🔋 Measuring Amperage (Current)

✔ **Multimeter must be in series** with the circuit.
✔ This means **you need to "break" the circuit** and insert the multimeter in-line so that the current flows *through* it.

Why?

- Current is the **flow of electrons**, and in a **series circuit, all components share the same current**.
- By placing the multimeter in series, it **measures how much current is flowing through that part of the circuit**.

🚨 **Caution:**

- **Never** connect the multimeter in **parallel** when measuring current—this would **create a short circuit** and could damage the multimeter or circuit.
- Make sure the multimeter is set to the **correct amperage range** before measuring.

⚡ Measuring Voltage

✔ **Multimeter must be in parallel** with the component or section of the circuit you are measuring.
✔ You can place the probes **anywhere across the circuit** as long as one probe is on the positive side (+) and the other on the negative side (-).

Why?

- Voltage is a **difference in electrical potential** between two points.
- The multimeter **does not "draw" current** when measuring voltage; it simply compares the potential difference between two points.
- This is why you can **place the probes anywhere in the circuit** (as long as you're measuring between two points correctly).

🚨 **Caution:**

- If measuring **AC voltage**, make sure your multimeter is set to AC (V~), not DC (V⎓).
- If you reverse the probes on a DC circuit, the multimeter will show a **negative voltage**, but it's still the correct value (just flipped polarity).

Summary

Measurement	Multimeter Connection	Key Rule
Amperage (Current, A)	**Series** (break circuit)	Current flows *through* the multimeter.
Voltage (V)	**Parallel** (across two points)	Voltage is *measured between two points*.

[How to Use a Multimeter for Beginners - How to Measure Voltage, Resistance, Continuity and Amps]