Measuring Volume

Draw

1. Draw a picture of the lab set-up.

Name _____   Date _____

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.
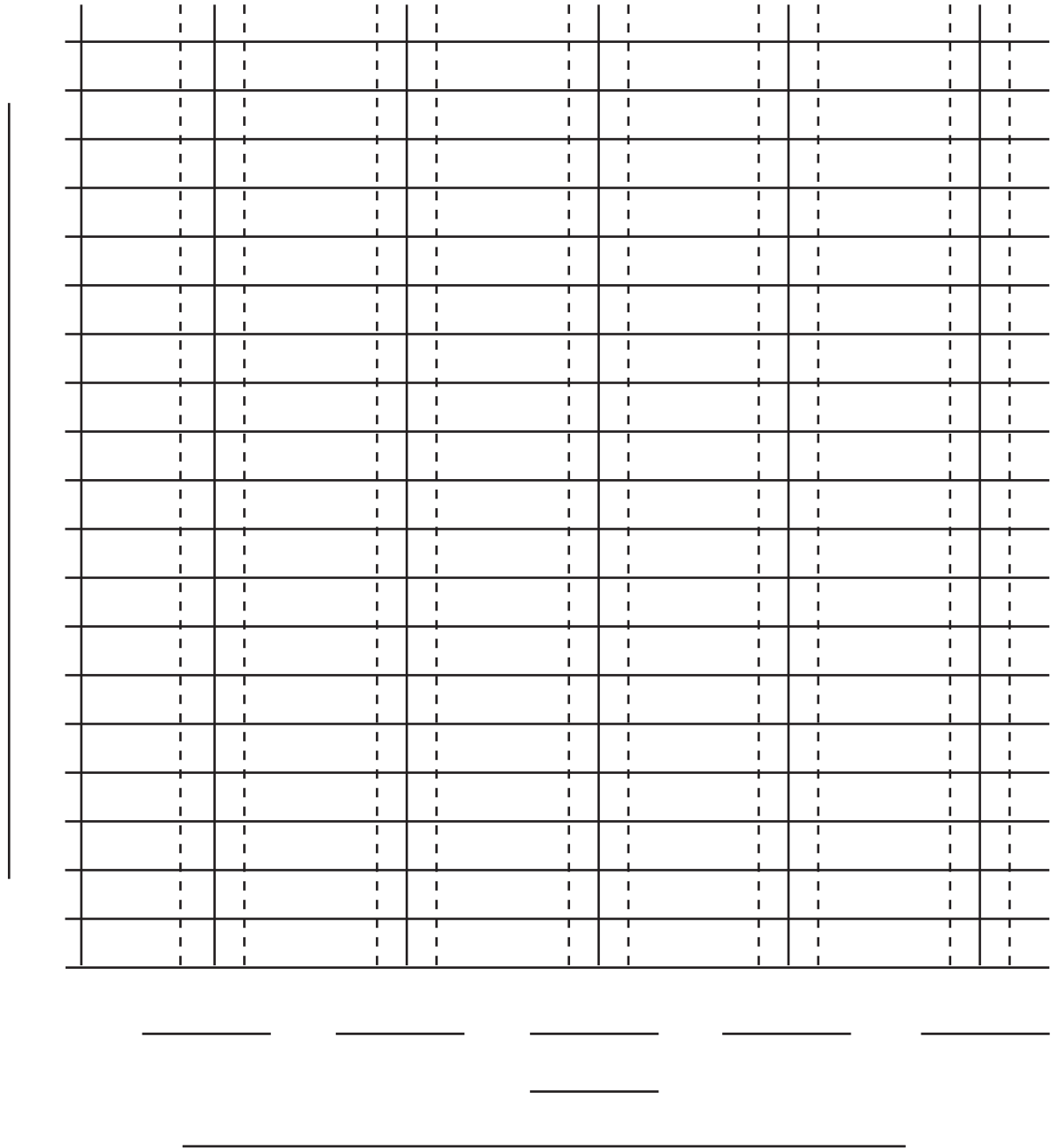
Measuring Volume

O Set of Objects	Volume of Water in _____ *unit*	Volume of Water and Objects in _____ *unit*	V Volume of Set of Objects in _____ *unit*	Number Sentence
chain of _____ connecting cubes				

Graph

3. Make bar graph of your data.

Measuring Volume

Explore

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.

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

    A. 156 cc + 89 cc ⃝ 110 cc + 67 cc

    B. 138 cc − 74 cc ⃝ 236 cc − 183 cc

    C. 241 cc + 32 cc ⃝ 189 cc + 84 cc

    D. 250 cc − 52 cc ⃝ 127 cc + 82 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?

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.

Triple the Volume of Objects

O Set of Objects	*V* Volume of One Set of Objects in ___cc___ unit	*V* Triple the Volume of Set of Objects in ___cc___ unit	Volume of Water in ___cc___ unit	Volume of Water and Objects in ___cc___ unit	Overflow 100-cc Mark (Yes or No)
chain of _____ connecting cubes			80 cc		
			80 cc		
			80 cc		
			80 cc		
			80 cc		

Name _____ Date _____

Measuring Volume Feedback Box	Expectation	Check In	Comments
Use words and symbols (e.g., <, >, =) to show comparisons of quantities (e.g., volumes). [Q# 8]	E1		
Use and apply place value concepts and comparative language to compare and order volumes (e.g., most, least, greater). [Q# 4–5]	E2		
Solve addition and subtraction problems (e.g., part-whole, join, compare) involving volume. [Q# 6–7, 9–11]	E3		
Read and interpret a variety of scales (e.g., graduated cylinder, thermometer) calibrated by twos, fives, and tens. [Q# 2]	E4		
Measure volume by displacement using a graduated cylinder. [Q# 2]	E5		
Make a bar graph to find information about a data set. [Q# 3]	E6		
Read a table and bar graph to find information about a data set. [Q# 4–5]	E7		
Use a table and bar graph to solve problems about a data set. [Q# 6–7, 11]	E8		