

Mrs. Faour/Module 5-Lesson 5

Objective: Use multiplication to connect volume as *packing* with volume as *filling*.

Problem –Set page/Watch Video

Fluency Practice /Watch Video

Application Problem/Watch Video

Lesson 5/Requirements:

- ✓ Review Class Note/use your math notebook
- ✓ Homework page/Submit
- ✓ Exit Ticket page/Submit

Problem-Set/Answer key

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 5 Problem Set 5•5

Name Chrissy Date _____

1. Determine the volume of two boxes on the table using cubes and then confirm by measuring and multiplying.

Box Number:	Number of cubes packed:	Measurements:			Volume:
		Length	Width	Height	
1	32	4cm	4cm	2cm	32 cm ³
2	20	2cm	5cm	2cm	20 cm ³

2. Using the same boxes from #1, record the amount of liquid that your box can hold.

Box Number:	Liquid the box can hold
1	32 mL
2	20 mL

3. Shade to show the water in the beaker.

At first: 4 mL After 1 mL water added: 5 mL After 1 cm cube added: 6 mL

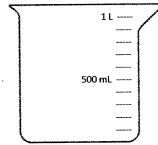
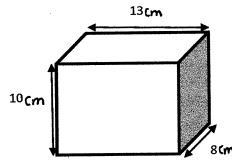
COMMON | Lesson 5: Use multiplication to connect volume as packing with volume as

4. What conclusion can you draw about 1 cubic centimeter and 1 mL?

When 1 cubic centimeter is added, the water level rises 1 mL. Therefore, 1 cubic cm is equal to 1 mL.

$$1\text{cm}^3 = 1\text{mL}$$

5. The tank, shaped like a rectangular prism, is filled to the top with water.



$$1\text{L} = 1,000\text{mL}$$

Will the beaker hold all the water in the tank? If yes, how much more will the beaker hold? If no, how much more will the tank hold than the beaker? Explain how you know.

$V_{\text{tank}} = 13\text{cm} \times 8\text{cm} \times 10\text{cm} = 1,040\text{cm}^3$ No, the beaker holds 40 mL less than the tank. $1\text{L} = 1,000\text{mL}$, and $1,040\text{cm}^3 = 1,040\text{mL}$. $1,040\text{mL}$ is 40 mL more than 1,000 mL.

6. A rectangular fish tank measures 26 cm by 20 cm by 18 cm. The tank is filled with water to a depth of 15 cm.

- a. What is the volume of the water in mL?

$$26\text{cm} \times 20\text{cm} \times 15\text{cm} = 520\text{cm}^2 \times 15\text{cm} = 7,800\text{cm}^3 = 7,800\text{mL}$$

- b. How many liters is that?

$$7,800\text{mL} \div 1,000 = 7.8\text{L}$$

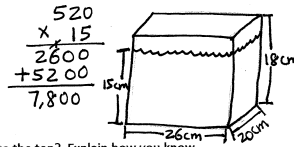
- c. How many more mL of water will be needed to fill the tank to the top? Explain how you know.

$$26\text{cm} \times 20\text{cm} \times 3\text{cm} = 26\text{cm} \times 60\text{cm}^2 = 1,560\text{cm}^3 = 1,560\text{mL}$$

The remaining part is $26\text{cm} \times 20\text{cm} \times 3\text{cm}$. I multiplied to find the volume, there is left to fill.

7. A rectangular container is 25 cm long and 20 cm wide. If it holds 1 liter of water when full, what is its height?

$$1\text{L} = 1,000\text{cm}^3 \quad 25\text{cm} \times 20\text{cm} = 500\text{cm}^2 \quad 1,000\text{cm}^3 \div 500\text{cm}^2 = 2\text{cm} \quad \text{It is 2cm high.}$$



Name _____

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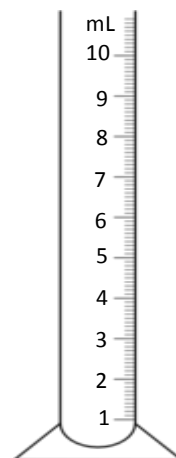
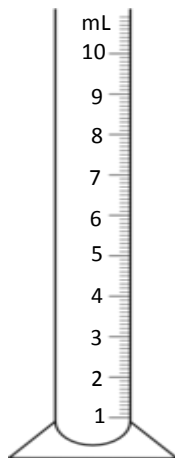
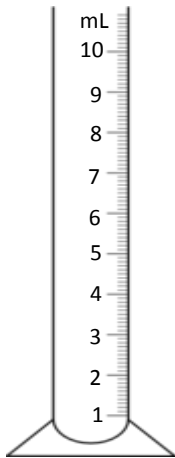
1. Determine the volume of two boxes on the table using cubes, and then confirm by measuring and multiplying.

