

Exploring Circuits

Brette Consolo

Grade: 4

Objective: Students will learn how to create a series and parallel electric circuit.

Standard: Trace how electrical current in a circuit travels by creating a simple electric circuit that will light a bulb.

Materials (1 set/group):

Laptop Computer

D-cell battery

Battery Holder

2 flashlight bulbs and holders

4 pieces of insulated wire

Digital Camera

Resources:

BrainPop Video: <http://www.brainpop.com/science/energy/electriccircuits/preview.weml>

Brighter Light Activity: http://www.bbc.co.uk/bitesize/ks2/science/physical_processes/changing_circuits/play/

Penzu: www.penzu.com

Procedure:

1. Repeatedly turn the classroom lights on and off again. Ask the students to think-pair-share how electricity gets to the lights when the switch is on. Discuss student responses.
2. Provide each group of students with one set of materials, and ask them to log into Penzu.
3. First the students need to compose three questions they have about electricity/currents. The recorder will type these questions out.
4. Ask the students to brainstorm how to use their materials to make both bulbs light up in two different ways. They can record their hypotheses on Penzu.
5. Ask the students to test their hypotheses and make adjustments until they get both lightbulbs to light in two different ways.
6. Students will take pictures of the two successful attempts and upload them onto their Penzu. Then they will record their conclusions.
7. Watch BrainPop Video and have students complete quiz individually.
8. Have students use laptops individually to complete Brighter Light Activity.
9. Discuss original group questions together. Students may use computers to help find the answers when prompted.
9. Students must create a new individual Penzu entry answering the following questions and journaling an overall reflection. Students will email all entries to grade.

Penzu Reflection Questions

1. Explain your group's thought process in finding two different ways to make the lightbulbs light up, including incorrect attempts.
2. Explain how parallel and series circuits are alike and different.
3. Reflect on the lab, video, and web activity. What did you learn and how will you use this knowledge in everyday life?

Assessment Rubric:

Group Penzu Entry	Response Thoughtful and Complete	Met Requirement	Incomplete
Three questions	2	1	0
Two Hypotheses	2	1	0
Conclusion	2	1	0
Pictures	N/A	1	0

Individual Reflection	Response Thoughtful and Complete	Met Requirement	Incomplete
Question #1	2	1	0
Question #2	2	1	0
Overall Reflection	2	1	0