GO MATHS

Student Journal

Sample Unit

STAGE
3B

Authors
Brian Tickle BA
James Burnett M Ed
Calvin Irons Ph D

Contributing Author
Allan Turton B Ed

Series Consultants
Anita Chin M Ed
Jan Glazier MA
Bruce Llewellyn B Sc

ORIGO
EDUCATION

1. A dripping tap loses 1 millilitre every minute. Complete the table to show how much water is lost over time.

	1 hour	2 hours	5 hours	10 hours	20 hours	1 day
Millilitres						
Litres						

2. a. Calculate how many minutes would pass before losing 1 litre. _____

b. Write the same time in hours and minutes. _____

3. About how much water is lost in

a. 1 week? _____ litres **b.** 30 days? _____ litres **c.** 1 year? _____ litres

4. This graph shows data from a different tap.
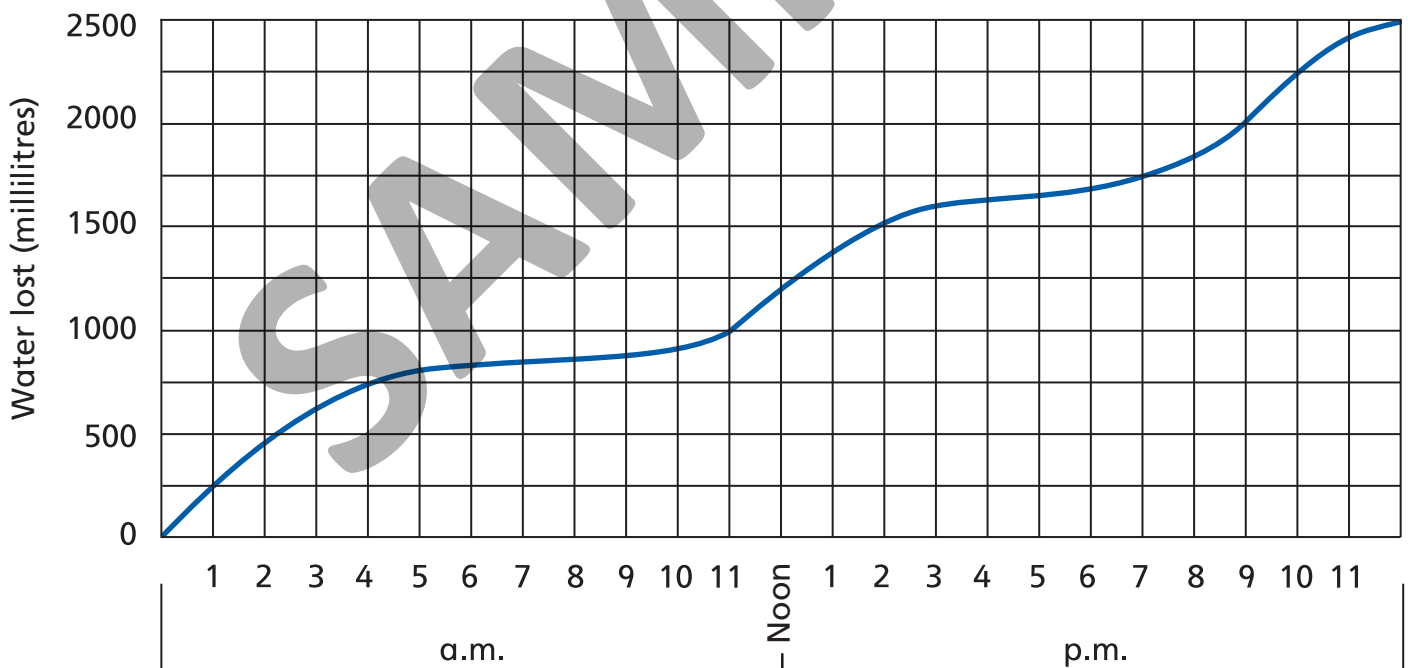
a. At what time had 1 litre of water been lost? _____

b. How much longer did it take to lose the first litre than the second litre? _____

5. Loop the tap that loses water at a faster rate.   first tap   second tap

Adding Mixed Units of Capacity

These students each had three different bottles of water.

Clay	
A	2 L
B	450 mL
C	1.2 L
Total	?

Bree	
A	375 mL
B	1.5 L
C	600 mL
Total	?

Monica	
A	1.25 L
B	250 mL
C	3 L
Total	?

Josh	
A	1 L
B	700 mL
C	2.5 L
Total	?

