
Faraday Electricity Discovery Kit — Pupil Worksheet (Version 1.0)

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.

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?

4. Main Investigation — Making Electricity

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?

B. Why does the needle move in different directions?

C. What has to change for electricity to be made?

(Hint: think about the magnet.)

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**

10. Simple Science Box — What's Really Happening

(Based on your original explanation)

- 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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