12/01/26

Learning Intention:
To recognise similar shapes

one digit per box

Underline your date and LI

shape
angle
corresponding
similar

Our Learning Journey

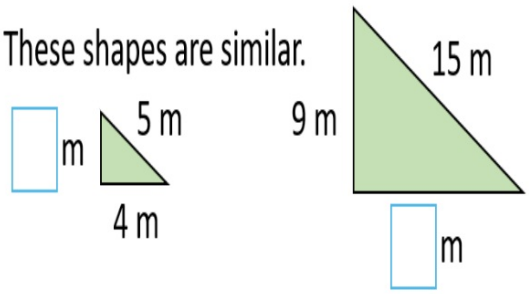
- Add or multiply?
- Use ratio language
- Introduction to the ratio symbol
- Ratio and fractions
- Scale drawing
- Use scale factors
- Similar shapes
- Ratio problems

Arithmetic

Flashback 4

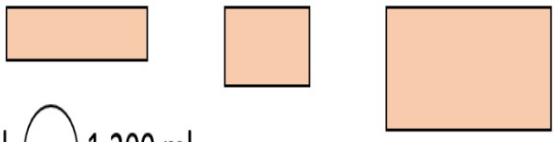
Year 6 | Week 2 | Day 3

1) These shapes are similar.



2) Here is a rectangle:

Which is a scale drawing of the original rectangle?



3) 12 l ◯ 1,200 ml

4) $7 \times 3 + (20 \div 4) =$ ☐

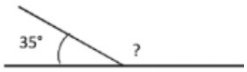
White Rose Maths

Challenge

The perimeter of a rectangle is 12cm. The area is 5cm². What i
length of the sides?

Write down all the prime numbers between 30 and 40.

What is the missing angle?



A scale model of a motorbike is made with a ratio of 1:40.
The length on the scale model is 6cm. How long is the actual m

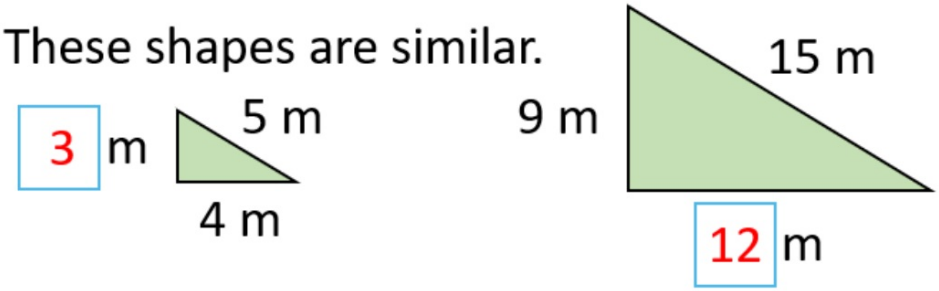
1625 ÷ 100

Sally sells 30 raffle tickets and makes £18. How much did she s
ticket for?

Flashback 4

Year 6 | Week 2 | Day 3

1) These shapes are similar.



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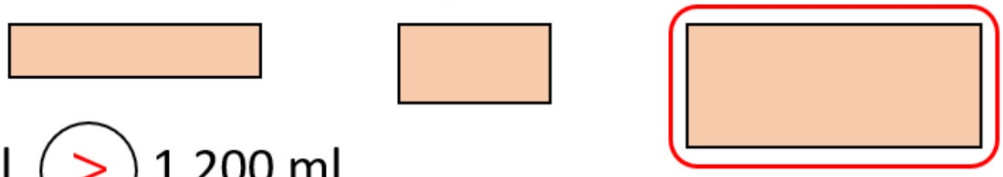
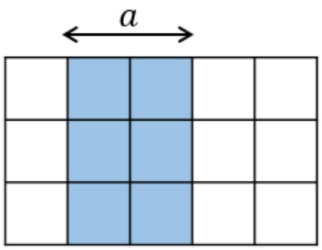


