).
- "Hot air rises" the more dense air sinks forcing the less dense air upward

Examples

- macaroni rising and falling in a pot of heated water
- heat rising from a chimney
- an old-fashioned radiator (creates a convection cell in a room by emitting warm air at the top and drawing in cool air at the bottom)

Radiation

- This carries energy from the hot object and causes it to cool down.
- the movement of heat in a wave-like motion through an empty space

Examples

- sunlight
- heat from toaster
- heat from a light bulb
- heat from a fire
- heat from anything else which is warmer than its surroundings.