Worksheet - Length, perimeter, mass and capacity

Year: Year 3 · 20

Show your working.

Question 1

Question 1 – Convert the lengths *(Section A · Practice)*

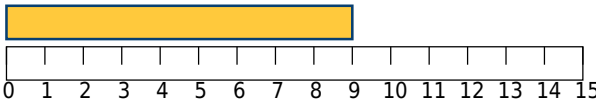
Complete each conversion.

a. 3 m = __ cm
b. 4 m 25 cm = __ cm
c. 250 cm = __ m __ cm
d. 50 mm = __ cm
e. 3 km = __ m

Question 2

Question 2 – Measure with a ruler *(Section A · Practice)*

Look at the picture of the strip and the ruler. Answer the questions.



a. How long is the strip?
b. How long is it in millimetres?
c. A pencil is 5 cm longer. How long is it?
d. How much shorter is the strip than a 15 cm ruler?

Question 3

Question 3 – Perimeter of a rectangle *(Section A · Practice)*

Find the perimeter of each rectangle. Show the addition.

a. Length 8 cm, width 3 cm
b. Length 12 cm, width 5 cm
c. Length 20 m, width 9 m
d. A square of side 7 cm

Question 4

Question 4 – Convert mass and capacity *(Section A · Practice)*

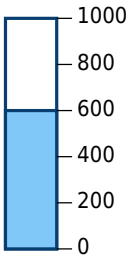
Complete each conversion.

a. 2 kg = __ g
b. 3500 g = __ kg __ g
c. 4 l = __ ml
d. 1500 ml = __ l __ ml
e. Half a litre = __ ml

Question 5

Question 5 – Reading a scale *(Section A · Practice)*

The picture shows a measuring jug. Each big number goes up in steps of 200 ml.



a. How much water is in the jug?
b. How much more is needed to fill it to 1 litre?
c. The jug is poured into two equal cups. How much in each?

Question 6

Question 6 – Choose the unit *(Section A · Practice)*

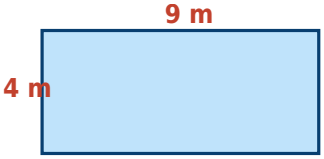
Choose the best unit for each measure: mm, cm, m, km, g, kg, ml or l.

a. The length of a football pitch
b. The mass of a bag of rice
c. The amount of juice in a cup
d. The distance from London to Leeds
e. The mass of a feather

Question 7

Question 7 – The school garden *(Section B · Real-life practice)*

Year 3 plant a rectangular vegetable bed that is 9 m long and 4 m wide. They put a fence round the bed.



a. What is the perimeter of the bed?
b. Fencing costs £3 for every metre. How much does the fence cost?
c. They leave a gap of 2 m for a gate. How much fencing do they buy now?
d. The bed is made longer by 3 m. What is the new perimeter?

Question 8

Question 8 – Cooking at home *(Section B · Real-life practice)*

Zoe makes a cake. The recipe needs 250 g of flour, 175 g of sugar, 125 g of butter and 400 ml of milk.

Ingredient	Amount
Flour	250 g
Sugar	175 g
Butter	125 g
Milk	400 ml

a. What is the total mass of flour, sugar and butter?
b. She has a 1 kg bag of flour. How much flour is left after she takes 250 g?
c. She makes the recipe twice. How much milk does she need in ml? And in litres and ml?
d. The milk bottle holds 1 litre. How much milk is left after two cakes?

Question 9

Question 9 – The long jump *(Section B · Real-life practice)*

Three children jump at sports day. Their jumps are in the table.

Child	Jump
Aisha	190 cm
Ben	2 m 15 cm
Dev	2 m 5 cm

a. Who jumped the furthest?
b. How much further did Ben jump than Aisha?
c. Dev’s second jump is 12 cm longer. How long is it?
d. Put the first jumps in order, longest first.

Question 10

Question 10 – At the supermarket *(Section B · Real-life practice)*

Ravi buys fruit. He buys 2 kg of apples, 750 g of grapes and 500 g of strawberries.

a. What is the total mass of the grapes and strawberries?
b. What is the total mass of all the fruit in grams?
c. Write the total in kilograms and grams.
d. His bag can hold up to 4 kg. How much more can he buy?

