Energy Ball Investigations

Materials

- Energy Ball
- aluminum foil
- cloth scrap
- paper

Note: An Energy Ball is a white ball that looks like a ping-pong ball with two metal strips underneath. When someone touches both metal strips, a light turns on and the ball makes a spooky noise. Use this activity to guide students through an investigation of how it works. Pair students with a partner and have them discuss each question before you reveal the answer.

Step 1

Do: Activate the Energy Ball by holding it in the palm of your hand.

Ask: What do you think makes the ball flash and hum?

(Answer: Electricity from a small battery activates a light and a noise maker.)

Step 2

Do: Show the metal contacts. First touch just one contact to show that the ball will not activate. Then touch both contacts to demonstrate the technique for activating the ball.

Ask: Why do I have to touch both contact points to make the ball work?

(Answer: Electricity must be given a complete path, or circuit, in order to flow. When you touch both contacts your body is completing the circuit. A small amount of electricity passes through your body to activate the ball.)

Step 3

Do: Connect the two contacts with a small piece of paper to show that some materials will not complete the circuit. (The ball will not light up.)

Say: As you can see, the Energy Ball won't light up when paper is used to complete the circuit. Can you think of any materials that <u>might</u> work?

Do: Try out any feasible ideas. Use aluminum foil, paper, cloth, etc.

Step 4

Ask: What kinds of materials were able to complete the circuit?

(Answer: Only materials that conduct electricity, such as metals, will work to complete the circuit. Interestingly enough, our bodies also conduct electricity.)

Activity Developed by Laura Candler (Teaching Resources at www.lauracandler.com)

Energy Ball Questions (Continued)

Step 5

Ask: If I touch one metal contact and someone else touches the other, will the ball light?

Do: Try this, but make sure your hands are not touching.

(Answer: The energy ball will not work since the electricity does not have a complete circuit through which to flow.)

Step 6

Ask: Will the ball light if we hold the ball *and* hold hands?

Do: Use your free hands to hold hands.

(Answer: Yes. Electrical current passes through your bodies and activates the energy ball.)

Step 7

Ask: Will the ball light if we add a third person?

Do: Add a third person to form a circle.

(Answer: Yes. Current passes through all three people.)

Step 8

Ask: How many people can w**e add and still activate the ball?**

Do: Keep adding students until the entire class has joined the circle.

(Answer: The ball will light up with the whole class holding hands. Beyond that, who knows???? Try it!)

The Energy Ball is available in many novelty and science stores. It is also available at www.stevespanglerscience.com.