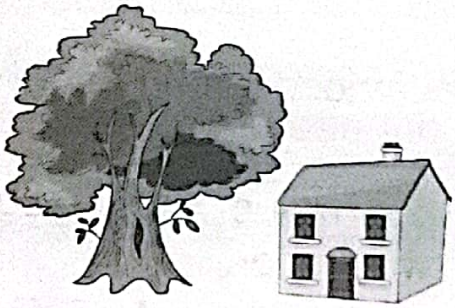
Lesson 6: **Ratio and proportion (1)**

- Understand and write simple statements about proportion

You will need
- ruler

Challenge 1 Circle the correct word in each pair so that the statements are true.

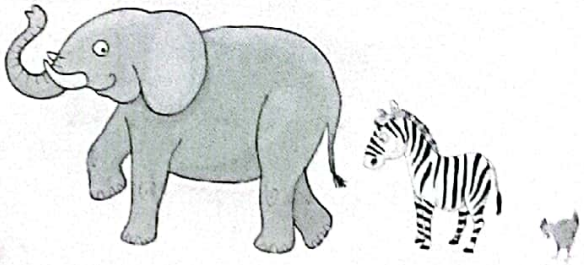
a



The house is **half / twice** as tall as the tree.

The tree is **half / twice** as tall as the house.

b



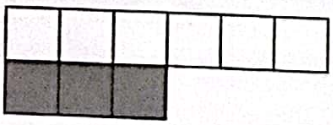
The chicken is a **half / quarter** of the height of the zebra.

The elephant is **half / double** the height of the zebra.

Challenge 2

1 Nia has cut different lengths of grey and white paper. She takes one of each colour and compares them. Complete the statements underneath each pair of strips.

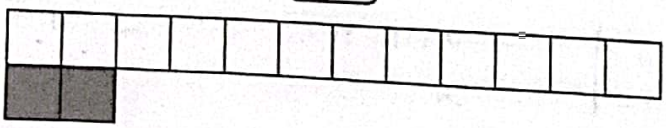
Example:



Two grey strips fit into one white strip.

The grey strip is $\frac{1}{2}$ of the length of the white strip.

a

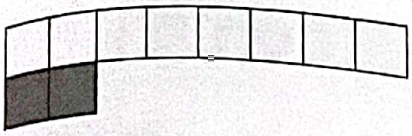


6 grey strips fit into one white strip.

The grey strip is $\frac{1}{6}$ of the length of the white strip.

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b



4 grey strips fit into one white strip. 2/8

The grey strip is 1/4 of the length of the white strip.

2 Five children have different-sized chocolate bars. They each eat a number of squares of their bar.

a Complete the table to show how much each person has eaten as a proportion of the whole bar.

Name	Number of squares in the whole bar	Number of squares eaten	Proportion of the bar eaten
Asim	10	5	5/10 or 1/2
Ben	4	1	1/4
Crista	12	6	6/12 or 1/2
Dan	9	3	3/9 or 1/3
Emma	20	2	2/20 or 1/10

b Complete these statements about the table.

Dan ate one third of the squares in their bar.

Emma ate one tenth of their bar. Asim and Crista ate a different number of squares but still ate the same proportion of their chocolate bar.

1 A song is 36 minutes long. A second song is $\frac{1}{4}$ as long. How long is the second song? 9 minutes long

1/4 × 36 = 9

3 6
+ 9
45



2 A room is 12 metres long. 6 metres is covered in carpet. What proportion of the room is covered in carpet?

1/2 of the room is covered in carpet

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Lesson 7: **Ratio and proportion (2)**

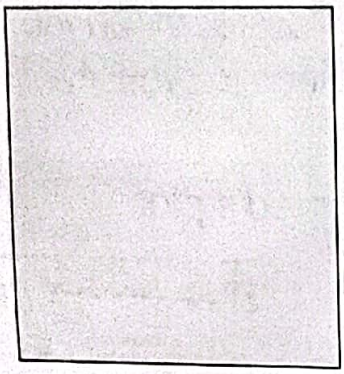
- Use simple fractions to show and work out proportion

You will need
- ruler
- sheet of paper

Challenge 1 Measure each of these images and then draw them at $\frac{1}{2}$ their original height and width on a sheet of paper.

Assume

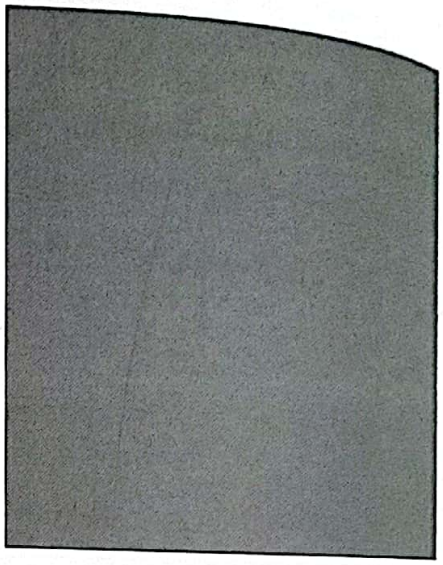
a



15cm.

1·5 cm

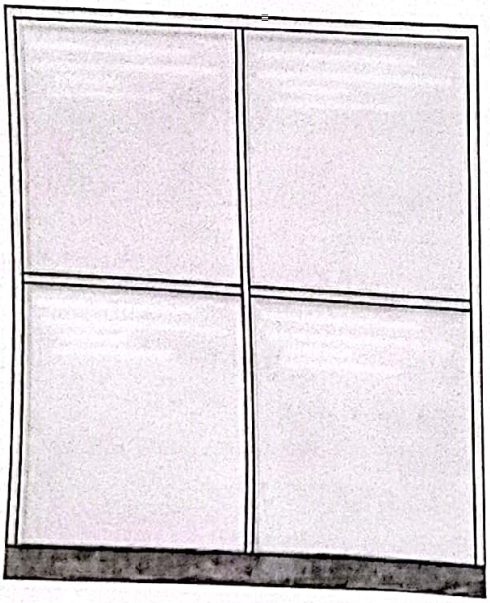
b



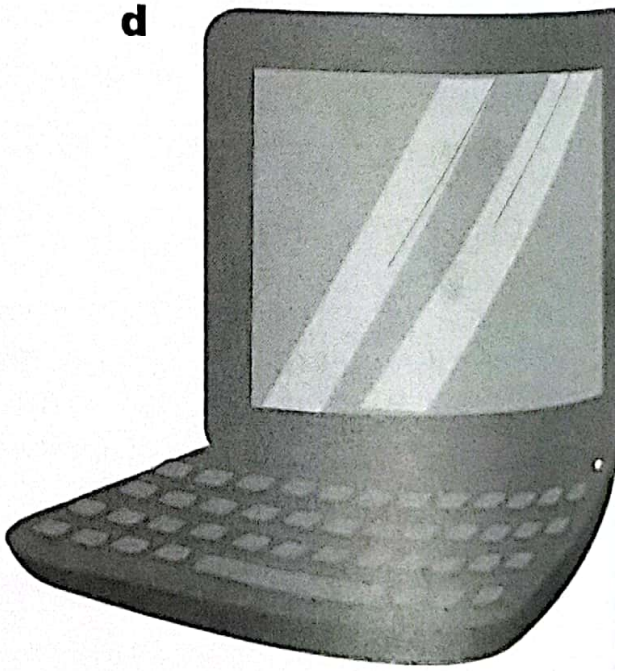
2·5

2·5 cm

c



d



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1 a A diamond is 7 mm wide in a photograph.
The photograph is labelled 'half actual width'.
How wide is the diamond in real life? 14 mm

b A flower is 6 cm tall in a diagram.
The diagram is labelled 'quarter actual height'.
How tall is the flower in real life? 24 cm

2 Ahmed is using chalk to draw a plan of his classroom, on the playground. To draw it in proportion, he decides to draw the plan $\frac{1}{2}$ of the actual length and width.
Complete the table to show the size of Ahmed's plan.

	Real-life measurement	Size on Ahmed's drawing
Length of classroom	8 m	4 m
Width of classroom	6 m	3 m
Table length	1 m	0·5 m
Whiteboard width	3 m	1·5 m
Maths book length	26 cm	13 m
Window height	58 cm	29 m
Pencil length	16 cm	8 m

Measure some classroom objects and then divide the measurements by 10 to find out what size they should be when you draw them at a $\frac{1}{10}$ of their actual height or width.

- Draw the objects on a sheet of paper and pass your sketches to a friend to measure.
- Can they work out the lengths of the objects in real life by multiplying the measurements by 10?



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Number

Lesson 8: **Ratio and proportion (3)**

- Begin to understand and use ratio to describe simple relationships

You will need
- coloured pencils

Challenge 1

1 Complete each sentence.

a ■□□□

For every 1 grey square, there are [3] white squares.

b ■■■□□

For every [3] grey squares, there are [2] white squares.

c ■■□

For every [2] grey squares, there is [1] white square.

2 Shade the squares to match the descriptions.

a □▨▨▨▨

For every 1 white square, there are 4 shaded squares.

b ▨▨▨▨▨▨▨□□□

For every 3 white squares, there are 7 shaded squares.

c ▨▨□

For every 1 white square, there are 2 shaded squares.

