



## SfS Away from the Classroom!

### P02: Electrical Conductivity (Recommended for Grades 3-5)

**Please use the following resources to learn about Electrical Conductivity**

**Watch this Video:** <https://ca.pbslearningmedia.org/resource/idptv11.sci.phys.energy.d4kele/electricity/>

**Answer these questions:**

- What is the difference between a conductor and an insulator?
- How does an electricity plant turn the energy of water into electricity?
- Where can you find electricity besides in the wires of your house?

**Activities:** Follow these directions to make a conductivity meter.

<https://www.exploratorium.edu/snacks/conductivity-meter>

Instead of suspending your meter in salt/baking soda solutions, connect the two aluminum ends using these common household items. Sort the items into those where the bulb lights, and those where it does not. Items: (book; penny; nickel; aluminum foil; coffee mug; fork; colored pencil; candle). Feel free to test out other household items as well!

You will need:

|                                                                                                                                                                                                           |                                                                                                                                                                                        |                                                                                                                                                                 |
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| <ul style="list-style-type: none"><li>• Aluminum foil</li><li>• A 9-volt battery</li><li>• A nonconductive flat object such as a Popsicle stick, craft stick, or plastic knife</li><li>• nickel</li></ul> | <ul style="list-style-type: none"><li>• String of incandescent holiday lights (not LEDs)</li><li>• Wire strippers or scissors</li><li>• Tape</li><li>• candle</li><li>• fork</li></ul> | <ul style="list-style-type: none"><li>• Optional: stainless-steel screws</li><li>• book</li><li>• coffee mug</li><li>• colored pencil</li><li>• penny</li></ul> |
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**Make observations & use Claims, Evidence, and Reasoning!**

1. **Claim:** Electricity only flows through conductors.
  - **Evidence:**
  - **Reasoning:**
2. **Claim:** The best conductor I tested was \_\_\_\_\_.
  - **Evidence:**
  - **Reasoning:**