

# ELECTRIC MOTOR

## ENGINEERING CHALLENGE 05

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### The brief

Build your own electric motor.

### The method

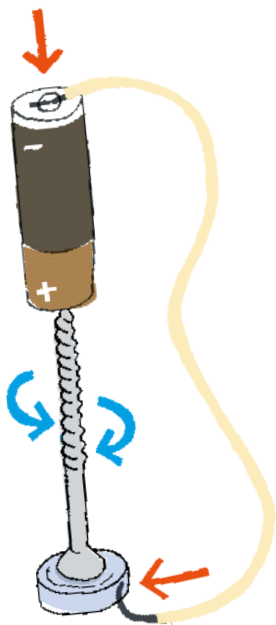
1. Attach the magnet to the head of the screw.
2. Holding the battery in your hand, hang the pointy end of the screw from the positive terminal of the battery. Hold one end of the wire to the negative terminal of the battery.
3. With your other hand, touch the opposite end of the wire to the head of the screw and watch it spin.

### Top tip

What happens if you swap the battery terminals?

### Materials

- ..... An AA battery
- ..... A screw
- ..... A small, round neodymium magnet (approx. 6mm diameter)
- ..... A wire



### How does it work?

The electric current passing through the screw when the circuit is completed by the wire is subject to the Lorentz force. This force creates torque, which turns the screw.

### Design icons



Michael Faraday built the first electric motor in 1821.