

WA5MMGTH2

Three-dimensional space and structures

Core + Challenge

NAPLAN-style

Capacity — Marking Key

I can choose mL or L, estimate capacity, and read and shade measuring jugs.

For tutors and parents. Award method marks for correct working even if the final answer is wrong.

Marks summary

A Warm up: 16 B Practise: 22 C Think it through: 10 D Challenge: 9 **Total: 57**

Gold shading in this key shows what the child should have shaded or drawn. Accept any correct arrangement unless the question fixes it.

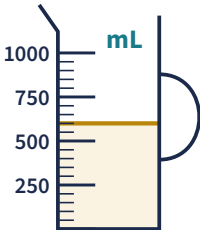
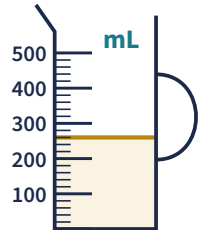
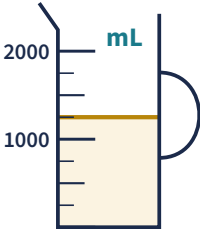
A

Warm up *answers*

/ 16 marks

Q	Answer	Model answer / notes	Marks
1	mL	A teaspoon holds a tiny amount (about 5 mL).	1
2	L	A bath holds a lot of water (about 150 L).	1
3	mL	A glass holds less than 1 L (about 200–250 mL).	1
4	L	A pool holds many thousands of litres.	1
5	10 L	A bucket holds several litres. 100 mL is less than half a cup.	1
6	600 mL	Less than 1 L but much more than a spoonful. 60 L is a big rubbish bin.	1
7	250 mL	About one cup. 25 mL is only a few sips.	1
8	9 L	A watering can holds several litres; 90 mL would not water one plant.	1
9	350 mL	4 steps between 200 mL labels, so each step is 50 mL. 3 steps past 200: 350 mL.	1
10	175 mL	4 steps between 100 mL labels, so each step is 25 mL. 3 steps past 100: 175 mL.	1
11	1300 mL	5 steps between 500 mL labels, so each step is 100 mL. 3 steps past 1000: 1300 mL. Accept 1 L 300 mL.	1
12	2.5 L	2 steps between 1 L labels, so each step is half a litre. Halfway between 2 and 3: 2.5 L. Accept $2\frac{1}{2}$ L or 2500 mL.	1

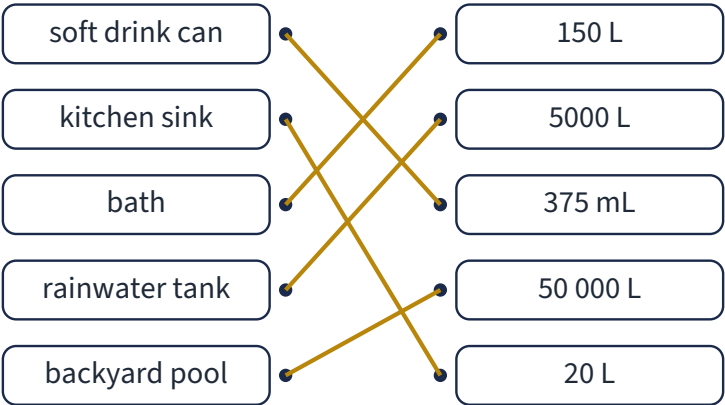
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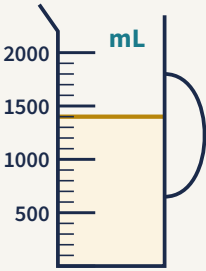
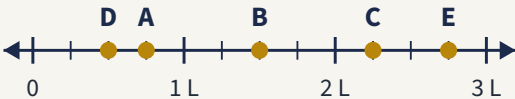
Q	Answer	Model answer / notes	Marks
13	Shaded to 600 mL	13  14  5 steps between 250 mL labels, so each step is 50 mL. 600 mL is 2 steps past 500. Items 13 and 14 are drawn here (accept within half a step).	1
14	Shaded to 260 mL	5 steps between 100 mL labels, so each step is 20 mL. 260 mL is 3 steps past 200.	1
15	Shaded to 1250 mL	15  16  4 steps between 1000 mL labels, so each step is 250 mL. 1250 mL is 1 step past 1000. Items 15 and 16 are drawn here.	1
16	Shaded to $\frac{3}{4}$ L	This jug is in litres. 1 L = 1000 mL, and there are 4 steps to 1 L, so each step is 250 mL. 750 mL is 3 steps.	1

B

Practise *answers and working*

/ 22 marks

Q	Answer	Working / sample response	Marks
1	can 375 mL, sink 20 L, bath 150 L, tank 5000 L, pool 50 000 L	 From smallest to largest: soft drink can 375 mL, kitchen sink 20 L, bath 150 L, rainwater tank 5000 L, backyard pool 50 000 L. <i>2 marks: all five correct. 1 mark: three or four correct.</i>	2

