BRICKWORK mathematics

4:8

Ratio & Proportion

1) Mrs Sonpal wants to make a juice drink for all the children taking part in sports day. She uses a recipe which states use 2 cups of pineapple juice to every 3 cups of orange juice.
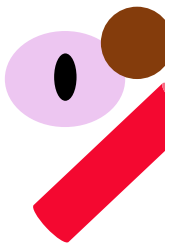
This ratio is recorded as

2:3

She pours 8 cups of pineapple juice into the jug. How many cups of orange juice does she need to pour in?

Encourage children to draw- such as drawing 2 pineapple juices and 3 orange juices 4 times to make 8 pineapple juices. Some children may have realised that to make 8 pineapple juices, x by 4 .

12

2)Pick a mix sweets cost 80p for every 100grams. Skyla has £1 to spend. How many grams of sweets can she buy?

20p more is needed to make £1 so that is ¼ of 80p.
¼ of 100 grams = 25 g
100 + 25=

125g

3) Answer these questions:

a) 25% of 360 =

Children should know 25% is same as $\frac{1}{4}$ and ÷4 mentally. This is the most efficient method.

90

b) 12% of £25.00 =

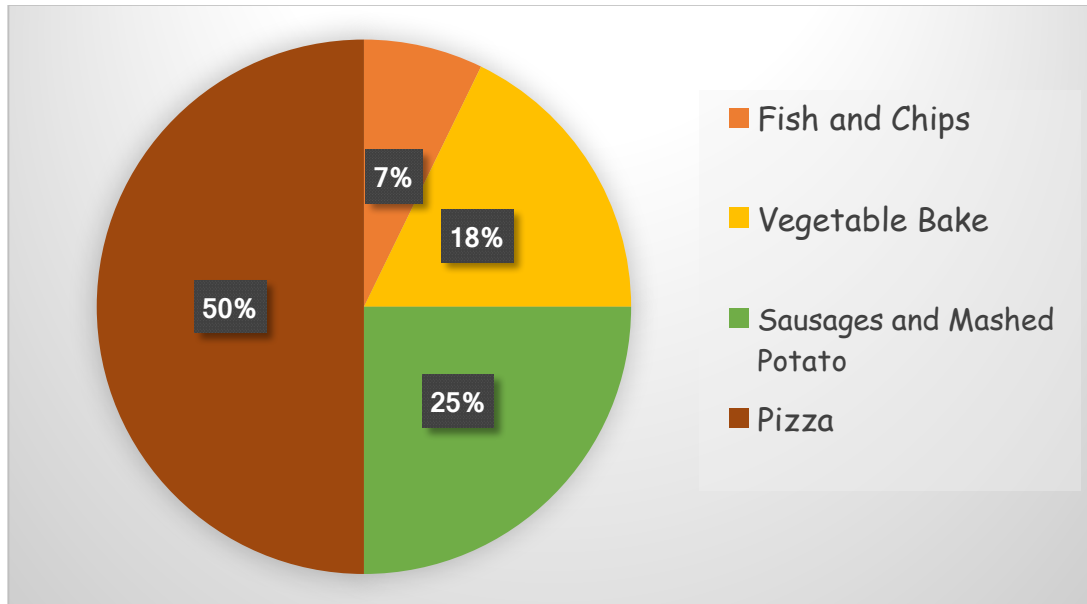Children should know 25% is same as $\frac{1}{4}$ and ÷4 mentally. This is the most efficient method.

£5.50

c) 30% x 900=

Children may complete errors due to the use of the x sign. It is the same as find 30% of 900.

10% = 90
30% = 90 x 3
=270

270

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4)Holy Primary School asked all the children to vote what is their favourite school dinner from a selection on the menu. 180 pupils voted.

- 7%
- 18%
- 50%
- 25%

Legend:
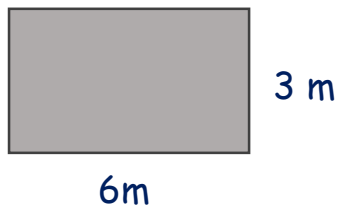- Fish and Chips
- Vegetable Bake
- Sausages and Mashed Potato
- Pizza

How many children voted for sausage and mashed potato?

Children should demonstrate understanding that 25% is the same as $\frac{1}{4}$.
180 ÷4 = 45

45 children
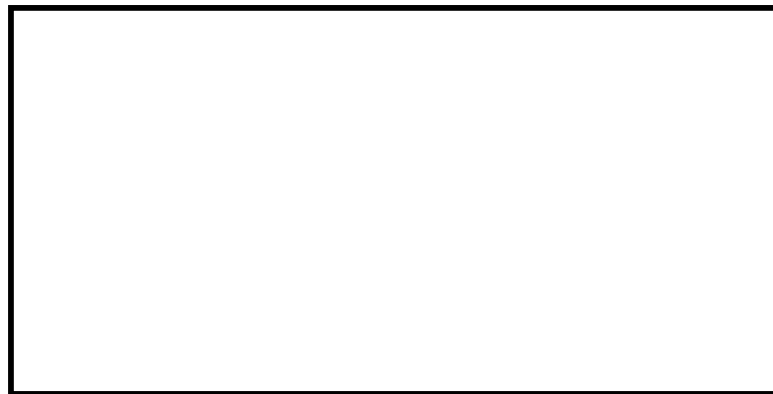
5)All Saints Primary School is designing a new allotment in the school grounds. Here is a rough plan of the allotment.

