

INVESTIGATION 1

HOW CAN YOU DESCRIBE MATTER?

Suppose you were asked to compare a building brick and a basketball. List the characteristics you would use to describe each object. Could another person identify both objects based on your lists?

Activity

A Matter of Mass

A golf ball and a table-tennis ball are about the same size. Which contains more matter? How can you measure the amount of matter in an object?

MATERIALS

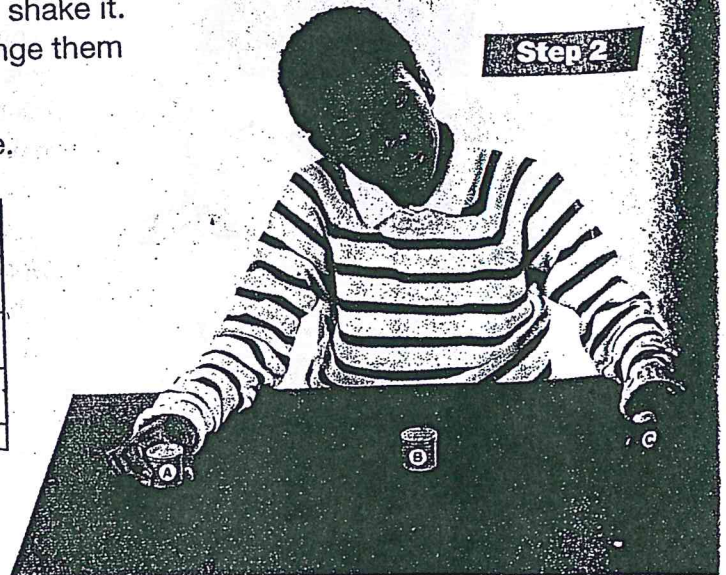
- 3 sealed containers, labeled A, B, and C
- balance and masses
- *Science Notebook*

Procedure

1. Look at the three containers. Without picking them up, compare their sizes and shapes. Record your observations in your *Science Notebook*.
2. Now pick up each container, but don't shake it. Based on the way the containers feel, arrange them in order from heaviest to lightest.
3. Make a chart like the one shown here.

Container	Mass (g)	Contents
A		
B		
C		

Step 2



4. Using a balance, measure in grams the mass—the amount of matter—of each container. Record the results in your chart.

5. Each container is filled with a different material—one with sand, one with water, and one with cotton. Based on your observations, infer the contents of each of the three containers. In the *Contents* column of your chart, write the name of the material you think is in each container. Then open the containers and check your inferences.



Analyze and Conclude

1. By studying and handling the containers, what can you infer about the amount of space taken up by each of the materials?
2. What did you learn about the amount of matter in each container? How did you learn this?
3. Describe what you learned about mass and matter by doing this activity.

SCIENCE IN LITERATURE



KITCHEN CHEMISTRY
by Robert Gardner
Julian Messner, 1988

You can compare liquid forms of matter in the same way that you compare solids. In *Kitchen Chemistry*, author Robert Gardner shows you how. On page 57, a section titled "Sinking Ice, Floating Ice" guides you as you compare the masses of equal volumes of ice, water, alcohol, and cooking oil. When you finish, see if you can explain why people say that oil is "lighter" than water.

Do you need a recipe for invisible ink? Would you like to make a "genie" rise out of a bottle? If you're ready for these science activities and more, *Kitchen Chemistry* is the book for you.



Use with pages C6-C7.

ACTIVITY RECORD

CHAPTER 1

Name _____ Date _____

A MATTER OF MASS

Procedure

Record your observations of the sizes and shapes of the three containers, by looking at them and not picking them up.

Record your arrangement of the containers, from heaviest to lightest, based on the way the containers feel.

Make a chart in the space below like the one shown on page C6 in which you can record the mass and contents of each container.

Name _____ Date _____

Analyze and Conclude

Write the answers to the questions in your book on the lines below.

1. _____

2. _____

3. _____

