
Faraday Electricity Discovery Kit – Pupil Worksheet (Updated Edition)

Name: _____ Date: _____

1. What Are We Investigating?

Today you will explore how **moving a magnet can make electricity**.

This idea was discovered by **Michael Faraday in 1831**, and it is still how power stations work today.

Write one sentence about what you think will happen:

My prediction:

2. Equipment Checklist

Tick each item when you have it:

- Copper coil
 - Ring magnets
 - Galvanometer
 - Connecting wires
 - Levitation pole
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3. Starter Activity – Magnetic Forces

Use the levitation pole to explore attraction and repulsion.

- A. What happens when the magnets face the same way?
 - B. What happens when you flip one magnet around?
 - C. What does this tell you about magnetic fields?
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4. Main Investigation – Making Electricity

You will move the magnets through the coil and watch the galvanometer needle.

Test 1: Slow movement

What happens to the needle?

Test 2: Fast movement

What happens now?

Test 3: Move the magnets in and out of the coil

What changes?

5. Results Table

Test What You Changed What You Observed (Needle Movement)

1 Speed: slow

2 Speed: fast

3 Direction

6. Thinking Questions

- A. When did the galvanometer needle move the most? Why do you think that is?
 - B. Why does the needle move in different directions?
 - C. What has to change for electricity to be made? (*Hint: think about the magnet.*)
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7. Key Idea (Write in your own words)

Electricity is made when...

(Hint: A changing magnetic field pushes electrons in the wire.)

8. Challenge Question (Optional)

How is this experiment similar to how electricity is made in a power station?

(Hint: Power stations also use moving magnets and coils.)

9. Self-Assessment

Circle one:

I can explain what electromagnetic induction is: **Yes / Almost / Not yet**

I can describe what happened in the experiment: **Yes / Almost / Not yet**

I can use words like *current, magnetic field, electrons*: **Yes / Almost / Not yet**

NEW: What's Really Happening? (Simple Science Box)

- When you move the magnet, **your movement energy** is turned into **electrical energy** in the coil. Energy is never created or destroyed — it just changes form.
 - Only **electrons** move to make electricity. Protons and neutrons stay in the nucleus and do not take part.
 - The needle moves because a **changing magnetic field** pushes electrons in the wire.
 - Moving the magnet faster or changing direction makes the needle move more.
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