

Properties of Materials

Companion Text: The Jakry Kids: Curiosity Shop, by Lin Jakary & illustrated by Ryan Olson

Subject Area & Grade Level: Science, 3rd Grade

Materials: plastic wrap, paperclip, magnet, plastic toy, penlight, rubberband, jar, bowl, and scraps of wood, fabric, plastic sheeting, & aluminum foil

Objectives

After this lesson, students will be able to:

- Classify objects by their core materials
- Describe physical characteristics of commonly found materials

Staging Activity

Read the story once through without stopping. Then, return to page 8, and reread it. Ask students if they have ever been in a place like this before, with all kinds of different things. Hold up the picture, and see if students can point out an object in the picture made of each of the following materials: wood, rubber, plastic, glass, fabric, paper, and metal.

Core Activity

Explain that in the world, when we make things, we choose the materials from which they are made based on the characteristics of the materials. For example, ask students what the most important characteristic of a raincoat is (that it is waterproof). So, which materials would be good ones for making a raincoat—Paper? Fabric? Plastic? Rubber? Then, flip the question on its head and ask students what is made from materials with the following properties: rough (i.e. sandpaper), reflective (i.e. mirror), good at insulating (i.e. thermos), transparent (i.e. window).

Set up the following stations and let students rotate through them. You could either demonstrate each one ahead of time, or allow students to lead themselves through experimental play:

- A jar of water, and a bowl, and a rubberband with scraps of fabric, plastic sheeting, and aluminum foil. Students should stretch each material over the jar of water, secure it with the rubberband, and try to pour water through it into the bowl. (Which are waterproof?)
- A scrap of aluminum foil, a piece of wood, a piece of plastic wrap, a piece of white paper, and a penlight. Students should hold up each material and shine the light on it. (Which are transparent? Which are reflective?)
- A plastic toy, a pencil, a piece of paper, a paperclip, and a magnet. (Which are magnetic?)

Extension

Conclude with a discussion using the parenthetical questions above as a springboard. Ask students can name other objects with the attributes explored in the activity. Play a game where



you see who can name the highest number of objects that have a particular attribute (i.e. transparent: windows, watch glass, plastic wrap, drinking glass, etc.)

