BLOOMSM4TH

Makes Maths Fun

Level 6
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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Level 6

Volume & Capacity

Level 6 is designed for students in their sixth year at school often called Year 5. Students will select and use the appropriate unit to estimate and measure volume and capacity, including the volume of rectangular prisms.

Knowledge: Students will estimate the volume of various containers and test to see how accurate they were.

Students who demonstrate proficiency in this activity move on to Comprehension.

STOP Students stop here as they require additional teacher support to master this activity.

Comprehension: Students will identify the mathematical difference between a recipe teaspoon/tablespoon/cup and that used every day and measure these.

Students who demonstrate proficiency in this activity move on to Application.

STOP Students stop here if time has run out or they require additional support with this activity.

Application: Students will convert millilitres to litres to solve a riddle.

Students who demonstrate proficiency in this activity move on to Analysis.

STOP Students stop here if time has run out or they require additional support with this activity.

Analysis: Students will calculate the capacity of various containers and the volume displaced by various items.

Students who demonstrate proficiency in this activity move on to Synthesis.

STOP Students stop here if time has run out or they require additional support with this activity.

Synthesis: Students will create a shape of volume 36 cubes as many different ways as they can.

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: _____

Knowledge

For this activity you will need 4 people per team each with a drink bottle. A bucket of water and a 250ml measuring jug.

1. If 1 cup has the capacity to hold 250ml how many litres are there in 6 cups? This is the average recommended daily intake of water for children.

2. Now estimate the capacity of each of your water bottles in millilitres.

Drink Bottle 1	Drink Bottle 2	Drink Bottle 3	Drink Bottle 4

3. Using the measuring cup fill each drink bottle to see how many millilitres it holds.

Drink Bottle 1	Drink Bottle 2	Drink Bottle 3	Drink Bottle 4

4. Now calculate how many times you each need to drain your drink bottle to consume 6 cups of water per day.

Drink Bottle 1	Drink Bottle 2	Drink Bottle 3	Drink Bottle 4

Let's Try This Again   Progress To Comprehension

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Volume & Capacity - Level 6 - Students will estimate and measure volume and capacity using various measurements.

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation

Name: _____

Comprehension

For this activity you will need a measuring cup, measuring teaspoon, measuring tablespoon, regular cups and spoons, water and a set of digital scales.

There is a difference between a mathematical teaspoon and the one you find in the kitchen drawer at home. Use water and a set of scales to see how each of these measures differ.

1 gram of water = 1 ml of volume

Item	Weight	Millilitres
Measuring Teaspoon		
Measuring Tablespoon		
Measuring Cup		
Regular Teaspoon		
Different Regular Teaspoon		
Regular Tablespoon		
Regular Soup Spoon		
Dessert Spoon		
Coffee Mug		
Tea Cup		
Glass		
Plastic Cup		

Let's Try This Again   Progress To Application

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation

Volume & Capacity - Level 6 - Students will estimate and measure volume and capacity using various measurements.
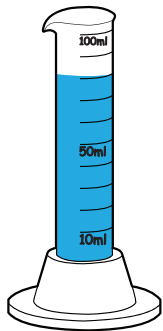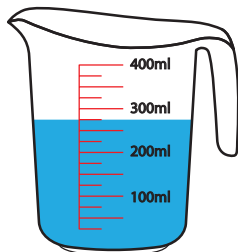
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Application

Match each pair of 10 measurements below to solve the riddle.

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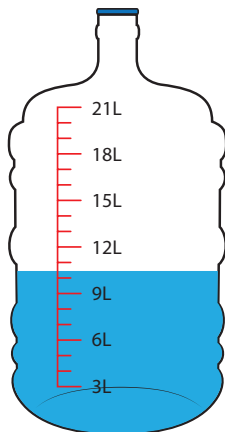
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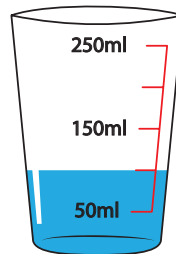
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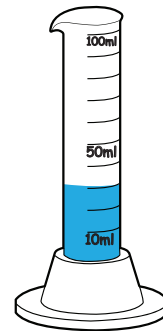
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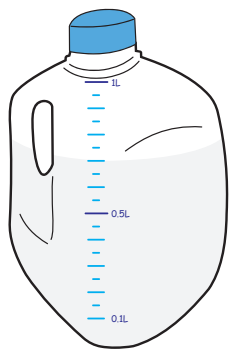
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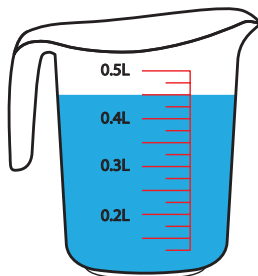
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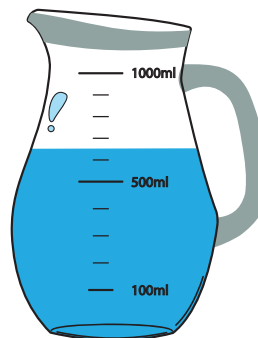
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What did zero say to 8?