Box Number	Number of Cubes Packed	Measurements			Volume
		Length	Width	Height	

2. Using the same boxes from Problem 1, record the amount of liquid that your box can hold.

Box Number	Liquid the Box Can Hold
	mL
	mL

3. Shade to show the water in the beaker.



At first:

_____ mL

After 1 mL water added:

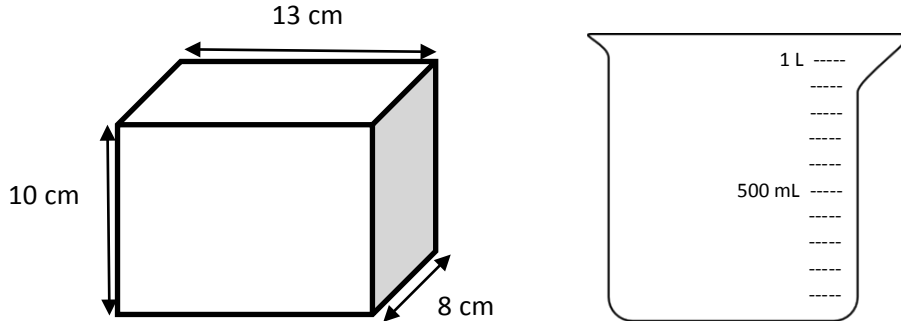
_____ mL

After 1 cm cube added:

_____ mL

4. What conclusion can you draw about 1 cubic centimeter and 1 mL?

5. The tank, shaped like a rectangular prism, is filled to the top with water.



Will the graduated cylinder hold all the water in the tank? If yes, how much more will the beaker hold? If no, how much more will the tank hold than the beaker? Explain how you know.

6. A rectangular fish tank measures 26 cm by 20 cm by 18 cm. The tank is filled with water to a depth of 15 cm.

a. What is the volume of the water in mL?

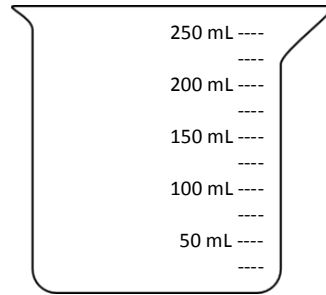
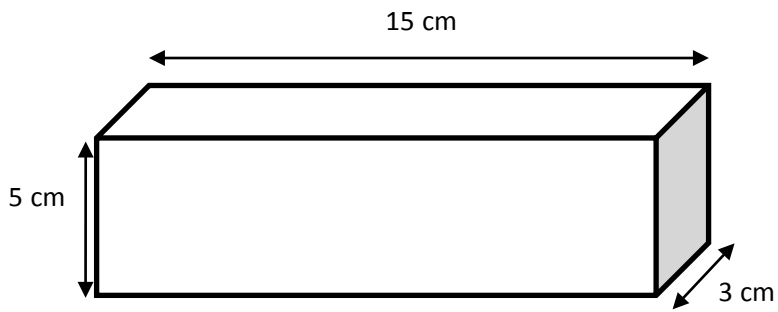
b. How many liters is that?

c. How many more mL of water will be needed to fill the tank to the top? Explain how you know.

7. A rectangular container is 25 cm long and 20 cm wide. If it holds 1 liter of water when full, what is its height?

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Date _____



- a. Find the volume of the prism.

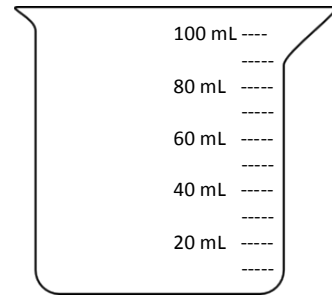
- b. Shade the beaker to show how much liquid would fill the box.

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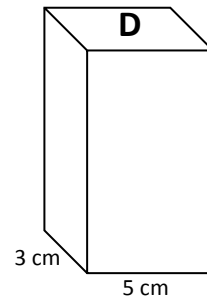
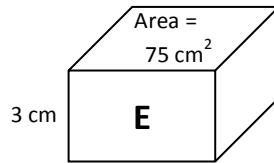
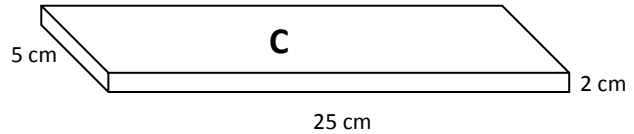
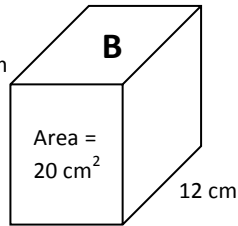
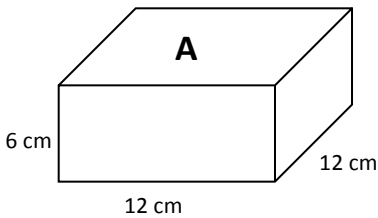
Date _____

1. Johnny filled a container with 30 centimeter cubes. Shade the beaker to show how much water the container will hold. Explain how you know.

1 cubic cm=1 ml



2. A beaker contains 250 mL of water. Jack wants to pour the water into a container that will hold the water. Which of the containers pictured below could he use? Explain your choices.



3. On the back of this paper, describe the details of the activities you did in class today. Include what you learned about cubic centimeters and milliliters. Give an example of a problem you solved with an illustration.