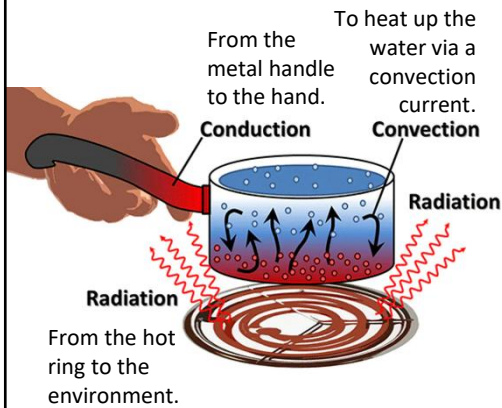


Rationale

Energy surrounds us and is something we use every single day in our homes. Energy cannot be created nor destroyed, it can only be transferred from one source to another. The 8 types of energy stores and 5 types of energy transfers allow this to happen. Not all energy transferred is useful, in fact most of the time energy is mostly wasted which we call 'energy dissipation'. We can use equations to work out the efficiency of devices and can also improve the efficiency by understanding renewable energy sources. This is a fundamental topic in Physics.

**Diagrams****Keywords**

Conduction

Convection

Radiation

Insulator

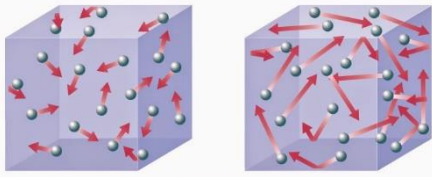
**Definitions**

The transfer of thermal energy in solids by the vibration of particles.

The transfer of thermal energy through liquids and gases when particles in a heated fluid rise.

Radiation is energy that comes from a source and travels through empty space at the speed of light, without using particles.

A substance which does not allow the passage of heat or sound.

**Low Temp****High Temp**

The higher the temperature, the more kinetic energy particles have.

Thermal Energy

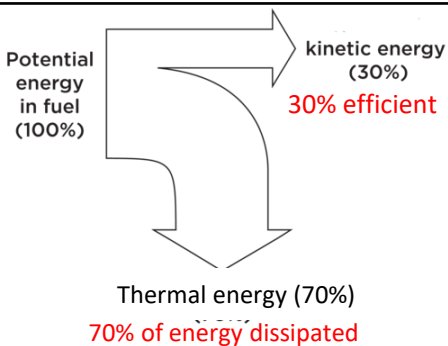
Kinetic Energy

Temperature

The quantity of energy stored in a substance due to the vibration of its particles.

A type of energy stores which involves movement.

A measure of the motion and energy of the particles.



Energy Dissipation

Energy Efficiency

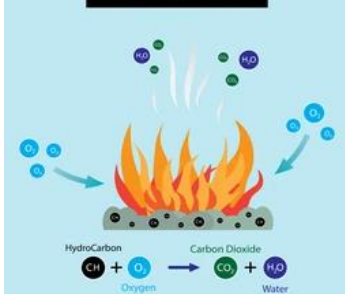
Power

Energy that does not get transferred to a useful store, otherwise known as wasted energy.

A way of describing the amount of useful energy output a device gives.

Efficiency =  $\frac{\text{Useful energy output}}{\text{Total energy input}} \times 100$

The amount of energy transferred or converted per unit time.

**Combustion**

Renewable Energy

Combustion

Energy from sources that are naturally replenishing.

A chemical reaction between substances with oxygen which causes thermal energy to be transferred from one source to another.