

# WJEC England Physics GCSE

## Specified Practical Magnetic Fields

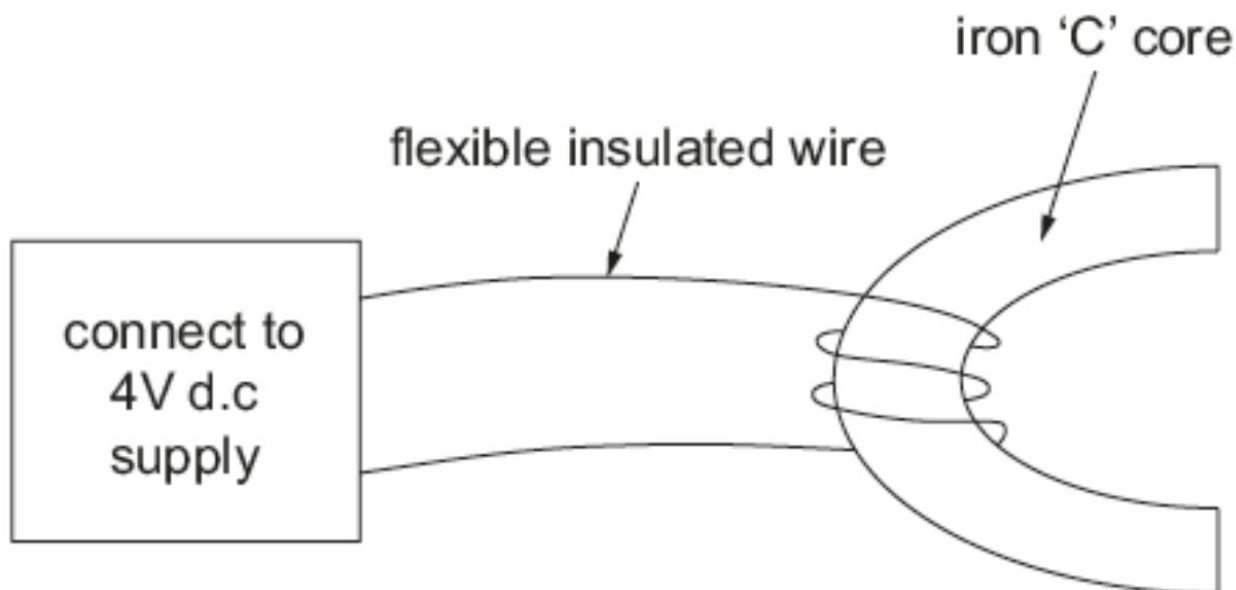


## SP8.2 Investigation of the force due to the magnetic field of coils

### Equipment

- Iron C core
- Flexible insulated wire
- Paper clips
- 4V D.C. power supply

### Diagram



*[Image: Eduqas](#)*

### Method

1. Set up the circuit as shown in the diagram.
2. Wrap the wire around the core 10 times (forming a coil with 10 turns).
3. Turn on the power supply and place the now-electromagnet into a pile of paper clips and record the number it picks up.
4. Turn off the power supply and add 10 turns to the coil.
5. Place the electromagnet onto the paper clips again and record the number it picks up.
6. Repeat this process, increasing the number of turns by ten each time up to 70 turns.
7. Plot a graph of number of paperclips against number of turns.

### Safety Precautions

- Ensure the power is switched off before making any changes to the circuit.
- The wires on the electromagnet can heat up so avoid touching them after disconnecting the power supply, allowing them to cool.

