

WJEC England Physics GCSE

SP8.2: Magnetic Fields

Practical Flashcards

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Outline the basic steps of the practical.



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1. Wrap 10 turns of wire connected to 4 V D.C supply around a C-Core.
2. Turn on the power supply and place the electromagnet into a pile of paperclips.
3. Record the number of clips picked up by the magnet.
4. Repeat, adding coils in 10-coil intervals.



Explain why the C-Core becomes magnetised.



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When a wire carries a current, a magnetic field is produced around it. When the C-Core is in the presence of a magnetic field, it becomes magnetised.



What type of magnet does the C-Core become when the supply is turned on?



What type of magnet does the C-Core become when the supply is turned on?

An induced magnet.



What is the difference between a permanent magnet and an induced magnet?



What is the difference between a permanent magnet and an induced magnet?

1. A permanent magnet produces its own magnetic field.
2. An induced magnet becomes magnetic when placed in a magnetic field.



What type of force does induced magnetism always cause?



What type of force does induced magnetism always cause?

A force of attraction.



What graph should be plotted with the data?



What graph should be plotted with the data?

A graph of number of paper clips picked up against number of coils of wire.



How should the number of paper clips change as the number of coils is increased?



How should the number of paper clips change as the number of coils is increased?

The number of clips picked up should increase as the number of coils is increased.



Why should the power supply be switched off immediately after and between readings?



Why should the power supply be switched off immediately after and between readings?

To reduce the likelihood of the coils of the wire overheating.



Why should plastic coated paper clips be avoided for this experiment?



Why should plastic coated paper clips be avoided for this experiment?

Plastic is a non-magnetic material so will not be attracted by the electromagnet.



Why can happen to the paper clips over time? What should be done if this happens?



Why can happen to the paper clips over time? What should be done if this happens?

Over time the paper clips may become magnetised. If this happens they should be discarded from the experiment and new paperclips should be selected.



What safety precautions should be taken
in this experiment?



What safety precautions should be taken in this experiment?

1. Avoid touching the wires during or immediately after use to prevent burning.
2. Do not exceed a power supply voltage of 4 V in order to keep the heating under control.

