

Please use the following resources to learn about series and parallel circuits.

Watch this Video: <https://www.youtube.com/watch?v=XSukRnxGy5c>

Answer these questions:

- Name the two types of electrical circuits.
- What do both types of circuits have in common?
- Why are the bulbs brighter in one of the circuits?

Activities:

Materials: 2 metal paper clips • Scotch tape • A rubber band • A flashlight • 2 AA batteries

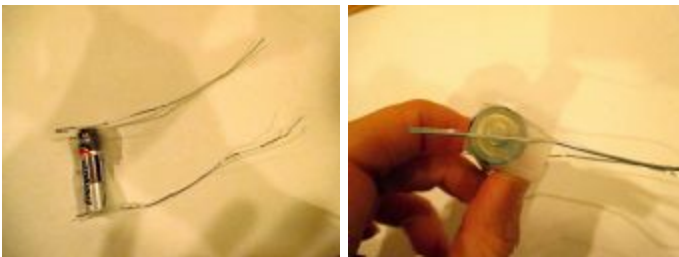
Prep:

1. Straighten out the paper clips
2. Take apart the flashlight and remove the light bulb from the base



Single battery:

3. Use tape to attach the straightened out paperclips to both ends of the battery. Make sure that the paperclip touches the raised button on the positive side.
*Once the paperclips are attached to the battery, make sure not to let the two paperclips touch; that would be a short circuit!
4. Now touch one free end of the paperclip to the button on the bottom of the flashlight bulb and touch the other end anywhere on the metal light bulb holder. You may need someone's help to hold everything in place.



Batteries in Series:

5. Take apart the paperclip/battery setup and use Scotch tape to connect two batteries in a row, making sure that the positive end (the end with the button) of the first battery touches the negative end (the flat end) of the second battery.
6. Use Scotch tape to attach the straightened paper clips to the ends of the batteries, making sure once again that the paperclip on the positive end touches the battery's raised button.
7. Turn on the light bulb by touching the ends of the paper clip to the bulb as in step 4.

Batteries in Parallel:

8. Take apart the series battery and use the rubber band to hold the batteries next to each other, making sure that both of the batteries are pointing the same way.
9. Use Scotch tape to attach the straightened paper clips to the battery ends. Make sure that the paperclips are touching both batteries at each end.
10. Turn on the light bulb by touching the ends of the paper clip to the bulb as in step 4.



Make observations & use Claims, Evidence, and Reasoning!

1. **Claim:** Light bulbs are brighter when they are wired into parallel circuits.

- **Evidence:**

- **Reasoning:**

2. **Claim:** The electricity on the street is wired in a parallel circuit.

- **Evidence:**

- **Reasoning:**