

Sets (s): Triple award

YEAR 9

SUBJECT Physics

Knowledge Focus: Making use of energy



Ysgol Uwchradd
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High School

This half term : Skills, Knowledge and Understanding to be developed:

This topic explores the idea that temperature differences can lead to the transfer of thermal energy by conduction, convection and radiation. It uses the molecular model of matter to explain the differences in the mechanism of thermal energy transfer by these three methods.

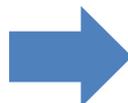
Key Terms to be learned this half term:

density, mass, volume, solid, liquid, gas, kinetic theory, conduction, conductors, insulators, convection

Week 1 and 2 Learning Objectives etc:

Transition weeks

Recap on types of variables



Objective assessments:

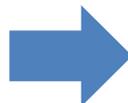
Settling in and induction activities on variables

Homework:

Week 3 and 4 Learning Objectives etc:

Students will learn the difference between heat and temperature.

Study the three states of matter in terms of the arrangement of the atoms or molecules and what happens when a substance changes state using ideas about particles and energy.



Objective assessments

Plot and interpret a temperature graph

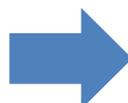
Homework:

Investigate volume of water and temperature 8La3
Or worksheet 8La5

Week 5 and 6 Learning Objectives etc:

Understand how energy is transferred by conduction (**Higher tier learn conduction using a model of molecular motion**).

Study how energy is transferred by **convection (Higher tier convection in terms of molecular behavior and variations in volume and density)**.



Objective assessments:

Observe and discuss the conduction experiment from the student practical book. Explain and describe conduction in terms of particles

Observe and discuss the convection experiment from the student practical book.

Draw a graph of a set of results from a set of data.

Homework:

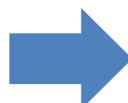
Worksheet 8lc5 conduction or convection

Week 7 and 8 Learning Objectives etc:

Investigate infrared radiation. Observe and discuss the experiment from the student practical book.

Explore how energy transfers can be minimised and how energy losses from houses can be restricted.

Methods of insulation and payback times.



Objective assessments:

Homework:

Worksheet 8lb6 wetsuits or 8lb8 cold feet