



Makes Maths Fun

# Level 2

## VOLUME & CAPACITY

Bloomsmath is a comprehensive mathematics program which provides a fun way for every student to be learning to the best of their ability.

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## Volume & Capacity

Level 2 is designed for students in their second year at school often called Year 1. The Volume & Capacity strand allows students to measure, compare and record volumes using informal units.

**Knowledge:** Students will compare various volumes informally and order sets of 4 volumes and number them from smallest to largest.

↓ Students who demonstrate proficiency in this activity move on to Comprehension.  Students stop here as they require additional teacher support to master this activity.

**Comprehension:** Students will estimate how many of a smaller container will fill a larger one. They can then cut and paste the smaller container to fill the larger container to see if they were correct.

↓ Students who demonstrate proficiency in this activity move on to Application.  Students stop here if time has run out or they require additional support with this activity.

**Application:** Students will count the number of blocks in a 3D model to be able to correctly order them from smallest to largest.

↓ Students who demonstrate proficiency in this activity move on to Analysis.  Students stop here if time has run out or they require additional support with this activity.


**Analysis:** Students will read the dry and submerged containers readings to measure the volume of each item.

↓ Students who demonstrate proficiency in this activity move on to Synthesis.  Students stop here if time has run out or they require additional support with this activity.

**Synthesis:** Students will make a cube and fill it with centicubes to see how big their cube is in cubic centimeters.

**Evaluation:** Suggested questions provide a starting point for discussions related to Volume and Capacity









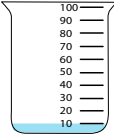
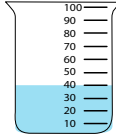
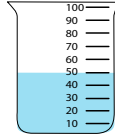
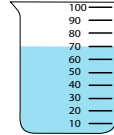




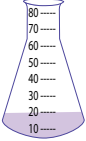
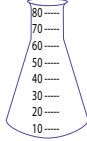
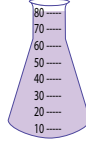
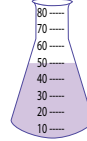
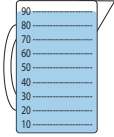
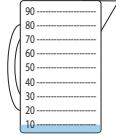
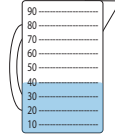
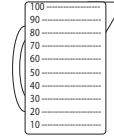
 Students may complete more or fewer activities for each learning outcome depending on the time allocated and their strength in the area being covered.

 All students should participate in the Evaluation discussion to encourage the use of mathematical language, logical reasoning and reflection on that which they have completed.

Name: \_\_\_\_\_

# Smallest To Largest

Order each set of containers from smallest volume (1) to largest volume (4).

1.				
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.				
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3.				
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4.				
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5.				
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
6.				
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Volume - Level 2 - Students will estimate, measure, compare and record formal and informal volumes.

Knowledge  
Comprehension  
Application  
Analysis  
Synthesis  
Evaluation



Let's Try This Again

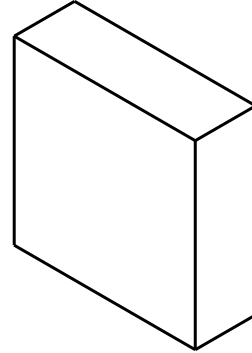
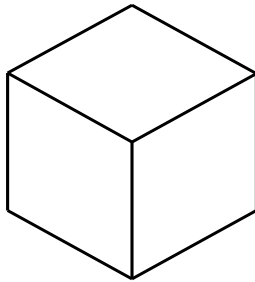
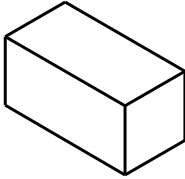


