

## Heat Need to Know 2019

---

- Heat can be transferred in three distinct ways.
- Heat travels from hot places to cold places.
- Usually heat is transferred in all three ways at once.
- Heat can be transferred by conduction, convection and radiation..
- Heat can travel through solid because the energy is passed along from particle to particle. This process is called conduction e.g.
- Metals are good conductors of heat.
- Silver, Copper and Aluminium are good conductors of heat.
- Gases are the poorest conductors of heat, in other words they are the best insulators.
- Materials which do not conduct heat are called insulators.
- Heat travels through fluids, (liquids and gases) by convection (and also radiation).
- Convection takes place whenever one part of a liquid or gas is heated more than the rest.
- Convection occurs as the warmed material has greater spacing between the particles so the density of the warmer material is less than the density of the colder material.
- The heated fluid rises, the colder fluid sinks down to take its place. This sets up a convection current. Hot air balloons use to this to change height.
- Stirring a hot fluid ensures the temperature is the same throughout the fluid.
- Radiation is the way heat travels from the Sun to Earth.
- Radiation is heat travelling in waves.
- Radiation does not need particles to travel.
- Radiation is also called infra-red radiation.
- Radiation travels in straight lines
- Black surfaces absorb and emit more radiation, shiny surfaces reflect more radiation