

Deyes High School Remote Learning

Engage, Enable and Empower



DEYES
HIGH
SCHOOL
LYDIATE
LEARNING TRUST

Year 9 Physics

Work for individual students not attending school

Half Term 3: January to February

Pupils who are absent should select the lesson activity that they are up to

- Click the link and watch the video.
- Complete the tasks as you watch. Write your answers on paper.
- Complete the exit quiz by clicking the green circles at the bottom of the screen. ●●●●●
- Submit your work to your teacher when you return to school.

Date (week commencing)	Lesson	Focus/Topic/Theme	Hyper link to Activity
4/1/21	1	Wave properties	https://classroom.thenational.academy/lessons/wave-properties-60vk0d?activity=video&step=1
11/1/21	2	Wave speed	https://classroom.thenational.academy/lessons/calculations-with-waves-6xh66e?activity=video&step=1
18/1/21	3	Waves required practical	https://classroom.thenational.academy/lessons/measuring-the-speed-of-waves-in-water-69k3jd?activity=video&step=1 and https://classroom.thenational.academy/lessons/measuring-the-speed-of-waves-in-solids-c9gk6t?activity=video&step=1
25/1/21	4	Reflection	https://classroom.thenational.academy/lessons/reflection-60v3ad?activity=video&step=1
1/2/21	5	Electromagnetic spectrum (part 1)	https://classroom.thenational.academy/lessons/electromagnetic-spectrum-part-1-6dk62r?activity=video&step=1
8/1/21	6	Electromagnetic spectrum (part 2)	https://classroom.thenational.academy/lessons/electromagnetic-spectrum-part-2-c9h3cr?activity=video&step=1
15/2/21	7 (half term)	Revision	Select and complete revision activities on the next slide to support your understanding of the topic.

Who to contact

You can email **your class teacher** if you have any questions regarding the activities set.

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Keyword	Definition
Transverse	Wave that has the oscillation direction perpendicular to the energy transfer direction.
Longitudinal	Wave that has the oscillation direction parallel to the energy transfer direction.
Wavelength	The distance between a point on a wave and the equivalent point on the adjacent wave. Units, m (metres)
Amplitude	the maximum displacement of a point on a wave from its undisturbed position. Units, m (metres)
Frequency	number of waves passing a point in 1 second. Units, Hz (Hertz)
Medium	A material waves travel through.
Refraction	Change in direction of a wave as it crosses the boundary between 2 media of different density.

Equations to remember

$$\text{Speed of sound} = \frac{\text{Distance travelled}}{\text{Time taken to travel}}$$

$$\text{Wave speed} = \text{frequency} \times \text{wavelength}$$

$$v = f\lambda$$

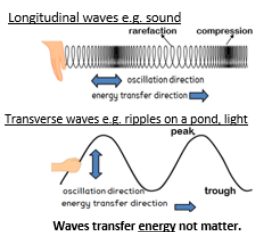
$$\text{Time period} = \frac{1}{\text{frequency}} \quad T = \frac{1}{f}$$

Further Reading

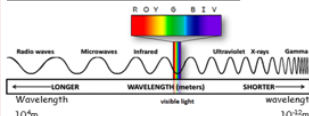
Combined Science CGP: Waves topic
School Network shared area – Science – Physics
- GCSE summary sheets

<https://www.bbc.com/bitesize/topics/zshaard>

6.1.1 Transverse and Longitudinal Waves



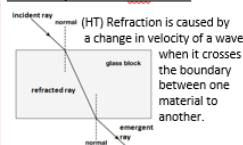
6.2.1 The Electromagnetic Spectrum



EM waves are all transverse and travel at the speed of light through a vacuum.

(HT) The wavelength of the wave determines how it is absorbed, transmitted, refracted or reflected by materials.

6.2.2 Properties of em waves



Em waves all have a wide variety of uses e.g. radio waves used for TV and radio transmissions; microwaves for cooking and communication with satellites; infrared for heating and remote controls; visible light for fibre optics; x-rays for medical images and gamma rays for cancer treatment.

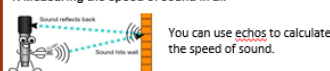
Gamma rays are made in the nucleus of atoms. Exposure to gamma rays, ultraviolet light and x-rays can be hazardous to people because they are ionising. Radiation dose exposure is measured in millisieverts (mSv).

(HT) Radio waves are produced by oscillations in electric circuits. When they are absorbed they can reproduce the oscillation as an alternating current.

6.1.2 Properties of Waves.

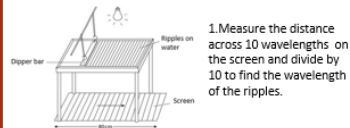
All waves have:
Wavelength, amplitude and frequency.

1. Measuring the speed of sound in air



1. Measure the distance to the wall and back.
2. Start the clock as you clap and time how long it takes to hear the echo.
3. Use the formula $\text{speed} = \frac{\text{distance}}{\text{time}}$ to work out the speed of the sound wave.

2. Measuring the speed of ripples on water.



2. Counting the number of waves passing a point in 10 seconds and divide by 10 to find the frequency of the ripples.
3. Use the equation $\text{speed} = \text{frequency} \times \text{wavelength}$ to find the speed of the waves

Physics Revision Activities

Unit 2: Waves

YouTube videos

Watch the videos and make notes (up to video 8)

https://www.youtube.com/playlist?list=PL87bjuaAmQLhYAgReO_aH-lZfeyFtVzIX

Knowledge Organiser

Create revision flashcards using the knowledge organiser

Include key definitions in your flashcards.

GCSE Bitesize

Using the web link read the revision notes and watch the video.

Revision

<https://www.bbc.co.uk/bitesize/topics/z2j22nb>