3) 12 l (>) 1,200 ml

4) $7 \times 3 + (20 \div 4) =$ 26

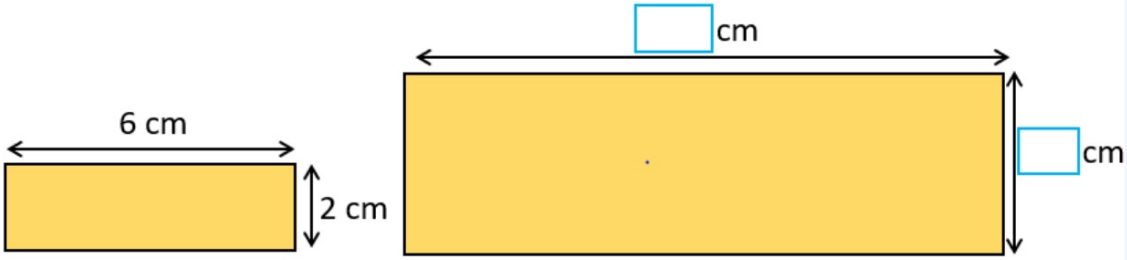
Assessment

1) If this shape is enlarged by a scale factor of 3, what will the corresponding length of a be?



2) The rectangle has been enlarged by a scale factor of 5

Fill in the dimensions of the new shape.



shape

angle

corresponding

similar

I do

Key knowledge

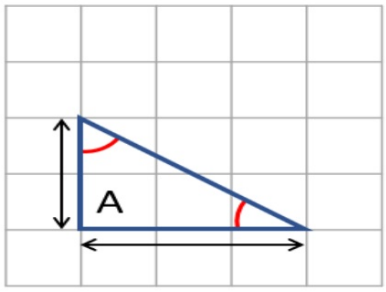
- What do you think "similar" means?
- What is the scale factor of the enlargement?
- Have all the sides been enlarged by the same amount?
- What are corresponding sides? Can you identify the corresponding sides in these two shapes?
- What do you notice about corresponding angles in similar shapes?
- Does it matter that the shapes are in a different orientation?

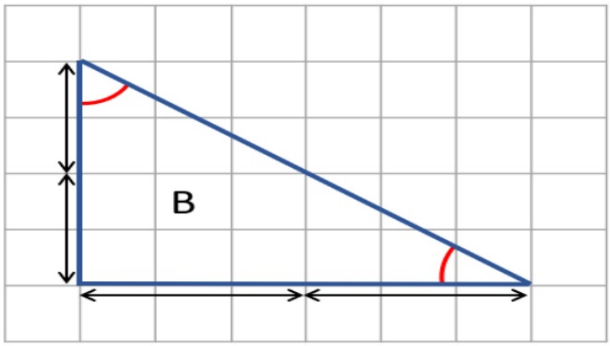
These two triangles are similar.

The shape is an exact enlargement of the other.

The angles are the same size.

Corresponding sides are always in the same ratio.

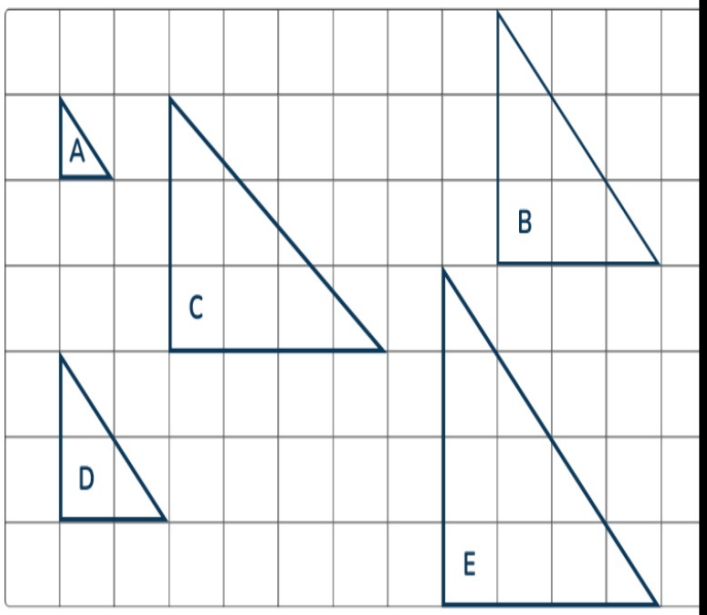




We do

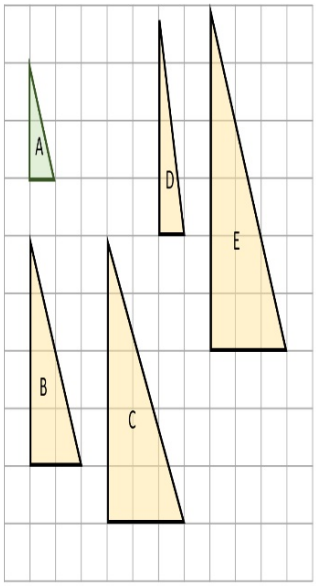
Tick the shapes that are an enlargement of A.

