

Describing Properties

OBJECTIVES

Students learn to further describe the properties of different objects. They also classify objects according to their properties.

The students

- ▶ examine a variety of objects and describe them with words
- ▶ create a chart showing different categories of descriptive words
- ▶ classify objects into groups according to their properties

SCHEDULE

About 40 minutes

VOCABULARY

classify

MATERIALS

For each student

- 1 Activity Sheet 2

For each team of two

- 1 balloon, any color
- 1 block, any shape/color
- 1 button, any shape/color
- 1 cork
- 1 feather
- 1 piece foam
- 1 marble
- 1 rock, rough
- 1 rubber band

- 1 piece sandpaper, coarse
- 1 shell
- 1 spoon, plastic
- 1 tray, sorting

For the class

- 1 chart, Property Words
- 1 pkg markers, assorted colors*
oil, vegetable*
- 16 shts paper, scrap*
paper towels*
- 1 pair scissors*
- 1 roll tape, masking
- 1 roll waxed paper*

*provided by the teacher

PREPARATION

- 1 Make a copy of Activity Sheet 2 for each student.
- 2 Cut the waxed paper into sixteen 10-cm × 10-cm (4-in. × 4-in.) squares. Rub a drop of oil onto the surface of each waxed paper square.
- 3 Cut sixteen 15-cm (6-in.) strips of masking tape and stick the ends of each strip together to make sixteen rings, each with the sticky side of the tape facing out. Stick a ring of masking tape to each of sixteen sheets of scrap paper.
- 4 Hang the Property Words chart at the front of the classroom.
- 5 Put the following objects on a sorting tray for each team of two: a balloon, a block, a button, a cork, a feather, a piece of foam, a marble, a rock, a rubber band, a piece of sandpaper, a shell, a plastic spoon, a ring

of masking tape stuck to a piece of scrap paper, an oiled waxed paper square, and a paper towel for students to use to wipe off their fingers.

BACKGROUND INFORMATION

To **classify** an object is to place it in a certain group, or category, based on its properties.

Throughout these activities, students will learn to classify objects based on comparisons of these objects with their past experiences or their immediate surroundings. In the first case, students might compare the size of a button on their tray to the size of a typical button with which they are already familiar. In the second case, students might compare the size of the button to the size of an adjacent object on their tray.

Make students aware that they are using their senses of sight, hearing, smell, and touch when they examine their objects and compare them with one another. Although in the real world we use the sense of taste as well to classify and sort objects, the activities in this module do not include sorting based on this characteristic.

Safety Note: Tell students not to taste or lick the objects on their tray.

By deciding on words that can be used to describe the different properties of objects, students will indirectly be increasing the size of their descriptive vocabulary. The sophistication of students' vocabulary can vary widely. Students will probably be most familiar with examples of color words.

At the end of this activity, students should recognize that different objects can be grouped together according to similar properties or attributes.

▼ Activity Sheet 2

Describing Properties

Circle the object that does not belong in each group.

Group 1



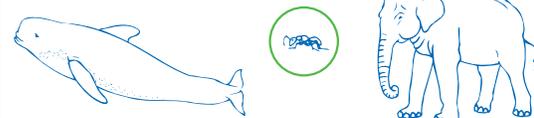
The fork is the only object that is not a spoon.

Group 2



The block and the hat are triangular in shape. The feather is not.

Group 3



The whale and elephant are large. The ant is small.

Guiding the Activity

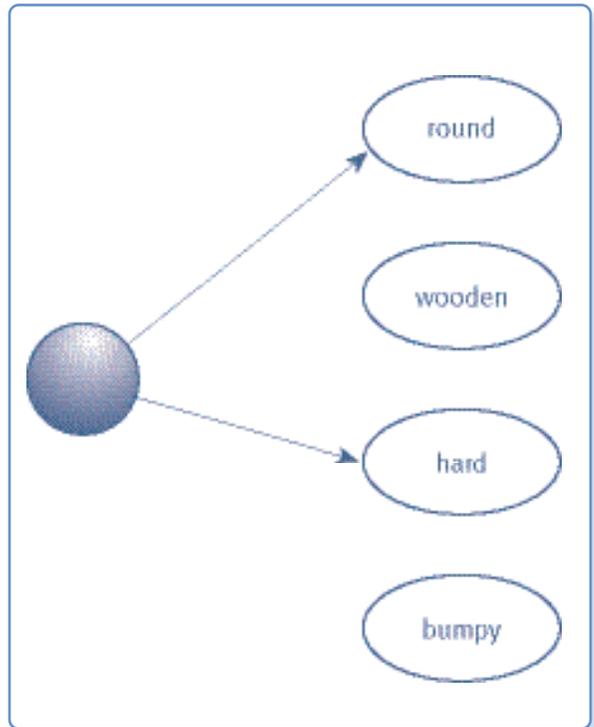
- 1 Tell students that they are going to look at different objects and decide on words that can be used to describe the properties of the different objects (see Figure 2-1).

Distribute a sorting tray of items to each team.

- 2 Point to the heading *Color Words* on the Property Words chart and ask, **What words can we list under *Color Words* to describe the objects on your trays?**

When students have finished adding to the list, point to each word as you read the list aloud. Ask, **What other color words could we add to this list?**

Additional Information



▲ **Figure 2-1.** A marble can be classified as “round” and “hard.”

Give the students ample time to examine and manipulate the objects on their trays. Students can use the paper towels to wipe their fingers after handling the oiled waxed paper square.

