


Student Activity Book

Measuring Volume (SAB pp. 567–572)
Questions 1–11

- 1.* See Figure 2 in Lesson 4 for a sample drawing.
- 2.* See Figure 3 in Lesson 4 for a sample Data Table.
- 3.* See Figure 4 in Lesson 4 for a sample graph.

Name _____ Date _____

Measuring Volume



1. Draw a picture of the lab set up.


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collect

2. Fill a graduated cylinder with 80 cc of water. Measure the volume of four sets of objects. One should be a chain of centimeter connecting cubes. Complete the data table.


O	Volume of Water In _____ unit	Volume of Water and Objects In _____ unit	Volume of Set of Objects In _____ unit	Number Sentence
chain of _____ connecting cubes				

Measuring Volume

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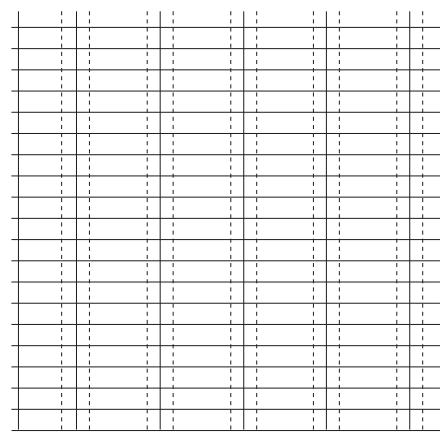
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3. Make bar graph of your data.

Measuring Volume



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*Answers and/or discussion are included in the lesson.

Answer Key • Lesson 4: Measuring Volume

Name _____ Date _____



Work together to answer the following questions.

4. Which set of objects has the most volume? What is its volume?

5. Which set of objects has the least volume? What is its volume?

6. What is the difference in volume between the two sets of objects in Questions 4 and 5? Show how you found your answer.

7. What is the sum of the volumes of the two sets of objects in Questions 4 and 5? Show how you found your answer.

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4–7. Answers will depend on the data.

8. A. >

B. >

C. =

D. <

9. A.* 55 cc; Possible responses: $105 - 50 = 55$; I know $50 + 50 = 100$ and 5 more is 105, so $50 + 55 = 105$

B. 29 cc; Possible response: I counted back by tens 96, 86, 76, 66, then added one back to 67, so that's $30 - 1 = 29$.

10.* Possible response: The water will overflow. $20 + 20 + 20 = 60$ cc and $60 + 50 = 110$ cc, which is more than the 100 cc the cylinder can hold.

11.* Responses will vary. See Figure 6 in the Lesson for a sample data table.

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8. Compare the volumes. Use <, >, or = to make each number sentence true.

A. $156 \text{ cc} + 89 \text{ cc}$ ○ $110 \text{ cc} + 67 \text{ cc}$

B. $138 \text{ cc} - 74 \text{ cc}$ ○ $236 \text{ cc} - 183 \text{ cc}$

C. $241 \text{ cc} + 32 \text{ cc}$ ○ $189 \text{ cc} + 84 \text{ cc}$

D. $250 \text{ cc} - 52 \text{ cc}$ ○ $127 \text{ cc} + 82 \text{ cc}$

9. A. A graduated cylinder was filled with water to the 50 cc mark. An object was added. The water level is at 105 cc. What is the volume of the object? Show or tell how you know.

B. Carla put a toy car into a graduated cylinder. The water was at 96 cc. The level of the water after Carla took the car out of the graduated cylinder was 67 cc. What is the volume of the toy car? Show or tell how you know.

10. A 100 cc graduated cylinder is filled with water to the 50 cc mark. Three rocks were put into the cylinder. The volume of each rock is 20 cc. What will happen? Why?

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*Answers and/or discussion are included in the lesson.

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Name _____

Date _____

11. Look at your data in Question 2. Imagine you are going to measure the volume of triple (3 times) the number of objects in each set. If you start with 80 cc in the graduated cylinder, which objects cause the water to go over the 100 cc mark on the graduated cylinder? Show your work in the table below.

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Set of Objects	Triple the Volume of Objects				
	Volume of One Set of Objects in $\frac{\text{cc}}{\text{unit}}$	Triple the Volume of Set of Objects in $\frac{\text{cc}}{\text{unit}}$	Volume of Water in $\frac{\text{cc}}{\text{unit}}$	Volume of Water and Objects in $\frac{\text{cc}}{\text{unit}}$	Overflow 100 cc Mark (Yes or No)
chain of _____ connecting cubes			80 cc		
			80 cc		
			80 cc		
			80 cc		
			80 cc		

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Teacher Guide

Volume Varies (TG pp. 1–3)

Homework

Questions 1–5

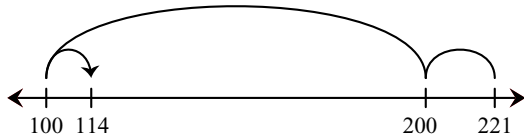
1. 134 cc; Possible number sentences:

$$300 - 166 = 134 \text{ cc};$$

$$166 + 4 + 30 + 100 = 134$$

2. 107 cc; Possible strategy:

$$21 + 100 \div 14 = 107$$



3. 232 cc; Possible number sentence:

$$52 + 60 + 60 + 60 = 232$$

4. A. Kim

B. Liz

C. greater; I know 300 is greater than 200 so

$$329 > 225$$

5. A. >

B. <

C. <

Name _____ Date _____

Volume Varies

Homework

Dear Family Member:

Your child is measuring volume in class by finding the amount of water objects displace when they are placed in a graduated cylinder of water. Students also have been comparing volumes and solving addition and subtraction problems involving volume. Listen to your child's problem solving strategies as he or she solves each problem.

Thank you.

1. Josh has a container filled with 166 cc of water. He needs 300 cc in the container. How much more water does he need?

Number sentence _____

2. Emily poured 114 cc of water in a graduated cylinder. She added all the marbles from a small bag. The volume of the water and the marbles was 221 cc. What was the volume of the marbles? Show or tell how you found your answer.

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3. Jason poured 52 cc of water in a graduated cylinder. He added three toy cars to the cylinder. Each car has a volume of 60 cc. What is the volume of the water and all the cars in the graduated cylinder?

Number sentence _____

4. Compare the volume of each student's graduated cylinder in the table.

Student	Volume of the Object and Water
Peter	225 cc
Liz	150 cc
Sam	179 cc
Kim	238 cc

A. Who has the cylinder with the greatest volume? _____

B. Who has the cylinder with the least volume? _____

C. Is the sum of the volume of Liz and Sam's cylinders greater or less than the volume of Peter's cylinder? Show or tell how you know.

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5. Complete the sentences using *greater than*, *less than*, or *equal to*.

A. The volume of Kim's cylinder is _____ the volume of Peter's cylinder.

B. The volume of Liz's cylinder is _____ the volume of Sam's cylinder.

C. The volume of Peter's cylinder is _____ the volume of Kim's cylinder.

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