3 m

6m

When designers draw the final design they often use a scale to help produce an accurate plan. Draw the plan of the allotment to scale using the rule below.
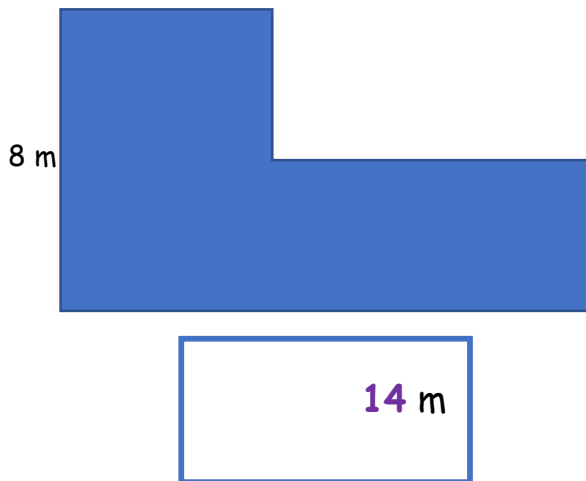
Scale = 1m : 2.5cm

Here you are looking for a rectangle with the length of**15cm** and **7.5cm** for the width (allow 1mm either side accuracy)

Here you may want to also assess whether some children find it hard to use a ruler accurately when not marking cm intervals.

6) The builders of All Saints School have designed a plan of a new classroom. However, some tea was spilt on the drawing. Complete the missing amount on the plan using the information provided to help.
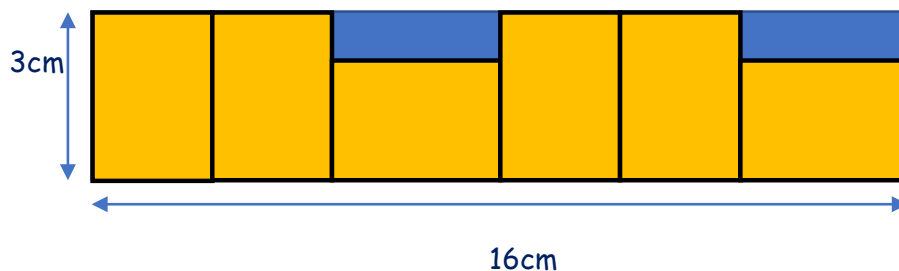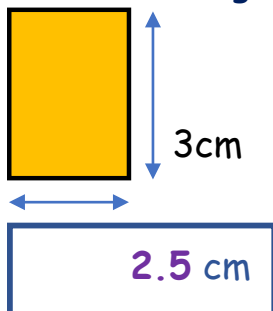
Drawn to scale

8 m

14 m

Scale 2m : 1 cm

Children will need to show understanding that when is states drawn to scale that they can measure accurately to help them. They should find that the length is 7cm and use the scale to work out that its represents 14m.

7) This design has been created with 6 identical rectangles.
Not drawn to scale

3cm

16cm

Fill in the missing amount

3cm

2.5 cm

Pupils should have noticed that 2 rectangles were turned on their side, which the measurement is given as 3cm.

So 3cm + 3cm = 6cm
16cm – 6cm = 10
There are 4 rectangles left therefore
10cm ÷ 4 = 2.5cm

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8)Atlanta buys a bag of sweets which contain 50 sweets. She eats 8 sweets on the journey home.

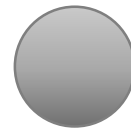She then shares the rest of the sweets equally with Jake and Harry. How many sweets do they have each?
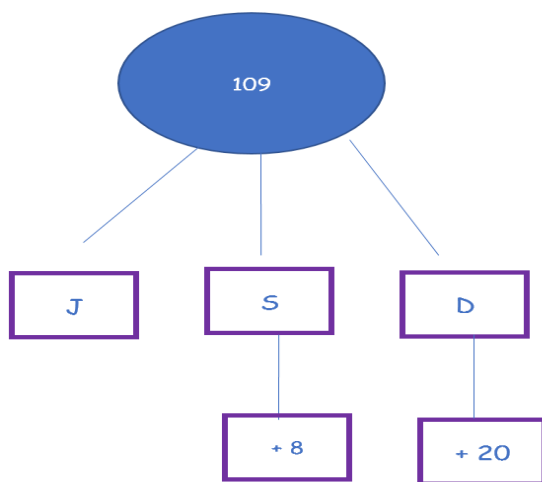
50 – 8 = 42
42 ÷ 3 = 14

14

9) Jacob, Shriya and Daniyal played a throwing game. Work out how many points each person won.
Altogether they received 109 points.

Jacob received the least amount of points.
Shriya received 8 points more than Jacob.
Daniyal received 20 points more than Jacob.

109

J   S   D

+ 8   + 20

109- 20 – 8 = 81
81 ÷3 = 27

J = 27
S = 27 + 8
D = 27 + 20

Children to have shown calculations or jottings to show that they needed to take away the differences in the child's scores first so that this could be shared equally first and then the differences to be added back on.

Jacob=   27   Shriya=   35   Daniyal=   47

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Ratio & Proportion

10) Rishi wants to make a loaf of bread. He finds this recipe to use.

> 500g strong white bread flour
> 40g butter
> 12g dried yeast
> 2 tsp salt
> 300ml warm water
> a little olive oil

He notices that he only has **30g of butter** in the fridge.
He must change the amount of all the ingredients so that the bread will cook and rise.

a) How much yeast will he now need to use?

30/40
30 grams instead of 40 grams could be presented as a fraction as we know only have 30 out of the whole 40 grams needed for the recipe.
This can be simplified to $\frac{3}{4}$

So if the full recipe uses 12g
$\frac{3}{4}$ of 12 is 9

9g

b) How much flour will he now need to use?

30/40
30 grams instead of 40 grams could be presented as a fraction as we know only have 30 out of the whole 40 grams needed for the recipe.
This can be simplified to $\frac{3}{4}$
So the full recipe uses 500g.
$\frac{1}{4}$ = 125g
$\frac{3}{4}$ = 3 x 125

375g