

Project FOCUS
Best Lessons
FIFTH GRADE

Title of Lesson: Series and Parallel Circuits

Theme: Physical Science

Unit Number: B **Unit Title:** Electricity & Magnetism

Performance Standard(s) Covered (enter code):

S5P3

b. Determine the necessary components for completing an electric circuit.

c. Investigate common materials to determine if they are insulators and conductors of electricity.

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Parallel Circuit, Series Circuit, Insulator, Conductor, Current

Learning Activity (description in steps)

Abstract (limit 100 characters): Students understand what is needed to make and complete a circuit. Students will understand and distinguish parallel and series circuits. Students will understand difference between insulators and conductors.

Details: Separate the students into groups of 4-5. Give each group the materials needed (see below). Instruct the students to build a circuit and make one light bulb light up. They should be able to figure this out. In my class they watched a video on the subject beforehand and kind of had an idea on how a circuit works. Help individual groups as needed. After they have completed this take certain things away from the circuit and ask the students what will happen to the light bulb (if you take anything from the circuit the light will not light up anymore). After they have series circuit down teach concept of parallel circuits and have the students make one. After all groups have constructed a parallel circuit have them remove 1 bulb and the other one will stay lit. In a proper parallel circuit if you remove one thing in the circuit one light bulb should remain lit. If time permits touch the wires to random objects in the classroom to see if they act as conductors or insulators (students will try everything from shoe laces to necklaces to pencils, etc). This really gets the students involved and they love it.

Materials Needed (type and quantity): Per Group: Wire (4), Light bulbs (2), Light bulb mounts, Battery (D cell), Battery holder

Notes and Tips (general changes, alternative methods, cautions): Check the batteries and light bulbs to see if they work. A lot of my batteries and light bulbs did not work. Stress the fact that

everything must be connected for a circuit to work. Removal of one thing will break the circuit. Do not connect two batteries two one light bulb! They will burn the light out.

Sources/References:

- 1) Georgia performance standards
- 2) Georgia HSP Science 5th Grade Textbook
- 3) [Click here to enter text.](#)