Challenge 2

1 Use two different colours to shade each set of circles and show each ratio.

a A ratio of 1 to 3 ○○○○

b A ratio of 3 to 7 ○○○○○○○○○○

c A ratio of 2 to 6 ○○○○○○○○

d A ratio of 2 to 3 ○○○○○

e A ratio of 3 to 5 ○○○○○○○○

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2 These diagrams show the number of girls and boys in different groups. What is the ratio of girls to boys in each group?

a 

There are 3 girls for every 1 boy.

The ratio is 3 to 1

b 

There are 4 girls for every 2 boys. The ratio is 4 to 2

c 

There are 5 girls for every 5 boys. The ratio is 5 to 5 1:1

d 

There are 3 girls for every 4 boys. The ratio is 3 to 4

3 If the ratio of girls to boys in a group is 1 to 6, how many people do you think are in the group? 7

Isaac has a bag of coloured counters. It contains 3 blue counters, 5 red counters, 1 green counter and 2 yellow counters.

a What is the ratio of blue counters to yellow counters? 3 : 2

b What is the ratio of green counters to red counters? 1 : 5

c What fraction of the bag are red counters? $\frac{5}{11}$ ☹

d What fraction of the bag are blue counters? $\frac{3}{11}$ 😐 ☺

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Measure

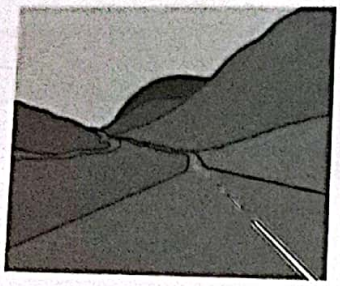
Lesson 1: **Units of length**

- Choose and use units to measure length
- Record length in mm, cm, m and km

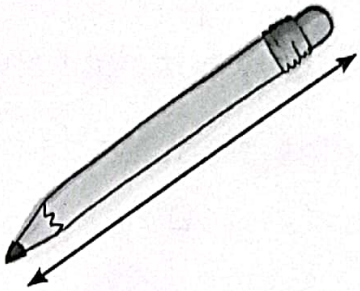
You will need
- ruler

Challenge 1

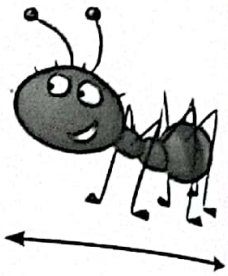
1 Write mm, cm, m or km next to each picture to show which unit you would use to measure the length.



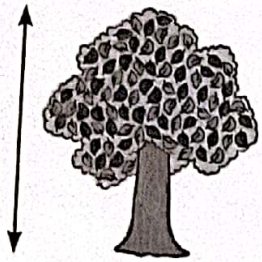
km



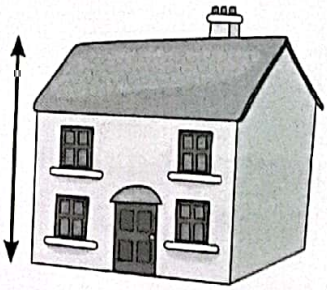
cm



mm



m



m



cm

2 Measure three different pencils and record their lengths in centimetres:

Pencil A: ____ Pencil B: ____ Pencil C: ____

Challenge 2

1 Circle the smallest length in each row.

a 10 m (10 mm) 10 cm

b 35 km (35 cm) 35 m

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2 Circle the largest length in each row.

a 50 km 50 cm 50 m

b 72 mm 72 m 72 cm

3 Find four objects to measure in the classroom. Estimate the length of each object then measure it. Don't forget to use the unit of measure: mm, cm or m.

Answer may vary

Object	Estimate	Actual length

4 Would you use km or m to measure these distances?

a From your desk to the board. m

b From one town to another town. Km

c From one side of a field to the other. m

Answer the questions using whole numbers.

a How many cm in $3\frac{1}{2}$ m? 3.5m $= 3.5 \times 100 = 350$ cm

b How many m in $2\frac{1}{4}$ km? 2.25 km $= 2.25 \times 1000 = 2250$ m

c How many mm in 3 cm? $= 30$ mm

1 cm = 10 mm

3 cm = 3×10





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Measure

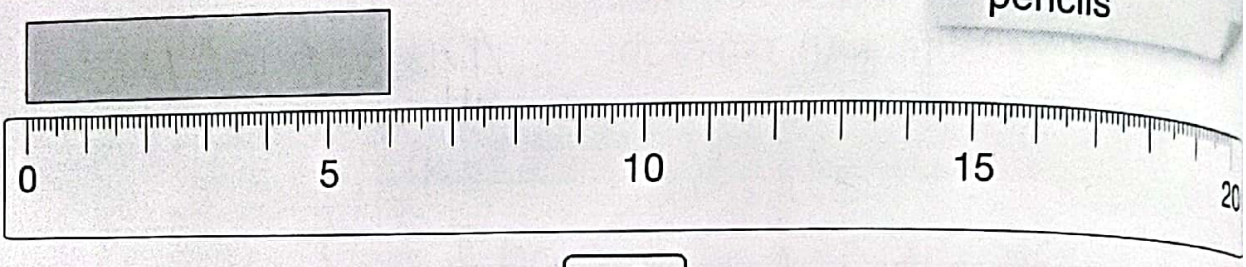
Lesson 2: Reading and interpreting length

- Read and show length on a ruler or metre rule that is only partially numbered

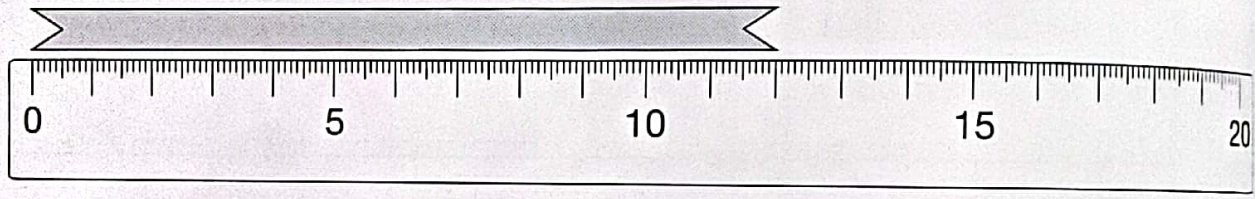
You will need
- ruler
- metre rule
- red and blue pencils

Challenge 1

1 How long is this rectangle? 6 cm

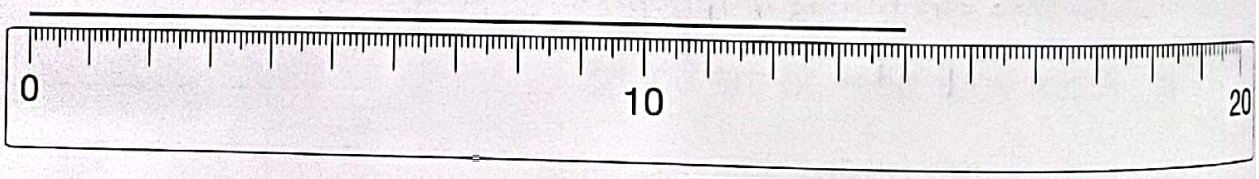


2 How long is this ribbon? 12 cm

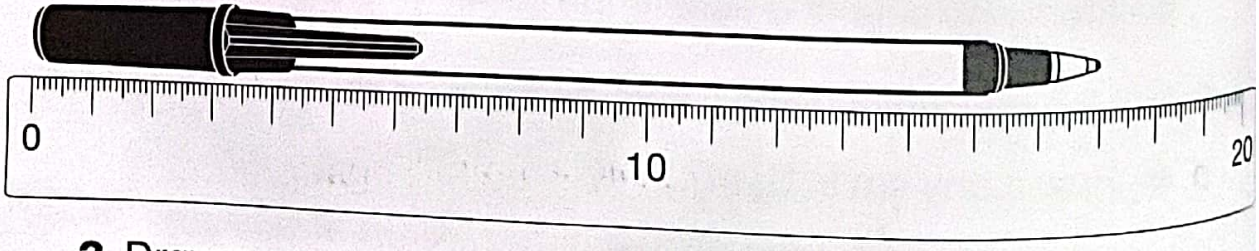


Challenge 2

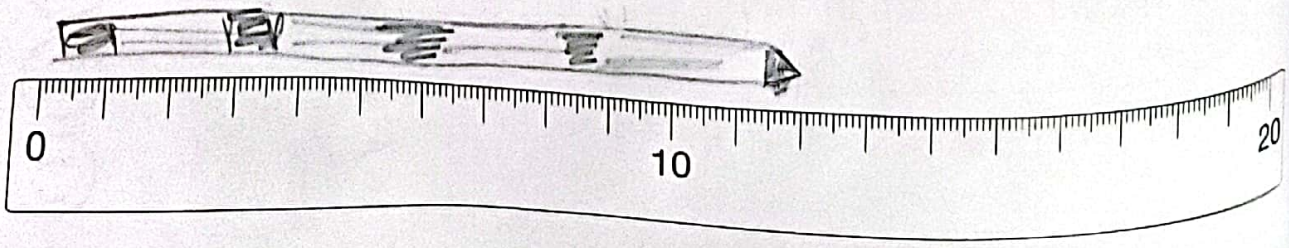
1 What is the length of the string? 14 cm