1. What do the students need to do before they can calculate their total amount of water?

_____

2. Figure out the total amount of water that each student has.
Write your answers in litres and millilitres.

Clay	Bree	Monica	Josh
_____ L	_____ L	_____ L	_____ L
_____ mL	_____ mL	_____ mL	_____ mL

Use this working space.
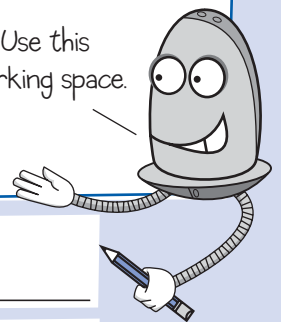
3. Who had the greatest amount of water? _____
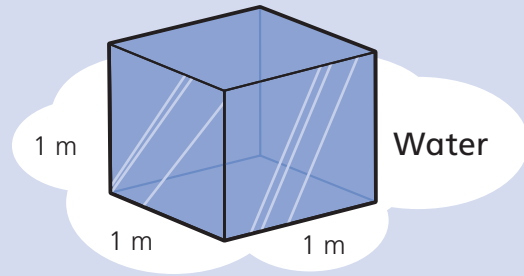
4. Who had the least amount of water? _____

5. Whose total amount was closest to

a. $3\frac{1}{2}$ litres? _____

b. $4\frac{1}{4}$ litres? _____

Draw a ✔ on the student totals that you could figure out mentally.
GO Maths Stage 3B Unit 53.2

Relating Length, Volume and Mass

1. Imagine this container was filled with water.

1 m   Water   1 m   1 m

One cubic metre of water is equivalent to:

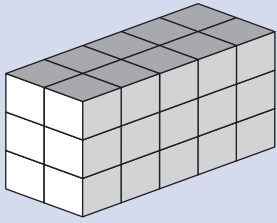|	Volume	Capacity	Mass
a.	_____ m³	_____ kL	_____ t
b.	_____ dm³	_____ L	_____ kg
c.	_____ cm³	_____ mL	_____ g

2. Use the dimensions to calculate the volume, capacity and mass of water in each tank.

	Dimensions (m)			Volume (m³)	Capacity (L)	Mass (kg)
	Width	Length	Height			
Tank A	4	3	2	_____	_____	_____
Tank B	2	3	2	_____	_____	_____
Tank C	2	6	4	_____	_____	_____
Tank D	1	1	0.5	_____	_____	_____
Tank E	1	1	0.25	_____	_____	_____
Tank F	0.5	0.5	1	_____	_____	_____

3. Complete the table.

	Dimensions (m)			Volume (m³)	Capacity (kL)	Mass (t)
	Width	Length	Height			
Tank A	2	4	_____	64	_____	_____
Tank B	_____	_____	5	_____	30	_____
Tank C	_____	0.5	_____	12	_____	_____
Tank D	_____	0.25	_____	_____	_____	5

FF   **Imagine a container that held 1 kL of water. If the base was 250 cm², how tall would it be?**

1. **a.** Imagine you built this shape with base-10 ones blocks. Complete the table.

Length	Width	Height	Total number of blocks
_____ blocks	_____ blocks	_____ blocks	_____ blocks

b. Write the volume of the shape. _____ cm³

2. Here are the dimensions of another box shape.

Length = 8 cm   Width = 3 cm   Height = 5 cm

Write how you can calculate the volume without counting blocks.

_____

3. Use your rule above to calculate the volume of these shapes.

	Length	Width	Height	Volume
a.	5 cm	4 cm	3 cm	_____ cm³
b.	9 cm	6 cm	4 cm	_____ cm³
c.	7 cm	5 cm	5 cm	_____ cm³
d.	6 cm	7 cm	3 cm	_____ cm³

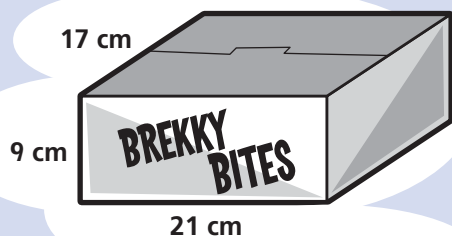**4.** Write the dimensions of some different box shapes that have the same volume. Use blocks to help.

Volume = 36 cm³				**Volume = 64 cm³**		
Length	Width	Height		Length	Width	Height
a. _____	_____	_____	**e.**	_____	_____	_____
b. _____	_____	_____	**f.**	_____	_____	_____
c. _____	_____	_____	**g.**	_____	_____	_____
d. _____	_____	_____	**h.**	_____	_____	_____

FF Write the dimensions of another box shape that has the same volume as 4 cm × 8 cm × 10 cm.

1. Calculate the volume of each box. Use a calculator to help you.

17 cm

9 cm BREKKY BITES

21 cm

_____ cm³

11 cm

3 cm

CAKE MIX

17 cm

_____ cm³

12 cm

5 cm BISCUIT BONANZA

15 cm
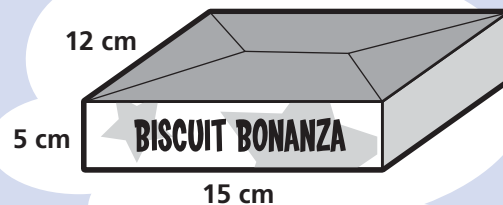
_____ cm³

2. Draw and label the dimensions of a box that has a volume less than 1000 cm³ and another box that has a volume of more than 1000 cm³. Then calculate the volume of each.

a. Less than 1000 cm³

Volume = _____

b. More than 1000 cm³

Volume = _____

3. Draw and label the dimensions of a box that has a volume as close to 1000 cm³ as possible. Make each dimension different.

4. Imagine boxes that fit these categories. List their dimensions and calculate their exact volume.

a.

Less than 1000 cm³	
Dimensions	Volume

b.

More than 1000 cm³	
Dimensions	Volume

GO Maths Stage 3B Unit 53.5

Imagine the boxes in Question 4 could hold water.
Write the capacities in litres.

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