Sparks

Companion Text: The Jakry Kids: Curiosity Shop, by Lin Jakary & illustrated by Ryan Olson
Subject Area & Grade Level: Science, 4th Grade
Materials: Balloons, timers

Objectives

After this lesson, students will be able to:

- Describe what causes static electricity to build up
- Demonstrate the effects of static electricity

Staging Activity

Find an area of your classroom or school with carpeting or a rug, and have students shuffle their feet on it to build up a static charge. Then, have them touch each other to try to produce a tiny "shock." Ask students if they know what caused the shock, but don't give them an answer yet.

Core Activity

Tell students that you are going to read a story, and that they should be on the look-out for any "shocking" events within it. Read the story once through without stopping, and then ask students if they noticed anything "shocking." Then, return to page 17, and re-read the first 4 or 5 lines of text. Ask why there would be a spark when Marlita rubbed the thread against her head.

Explain that in real life, rubbing two things together won't cause a tiny poodle to appear, but it can cause a spark, a sign of electricity. Tell students that the small shock they experienced earlier would also have a very little spark associated with it. Ask if anyone has ever happened to experience a shock of electricity in the dark where they were able to notice the spark. (An example of this is the static electricity sometimes found in freshly laundered sheets or clothes that have just come out of a clothes dryer.)

Then, explain that the kind of electricity caused by objects rubbing against each other is called "static" electricity, because it is stationary, as opposed to moving along a wire, for example.

Extension

Tell students you are going to give them a challenge. Break them into groups of three or four students each, and give each group an inflated balloon, and a timer. Arrange the groups around the room and tell them they have to get their balloon to stick to the wall using static electricity. Give the groups a few minutes to plan their strategy, then countdown, have them stick their balloons on the wall, and start their timers simultaneously. Afterward, lead a discussion in which you highlight winning and losing strategies, and highlight that static charge was built up by rubbing the balloon against other objects before sticking it on the wall. If you have a section of your room where the walls are more humid, such as by an outside door or window, explain that humidity mitigates static charge, so you would expect balloons hung there to stick for less time.