Progress To Comprehension

Name: \_\_\_\_\_

# Measuring Solids

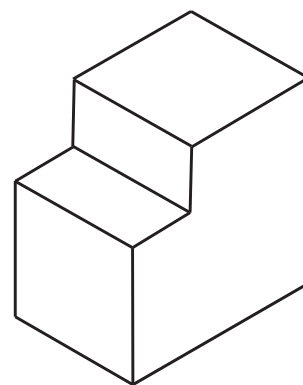
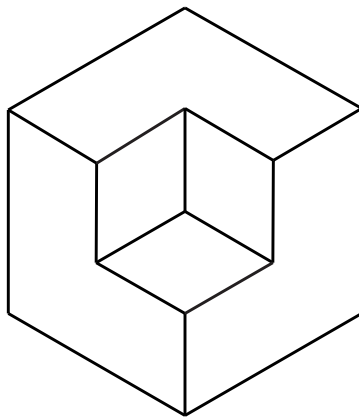
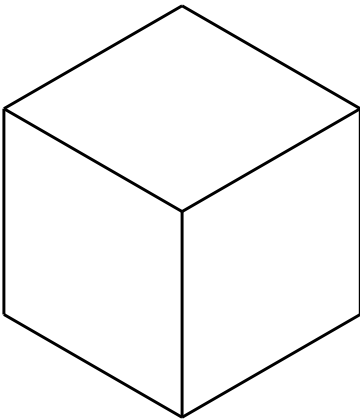
Estimate how many cubes will fill each container. Then cut out the cubes at the bottom of the sheet to see if you were correct.



Estimate: \_\_\_ Actual: \_\_\_

Estimate: \_\_\_ Actual: \_\_\_

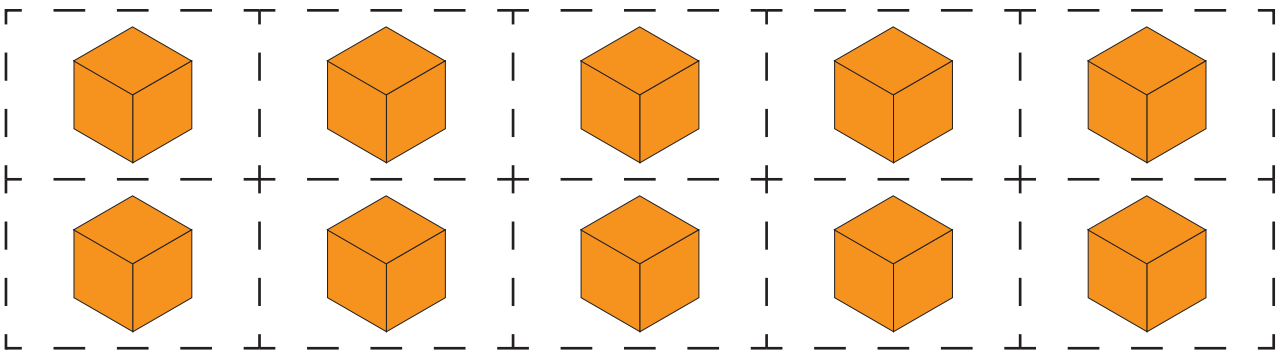
Estimate: \_\_\_ Actual: \_\_\_



Estimate: \_\_\_ Actual: \_\_\_

Estimate: \_\_\_ Actual: \_\_\_

Estimate: \_\_\_ Actual: \_\_\_



Let's Try This Again

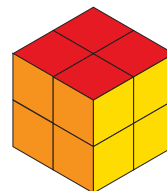
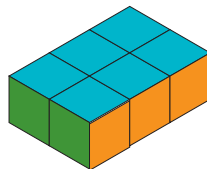
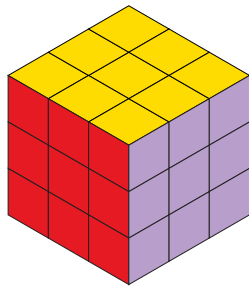


Progress To Application

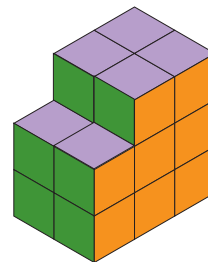
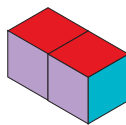
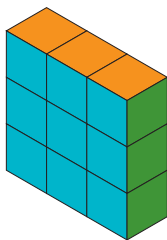
Name: \_\_\_\_\_