Write the scale factor of enlargement for the enlarged shapes.



Challenge

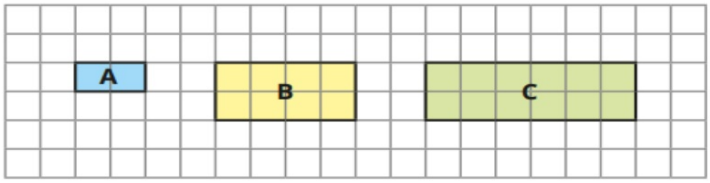
Which of the shapes are similar to shape A?



Have a think

Task 1:

You do

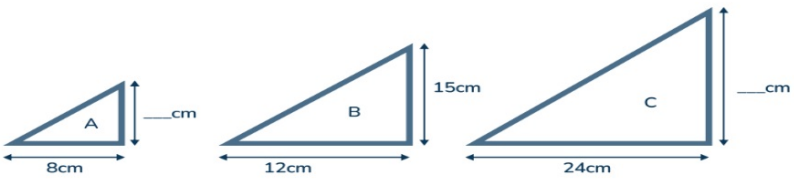


- Explain why shapes A and B are similar.
- Explain why shapes A and C are **not** similar.
- Draw another shape that is similar to A.

Compare answers with a partner.

Challenge

The triangles are all similar.



a Calculate the missing values from the given information.

b From A to B, the scale factor of enlargement is .

c From B to C, the scale factor of enlargement is .

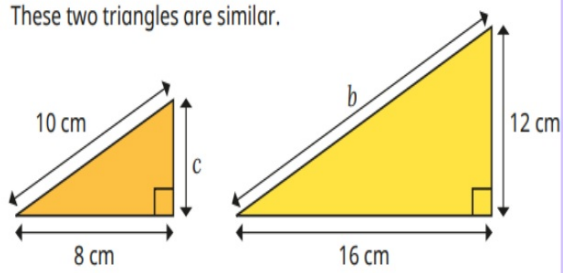
d From A to C, the scale factor of enlargement is .

e Another similar triangle has been drawn, triangle D. The base of triangle D is 2cm. What is the height of triangle D? What is the scale factor of enlargement from D to A?

f Look at the angles in the triangles. What do you notice?

Task 2:

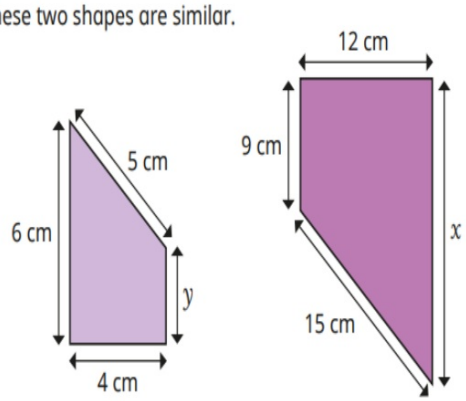
- These two triangles are similar.



- Find the lengths of b and c.
- Measure the sizes of all the angles.

  What do you notice?

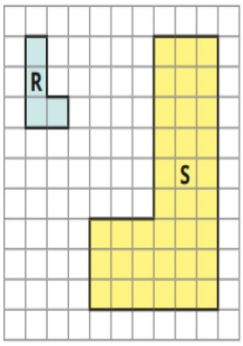
- These two shapes are similar.

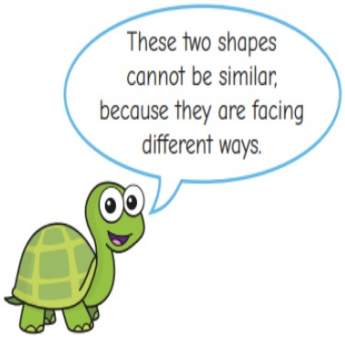


Find the lengths of x and y.

Task 3:

We do **Reasoning**





Do you agree with Tiny?

Explain your answer.

you do

The Eiffel Tower is 320 m tall and 120 m wide.

