Volta Electricity Discovery Kit — Pupil Worksheet (Vesrion1.0)

Name: _____ ***Date:*** _____

1. What Are We Investigating?

Today you will explore **how two different metals in salty water can make electricity**. This idea was discovered by **Alessandro Volta in 1800**, and it is still how batteries work today.

My prediction:

2. Equipment Checklist

Tick each item when you have it:

☐ Copper plates
☐ Zinc plates
☐ Test tubes with caps
☐ Saltwater (electrolyte)
☐ Connecting wires
☐ LED or voltmeter

3. Starter Activity — Metals & Electricity

Look at the two metals you will use: **copper** and **zinc**.

A. How are the two metals similar?

B. How are they different?

C. Why do you think we need *two different* metals to make electricity?

4. Main Investigation — Building a Battery

You will build a simple battery cell using copper, zinc, and saltwater.

Test 1 — One cell

What voltage do you see on the voltmeter?

Test 2 — Two cells in series

What changes?

Test 3 — Four cells in series

Can you light the LED?

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5. Results Table

Test	What You Changed	Voltage / LED Result
1	One cell	_____
2	Two cells	_____
3	Four cells	_____

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6. Thinking Questions

A. Why does adding more cells increase the voltage?

B. Why do we need saltwater in the test tubes?

C. Which metal gives electrons, and which metal receives them?

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7. Key Idea (Write in your own words)

Electricity is made when…
(Hint: A chemical reaction pushes electrons from zinc to copper.)

8. Challenge Question (Optional)

How is this experiment similar to the batteries inside phones, torches, or electric cars?

9. Self-Assessment

Circle one:

I can explain how a simple battery works: **Yes / Almost / Not yet**
I can describe what happened in the experiment: **Yes / Almost / Not yet**
I can use words like *electrode*, *electrolyte*, *voltage*, *electrons*: **Yes / Almost / Not yet**

10. Simple Science Box — What's Really Happening

- **Zinc gives up electrons**, and **copper receives electrons**.
- Saltwater allows **ions** to move so the reaction can continue.
- Electrons travel through the wires to the LED or voltmeter.
- Only **electrons** move in the wires — protons and neutrons stay in the nucleus.
- Adding more cells **adds more voltage**, making the LED brighter.