Activities

The Magic School Bus Gets a Bright Idea

Grades: 3–5

Overview
The Magic School Bus adventure leads to a series of simple experiments showing how light rays are reflected.

Field Trip Notes
After the illuminating light show at Walkerville's old theater, Arnold's bossy cousin Janet claims she could put on a much better show. Nobody believes her, until Janet and Arnold mysteriously disappear. Ms. Frizzle leads her class into the darkened theater to look for them. To shed some light on the problem, the kids become beams of light - but find nothing. Then, to their great shock, they see Arnold's ghostly image floating high above the empty stage! Is the theater haunted? Or is this just one of Janet's tricks?
Bounce the Light

Time: 30 minutes
Group Size: 2-4
Arnold and Janet disappear! Or so it seems. When Ms. Frizzle’s kids discover how light bounces, they shed light on a ghostly trick. Your kids explore reflecting light.

What You Need

- Flashlight
- Small flat mirror
- White index card
- Copies of BOUNCE THE LIGHT page

Talk About It

Some kids believe we see objects because our eyes are like flashlights: We “shine” them on things. These activities help kids explore how light actually travels from a source (flashlight), hits an object, and bounces off into our eyes. Ask: How could you shine a flashlight in front of you and make the light go behind you?

What To Do

a. Pull shades, and place group materials at stations in darkened areas.
b. Display the materials. Go over the activity sheets, then let teams explore light on their own.
c. Circulate to help kids and to keep them focused on the questions.
d. Kids will see: 1. light only at the wall; 2. no shadow in air; 3. light on mirror and card.
e. Challenge kids to “Bounce the Light.” Tell groups to shine a flashlight on a wall in front of them. Ask: How can you make the light shine equally brightly behind you WITHOUT MOVING THE FLASHLIGHT? Have them draw a picture of how the light bounced on the back of the activity sheet.

Next Stop
In a darkened room, shine a flashlight onto a wall. Ask: Where do you see light? (at flashlight source and on wall) Can you see light travel from the flashlight to the wall? (not unless dust in air reflects light to our eyes) What could we do to see the light beam? Let kids experiment with ideas. Then ask a nonallergy-prone child to clap two dusty erasers together while you shine the flashlight through the dust-filled air. Ask: Why do we see the light beam now?

Subjects:
Science, Light, Observation, Geometry/Angles
What to Do

1. Predict: Write the letter of the picture that shows what you think will happen.
2. Do the experiment.
3. What was the result? Write the letter of that picture.

What do you know about light? Can you move it around? Find out when you try these experiments!

**EXPERIMENT #1:**
Point the flashlight at the wall and turn it on. Where will you see light?

- A. In the air and on the wall
- B. Only on the wall
- C. Only in the air

Prediction: _________ Result: _________

**EXPERIMENT #2:**
Hold a card between the flashlight beam and the wall. You'll see the card shadow on the wall, of course. Will you see the shadow in the air?

- A. Shadow in the air
- B. No shadow in the air

Prediction: _________ Result: _________

**EXPERIMENT #3:**
Ask a partner to hold the mirror and white card at an angle to each other. If you shine light on the mirror, where will you see the light beam?

- A. Only on the mirror
- E. On the mirror and the card

Prediction: _________ Result: _________