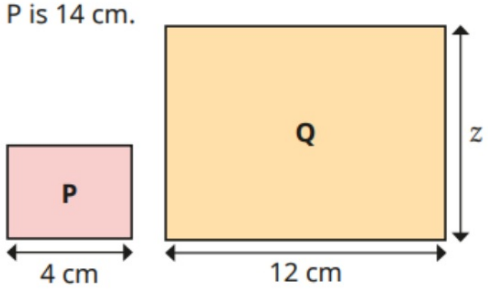
Tommy makes a scale model of the Eiffel Tower.

His model is 16 cm tall.

How wide is his model?

Rectangles P and Q are similar.

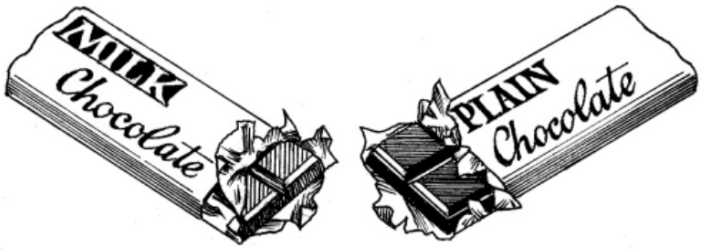
The perimeter of rectangle P is 14 cm.



Work out length z.

Plenary:

We do



In a survey, the **ratio** of the number of people who preferred **milk chocolate** to those who preferred **plain chocolate** was **5 : 3**

46 more people preferred milk chocolate, to plain chocolate.

How many people were in the survey?

[2 marks]

13/01/26

one digit per box

Learning Intention: To solve ratio problems

Underline your date and LI

sequence

ratio

for every

symbol

Our Learning Journey

- Add or multiply?
- Use ratio language
- Introduction to the ratio symbol
- Ratio and fractions
- Scale drawing
- Use scale factors
- Similar shapes
- Ratio problems

Arithmetic/Assessment

5 mins

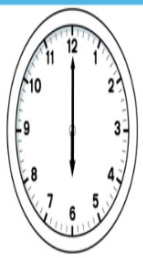
Challenge

Flashback 4

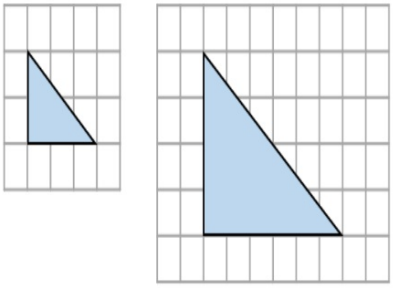
Year 6 | Week 2 | Day 4

1)

Distance walked (miles)	1	2	8
Money raised (£)	8		



2) What is the scale factor of enlargement?



3) $\frac{3}{8}$ of ☐ = 15

4) 43 × 65 = 2,795 so 42 × 65 = ☐

White Rose Maths

52.76 = 52 + 0.7 + _____

Convert $\frac{17}{6}$ to a mixed number.

Write 'a' on each acute angle. How many are there?

The time is 7:25pm. What is the 24-hour clock time?

$\frac{1}{5} + \frac{1}{4}$

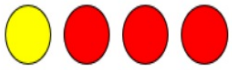
A husky runs at 28 miles per hour for 30 minutes. How far has it

Learning Intention: To solve ratio problems

- What is the ratio of _____ to _____?
- If there are _____, how many _____ must there be?
- If the total number of _____ is _____, how many _____ must there be?
- If there are _____ more _____ than _____, how many are there in total?
- How can you draw a bar model to solve the problem?
  Which parts of the model do you know?
  How can you work out the remaining parts?

I do:

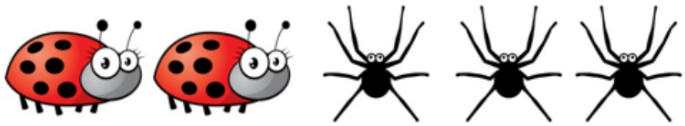
1) The ratio of yellow to red counters is 1 : 3
   If there are 4 yellow counters, how many red counters are there?