# Ordering 3D Volume

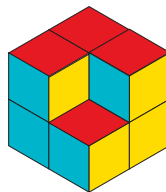
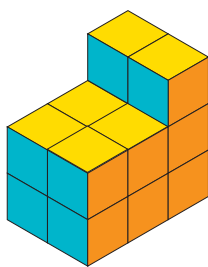
Count the cubes to find the volume of each shape and then order them from smallest to largest.



a. Number of Squares \_\_\_    b. Number of Squares \_\_\_    c. Number of Squares \_\_\_



d. Number of Squares \_\_\_    e. Number of Squares \_\_\_    f. Number of Squares \_\_\_



g. Number of Squares \_\_\_    h. Number of Squares \_\_\_    i. Number of Squares \_\_\_

Volume Order

Smallest

Largest



Let's Try This Again

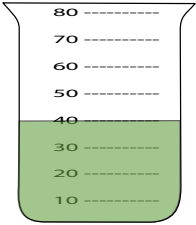
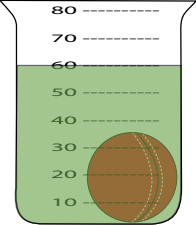
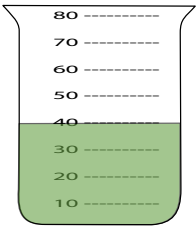
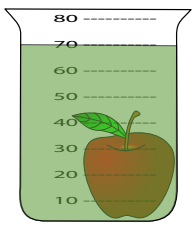
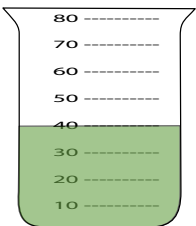
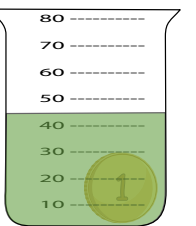
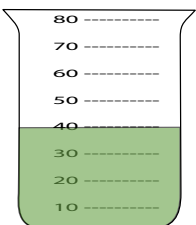
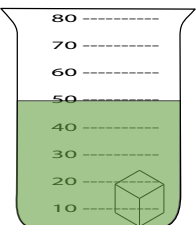
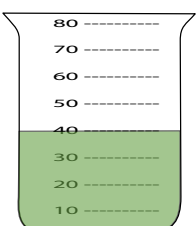
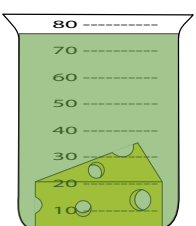
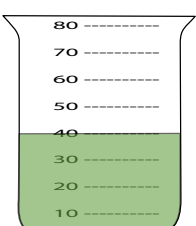
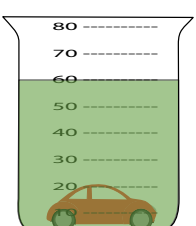


Progress To Analysis

Name: \_\_\_\_\_

# Archimedes' Objects

The difference in the height of the water tells you the volume of each object.

1.			Before: _____ mls After: _____ mls Volume: _____ mls
2.			Before: _____ mls After: _____ mls Volume: _____ mls
3.			Before: _____ mls After: _____ mls Volume: _____ mls
4.			Before: _____ mls After: _____ mls Volume: _____ mls
5.			Before: _____ mls After: _____ mls Volume: _____ mls
6.			Before: _____ mls After: _____ mls Volume: _____ mls

Volume - Level 2 - Students will estimate, measure, compare and record formal and informal volumes.

