

Sets (s): Double award

YEAR 9

SUBJECT Physics

Knowledge Focus: Features of waves



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This half term : Skills, Knowledge and

Understanding to be developed: This topic introduces the ideas of transverse and longitudinal waves and the differences between them. It introduces the wave equation and gives learners the ideas and skills to study electromagnetic and sound waves. Learn the wave equation and the fundamental ideas and skills that are needed to study the electromagnetic spectrum and sound waves.

Key Terms to be learned this half term:

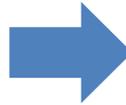
Transverse, longitudinal waves, amplitude, wavelength, frequency, wave speed, reflection, refraction, radiation, electromagnetic waves, ionizing radiation, communication, satellites and geostationary orbit.

Week 1 and 2 Learning Objectives etc:

Learn the difference between a transverse and longitudinal wave.

Learn the features of waves. Know what amplitude, frequency and wavelength are.

Look at the graphical representation of a transverse wave, including labelling the wavelength and amplitude.



Objective assessments:

Construct a wave diagram from given data

Homework:

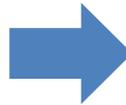
Literacy task hw

Week 3 and 4 Learning Objectives etc:

Learn what happens to speed, frequency, wavelength, direction of water waves as they move from deep to shallow water (visa versa).

Practice calculating wave speed using wavelength and frequency also distance and time.

Study diagrams showing plane wave fronts being reflected or refracted, eg as shown by water waves in a ripple tank.



Objective assessments:

Observe the specified practical on speed of water waves and complete calculations using the formula for speed.

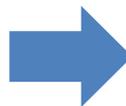
Homework:

Analyse and evaluate experiment

Week 5 and 6 Learning Objectives etc:

Study reflection of waves and carry out investigation on reflection of light waves.
Study refraction and carry out investigations on refraction of light waves.
Study the electromagnetic spectrum and how all regions transmit information and energy.

The uses and dangers of the different regions of the em spectrum. Higher frequencies transmit higher energies.



Objective assessments:

learn the terms normal, angles of incidence/ reflection / refraction.

SA Physics.

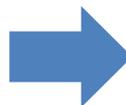
Be able to name the 7 regions of the em spectrum. Know the order in terms of wavelength, frequency and energy

Homework:

Revise for SA

Week 7 Learning Objectives etc:

Learn about communication using microwaves via geosynchronous satellites.



Objective assessments:

Complete calculations for wave speed.

Literacy task

Homework: