Magnetism



What metals are magnetic? What are magnets used for? How does a compass work? Where is the magnetic field around a magnet? What is an electromagnet?

Magnetism is a non-contact force, meaning that it acts at a distance, and magnetic materials do this because they produce a magnetic field.

This is the **second** unit we are studying as part of the big idea: **Fields Produce Forces**.

In this unit, we will begin by learning which metals are magnetic, about the poles of a magnet and the rules of attraction and repulsion. We will extend our understanding by learning about magnetic fields and how to draw field lines around a magnet to display strength and direction. This will allow us to practise the skill of representing 2 dimensional and 3 dimensional forms.

We will then compare permanent magnets to electromagnets, before investigating the factors that affect the strength of an electromagnet. We will use our knowledge and skills from Y7 when we look at electrical circuits and think about how current affects the strength of an electromagnet.

Finally we will apply our knowledge of magnetic fields to the Earth's magnetic field where we learn the difference between a magnetic and geographic pole.

TASKS:

What subject will this unit focus on? BIOLOGY CHEMISTRY PHYSICS
(circle the correct subject)

There are lots of keywords underlined above. List these into the two columns:

Words I know	Words I haven't seen before

To answer before the unit:

1. What are you most excited to learn about in this topic?

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_____

2. What do you already know about this topic?

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3. Why do you think it's important to learn how fields produce forces?

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4. What knowledge from previous science lessons might help us?

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5. What questions do you have about this topic?

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To answer at the end of the unit:

1. Tick off any words in the 'words I haven't seen before' column that you are now confident with. Circle any you still need more practice to use.
2. What have you most enjoyed about this unit?

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3. What more would you like to learn about particles as part of the big idea: 'Fields Produce Forces?

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Teacher guidance:

The purpose of this resource is to provide students with an overview at the beginning and end of each unit. It is designed to create a discussion about the unit prior to the sequence of lessons.

The unit scope should be read as a guided reading activity. Tier 3 vocabulary has been highlighted. It may need to be adapted further for LPAs or pupils with different reading ages.

There are a range of ways to use this resource.

1. Display on a slide for students to read as a class. Direct students to complete the activities in their book.

2. Print off for students to stick into their book at the beginning of the unit along with their knowledge organiser. Complete as a guided reading task together. Direct students to complete the activities.

3. Have students complete as part of a booklet.

4. Set as a homework prior to a unit.

If you have any feedback about how this resource could be used/improved, please contact the science mastery team: sciencemastery@arkonline.org