

Name \_\_\_\_\_

## **SHOEFULS**

**Vocabulary:** Estimation, capacity

**Objective:** Students will develop, use and explain orally and in writing a variety of estimation strategies in a problem situation involving whole numbers relevant to students' experiences to determine quantity, measure, make comparisons and compute.

**Initiation:** Talk about ways to make a reasonable estimate. Discuss vocabulary words.

### **Procedure:**

1. Hold up your shoe and ask students how many centimeter cubes they think will fill your shoe. Record their estimations on the board and/or chart paper. Fill your shoe with centimeter cubes. Students should count along with you. Ask: How can you use what you know about the capacity of this shoe to help you estimate the capacity of your shoe?
2. Have students work in groups of 3 or 4. One member of the group should take off their shoe and place it in the center of their group. Make stations of each object and have groups move from station to station. Once they get to a new station, they should estimate first, then count how much of each object fits inside the shoe. Each member of the group should record on their data sheet how much of each object will fit inside this shoe.
3. Students should then count how much each object will fit inside the shoe. Record data on worksheet.

### **Closure:**

1. Students should answer questions on worksheet.
2. Chart the results. Brainstorm what these results tell us.
3. What helped you improve your estimates?
4. What is important to think about when making an estimate of how much a container will hold?

[Adapted from ESTIMATION INVESTIGATIONS by Marcia Miller and Martin Lee. Scholastic, Inc. <http://www.scholastic.com>]  
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## Shoefuls

Name \_\_\_\_\_

**Directions:** A member of each group needs to volunteer their shoe for this experiment. As you move from station to station, first make an estimate of how much of that object will fit inside the shoe. Then, count how much of each object actually fits inside the shoe. Each member of the group should record the information on their data sheet.

<b>Object</b>				
<b>Estimation</b>				
<b>Actual amount</b>				

When your group is done, answer the following questions:

1. Which object fit the most inside the shoe?

\_\_\_\_\_

2. Which object fit the least amount inside the shoe?

\_\_\_\_\_

3. Why do you think you could fit more of one object inside the shoe?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Did your estimate improve as you moved from station to station? Why or why not?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. How do your estimates compare with those of your classmates?

\_\_\_\_\_

6. How can you account for the variations?

\_\_\_\_\_

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