2 What is the length of the pen? 17 cm

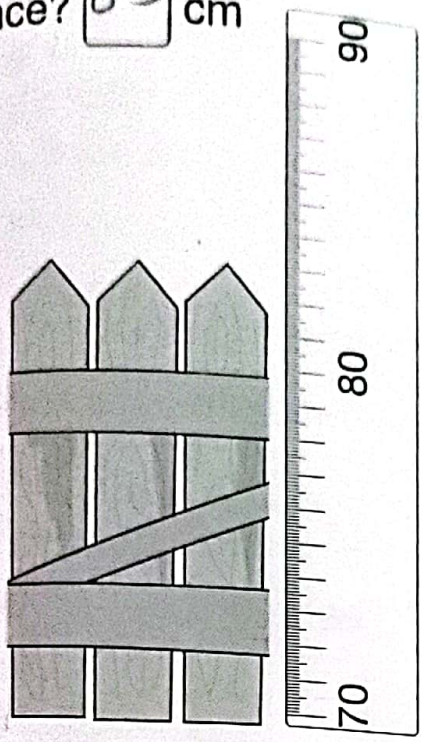


3 Draw a crayon 12 cm long.

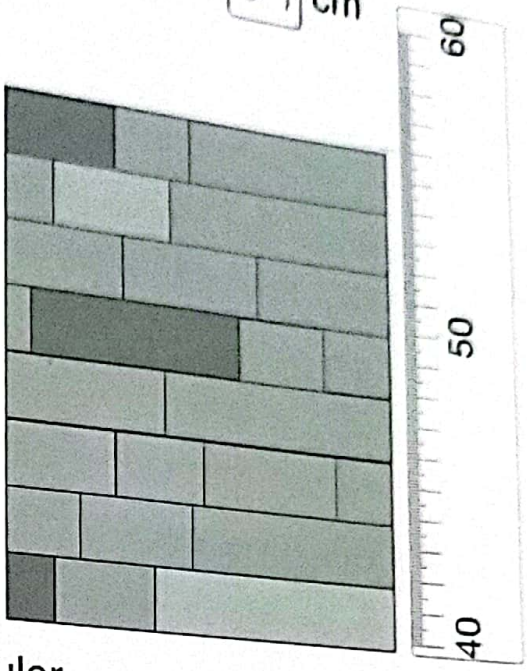


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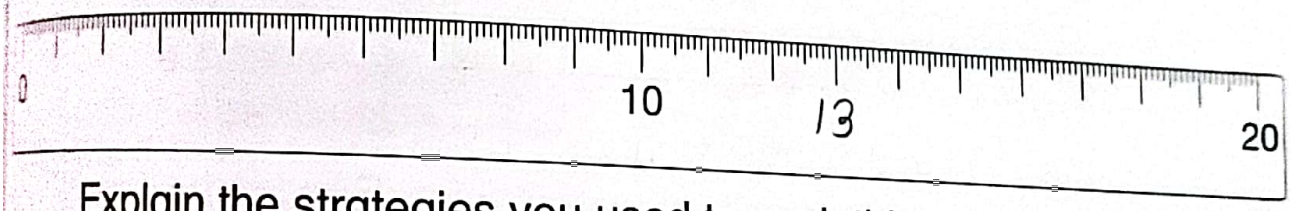
4 a What is the height of the fence? 83 cm



b What is the height of the wall? 55.9 cm



5 Mark where 13 belongs on this ruler.



Explain the strategies you used to work this out.

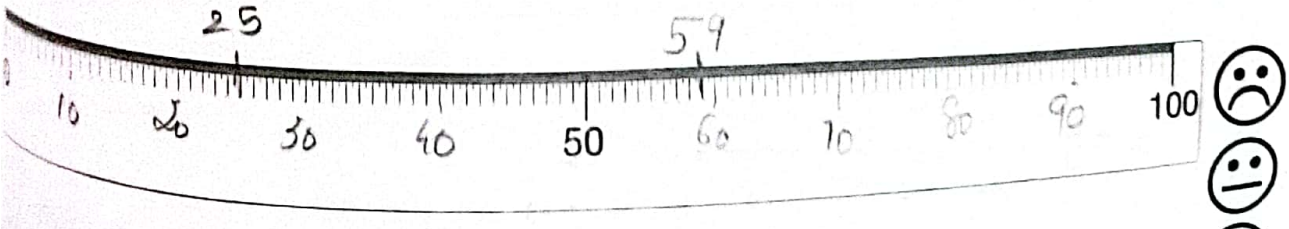
1cm distance

6 1 Mark where the numbers 10, 20, 30, 40, 60, 70, 80 and 90 belong on the ruler.

2 Make a red mark where you think 25 belongs.

3 Make a blue mark where you think 59 belongs.

fractions decimals round



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Lesson 3: **Estimating, measuring and recording length**

- Estimate lengths and distances
- Record length in metres and centimetres

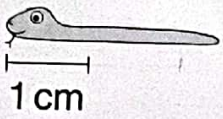
You will need
- ruler
- metre rule
- chalk

Challenge 1

1 Estimate the length of each snake.
Record your estimate in centimetres.

may vary.

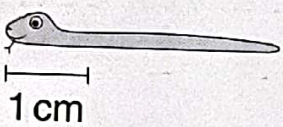
a



estimate: 2.25cm

actual length: 2.5cm

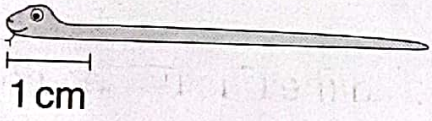
b



estimate: 3cm

actual length: 3 cm

c



estimate: 5.5cm

actual length: 5 cm

2 Now, measure the length of each snake. Record the actual length in centimetres.

Challenge 2

1 Tick the line that you estimate to be 7 cm long.

a _____ 10cm

b _____ 7cm

c _____ 5cm

d _____ 12cm

2 Now measure the lines in Question **1** and record their actual lengths in centimetres in the boxes.

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3 This line is 10 cm long.

Turn your ruler over so that you cannot see the numbers and use it to draw lines that you estimate to be the following lengths:

a 4 cm

b 12 cm

c 7 cm

4 Now measure your lines and record their actual lengths to the nearest centimetre.

a 4·2 cm **b** 12·1 cm **c** 8 cm

3

1 Make a mark on the floor with chalk where you estimate 3 m to be from the wall. Measure the actual distance from the wall to your mark and record the distance:

a in metres and centimetres 25 cm 3 m

b to the nearest metre 3·25 m

Answer may Vary according to your mark

2 Think about how close your line was to 3 m in Question **1** and use this information to draw a mark at a point that you estimate to be closer to 3 m.

I marked above 3m. So 25 cm was extra.

Measure the distance and record it:

a in metres and centimetres 25 cm 3 m

b to the nearest metre 3·25 m

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Lesson 4: **Problems involving length**

- Solve word problems involving length

For each word problem, show your answer and how you worked it out.

Challenge 1

1 Brad needs to share two baguettes between 5 friends. Each baguette is 20 cm long. How much can each friend have?

Each baguette = 20 cm.
2 baguettes = 20 × 2 = 40 cm.
Each friend has = 40 ÷ 5 = 8 cm

8 cm

2 Amira has 12 cm of ribbon. Leila has 30 cm of ribbon. Sabeen has 27 cm of ribbon. How much ribbon do they have altogether in centimetres?

Length of ribbon Amira has = 12 cm
Length of ribbon Leila has = 30 cm
Length of ribbon Sabeen has = 27 cm
Total length 69 cm

69 cm

Challenge 2

1 Rahim cuts 6 pieces of string that are each 14 cm in length. How much string has he cut in total?

Length of each string = 14 cm.
Length of 6 strings = 14 × 6
= 84 cm

84 cm

2 Malik has cut a plank of wood into 9 pieces. Each is 20 cm long. What was the total length of the plank before Malik started? How many equal pieces can he cut?

Length of each wood = 20 cm
Length of 9 pieces = 20 × 9 = 180 cm
Total length of the plank = 1800

1800 cm

3 It is a 46 km journey into town. Jamal has travelled 18 km so far. How many kilometres must he still travel?

Total journey = 46 km
Distance Jamal covered = 18 km
Distance left to cover = 46 - 18 = 28

$$\begin{array}{r} 3\,16 \\ \not{4}\not{6} \\ -\,1\,8 \\ \hline 2\,8 \end{array}$$

28 km

3

1 David's trousers are too long. They are 108 cm long. He needs to cut 13 cm off each leg, so they will be the correct length. How long will the trousers be when he has done this?

Length of a trouser = 108 cm
Length to be cut off = 13 + 13 = 26 cm
Length of the trouser = 108 - 26

82 cm

2 Write a length or distance problem that uses division or multiplication. Make sure you have worked out the answer. Then ask someone to answer your problem.

Answer may vary

3 Make up a number story for this calculation. 76 ÷ 4.

Create your own word problem. Answer may vary.