2) The ratio of bees to spiders is 2 : 1
   There are 15 bees and spiders altogether.
   How many bees are there?

total
amount
ratio
for every

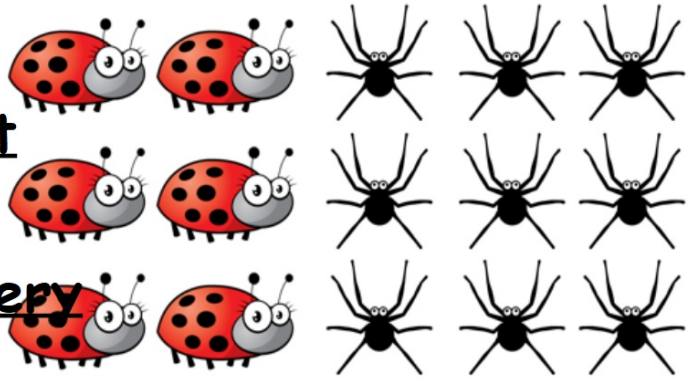
We do: **Learning Intention: To solve ratio problems**



For every 2 ladybirds, there are 3 spiders.

If there are 6 ladybirds, how many spiders are there?

total 2
amount 4
ratio 6
for every



3

6

9

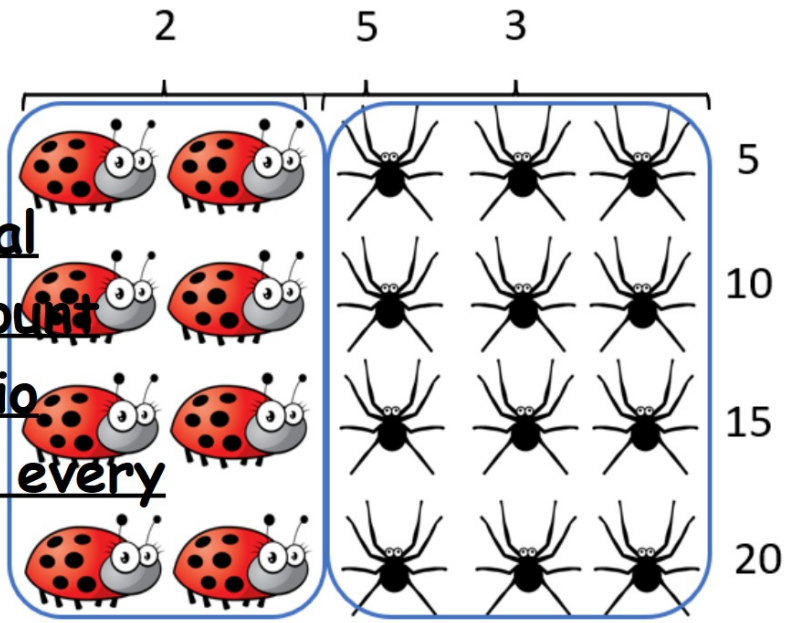
Have a think

Spiders: _____

We do: **Learning Intention: To solve ratio problems**

For every 2 ladybirds, there are 3 spiders. 

If there are 20 insects altogether, how many spiders and how many ladybirds are there?



Ladybirds: _____

Spiders: _____

total amount

ratio

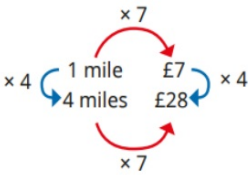
for every

Learning Intention: To solve ratio problems

Task 1

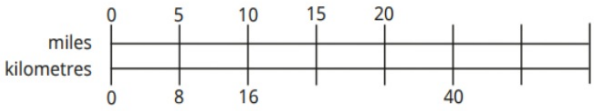
- Ron is doing a sponsored walk for charity.

  For every mile he walks, he will raise £7



  - How much will Ron raise if he walks 3 miles?
  - How much will Ron raise if he walks 22 miles?
  - How many miles will Ron need to walk to raise £42?

- The double number line shows the relationship between miles and kilometres.
  - Complete the double number line.

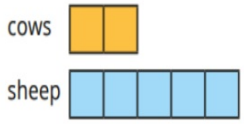


  - Complete the statements.

    55 miles = _____ km _____ miles = 96 km

You do Task 2

- On a farm, for every 2 cows, there are 5 sheep.



  Use bar models to answer the questions.

  - If there are 4 cows, how many animals are there altogether?
  - If there are 35 animals altogether, how many cows are there?
  - If there are 50 sheep, how many cows are there?
  - If there are 12 cows, how many more sheep are there than cows?

