ALL TOGETHER NOW | FIFTH GRADE | S5P2. CIRCUITS

# **CONNECTIONS TO SCIENCE GUIDES**

# **GEORGIA YOUTH SCIENCE & TECHNOLOGY CENTERS, INC.**

# FIRENZE'S LIGHT BY: JESSICA COLLACO

CAN'T FIND THE BOOK? READ-ALOUDS ARE AVAILABLE ON YOUTUBE.



### ASK

- What makes you special?
- What is electricity?
- How do we use electricity?
- What are the components of a simple circuit?
- Have you ever thought about being an electrical engineer?

### **EXPLORE** Complete and incomplete circuits

#### Materials:

- 1 3mm LED bulb
- 1 3-volt watch battery or 2 1.5-volt watch batteries

#### **Directions:**

- Gather your LED bulb and battery.
- Connect the positive, long terminal (wire) of the LED to the positive terminal of the battery.
- Then, connect the negative, short terminal (wire) of the LED to the negative side of the battery.
- Observe what happens.
- As you are experimenting, think about:
  - What part of the circuit is the power source?
  - Can you make an incomplete circuit? What makes it incomplete?
  - What could you make using your complete circuit?

#### **Fun Facts:**

- Electricity travels at the speed of light which is 670,616,629 miles per hour.
- Lightning is caused by the discharge of static electricity in the atmosphere.



## **EXPLAIN** CIRCUITS

Electricity is a form of energy that can flow from one place to another. Electricity can flow through a complete circuit and power a load, like a lightbulb. A simple circuit must contain a power source, a pathway for electricity to flow, and a load. If there is a gap in the pathway, the load cannot be powered and the circuit is incomplete.



# EXTEND PHET CIRCUIT CONSTRUCTION KIT: AC



Explain basic electricity relationships in series and parallel circuits.

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### **STEM CAREER** ELECTRICAL ENGINEER

An electrical engineer designs, develops, tests, and supervises the manufacturing of electrical equipment, such as electric motors, communications systems, and power generation equipment. Electrical engineers also design the electrical systems for automobiles and aircraft. If you are interested in working with electricity, being an electrical engineer might be for you!





## BACKGROUND

The Georgia Youth Science and Technology Centers, Inc. provides quality programs for teachers of STEM subjects that improve the teaching and learning process at the kindergarten through eighth grade levels. We present programs that change students' perceptions and inspire an appreciation for science, technology, engineering, and mathematics subjects.

# ABOUT US

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