Lesson 1: **Units of mass**

- Choose and use units to measure mass
- Understand the relationship between g and kg

Challenge 1

1 Write g or kg next to each object to show which unit you would use to measure its mass.

 kg  kg  g  kg  g

2 Name an object you would weigh in grams. Answer may vary

An apple, a toy, etc

3 Name an object you would weigh in kilograms.

A cupboard, a desk etc

Challenge 2

1 3000 g = 3 kg

2 2 kg = 2000 g

3 Circle the smallest mass in each row.

a	(5 g)	5 kg	50 g
b	500 kg	50 kg	(5000 g)

4 Circle the largest mass in each row.

a	(250 kg)	2500 g	250 g
b	(8000 g)	5 kg	800 g

5 **a** How many grams in 4 kg? 4000 g

b How many grams in $2\frac{1}{2}$ kg? 2500 g 2.5 x 1000

c How many kilograms in 6000 g? 6 kg

d How many kilograms in 2500 g? 2.5 kg

e How many kilograms in 1100 g? 1.1 kg

f How many grams in $3\frac{1}{4}$ kg? 3250 g

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3 Answer each question, showing your working.

a How many kilograms is 3750 g? 3·75 kg

1 kg = 1000 g
3750 ÷ 1000
= 3·75 kg

b How many grams is $5\frac{1}{4}$ kg? 5250 kg

$5\frac{1}{4}$ kg = 5·250 g
5·250 × 1000 = 5250 kg

c How many kilograms is 6250 g? 6·25 kg

6250 ÷ 1000
= 6·250 kg or $6\frac{1}{4}$ kg

d How many grams is $\frac{1}{4}$ of a kg? 250 g

250 g 1000 ÷ 4

e How many kilograms is 2250 g? 2·25 kg

2250 ÷ 1000
= 2·250 kg or $2\frac{1}{4}$ kg

☹ 😐 ☺

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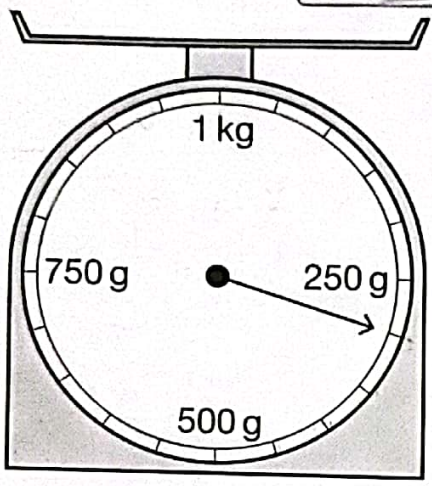
Measure

Lesson 2: **Reading and interpreting mass**

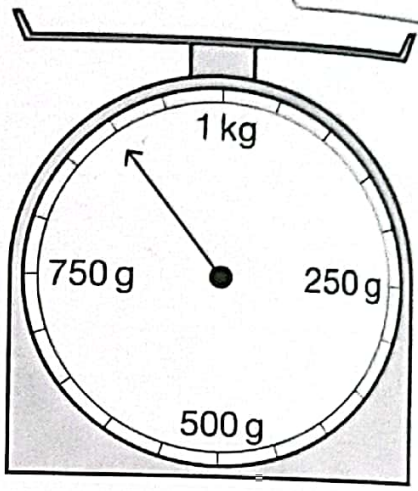
- Read and show a mass on a scale that is only partially numbered

Challenge 1

1 What is the mass shown on the scales? 300 g

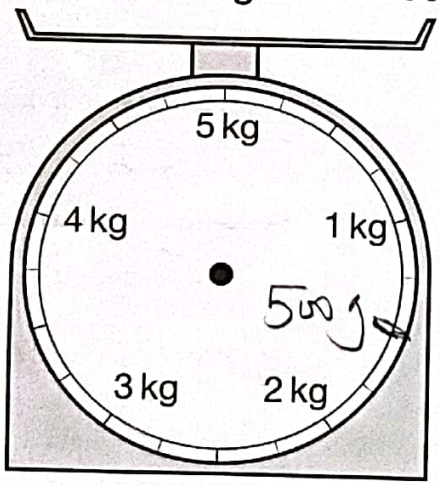


2 What is the mass shown on the scales? 900 g

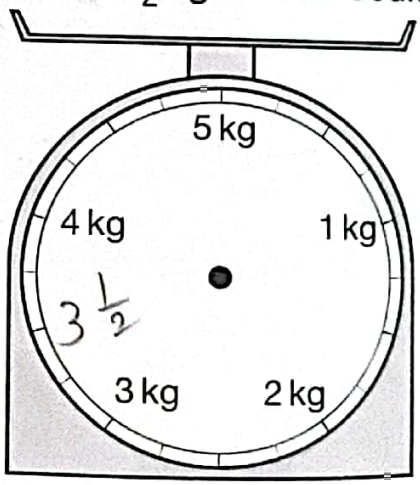


Challenge 2

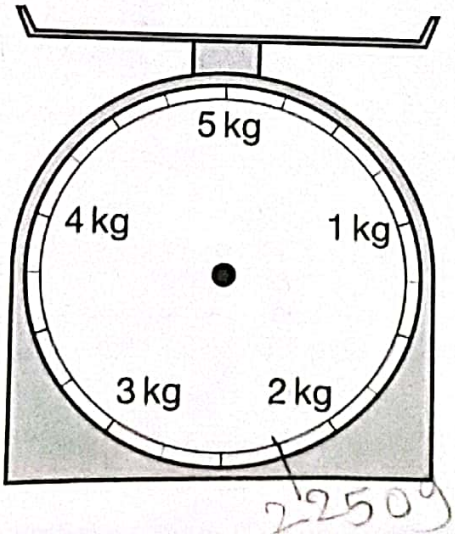
1 a Show 500 g on the scales.



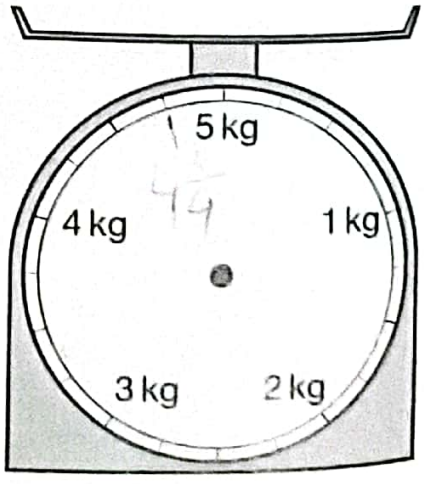
b Show $3\frac{1}{2}$ kg on the scales.



c Show 2250 g on the scales.

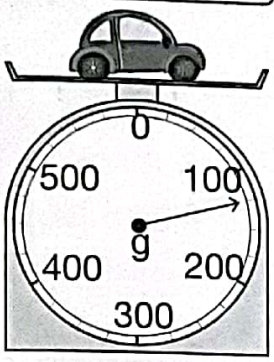


d Show $4\frac{3}{4}$ kg on the scales.

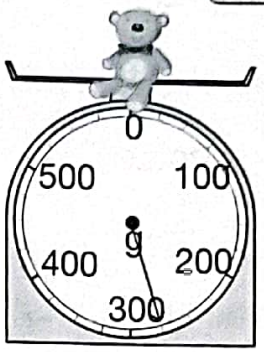


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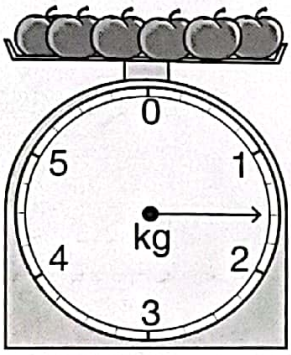
2 a What is the mass of the toy car? 125 g



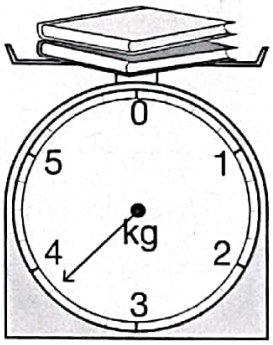
b What is the mass of the teddy bear? 275 g



c What is the mass of the apples? 1·5 kg 1½

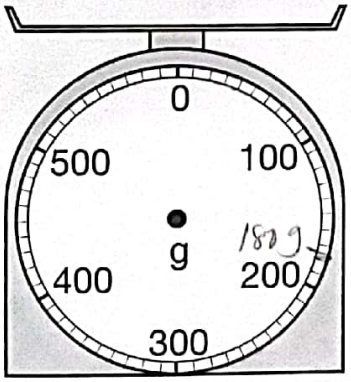


d What is the mass of the books? 3·75 kg 3¾

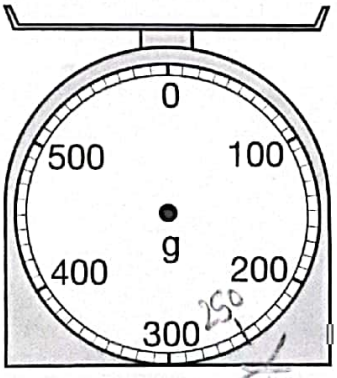


Challenge 3

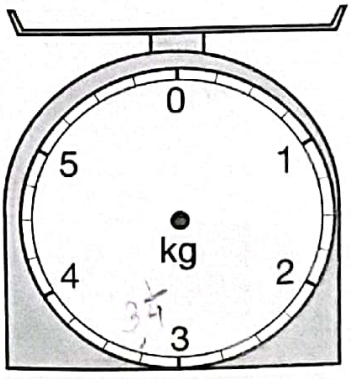
1 Show 180 g on the scale.



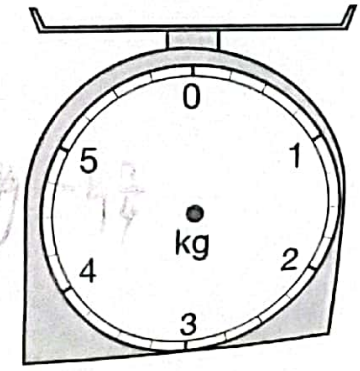
2 Show $\frac{1}{4}$ kg on the scale.



