

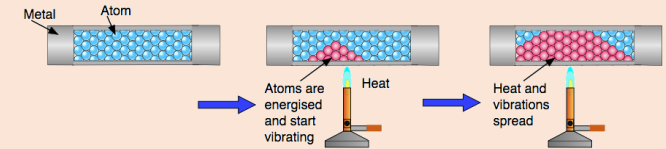
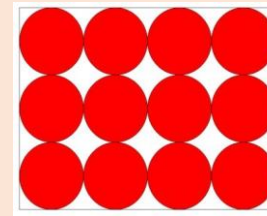
Physics: Heat Transfers

Key word	Definition
Conduction	How energy is transferred when particles collide with each other (Most often in solids)
Conductor	A material which transfers energy or electrical charge well
Insulator	A material which does not transfer energy or electrical charge well
Convection	The transfer of energy by the movement of liquids <u>or</u> gases
Convection current	The movement of heated liquids <u>or</u> gases
Radiation	The transfer of energy as a wave
Emit	To give out
Absorb	To take in
Reflect	Bounce off
Thermal Equilibrium	When 2 substances in contact with each other exchange no heat energy i.e. They are at the same temperature

Conduction:

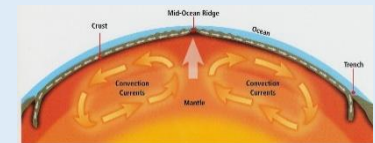
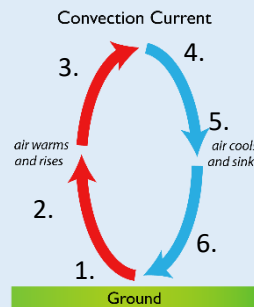
Solids are the best **conductors** because the particles are closest together. This means energy is transferred quickly when they vibrate.

Conductor	Insulator
Copper	Polystyrene
Iron	Rubber
Gold	Wood



Convection:

- 1) The particles at the bottom get hotter so start to move more
- 2) The particles begin to move apart so air becomes less dense
- 3) The less dense air rises (floats up)
- 4) It then begins to cool
- 5) The particles move less and get closer together
- 6) Air sinks
- 7) Cycle repeats

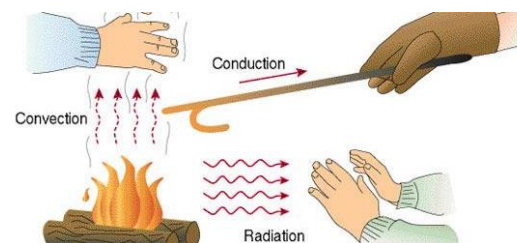
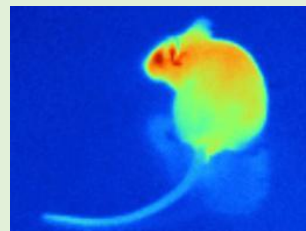
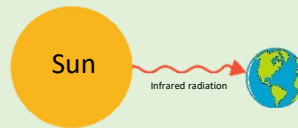


Radiation:

- You don't need particles to transfer energy by **radiation**.
- Infrared radiation is also known as 'heat waves'
- All objects **emit** radiation

The hotter the object the more infrared **radiation** it **emits**.

A thermal imaging camera **absorbs** **radiation** and turns it into an image!



"Heat is always transferred from a hot object to a cooler one"

