



Volume, Capacity and Mass



Series G – Volume, Capacity and Mass

Contents

Student book answers	_____	1
Assessment	_____	3
Student progress record	_____	5
Assessment answers	_____	6
Objectives	_____	7

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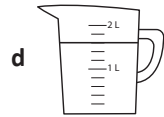
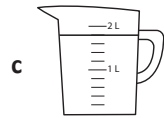
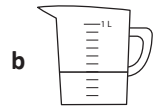
Series G – Volume, Capacity and Mass

Page 1

- 1a 0.9
 b 7.7
 c 3.5
 d 112
 e 2.4
 f 7.2
 g 44
 h 12.6
- 2 6
 140
 140
 224
 112

Pages 2–3

- 1a ÷
 b ×, 1,000
- 2a 3.452 l
 b 7.895 l
 c 10 l
 d 12.674 l
 e 56.78 l
 f 0.235 l
- 3a 2,568 ml
 b 3,999 ml
 c 10,566 ml
 d 1,780 ml
 e 7,305 ml
 f 350 ml
- 4a 10
 b 1.625 l, 1.250 l
 c 5 glasses, 125 ml
 d 4.750 l, 19 cups
- 5b 0.9; 900
 c 0.3; 300
 d 1; 1,000
 e 0.7; 700



- 7 125; 125; 15; 250
 8 Teacher check.

Pages 4–5

- 1a 12
 b 48
 c 30
- 2a 16 cm³
 b 12 cm³
 c 40 cm³
 d 135 cm³
 e 269.5 cm³
 f 780 cm³
- 3a 120 m³
 b 39 m³
 c 70 m³
 d 140 m³
- 4a 500
 b 1,000
 c 400

5a

	Person 1	Person 2
1st level	12 cm ³	20 cm ³
2nd level	24 cm ³	40 cm ³
3rd level	36 cm ³	60 cm ³
4th level	48 cm ³	80 cm ³
5th level	60 cm ³	100 cm ³
6th level	72 cm ³	120 cm ³
7th level	84 cm ³	140 cm ³
8th level	96 cm ³	160 cm ³

- b Person 1 – 6th level
 Person 2 – 6th level

Page 6

- 1 4 100 ml = 100 cm³
 Answers will vary.
- 2 Answers will vary.
- 3a 100
 b 250
 c 500
 d 8
 e 1,000
 f 56
 g 86
 h 4,300
 i 1.9

Page 7

- 1a 10; 10; 10
 b 7; 7; 7
 c 7; 7; 7
 d 8; 8; 8
 e 8; 8; 8
 f 24; 24; 24
- 2a–c Answers will vary.
- 3 Answers will vary.

Series G – Volume, Capacity and Mass

Page 8

What to do

Answers will vary.

What to do next

Answers will vary. Students may measure the mass of the rock (mass = volume) or use displacement to calculate capacity (capacity of displaced water = volume).

Page 9

What to do

Observe students.

What to do next

Answers will vary.

Page 10

1 Answers will vary.

2 Answers will vary.

3 Answers will vary.

4 2,700 g; 7,125 g; 5,050 g; 3,200 g
1 kg; 7 kg 125 g; 350 g; 3 kg 200 g
1.0 kg; 2.7 kg; 0.35 kg; 5.05 kg

Page 11

1a 17; 47.5; 27; 37; 35.5

b Minh; Heba; Yasmin; Sara; Ben

2a 12

b 3 days

c 4 days

d 2 boxes of each

3a 15.745 kg

b 325 g

c 1.5 kg

Pages 12–13

1 50 g; 100 g; 250 g; 500 g; 1 kg

a 1

b To find out the mass of the water.

2a 150

b 467

c 1.5

d 0.98

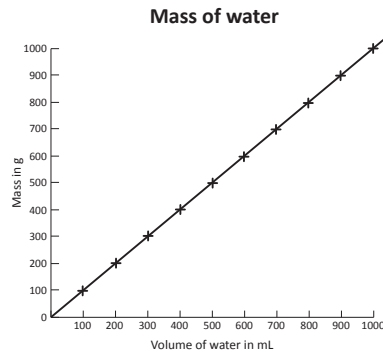
e 2.75

f 8,450

3 328 g; 108 g; 650 g; 950 g

4 Answers will vary.

5a 500 g; 600 g; 800 g; 1,000 g



5b

Cubic centimetres	Water displaced
10 cm ³	10 ml
20 cm ³	20 ml
5 cm ³	5 ml
14 cm ³	14 ml
50 cm ³	50 ml
100 cm ³	100 ml
850 cm ³	850 ml

c Volume (cm³):
350 cm³; 25 cm³; 1,000 cm³; 1,200 cm³
Capacity (ml);
500 ml; 350 ml; 1,000 ml; 7 ml
Mass (g):
500 g; 25 g; 1,200 g; 7 g

6a, b Answers will vary.

Page 14

What to do

There are a number of ways to solve this problem. One way is:

$$1 \text{ bar} = 150 \text{ g} + \frac{1}{3} \text{ bar}$$

This can be re framed as:

$$\frac{3}{3} \text{ bar} = 150 \text{ g} + \frac{1}{3} \text{ bar}$$

We remove $\frac{1}{3}$ bar from both sides:

$$\frac{2}{3} \text{ bar} = 150 \text{ g}$$

If we multiply both sides by 3 we have:
2 bars = 450 g

Then we divide by 2 to find the weight of one bar: 1 bar = 225 g

Page 15

What to do

48 cupcakes – enough of all ingredients for four batches. You will have flour, milk, and vanilla essence left over.