3 Show $3\frac{1}{4}$ kg on the scale.



4 Show $4\frac{3}{4}$ kg on the scale.





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Lesson 3: **Estimating, measuring and recording mass**

- Estimate mass
- Record mass in grams and kilograms

You will need
- 1 kg weight
- 100 g weight

Challenge 1

1 Pick up a 1 kg weight and then estimate whether these objects would have a mass that is less or more than 1 kg. Circle each answer.



a mouse: less than 1 kg more than 1 kg



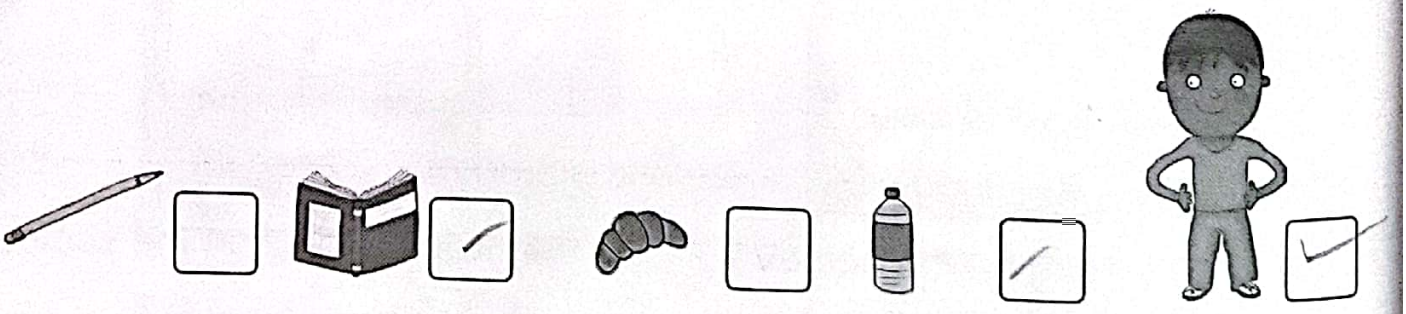
b pencil sharpener: less than 1 kg more than 1 kg



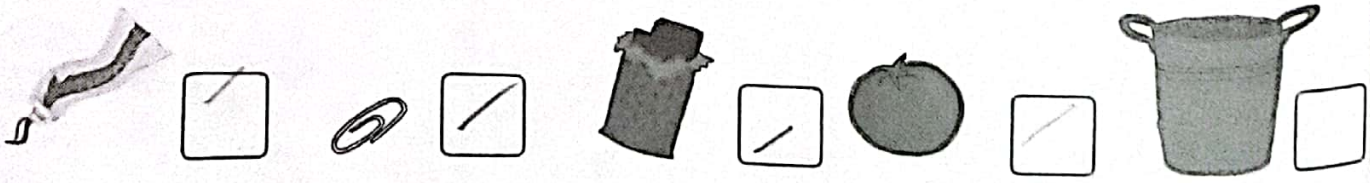
c basket of washing: less than 1 kg more than 1 kg

Challenge 2

1 Tick the objects that you estimate have a mass of about 1 kilogram.



2 Tick the objects that you estimate have a mass of about 100 grams.



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Lesson 4: **Problems involving mass**

- Solve word problems involving mass

For each word problem, show your answer and how you worked it out.

Challenge 1

1 Louise is standing on the scales. She has a mass of 28 kg. She picks up her 3 pet rabbits, which have a mass of 4 kg; 2 kg and 5 kg. What will the reading on the scales show now?

Mass of Louise = 28 kg.
mass of Rabbit 1 = 4 kg
Mass of Rabbit 2 = 2 kg
Mass of Rabbit 3 = 5 kg
Total mass 39 kg

39 kg

2 I have a bunch of bananas. Each banana has a mass of 80 g and there are 5 in the bunch. What is the total mass of the bunch of bananas?

mass of 1 banana = 80 g
Mass of 5 bananas = 80 × 5
Total mass = 400 g

400 g

Challenge 2

1 David has to load 7 bags of corn onto a truck. Each bag of corn has a mass of 20 kg. What is the total mass of corn?

mass of each bag = 20 kg
Mass of 7 bags = 20 × 7
Total mass = 140 kg

140 kg

2 I have 65 g of sweets. I give three friends 15 g of sweets each. What mass of sweets do I have left?

Total mass of sweets = 65 g
Sweets shared to 3 friends = 15 × 3
= 45 g
Sweets left = 65 − 45
20

g

3 Sarah is carrying a bag of 4 books. Each book has a mass of 20 g. She picks up another, identical, bag of 4 books. What is the mass of the books she is carrying now?

mass of each book = 20 g
mass of 4 books = 20 × 4
= 80 g

80 g

Challenge 3

1 Jamal carried a 1 kg bag of flour home. It leaked and he lost 350 g of the flour. How much flour is left?

1 kg = 1000 g.
1000
− 350
650 g left.

650 g

2 Write a mass problem that uses division or multiplication. Make sure you have worked out the answer. Then ask someone to answer your problem.

Answer may vary.

3 Make up a number story for this calculation. 23 g × 8 = 184 g.

Mass of each bottle is 23 g.
I have 8 bottles in kitchen
What is the total mass of the bottle.
Answer may vary

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Lesson 1: **Units of capacity**

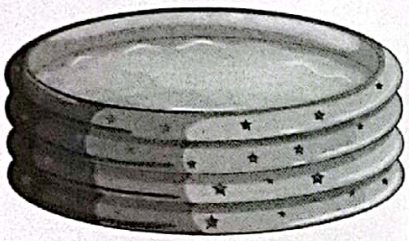
- Choose and use units to measure capacity
- Understand the relationship between ml and *l*

You will need
- red, blue and yellow coloured pencils

Challenge 1

1 Write *l* or ml next to each picture to show which unit you think would have been used to measure the liquid.

a



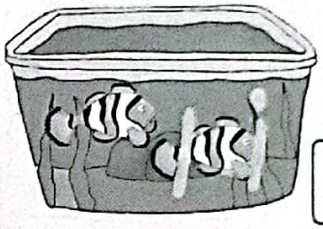
l

b



ml

c



l

d



ml

e



l

f



ml

2 Write an example of when you would measure liquid in litres.

to fill the bucket

3 Write an example of when you would measure liquid in millilitres.

A cup of tea

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Challenge 2

1 7000 ml = 7 *l*

2 3 *l* = 3000 ml

3 $9\frac{1}{2}$ *l* = 9500 ml

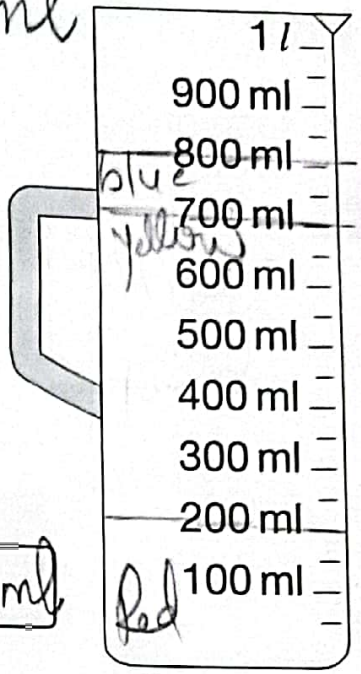
1 l = 1000 ml

4 a Colour the container red to show 200 ml.

b Colour another half a litre yellow.

c Colour another 100 ml blue.

d How many more millilitres would you have to colour to reach 1 litre? 200 ml



5 Draw lines to match the amounts that are equal.

500 ml	$\frac{3}{4}$ of a litre
1 litre	250 ml
100 ml	1000 ml
750 ml	3 litres
3000 ml	$\frac{1}{10}$ of a litre
$\frac{1}{4}$ of a litre	$\frac{1}{2}$ a litre

Challenge 3

1 $\frac{4}{10}$ *l* = 400 ml $\frac{4}{10}$ of 1000

2 $3\frac{1}{4}$ *l* = 3250 ml

3 $\frac{7}{10}$ *l* = 700 ml $\frac{7}{10} \times 1000$

4 1250 ml = 1.250 *l*

5 2750 ml = 2.750 *l*

6 810 ml = 0.810 *l*



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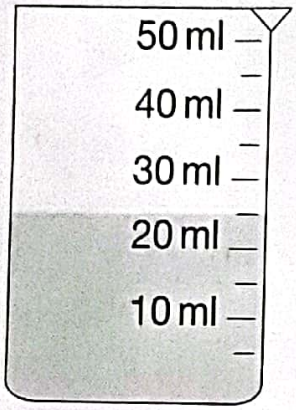
Lesson 2: **Reading and interpreting capacity**

