**P1 Summary (higher)**

## How do you feel

## about this topic?

Key Calculations:

Good OK Unsure

Energy transferred = mass x specific latent heat

Energy transferred = mass x specific heat capacity temperature change

Efficiency = useful energy output/total energy output

Key ideas:

Heat and Temperature

Temperature is a measure of how hot something is in OC.

Heat is a measure of energy transfer in J.

Energy is transferred from a hotter to a colder object

Energy is transferred when a substance changes temperature or state

The amount of energy transferred depends on:

 The mass of the substance

 The specific latent heat

 The temperature change

The specific heat capacity of the substance

Energy Transfer

Energy can transfer by conduction, convection and radiation

Conduction in a solid is the transfer of kinetic energy

Air is a good insulator and reduces energy transferring by conduction

Trapped air reduces energy transferring by convection

Shiny surfaces reflect infra-red radiation to reduce energy transfer

Energy saving methods in the home: double glazing, cavity wall insulation,

draught strips, reflecting foil, loft insulator, curtains, careful design of house.

Energy efficiency calculation, payback time and Sankey diagrams

Waves carrying energy

Good OK Unsure

## How do you feel

## about this topic?

Waves in the electromagnetic spectrum are

 Radio waves

 Microwaves

 Infrared

Visible light

Ultraviolet

All electromagnetic waves can be reflected and refracted.

The energy of the wave increases as the wavelength decreases.

Transverse waves have an amplitude, wavelength and frequency

Speed of a wave can be calculated by multiplying frequency and wavelength

Radio waves are used for communication. Longer wavelengths diffract around

obstacles.

Microwaves can be used for cooking. They can also be used for communication but

only when the transmitter and receiver are in line of sight.

Warm and hot objects emit infrared radiation. Infrared radiation is used for

cooking. (ovens, toasters)

Digital and analogue signals are used for communication.

Digital signals allow many signals to be transmitted at the same time and are clearer.

The stable Earth

Global warming is a result of both human activity (such as burning fossil fuels) and

natural occurrences such as volcanic eruptions.

Earthquake waves travel through the Earth. Different waves give us information

about the inside of the Earth.

Exposure to ultraviolet radiation causes sun burn and skin cancer.

Sunscreen and sunblock reduce damage caused by UV waves.

CFCs are chemicals released by some aerosols and old fridges which cause thinning

of the ozone layer.