Question 11

Question 11 – The paddling pool *(Section B · Real-life practice)*

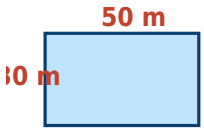
Mia fills a paddling pool with buckets. Each bucket holds 5 l. She pours in 8 buckets.

a. How much water is in the pool?
b. The pool holds 60 l when full. How much more water is needed?
c. How many more buckets is that?
d. A small cup holds 250 ml. How many cups fit in one bucket?

Question 12

Question 12 – The school fence *(Section B · Real-life practice)*

The school field is a rectangle 50 m long and 30 m wide. The caretaker walks all round the edge to check the fence.

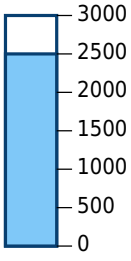


a. How far does he walk in one lap?
b. How far does he walk in 3 laps?
c. How many metres short of 1 km is that?
d. The field has a small square pond, 4 m on each side. What is the perimeter of the pond?

Question 13

Question 13 – The scales at the market *(Section B · Real-life practice)*

At a market stall a customer puts a bag of potatoes on a scale. The bag weighs 2 kg 500 g. The stall has bags of 1 kg, 500 g and 250 g.



a. How many grams is 2 kg 500 g?
b. Which bags could balance it? Use bags of 1 kg, 1 kg and 500 g.

c. The customer takes away a 750 g bag. What is the mass left?
d. Is that more or less than 2 kg?

Question 14

Question 14 – The petrol station *(Section B · Real-life practice)*

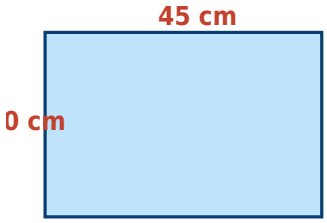
A car tank holds 50 l. Dad fills the tank. It already has 18 l.

a. How many litres does Dad put in?
b. Petrol costs £2 for each litre. How much does he pay?
c. He drives and uses 15 l. How much is left in the tank?
d. Write 35 l in millilitres.

Question 15

Question 15 – Problem: the picture frame *(Section C · Problem solving)*

Ella makes a picture frame from a strip of wood 2 m long. The picture is a rectangle 45 cm long and 30 cm wide. She needs the strip to go all the way round the picture.



a. What is the perimeter of the picture in centimetres?
b. Convert the perimeter into metres and centimetres.
c. How much of the 2 m strip is left over?
d. Ella wants a frame with sides 10 cm longer in each direction (55 cm by 40 cm). Is 2 m enough?

Question 16

Question 16 – Problem: baking bread *(Section C · Problem solving)*

Mr Patel bakes bread. A big loaf has a mass of 800 g and a small loaf has a mass of 400 g. He bakes 5 big loaves and 6 small loaves.

a. What is the total mass of the big loaves?
b. What is the total mass of the small loaves?
c. What is the total mass of all the bread? Give your answer in kg and g.
d. He puts the bread in boxes. Each box holds up to 5 kg. How many boxes does he need?

Question 17

Question 17 – Problem: the running track *(Section C · Problem solving)*

A school running track is a rectangle with sides 100 m and 40 m. Year 3 run laps for charity. Each child runs as many laps as they can.

a. What is the length of one lap?
b. Ali runs 5 laps. How far is that?
c. Beth runs 1 km. How many metres more must she run to complete 4 laps?
d. Cara says "Two laps is more than half a kilometre." Is she right?

Question 18

Question 18 – Problem: water for the garden *(Section C · Problem solving)*

Mrs Evans fills three watering cans. Can A holds 3 l, can B holds 5 l and can C holds 2 l. She also has a water tank with 40 l of water.

a. How many litres do the three cans hold altogether?
b. She fills all three cans from the tank. How much water is left in the tank?
c. How many times can she fill all three cans from a full 40 l tank?
d. Each plant needs 250 ml. How many plants can she water with the 5 l can?

Question 19

Question 19 – Problem: spot the mistakes *(Section C · Problem solving)*

Tom answers measure questions. Check each answer and correct the wrong ones.

a. 3 m = 30 cm
b. 2 kg 400 g = 2400 g
c. The perimeter of a rectangle 6 cm by 4 cm is 24 cm.
d. 1 l 500 ml = 1500 ml

Question 20

Question 20 – Challenge: the secret rectangle *(Section D · Challenge)*

A rectangle has a perimeter of 30 cm. The length and the width are both whole numbers of centimetres. The length is 5 cm longer than the width.

a. Find the length and width. Explain how you get them.
b. Check that the perimeter is 30 cm.
c. Find a different rectangle with perimeter 30 cm and whole number sides.