- Read and show capacity on a scale that is only partially numbered

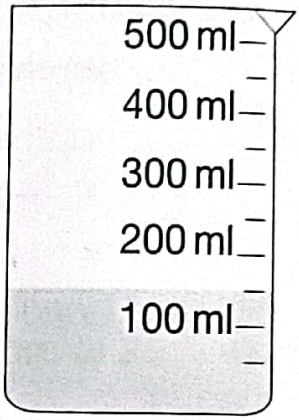
Challenge 1

1 Write the amount of liquid shown in each container.

a 25 ml

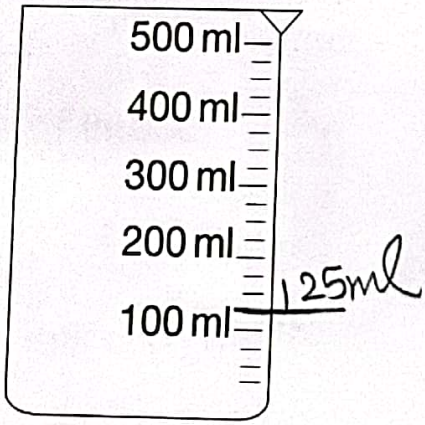


b 150 ml

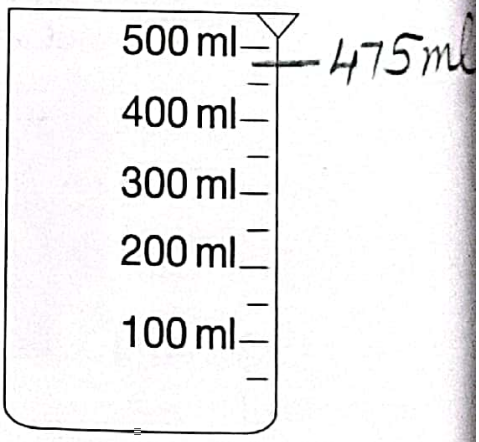


Challenge 2

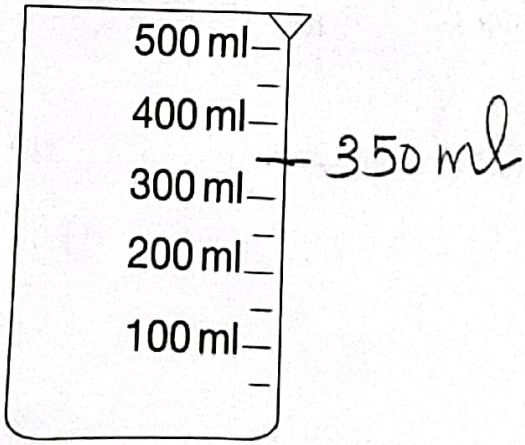
1 Show 125 ml of liquid in the container



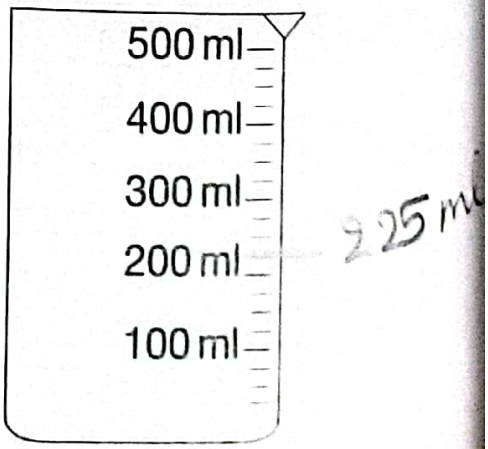
2 Show 475 ml of liquid in the container.



3 Show 350 ml of liquid in the container.

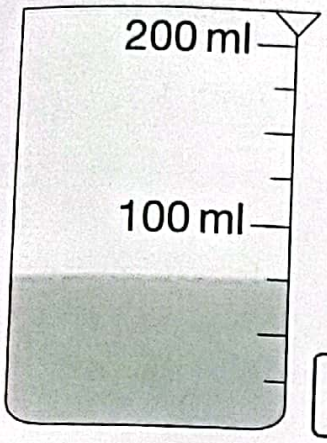


4 Show 225 ml of liquid in the container.



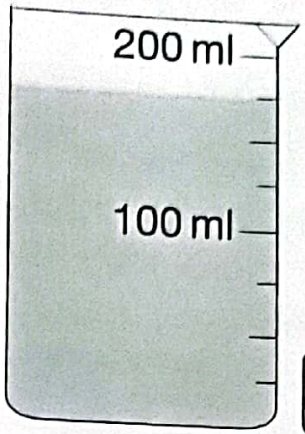
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5 How much water is in this measuring jug?



75ml

6 How much water is in this measuring jug?



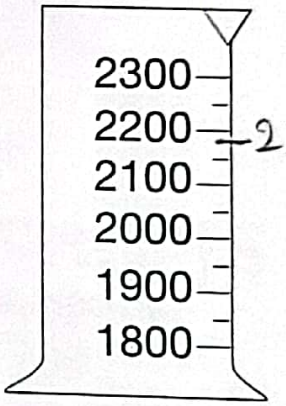
175ml

3

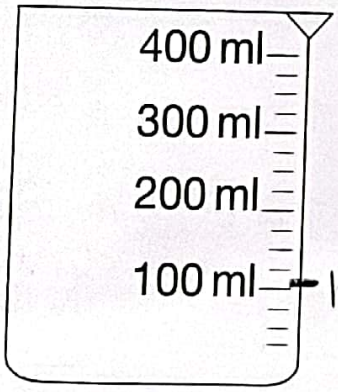
1 a Mark where you think 2*l* 175 ml would be on this scale.

b How much is 2*l* 175 ml in millilitres?

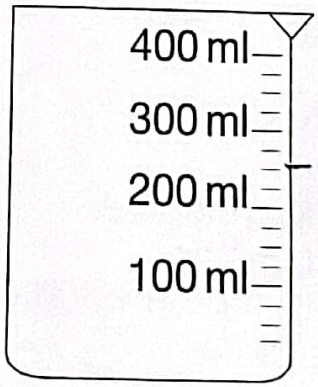
2175 ml



2 a Show 110 ml of liquid in the container.



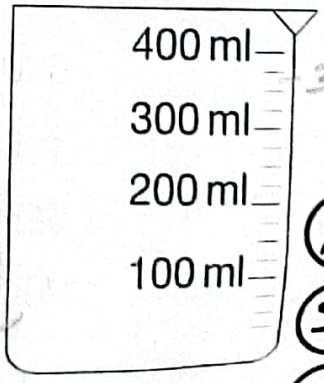
b Show 260 ml of liquid in the container.



c Show 370 ml of liquid in the container.

d Explain the strategies that you used to place the numbers.

There are 4 divisions
100 ÷ 4 = 25
Each division is 25ml



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recording capacity

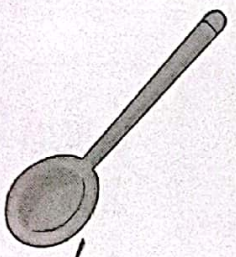
- Estimate capacity and record it in litres and millilitres

You will need
- selection of plastic containers

Challenge 1

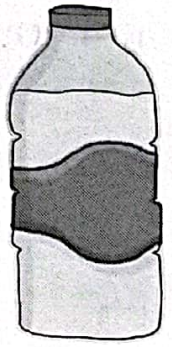
1 Estimate whether these containers hold less, or more, than 100 ml. Circle your estimate.

a



less more

b



less more

c



less more

d



less more

2 Estimate whether these containers hold less, or more, than 1 litre. Circle your estimate.

a a basin: less than 1 litre more than 1 litre

b a drinking glass: less than 1 litre more than 1 litre

c a washing machine: less than 1 litre more than 1 litre

Challenge 2

1 Draw a line to match each container to the capacity that you estimate it to have.











- 5 ml
- 200 ml
- 8 litres
- 330 ml
- $1\frac{1}{2}$ litres

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2 a Look at a container that has a capacity of 250 ml. Now, find a different container that you think has the same capacity. Pour water from the second container into the first to check. Were you correct?

Yes / No

Practical answers may vary.

b What was the difference between the capacities in ml? 40 ml

3 a Look at a container that has a capacity of 500 ml. Now, find a different container that you think has the same capacity. Pour water from the second container into the first to check. Were you correct?

Yes / No

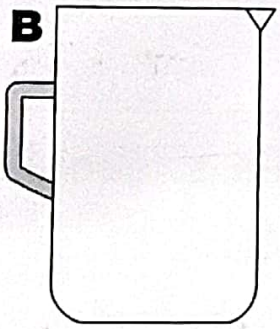
b What was the difference between the capacities in ml? 80 ml

1 If container A holds 200 ml of liquid, how much liquid do you estimate container B holds? 400 ml

A



B

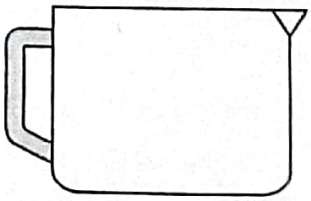


2 If container A holds 100 ml of liquid, can you tell how much liquid container B holds?

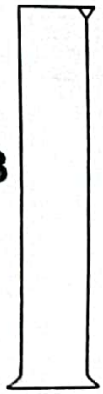
Yes / No

Explain your reasoning.

A



B



Estimate of 70 ml.

Container B is thin. Container B's capacity is less than Container A.







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Measure

Lesson 4: **Problems involving capacity**

- Solve word problems involving capacity

For each word problem, show your answer and how you worked it out.

Challenge 1

1 Ben has filled a paddling pool with 13 litres of water. He makes another three trips and puts in 7 litres, 4 litres and 6 litres, which fills the pool. What is the capacity of the pool?

