

Let There Be Light - 5E Lesson Plan

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Subject / grade level: Science/5th grade

Materials:

For each student:

- 1 D-cell battery
- 1 3v bulb
- 1 (or more) length(s) of wire made from aluminum foil and Scotch tape
- 1 Diagram worksheet
- 1 Electricity Quiz

For each group:

- Flashlight
- UFO ball

TEKS: 5.6B Force, motion, and energy. The student knows that energy occurs in many forms and can be observed in cycles, patterns, and systems. The student is expected to: demonstrate that the flow of electricity in circuits requires a complete path through which an electric current can pass and can produce light, heat, and sound.

ENGAGEMENT

- Students will be given a UFO ball (sent to us from NASA) and investigate how it works.

Probing/Eliciting questions:

- How does it work?
- Can you make it work with all of your group members?
- What is required to make it light and make noise?

EXPLORATION

- Students will be given a battery, wire, bulb, and handout to record their findings
- Students will make the light bulb light up
- Students will try and find other ways of lighting up the bulb
- Students will write questions they would like to investigate further and test their questions

Probing/Eliciting questions:

- Can you find two ways to make the bulb light up?
- Can you find two ways that don't work?
- Can you think of some things about your circuit that you'd like to test and find out?
- What requirements must be met in order for the bulb to light?

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EXPLANATION

- Students will present their findings and answer questions as to why some of their arrangements worked and some did not.

Probing/Eliciting questions:

- Did you find only one arrangement that worked?
- What are some arrangements that worked? Why did this work?
- What are some arrangements that didn't work? Why?
- What were some of your questions?
- How did you investigate them?
- Why don't all circuit paths work?

ELABORATION

- Students will examine a flashlight and make a sketch of the circuit.
- Students will light the flashlight with their aluminum foil and battery.

Probing/Eliciting questions:

- Can you light the flashlight bulb with your wire and battery?
- How many wires are used to make this circuit?

EVALUATION

- Students will take a quiz
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