Volume and capacity

Name _____

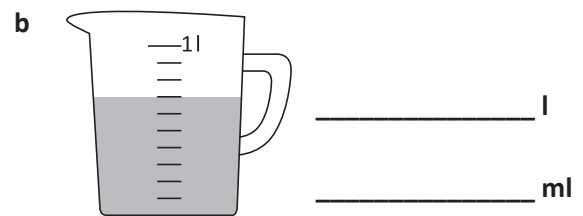
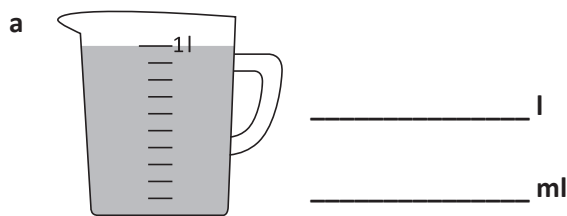
1 Write the following as litres:

a 12,345 ml = l b 6,438 ml = l c 9,264 ml = l
 d 7,235 ml = l e 276 ml = l f 109 ml = l

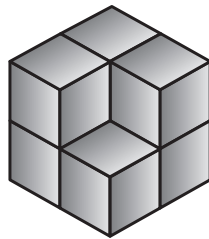
2 Write the following as millilitres:

a 826 l = ml b 12 l = ml c 62 l = ml
 d 0.75 l = ml e 2.25 l = ml f 3.89 l = ml

3 How much liquid is in each jug?



4 Label this cubic centimetre model with its volume, capacity and appropriate unit.



Volume = _____
 Capacity = _____
 Mass = _____

5 If 1 fluid ounce = 30 ml and 10 ml = 0.3 fluid ounces, and 1 pint = 0.6 l and 1 litre = 2.1 pints, convert between these metric and imperial measurements:

a 20 fluid ounces = ml b 9 litres = pints
 c 80 ml = fluid ounces d 12 pints = litres

Skills	Not yet	Kind of	Got it
• Converts between millilitres and litres using decimal notation			
• Uses appropriate unit to measure volume, capacity and mass			
• Reads scale interval points on a 1 litre jug in litres and millilitres			
• Converts between metric and imperial measurements of capacity			

1 Write each mass in grams, kilograms and grams, and as a decimal:

Grams			250 g		1,234 g	
Kilograms and grams	2 kg 60 g					6 kg 900 g
Decimal notation		2.234 kg		5.250 kg		

2 Calculate:

a $10 \times 75 \text{ kg} =$

b $600 \text{ g} +$ $= 1 \text{ t}$

c $1 \text{ t} - 560 \text{ kg} =$

3 Draw a line to connect the equivalent masses:

3,000 kg

1.5 t

1,500 kg

8,200 kg

1 t

1,000 kg

8.2 t

750 kg

0.75 t

3 t

4 Complete the following word problem:

A 50 seater aeroplane was filled to capacity. The passengers had an average mass of 74 kg. What is the total mass of the passengers in tonnes? _____

5 If 1 ounce (oz) = 28 g, 1 pound (lb) = 0.45 kg, 1 kg = 2.2 lbs and 1 tonne = 1.1 tons, convert these measurements from imperial to metric or metric to imperial:

a 4 lbs = kg

b 12 tonnes = tons

c 15 kg = lbs

d 5 ounces = g

Skills	Not yet	Kind of	Got it
• Converts between grams and kilograms using decimal notation			
• Converts between metric and imperial measurements of mass			
• Calculates with kilograms and tonnes			

Series G – Volume, Capacity and Mass – Student Progress Record

Name _____ Class _____ Date _____

What went well: _____

What I need to improve: _____



Series G – Volume, Capacity and Mass – Student Progress Record

Name _____ Class _____ Date _____

What went well: _____

What I need to improve: _____

Series G – Volume, Capacity and Mass

ASSESSMENT ANSWERS

Page 3

1a 12.345

b 6.438

c 9.264

d 7.235

e 0.276

f 0.109

2a 826,000

b 12,000

c 62,000

d 750

e 2,250

f 3,890

3a 1; 1,000

b 0.7; 700

4 7 cm³

7 ml

7 g

5a 600

b 18.9

c 2.4

d 7.2

Page 4

1 Grams:

2,060 g; 2,234 g; 5,250 g; 6,900 g

Kilograms and grams:

2 kg 234 g; 0 kg 250 g; 5 kg 250 g;

1 kg 234 g

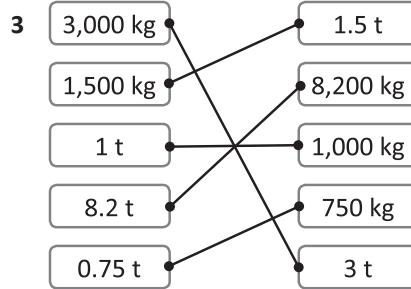
Decimal notation:

2.06 kg; 0.25 kg; 1.234 kg; 6.9 kg

2a 750 kg

b 400 kg

c 440 kg



4 3.7 tonnes

5a 600

b 18.9

c 2.4

d 7.2

Series G – Volume, Capacity and Mass

Topic	Reference	Strand	Objective
Volume and Capacity	5M6	Measurement	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.
Volume and Capacity	6M8a	Measurement	Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3 .
Volume and Capacity	6M8b	Measurement	Recognise when it is possible to use formulae for area and volume of shapes.
Mass	6S1	Statistics	Interpret and construct pie charts and line graphs and use these to solve problems.
All	6M5	Measurement	Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.
All	6M9	Measurement	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.