Activities

The Magic School Bus Gets Charged

Grades: 3–5

Overview
As part of another Magic School Bus tale, kids make a simple electrical circuit and then use it to send messages by switching a light bulb on and off.

Field Trip Notes
It's Valentine's Day and the kids are selling lightbulbs. But when they stop at Ms. Frizzle's house to sell her one, her battery-operated doorbell doesn't work. Looking for Ms. Frizzle to tell her the doorbell's broken, Wanda overhears her teacher talking on the telephone...to a man! Want rushes back to the others: 'Ms. Frizzle has a boyfriend,
and he's on his way to see her! We've got to fix the doorbell or else she'll never know he's here!' But first they have to figure out how it works...

**Make The Flow Go**

*Time:* 30 minutes  
*Group Size:* 2-4  
The Magic School Bus kids charge through an electrical circuit to discover how it works. Your kids make a simple circuit and switch.

**What You Need**  
For each group:  
- D dry-cell battery  
- Flashlight bulb (PR2, PR4, PR6)  
- 12-inch aluminum foil strip or copper wire  
- Paste  
- Index card  
- 2 1-inch-wide foil strips  
- 2 12-inch foil strips or copper wire  
- Rubber band  
- Tape  
- Clothespin (spring type)  
- Copies of MAKE THE FLOW GO page  

**Talk About It**  
If we have a battery and a lightbulb, how can we light the bulb?
What To Do

1. Before passing out activity sheets, give each group a battery, bulb, and 12-inch foil strip or wire. Fold foil strips lengthwise to make them sturdier. Let them experiment, then give each group the Worksheet.

2. Compare groups’ electrical circuits. Ask: What do successful setups have in common? (They make a circular pathway with the foil between battery and bulb.) Let kids draw and label circuits on the activity sheet.

3. Ask: How can we turn the bulb off? (Break the circuit.) Use activity-sheet instructions to make pressure switches. Ask: What do switches do? (They turn electrical circuits and connected appliances off and on.)

4. Ask: Why does the bulb light when you press the foil strips together? (It completes the circuit, or pathway.)

Next Stop
Create a code using the pressure switch to turn the bulbs off and on. Send a message.

Subjects:
Electricity, Energy, Communication, Diagrams
MAKING THE FLOW GO

Can you create an electric flow and make the bulb glow?

THE GLOW-FLOW CHALLENGE

1. Use a battery, bulb, and foil strip to make an electric circuit. If the bulb glows, you've got a circuit! Draw a picture here of your setup.
2. Connect the labels below with arrows to the parts of your electrical circuit.

LIGHTBULB

What it does: Uses electric current to make light and heat
Job: Lights up

BATTERY

What it does: Moves electric charges in a current
Job: Energy source

FOIL STRIP

What it does: Lets electric charges move easily
Job: Conducts electricity

SWITCH IT ON!

Make a switch to turn your light bulb on and off.
1. Fold index card in half. Tape pieces of foil completely around both halves.
2. Make a pressure switch, as shown in the illustration.
3. Finish making the switch. Does the bulb light? What can you do to make it light?