Capacity of the pool = 13 + 7 + 4 + 6

30 l

2 Jamal opens a 1 litre carton of apple juice. He drinks 300 ml. How much apple juice is left in the carton?

Apple juice left = 1000 − 300 = 700

1 l = 1000 ml

700ml

Challenge 2

1 Six children are painting. There is 450 ml of paint in the pot. How much paint will be left over if each child has 60 ml of paint?

No. of children = 6

Each child has paint = 60 × 6 = 360 ml

Paint left = 450 − 360

3 15
4 5 0
− 3 6 0

90 ml

2 Seven people each pour 20 ml of water into a container. The container is now completely full. What is the capacity of the container?

7 × 20 = 140 ml

The capacity of the container is

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3 Aida has a bottle with a capacity of 1500 ml. She fills it with water, spills 230 ml, then adds another 50 ml to it. How much water is in the bottle now?

Capacity of a bottle = 1500 ml
Water she spilled = − 230
Water she left = 1270 ml
Water she added + 50
Water in the bottle = 1320 ml

1320 ml

Challenge 3

1 Surinder's dad bought 40 litres of fuel for his car. The next day, only 13 litres of fuel were left. How many litres of fuel did the car use?

Fuel = 40 l
Fuel left = − 13 l
27 l fuel left.

27 l

2 Write a two-part capacity problem that uses addition, subtraction, division or multiplication. Make sure you have worked out the answer. Then ask someone to answer your problem.

3 Make up a number story to go with this calculation.
$22l + 41l = 63l$. $63l \div 7l = 9$

Bottle A contains 22 l of water and bottle B contains 41 l of water. Out of total capacity of ☹
She pours 7 l of ☐ 😐
each bucket. Find out the number ☺
of buckets.

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Lesson 1: **Revising length**

- Estimate and measure length in metres and centimetres
- Record length using decimal notation

You will need
- ruler
- coloured pencils

Challenge 1

1 Write each length using decimal notation.

a 50 cm = 0·[5] m **b** 70 cm = 0·[7] m

c 1 m 30 cm = [1] ·3 m **d** 4 m 60 cm = [4] · [60] m

2 Write each length in metres and centimetres.

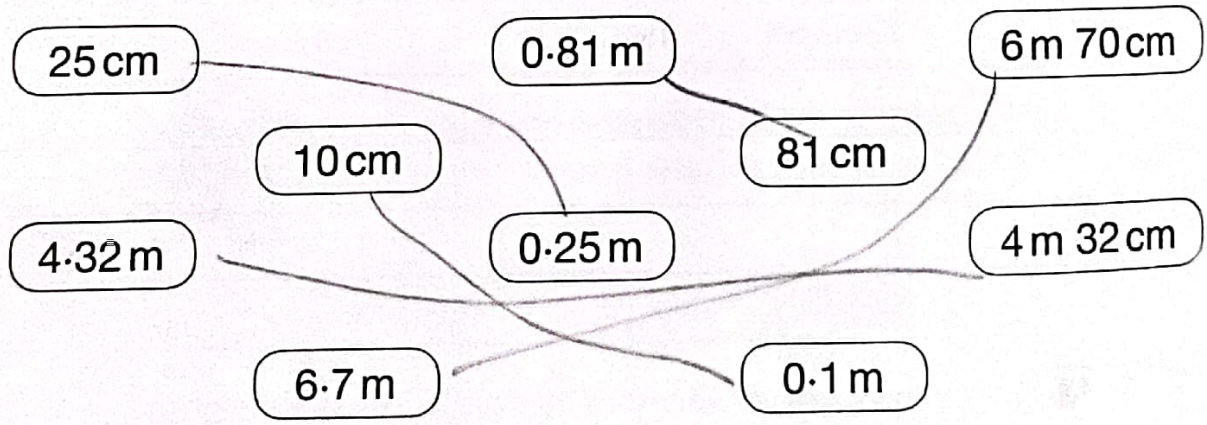
a 0·40 m = [40] cm **b** 0·80 m = [80] cm

0.40 ×100

c 2·20 m = [2] m [20] cm **d** 3·10 m = [3] m [10] cm

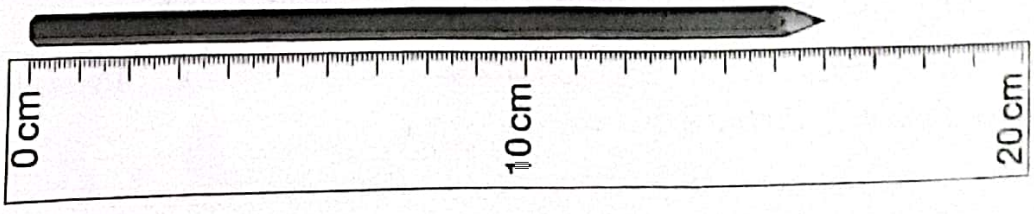
Challenge 2

1 Find the matching lengths and colour them with the same colour. Choose a different colour for each pair of matching lengths.



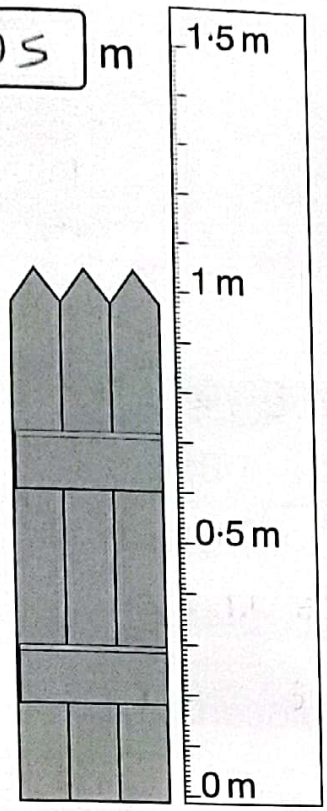
2 Write each length using decimal notation.

a [0.16] m 16 cm 16 ×100

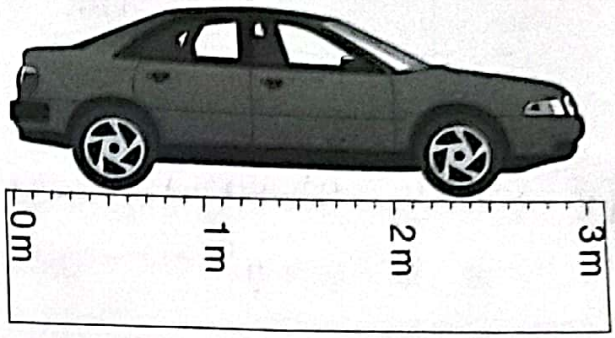


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b 1.05 m



c 3 m



3 Measure your hand span with a ruler. Record the measurement:

a in centimetres 8 cm

Eg. Depends upon your measurement

b using decimal notation 0.08 m

Challenge 3

1 Circle the length that is **not** equal to the others.

a $\frac{3}{4}$ of a metre | 0·75 m | 1 m 75 cm

b 6 m 10 cm | 6·01 m | $6\frac{1}{10}$ of a metre

c 2·60 m | $2\frac{6}{10}$ of a metre | 260 cm

2.60m 260cm all are same

2 Complete each calculation and write the answer using decimal notation.

a 67 cm + 21 cm = 0.88 m

b 1 m 53 cm + 3 m 39 cm = 4.92 m

c 8 m 88 cm + 32 cm = 9.20 m

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Measure

Lesson 2: **Revising mass**

- Estimate and measure mass in grams and kilograms
- Record mass using decimal notation

You will need
- weighing scales

Challenge 1

1 Circle the matching mass.

a	600 g =	0·5 kg	0·6 kg	4·6 kg
b	800 g =	0·8 kg	1·8 kg	8·8 kg
c	1 kg 50 g =	0·15 kg	1·5 kg	1·05 kg
d	4 kg 100 g =	4·1 kg	0·41 kg	4·6 kg

2 Write each mass using decimal notation.

a 300 g



kg

b 900 g



kg

c 500 g



kg

Challenge 2

1 Draw lines to match the masses that are equal.

750 g	5·89 kg
2 kg 600 g	0·1 kg
5 kg 890 g	2·3 kg
50 g	0·05 kg
2 kg 300 g	2·6 kg
100 g	0·75 kg

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2 Write each mass in kilograms and grams.

a



560g

b



1kg700g

c



4kg340g

3 Weigh your shoe on the scales. Record the mass:

a in grams [ ] g

b using decimal decimal notation [ ] kg

depends on your measurement

4 Write the equivalent mass using decimal notation.

a $3\frac{3}{4}$kg = [3·750] kg

5 ×1000 / 18

b $1\frac{7}{10}$kg = [1·700] kg

7 ×1000 / 18

c $\frac{5}{10}$kg = [0·500] kg

Challenge 3

1 Circle the mass that is **not** equal to the others in each row.

a	$\frac{1}{2}$ of a kilogram	0·5 kg	50 g
b	0·3 kg	$\frac{1}{4}$ of a kilogram	250 g
c	$\frac{1}{10}$ of a kilogram	200 g	0·2 kg

2 a Which is larger 0·6 kg or 0·06 kg? [0·6kg is larger]

b Explain how you know.

