

# Deyes High School Remote Learning

Engage, Enable and Empower



DEYES  
HIGH  
SCHOOL  
LYDIATE  
LEARNING TRUST

## Year 11 Physics (combined science)

Work for individual students not attending school

Half Term 3: January-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	Magnetic forces	<a href="https://classroom.thenational.academy/lessons/magnetism-75jpad?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/magnetism-75jpad?activity=video&amp;step=1</a>
11/1/21	2	Magnetic fields	<a href="https://classroom.thenational.academy/lessons/magnetic-fields-61jkcc?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/magnetic-fields-61jkcc?activity=video&amp;step=1</a>
	3	Electromagnetism	<a href="https://classroom.thenational.academy/lessons/electromagnetism-cgv64r?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/electromagnetism-cgv64r?activity=video&amp;step=1</a>
18/1/21	4 (HT only)	The motor effect and left hand rule	<a href="https://classroom.thenational.academy/lessons/the-motor-effect-and-left-hand-rule-cctp8c?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/the-motor-effect-and-left-hand-rule-cctp8c?activity=video&amp;step=1</a>
25/1/21	5 (HT only)	F = BIL	<a href="https://classroom.thenational.academy/lessons/f-b-i-l-74uk4d?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/f-b-i-l-74uk4d?activity=video&amp;step=1</a>
	6 (HT only)	DC Motors	<a href="https://classroom.thenational.academy/lessons/dc-motors-74r32c?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/dc-motors-74r32c?activity=video&amp;step=1</a>
1/2/21	7	Magnetic field revision	<a href="https://classroom.thenational.academy/lessons/p7-magnetism-revision-part-1-6cv3gc?activity=video&amp;step=1">https://classroom.thenational.academy/lessons/p7-magnetism-revision-part-1-6cv3gc?activity=video&amp;step=1</a>
8/1/21	8	Revision	Select and complete revision activities on the next slide to support your understanding of the topic.
15/2/21	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
<b>Poles</b>	The 'ends' of a magnet where the magnetic force is strongest.
<b>Non-contact force</b>	Force between objects that are physically separated.
<b>Magnetic field</b>	Region around a magnet where a force acts on another magnet or on a magnetic material
<b>Induced magnet</b>	a magnetic material that is magnetised when in the field of another magnet.
<b>Permanent magnet</b>	A magnet which is always magnetised.
<b>Solenoid</b>	A coil of wire with a current flowing through it.
<b>Electromagnet</b>	A solenoid with an iron core.
<b>Magnetic flux density</b>	A way of measuring the strength of a magnetic field
<b>Compass</b>	Tiny bar magnet that can spin.

  

Equations to remember	
$Force = Magnetic\ flux \times Current \times Length\ density$	

  

Further Reading	
CGP revision guide: Magnetism topic	
School Network shared area - Science - Physics - GCSE summary sheets	
<a href="https://www.bbc.com/bitesize/topics/zwkwwdf">https://www.bbc.com/bitesize/topics/zwkwwdf</a>	
<a href="https://www.cyberphysics.co.uk/topics/magnets/magnetism.htm">https://www.cyberphysics.co.uk/topics/magnets/magnetism.htm</a>	

  

7.1.1 Poles of a Magnet	
The magnetic force is a noncontact force. It is strongest at the <b>poles</b> of a magnet (known as North and South).	
A magnetic material placed in the field of a magnet becomes magnetized it is called an <b>induced magnet</b> . It demagnetizes when it is moved out of the permanent magnets field.	

  

7.1.2 Magnetic Fields	
The region around a magnet where magnetic material feels a force.	
A magnetic field can be plotted using a compass. The field of a bar magnet is shown opposite	
Field direction is the direction the force that would act on a north pole so <b>North to South</b> .	
The earth's iron core makes it a magnet. Its field is similar to a bar magnet in shape.	
A compass is a tiny magnet it points in the direction of the Earth's magnetic field.	

  

7.2.1 – Electromagnetism	
When an electric current flows a magnetic field is set up around the wire.	
The field is stronger when <ul style="list-style-type: none"> <li>Current is increased</li> <li>Wire is wound in a coil – forming a solenoid</li> <li>Coil is wound on an iron core – forming an electromagnet</li> </ul>	
The magnetic field of a solenoid is similar to that of a bar magnet. Its direction can be found using the right hand grip rule.	

  

7.2.2 Fleming's Left Hand Rule (FLHR)	
When a conductor carrying a current is placed in a magnetic field the magnet producing the field and the conductor exert a force on each other. This is called the <b>motor effect</b> .	
The <b>direction of the force</b> is found from FLHR. It's magnitude from $F = BIl$	
Increasing the current flowing, strength of the magnetic field and the length of conductor in the field increases the size of the force. The force is at it maximum when field and current are at 90° to each other.	

## Physics Revision Activities

### Unit 9 Magnetism and Electromagnetism

#### Knowledge Organiser

Create revision flashcards using the knowledge organisers

Include key definitions in your flashcards.

#### Revision

Watch the videos and make notes

[https://www.youtube.com/playlist?list=PL87bjuAamQLg6phzQ8bqE-Z0I0M\\_vuaHF](https://www.youtube.com/playlist?list=PL87bjuAamQLg6phzQ8bqE-Z0I0M_vuaHF)

#### GCSE Bitesize

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

<https://www.bbc.co.uk/bitesize/topics/z39ry4j>