Q	Answer	Working / sample response	Marks
2	a) A 450 mL, B 700 mL b) B, 250 mL more c) 1150 mL	a) Jug A: 4 steps between 200 mL labels, each step 50 mL; 1 step past 400: 450 mL. Jug B: 5 steps between 250 mL labels, each step 50 mL; 1 step below 750: 700 mL. b) $700 - 450 = 250$ mL more in B. c) $450 + 700 = 1150$ mL = 1 L 150 mL. <i>1 mark for each part. In a) both readings are needed.</i>	3
3	a) 1400 mL c) 7 glasses	 a) 1 L = 1000 mL. $250 + 150 + 1000 = 1400$ mL (1 L 400 mL). b) Each step is 100 mL; shade 4 steps past 1000. c) $1400 \div 200 = 7$ glasses. <i>1 mark for each part.</i>	3
4	40 cups	1 L = 1000 mL, and $1000 \div 250 = 4$, so 4 cups fill from each litre. $10 \times 4 = 40$ cups (or $10\,000 \div 250 = 40$). <i>1 mark: 4 cups per litre (or 10 L = 10 000 mL).</i> <i>1 mark: 40 cups.</i>	2
5	D, A, B, C, E	 Each small step is 250 mL (4 steps make 1 L). D 500 mL, A 750 mL, B 1500 mL, C 2250 mL, E 2750 mL. <i>2 marks: all five marked (1 mark for three or four).</i> <i>1 mark: correct order.</i>	3
6	a) 16 L b) 7 jugs	a) $8 \times 2 = 16$ L. b) $30 - 16 = 14$ L still needed. $14 \div 2 = 7$ more jugs. <i>1 mark: 16 L.</i> <i>1 mark: 7 jugs.</i>	2
7	One 2 L bottle, by \$1.90	Four 500 mL bottles make 2000 mL = 2 L. They cost $4 \times \\$1.60 = \\$6.40$. $\\$6.40 - \\$4.50 = \\$1.90$, so the 2 L bottle is cheaper by \$1.90. <i>1 mark: \$6.40 for four small bottles.</i> <i>1 mark: 2 L bottle is cheaper by \$1.90.</i>	2
8	a) 3 L b) 72 L	a) $50 \times 60 = 3000$ mL = 3 L. b) 24 hours in a day: $3 \times 24 = 72$ L. <i>1 mark: 3 L (accept 3000 mL).</i> <i>1 mark: 72 L.</i>	2

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Q	Answer	Working / sample response	Marks
9	B	A 1200 mL, B 1250 mL, C 1.5 L = 1500 mL, D 250 mL. 1 L 250 mL = 1250 mL, so jug B. (Jug D shows 250 mL, not 1 L 250 mL.) Accept C as 1.5 L, $1\frac{1}{2}$ L or 1500 mL. <i>2 marks: all four readings (1 mark for two or three). 1 mark: circles B.</i>	3

C

Think it through *sample answers and criteria*

/ 10 marks

Q	Answer	Working / sample response	Marks
1	No: 2 L = 2000 mL	2 L = $2 \times 1000 = 2000$ mL, and 2000 mL is more than 1500 mL. You must compare in the same unit; litres are much bigger than millilitres. <i>1 mark: No. 1 mark: changes 2 L to 2000 mL (or 1500 mL to $1\frac{1}{2}$ L) to compare.</i>	2

2	No: 340 mL	There are 5 steps between 300 mL and 400 mL, so each step is $100 \div 5 = 20$ mL, not 10 mL. The water is 2 steps past 300: $300 + 40 = 340$ mL. Sam counted each step as 10 mL. <i>1 mark: No, 340 mL. 1 mark: explains each step is 20 mL.</i>	2
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Always

Sometimes

Never

3	Sometimes	A tall jug can hold more than a short cup, so it can be true. A tall thin vase holds less than a short wide bucket, so it is not always true. <i>1 mark: Sometimes. 1 mark: one example each way (width matters as well as height).</i>	2
4	10×10 mL	1000 mL = 1 L, and 4×250 mL = 1000 mL. 10×10 mL = 100 mL, which is only one tenth of a litre. <i>1 mark: 10×10 mL. 1 mark: shows the other three are all 1000 mL (1 L).</i>	2

5 See table

	Written in mL	Written in L
Less than 1 L	350 mL, 999 mL, 750 mL	$\frac{1}{2}$ L
1 L or more	1200 mL, 1500 mL	1 L, $2\frac{1}{2}$ L

2

999 mL is written in mL and is 1 mL less than 1000 mL = 1 L, so it is less than 1 L.

1 mark: all eight sorted correctly (accept seven).

1 mark: explanation for 999 mL.

D

Challenge *solutions and criteria*

/ 9 marks

Q	Answer	Working / sample response	Marks
1	a) $9 - 4 - 4 = 1$ L b) see steps	a) Fill the 9 L bucket. Pour it into the 4 L bucket (5 L left). Empty the 4 L bucket and fill it again from the 9 L bucket: $9 - 4 - 4 = 1$ L left in the 9 L bucket. b) Empty the 4 L bucket and pour the 1 L into it. Fill the 9 L bucket. Pour from it until the 4 L bucket is full (3 L goes in, because it already had 1 L). $9 - 3 = 6$ L is left. Other correct methods are accepted. <i>1 mark: clear steps for 1 L.</i> <i>1 mark: uses the 1 L to leave room for 3 L.</i> <i>1 mark: ends with exactly 6 L.</i>	3
2	4 ways; fewest 7 cups	2 L = 2000 mL. Try 0, 1, 2, 3 ... of the 300 mL cups and see if 200 mL cups make up the rest: $0 \times 300 + 10 \times 200$; $2 \times 300 + 7 \times 200$; $4 \times 300 + 4 \times 200$; $6 \times 300 + 1 \times 200$. An odd number of 300 mL cups leaves 100 mL over, so those do not work. Fewest cups: $6 + 1 = 7$ cups. <i>2 marks: all four ways (1 mark for two or three).</i> <i>1 mark: 7 cups (six 300 mL and one 200 mL).</i>	3
3	800 mL	Before Ben drank: $350 + 150 = 500$ mL. Before Ava drank half: $500 \times 2 = 1000$ mL. Before Mum poured: $1000 - 200 = 800$ mL. Check: $800 + 200 = 1000$, half is 500, $500 - 150 = 350$. <i>1 mark: 500 mL.</i> <i>1 mark: 1000 mL.</i> <i>1 mark: 800 mL.</i>	3