Name _____ Date _____

Vanishing Volume

Procedure

1. **Measure** To find the volume of a bottle, fill it with water. Then pour the water into a graduated cylinder. Record the volume on the line below.

_____

2. **Compare** Fill the same bottle with marbles. Compare the way marbles fill the bottle to the way the water filled it. Write your comparison on the lines below.

_____

_____

_____

3. **Infer** What other material is in the jar besides the marbles? (Hint: The same material is all around you.)

_____

4. **Experiment** Design a procedure to find the total volume of the open space surrounding the marbles in the bottle. Choose from the following materials: graduated cylinder, balance, water, and plastic cups. With your teacher's approval, carry out your experiment. Record your procedure and your results on the lines below.

_____

_____

_____

_____

Use with page E73

Name _____ Date _____

Conclusion

Write the answers to the questions below.

1. **Use Numbers** What was the total volume of the marbles in the bottle? Use the results of your experiment to calculate the answer.

_____

_____

_____

2. **Hypothesize** What property allows gases and liquids to fill the spaces between solid objects?

_____

_____

_____

3. **Predict** How would this investigation be different if cubes were used to fill the bottle instead of marbles?

_____

_____

_____

Investigate More!

Design an Experiment How much open space is in a plastic bottle filled with beads? Or with coarse gravel, or sand? Adapt your procedure to find and compare the answers.

Use with page E73