

Combined science - Physics

Key stage 4 - Magnetism

DC Motors (HT only)

Mr van Hoek



Warm up question

A current flows from A to B in the diagram.

Describe how Fleming's Left hand rule can be used to determine the direction of movement of the wire.

State the direction of movement of the wire.

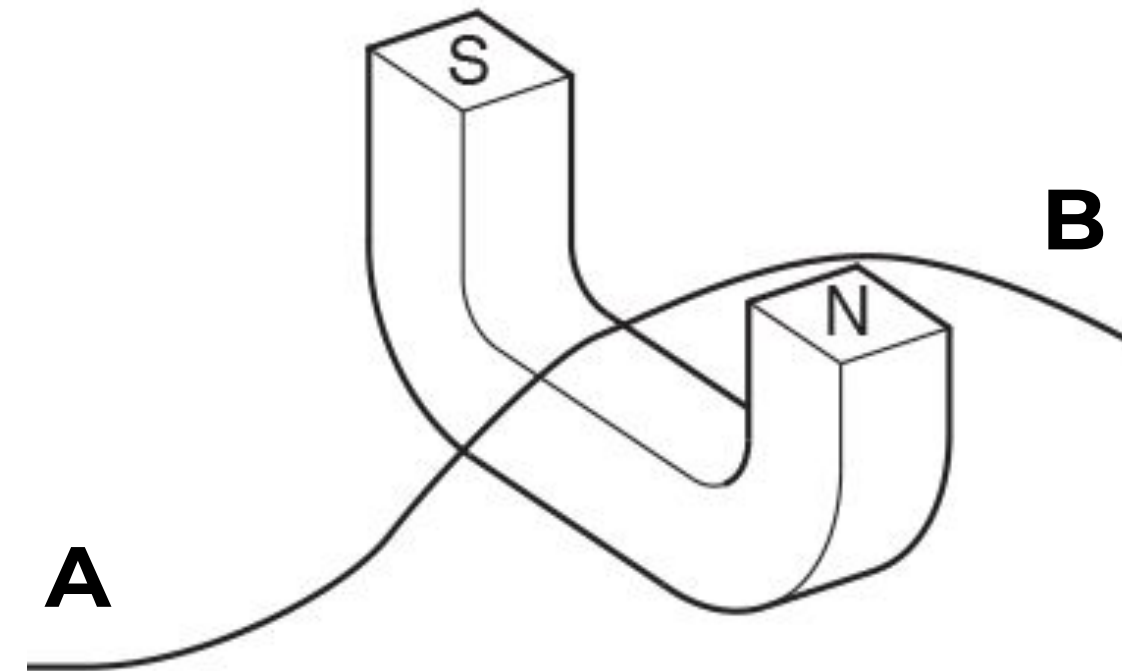


Image credit : OCR, June 2018, J249/03



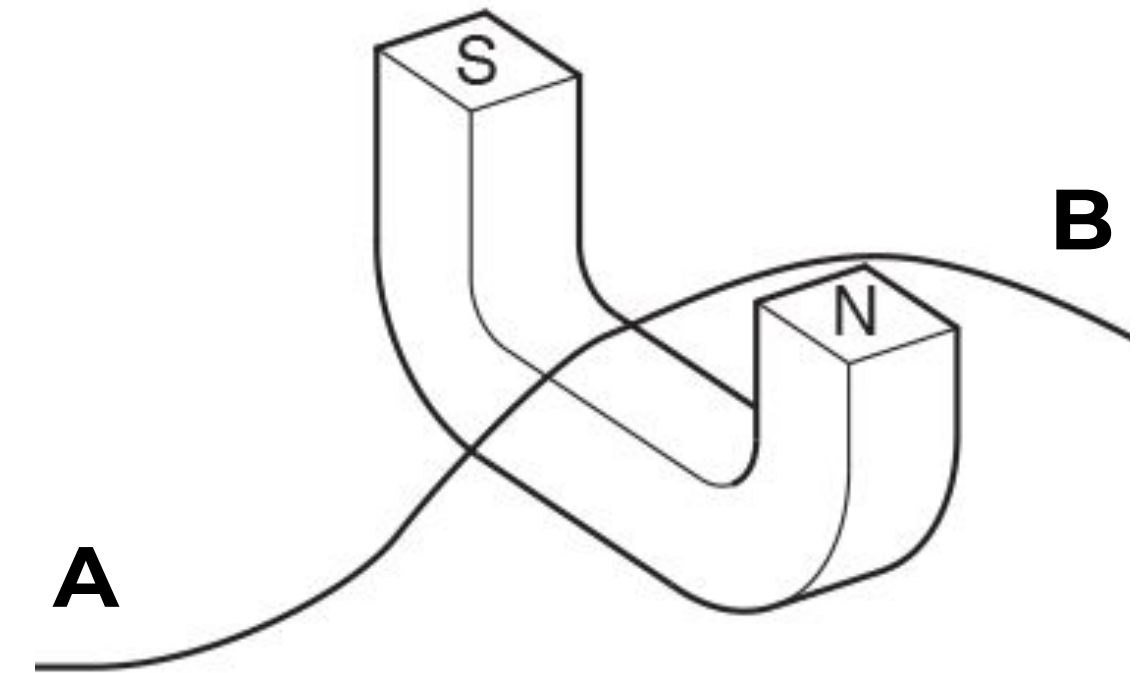
Warm up question

The length of the wire in the magnetic field in the diagram is 0.014 m and the magnet is resting on a digital balance that reads 0.00kg.

When the circuit is switch on the current in the wire is 0.50 A and the digital balance reads 0.02kg.

Gravitational field strength = 9.8 N/kg

Calculate the magnetic flux density of the permanent magnet.



Explaining how it works

	On one side of the coil the current flows away from us and on the...
	... rotate as each force creates a moment.
	... produced by the current in the magnetic field will be in opposite ...
1	The current flows around the coil. The magnetic field is across the coil at right angles to the axis of the coil.
	... directions. Because there is a fixed axle, the coil will begin to ...
	... other the current flows towards us. This means that the forces ...



Commutator Questions

1. How could we make the coil rotate the other way?

To make the coil turn the other way we can ...

1. The contacts for the commutator are generally made out of graphite – why do you think this is?

Graphite is a good ...

1. How could we make the motor more powerful?