___	___	___	___	___
2L	30ml	2L	100ml	275ml

___	___	___	___	___	___	___	___
650ml	0.7L	0.45L	1.5L	80ml	275ml	30ml	10.5L

Let's Try This Again

Progress To Analysis

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation

Volume & Capacity - Level 6 - Students will estimate and measure volume and capacity using various measurements.

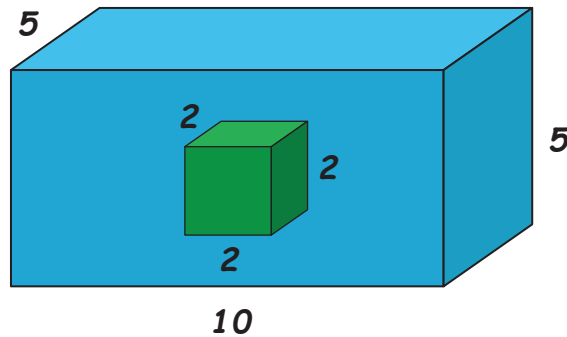BLOOMSMATH

Analysis

Calculate the volume of water remaining in each container below. The first one has been done for you as an example.

The larger box is 5ml x 10ml x 5ml which is **250ml³**.
The smaller box is 2ml x 2ml x 2ml which is **8ml³**.

This means 250 – 8 = **242ml³** of water remains in the container.

See if you can solve these:

Dimensions of Box 1	Capacity of Box 1	Dimensions of Box 2	Water displaced by Box 2	Remaining volume of water
8 x 10 x 2		3 x 2 x 1		
6 x 3 x 4		2 x 1 x 5		
15 x 4 x 3		5 x 2 x 4		
20 x 7 x 2		9 x 5 x 2		
17 x 3 x 8		10 x 3 x 1		
25 x 6 x 2		12 x 4 x 2		
100 x 20 x 5		18 x 6 x 3		
40 x 15 x 12		11 x 4 x 8		

Let's Try This Again   Progress To Synthesis

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation

Volume & Capacity - Level 6 - Students will estimate and measure volume and capacity using various measurements.

Synthesis

Given 36 x 1cm^3 cubes how many shapes of volume 36ml^3 can you create?

Blocks must be fully touching on at least 1 side not touching at just one corner or edge.

Volume & Capacity - Level 6 - Students will estimate and measure volume and capacity using various measurements.

Knowledge

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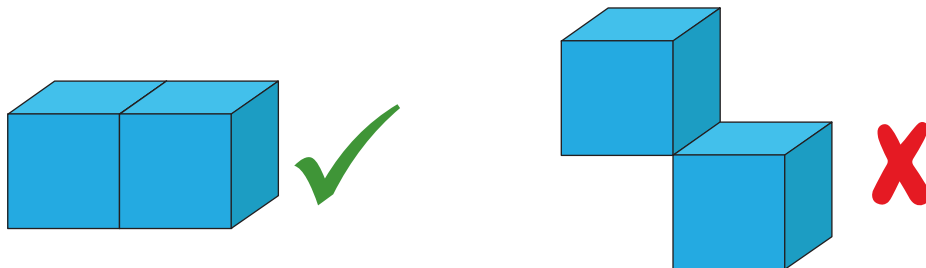
Evaluation

The following questions and activities are provide as a starting point for fun discussions related to Volume & 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 & Capacity activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.

Discuss the difference between volume and capacity and why measuring jug measurements finish before the top of the jug.

Discuss why water or flour is a better measurement tool than rice or beans.

Which containers were easier to estimate their volume – why was this?

Why is there a difference between a mathematical teaspoon and the ones in a kitchen drawer?

Read "Mr. Archemedes' Bath" by Pamela Allen and discuss displacement of water.

Look at how many ways you can arrange 12 cubes to form a solid shape. Students can then show all the different ways they connected 36 cubes.

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation

Volume & Capacity - Level 6 - Students will estimate and measure volume and capacity using various measurements.

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