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation



Let's Try This Again

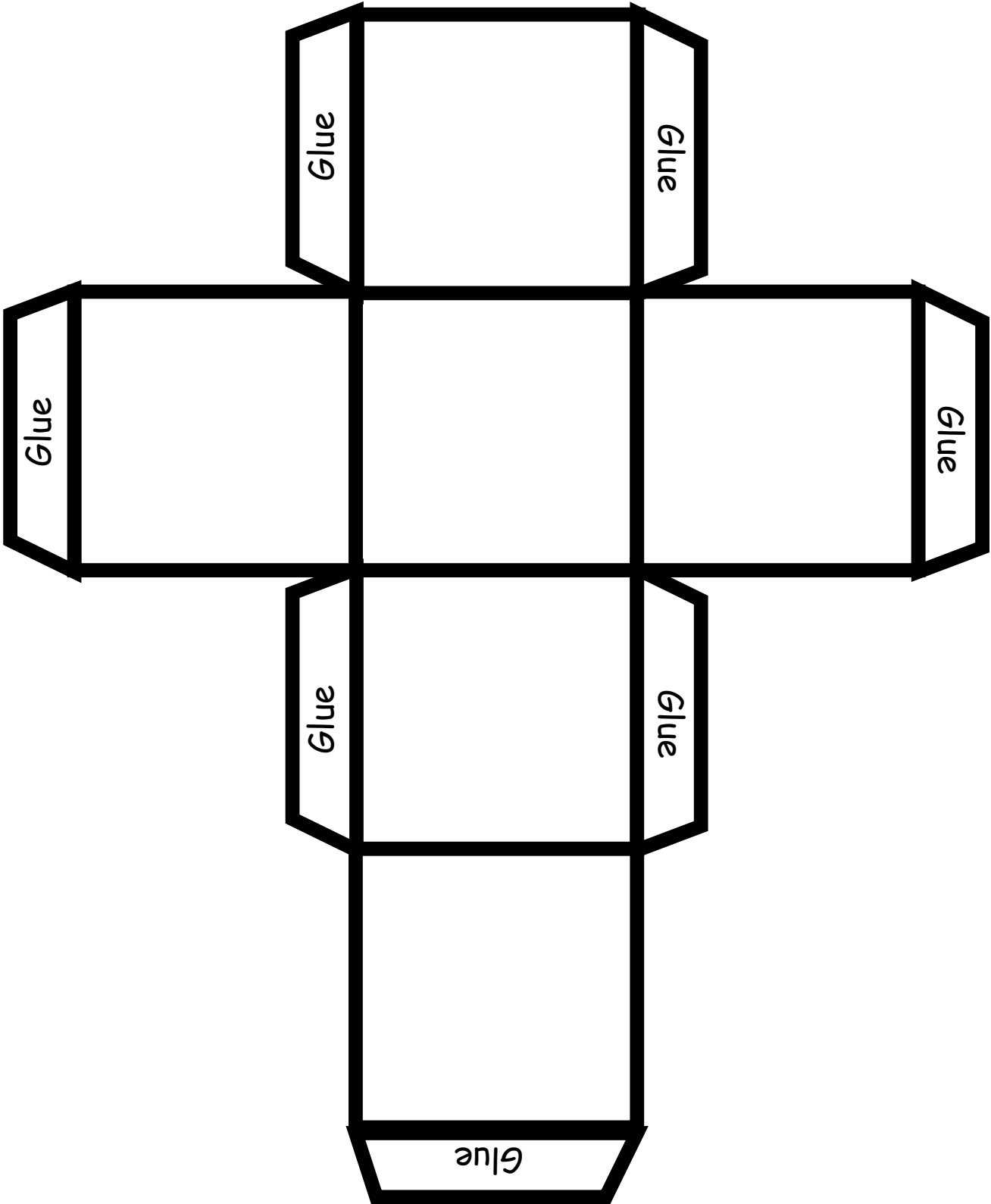


Progress To Synthesis

Name: \_\_\_\_\_

# Area Cubed

Cut out and make the cube below. Fill it with centicubes to find its volume.



Let's Try This Again



Progress To Evaluation

# Volume and Capacity Discussion

The following questions and activities are provide as a starting point for fun discussions related to Volume and Capacity. During these conversations students will have an opportunity to use appropriate mathematical language in its correct context, to engage in reflection on the Volume and Capacity activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.



Half fill a large bucket with water and have students predict how many of one small container will be needed to fill a larger container. Let students fill the larger container to see how accurate they were.



Now fill a middle size container with the small container and have students predict how many of the middle size container will fill the larger container.



Read Mr Archimedes' Bath by Pamela Allen which uses animals to explain the principle of displacement of water and offers many discussion points on volume versus capacity.



Use joined centicube blocks to build solids of various sizes and have students estimate and then measure how many blocks are in the shape.



Try building some hollow shapes and see if students can mentally remove blocks to accommodate blank space and adjust their estimates accordingly. (This may confuse less able students).