*Student answers will vary depending on the color of the objects on their trays. Record their answers on the Property Words chart under the heading *Color Words*. Write each word using an appropriately colored marker. For example, use a blue marker to write the word blue.*

Accept a few more answers from the students and add them to the list.

Guiding the Activity

Additional Information

- 3 Point to the heading *Shape Words* on the chart and read the heading aloud to the students. Ask, **What words can we list under *Shape Words* to describe the objects on your trays?**

Once the students have finished adding words to the list, read the list back to the students. Ask, **Are there any other shape words that you can think of to add to this list?**

Repeat the above process for the headings titled *Size Words*, *Texture Words*, and *Weight Words*. Leave the other headings blank for now (see Figure 2-2).

Again, student answers will vary. Shape words might include square, circle, rectangle, round, triangle, pointy, curvy, diamond-shaped, and hat-shaped.

Record student answers on the chart and, where possible, draw the appropriate shape next to each descriptive word.

Accept a few more answers from the students and add them to the list.

At the end of this activity, students should be familiar with different words that can be used to describe a variety of properties. For example, the descriptive words for size might include small, medium, large, big, little, short, tall, thick, wide, and narrow. Texture words might include rough, smooth, bumpy, and sticky. Weight words might include heavy, light, very light, and very heavy.

Property Words

Color Words	Shape Words	Size Words	Texture Words	Weight Words
yellow	round	large	smooth	heavy
silver	square	small	rough	light
brown	triangle	tiny	bumpy	
red	diamond		greasy	
blue	pointy			

▲ Figure 2-2. The Property Words chart.

Guiding the Activity

- 4 After the first five columns of the Property Words chart are complete, have students pick a specific property and then group together all the objects from their tray that have this property. Then have each team display their objects and have other students guess which property the objects represent.

Write the word *classify* on the board and explain to students that when they add the rubber band to the “round” group, they have classified it as “round.” To **classify** an object is to place the object into a group of other objects that share a common property.

Distribute a copy of **Activity Sheet 2** to each student. Help students read the directions.

Additional Information

For example, all objects that are yellow or all objects that are round.

For example, a button, a marble, and a rubber band might represent round.

Go over student responses once they have finished.

REINFORCEMENT

Provide a set of objects in which each object clearly represents one property (round, smooth, soft, and so on) and ask students to find the object that is round, the object that is smooth, the object that is soft, and so on.

SCIENCE JOURNALS

Have students place their completed activity sheets in their science journals.

CLEANUP

Have students discard the sheets of scrap paper with masking tape and oiled waxed paper squares. Return the sorting trays, balloons, blocks, buttons, corks, feathers, foam pieces, marbles, rocks, rubber bands, pieces of sandpaper, shells, and plastic spoons to the kit. Leave the Property Words chart on display in the classroom.

SCIENCE AT HOME

Have students find three small objects at home that share a common property and ask their parents if they can bring them in to show the class. Have each student hold up their objects and have the class guess what property the three objects have in common.

Connections

Science Extension

- ▶ Name three objects in the classroom that share at least one obvious property—for example, a rug, a specific book, and a particular student’s shirt, all of which are green—and ask students to identify the specific property that all three objects have in common. Accept all reasonable answers besides the one you anticipated. Once students understand the procedure, let them take turns identifying objects for which other students should identify the common property.
- ▶ Print specific property words on separate file cards, making enough cards so that each student can have one. Shuffle the cards together, then let each student pick one. Each student should then find in the classroom or identify from memory three objects that share the specific property named on the card. For a more difficult task, make enough cards so that each student can have two, sort the cards into general property categories (color cards, shape cards, and so forth), and let each student pick one card from each of two different categories. The student must then identify three objects that have those two specific properties in common.
- ▶ Use actual objects to demonstrate the relative nature of size relationships. For example, show students a small toy car and a book, and ask, “Which one is big?” and “Which one is small?” Remove the car and replace it with a wastebasket, and again ask students to identify which one is big and which is small. Repeat the procedure with different objects. As a more difficult task, use picture cards instead of actual objects.

Science and the Arts

On a blank area of the bulletin board, post a large index card with a specific property word

printed on it—*red*, for example, or *soft*. Have each student draw a picture of an object that has that specific property and attach the picture to the bulletin board. Each day, remove students’ pictures from the previous day and post a new card with a different specific property word. As a more difficult variation, post cards identifying general property categories—color, shape, or size, for example—and have students draw pictures of two objects that share a specific property in that category, such as a red apple and a red fire engine, a round clock and a round soccer ball, or a large elephant and a large truck.

Science and Language Arts

- ▶ Unlike property words for color and shape, which are specific (*red*, *square*, and so on), property words for size are relative, involving comparisons between objects (*big/small*, *wide/narrow*, and so on). The relative size of an object depends on the other object(s) with which it is compared. For example, a dog is big compared with a mouse but small compared with an elephant. Obtain a picture book that presents this concept in an age-appropriate manner. Read the book aloud to small groups, or make it available for students to read on their own if they are capable. Review the book with small groups. Discuss the size relationships illustrated, and ask questions to make sure students understand the relative nature of size comparisons.
- ▶ Identify an “opposites” pair of specific property words that could be used to describe two objects—for example, *wide* and *narrow*. Call on students in turn to use both words in complete sentences describing specific objects: for example, “A highway is wide,” and “A sidewalk is narrow.”