Tea Cozies

Companion Text: The Jakry Kids: Curiosity Shop, by Lin Jakary & illustrated by Ryan Olson
Subject Area & Grade Level: Science, 5th Grade
Materials: Thermometers, glass jars, small pitchers of hot water, teabags, shoeboxes, packing foam, rubberbands, and scraps of wool, fleece, or other fuzzy fabric.

Objectives

After this lesson, students will be able to:

- Make and test a hypothesis
- Use appropriate scientific tools to measure, record, and compare data
- Describe what makes a material a good insulator

Staging Activity

Read the story once through without stopping. Then, ask students if they have ever been to a tea party. Describe that people who drink tea often use something called a "tea cozy" to keep the tea in their teapot warm, and that today they will try to determine how to make the best tea cozy.

Core Activity

Split students into groups, and assign a role (recorder, pourer, timer, reporter, etc.) to each student so that everyone's job is clear.

Explain and demonstrate the experimental set-up in the front of the room to introduce students to the materials that will be used in the lab: three jars will be surrounded by different insulators for the purpose of determining which insulator keeps the water the warmest. The first jar in set in the shoebox, and surrounded with pieces of packing foam; the second and third have a piece of paper and a piece of fabric, respectively, wrapped around them and held in place with rubberbands. Once the jars are set up, collect a thermometer and a pitcher of hot water from the front of the room, and take them to your work area. Measure the temperature of the water using the thermometer, record it, and quickly pour equal amounts of the remaining water into each of the three jars. Take the temperature of the water in each jar after 5 and 10 minutes.

Now that students know what they will be doing, stress the importance of making a hypothesis before they begin. Remind them that a hypothesis is an "if…then…" statement about what they expect to happen in the experiment. For this experiment, everyone's hypothesis should begin, "If we put water into three jars with different insulators around them, then…" and each group should fill in the blank about which jar they think will stay the warmest.

Have the groups conduct the experiment, clean up the supplies, and then plan their oral report.

Extension

Have reporters summarize results; then, lead a discussion about attributes of good insulators.