0·6 ×1000 = 600g

0·06 ×1000 = 60g

3 Complete each calculation and write the answer using decimal notation.

a 43 g + 11 g = [54] g

b 1 kg 34 g + 5 kg 19 g = [5·53] kg

c 7 kg 77 g + 33 g = [8·10] kg



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Lesson 3: **Revising capacity**

- Estimate and measure capacity in litres and millilitres
- Record capacity using decimal notation

You will need

- selection of plastic containers
- measuring jug

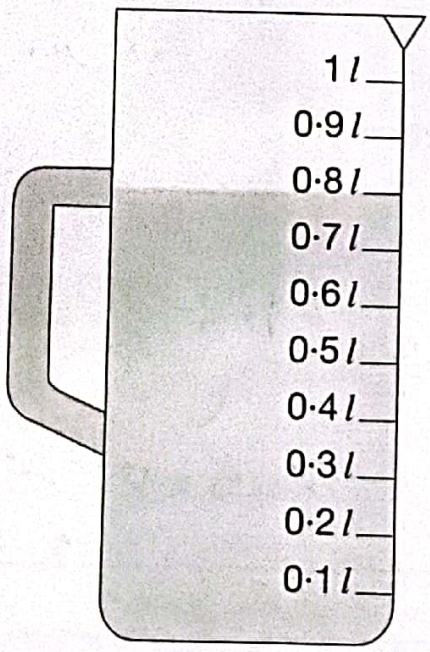
Challenge 1

1 Circle the matching capacity.

a	600 ml =	0·2 *l*	6·0 *l*	0·6 *l*
b	1 *l* 200 ml =	1·2 *l*	2·1 *l*	1·0 *l*
c	0·3 *l* =	3 ml	30 ml	300 ml
d	4·1 *l* =	4 *l* 1 ml	4 *l* 0 ml	4 *l* 100 ml

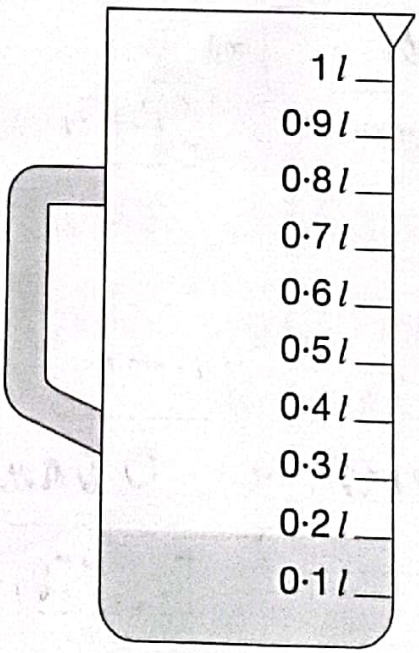
2 What volume of liquid is in each jug?
Write your answer in millilitres.

a



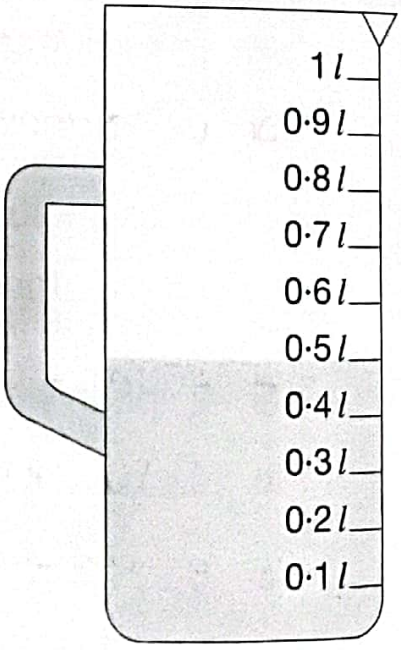
800 ml

b



200 ml

c



500 ml

Challenge 2

1 Write each capacity using decimal notation:

a $\frac{1}{2}$ of a litre 0·5 *l*

b $\frac{1}{4}$ of a litre 0·250 *l*

c $\frac{1}{10}$ of a litre 0·1 *l*

d $\frac{3}{4}$ of a litre 0·750 *l*

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Measure

Lesson 4: Problems involving measures

- Solve word problems involving measures
- Record measures using decimal notation

Work out the answer to each word problem in the space provided. Write all answers using decimal notation.

Challenge 1

1 There were 0·7 kg of mixed nuts in the jar. Adiba sold 200 g of them yesterday. What is the mass of the nuts that are left now?

Amount of mixed nuts in the jar = 0.7 kg
0.7 × 1000 = 700 g.
Nuts sold = 200 g.
Mass of nuts left = 700 − 200
= 500 g

500 / 1000

0.5 kg

2 Leila ran 2300 m today, 1100 m yesterday and 1500 m the day before that. How far has she run altogether?

Distance she covered today = 2300 m
" " " yesterday = 1100 m
" " " day before = +1500 m
Distance she covered altogether 4900

4900 m

Challenge 2

1 Some children are filling a bucket with water. Prahalad pours in 1·3 *l*. Fatima pours in 400 ml. Manir pours in 1·1 *l*. How much water is there in the bucket now?

Water poured by prahalad = 1.3 l = 1.3 × 1000 = 1300 ml
Water poured by fatima = 400 ml.
Water poured by Manir = 1.1 l = 1.1 × 1000 = 1100 ml
Water in the bucket = 1300 + 400 + 1100
= 2800 ml = 2800 ÷ 1000 = 2.8 l

2.8 l

2 Jamal and his family are walking at a speed of 7600 m per hour. They have been walking for half an hour. How many kilometres have they travelled?

7600 ÷ 2 = 3800 m
3800 ÷ 1000 = 3.8 km

3.8 km

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3 Hakan is packing books into a box. Each book weighs 250 g. The parcel weighs 3·75 kg. How many books are in the parcel?

3.75 × 1000 = 3750 g.
Weight of 1 book = 250 g.
= 3750 ÷ 250 = 15 books.

4 Make up a number story for this calculation. 27 + 82 = 109

Rahel is reading a book. She reads 27 pages on first day and 82 pages on second day. How many pages she read altogether?

Challenge 3

1 Lily had a bath. The bathtub had a capacity of 25 *l*. She let $\frac{3}{5}$ of the water out. How much water was left in the bath?

$\frac{3}{5}$ of 25
$= \frac{25}{5} = 5 \times 3 = 15$ l

15 l

2 Write a measurement problem that uses two of the following: addition, subtraction, division or multiplication. You can decide whether it is about length, mass or capacity. Make sure you have worked out the answer. Then ask someone to answer your problem.

Shopkeeper has 60 kg of Rice in his store and 30,000 g of Rice in his warehouse. He sold 5 2000 g of rice. How much rice is left now?.

3 Write a measures number story for this calculation.
476 – 380 = 96. 96 ÷ 8 = 12.

The length of a ribbon is 476 m in which he cut 380 m. Out of the left over ribbon he cut into 8 pieces. What could be the length of each ribbon?

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2 Write each capacity in litres and millilitres.

a



200 ml

b



2 l 100 ml

c



7 l 500 ml

3 Pick a container. Estimate its capacity: A milk can.

a in millilitres 1000 ml

b using decimal notation 0·9 l practical

4 Now work out the container's capacity using a measuring jug. Write the capacity below:

a in millilitres 450 ml assumption practical.

b using decimal notation 0·450 l

1 Complete each calculation and write the answer using decimal notation.

a 450 ml + 420 ml = 870 ml = 0·870 l

b 3 l 500 ml + 2 l 120 ml = 5620 ml = 5 l 620 ml = 5·620

c 6 l 240 ml + 1 l 310 ml = 7550 ml = 7 l 550 ml = 7·550 l

a Which is smaller 3·40 l or 3·04 ml? 3·04 ml is smaller

b Explain how you know.

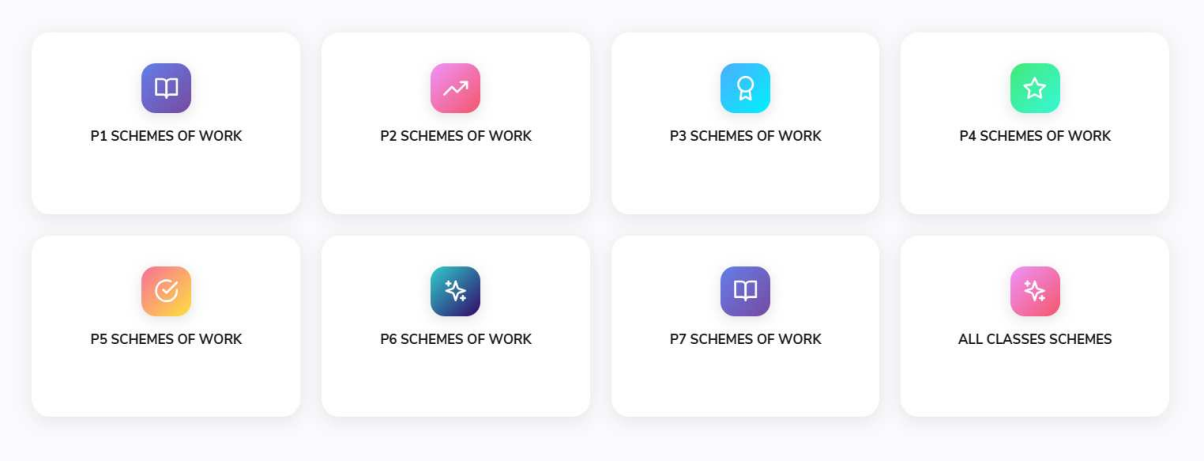
3·40 l → 1 l = 1000 ml

3·40 l = 3·40 × 1000

= 3400 ml.

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