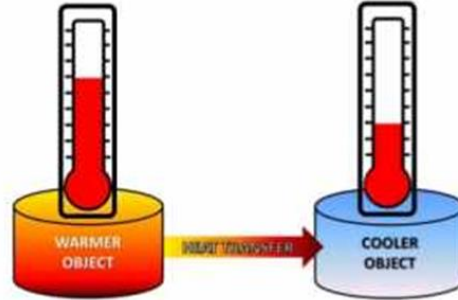


# Energy Transfers 2

Key words	Definitions
<b>Conduction</b>	Thermal energy passed through a solid. Energy passed from particle to particle
<b>Conductor</b>	A material that allows energy to pass easily through it
<b>Convection</b>	Thermal energy is passed through a fluid, liquid or gas. Warm particles are less dense and rise. Cool particles are more dense and fall
<b>Energy Efficiency</b>	Describes how much energy in a system is useful and how much is wasted
<b>Energy transfer</b>	The movement of energy from one type of store to another
<b>Radiation</b>	Thermal energy is passed as a wave of Infrared Radiation. No particles are needed.
<b>Useful energy</b>	The energy transferred in to the energy you want. E.g. light from a lightbulb

## Key diagram – Heat transfer

Heat transfer is the transfer of heat energy from one source to another.



The transfer of heat energy can occur in three primary ways: Conduction, Convection and Radiation



## Key knowledge

Thermal energy always flows from high to low (hot → cold)

Internal energy is the total amount of thermal energy an object has (Joules)  
The energy of every atom added

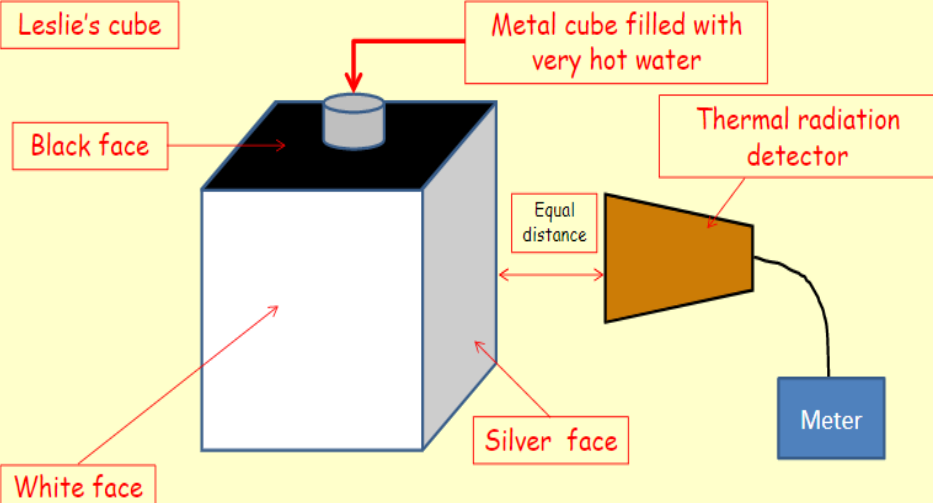
Temperature is the average energy of the atoms in an object (°C)

Air is a poor conductor of thermal energy

Dark colours are good emitters and poor absorbers of thermal energy

Light colours are poor emitters and poor absorbers of thermal energy

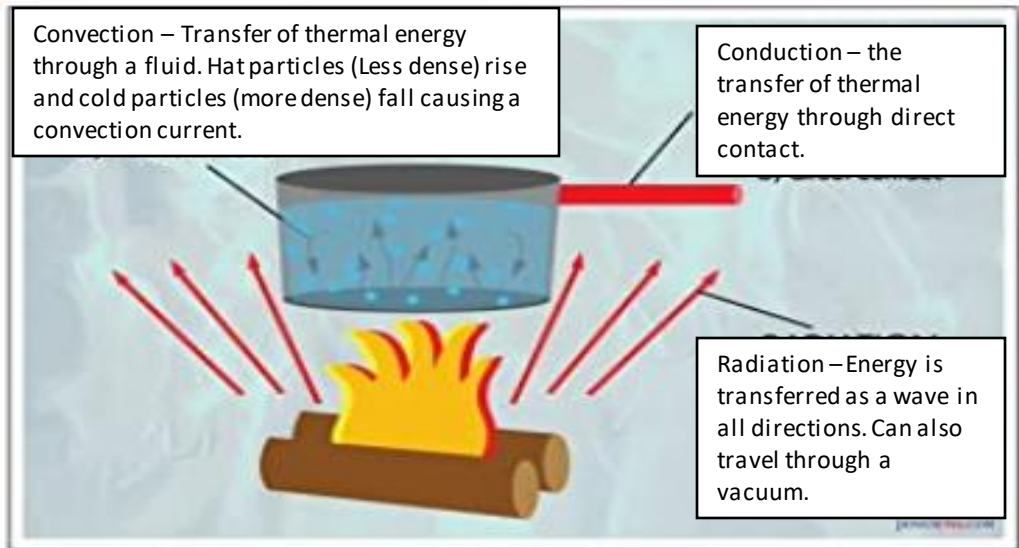
## Practical – Investigating Radiation



## Key process – Conduction, Convection and Radiation

Convection – Transfer of thermal energy through a fluid. Hot particles (Less dense) rise and cold particles (more dense) fall causing a convection current.

Conduction – the transfer of thermal energy through direct contact.



Radiation – Energy is transferred as a wave in all directions. Can also travel through a vacuum.