Extra challenge

- In a car park, there are 4 blue cars for every 7 red cars.
  - If there are 20 blue cars, how many red cars are there?
  - If there are 28 red cars, how many blue cars are there?
  - If there are 22 cars in total, how many of them are blue?
  - If there are 12 blue cars, how many more red cars are there than blue cars?
  - If there are 30 more red cars than blue cars, how many cars

Task 3:

We do Reasoning

Learning Intention: To solve ratio problems

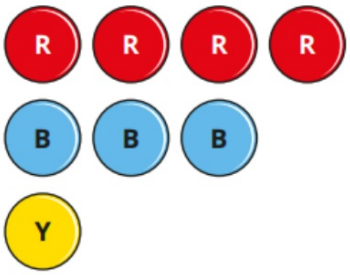
You do:

At a football match, the ratio of home fans to away fans is 7:2

Home fans	Away fans
7	2
14	4
21	6
28	8

Do you agree with Tiny?

The ratio of red to blue to yellow counters is 4:3:1



If there are 148 red counters, how many yellow counters are there?

If there are 50 more blue counters than yellow counters, how many red counters are there?

If there are 608 counters in total, how many of them are red?

How did you work this out?

Compare answers with a partner.

Plenary:

LI: To solve ratio problems

We do

14 [Extra]

In this design, the ratio of **grey to black** is **3 : 1**

What **percentage** of the design is **black**?

_____ %

In this design, **60%** is **grey** and the rest is black.

What is the ratio of **grey to black**?

Write your ratio in its simplest form.

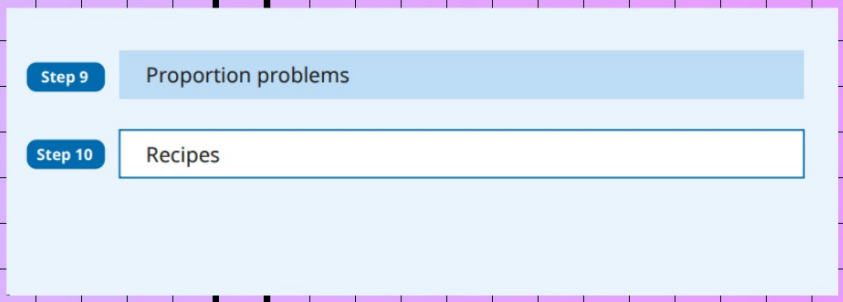
Learning Intention: To solve proportion problems

14/01/26

one digit per box

Our Learning Journey

Underline your date and LI



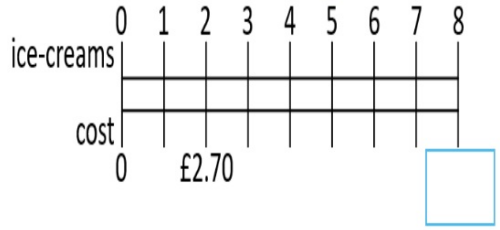
multiplicative
proportion
double

Arithmetic assessment

Flashback 4

Year 6 | Week 2 | Day 5

1)



2) Which shape is similar to the orange triangle?

3) A parcel has a mass of 550 g.
What is the mass of 14 of these parcels in kilograms?

4) What is 8 degrees colder than 3°C?

White Rose Maths

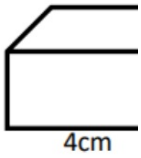
Challenge

$3\frac{2}{5} + 5\frac{1}{5}$

What is 50% of £48?

Write down all the factors of 45. ___ ___ ___

What is the volume of this cuboid?

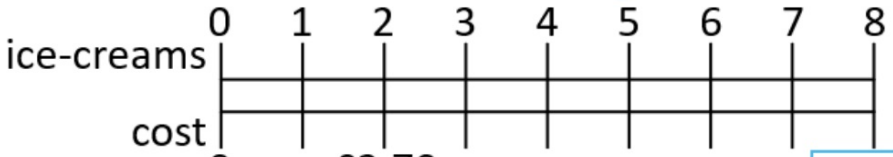


Convert 37% into a fraction.

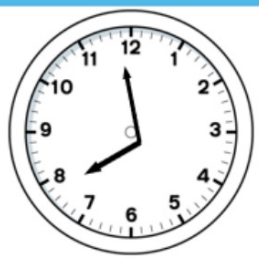
Flashback 4

Year 6 | Week 2 | Day 5

1)



£10.80



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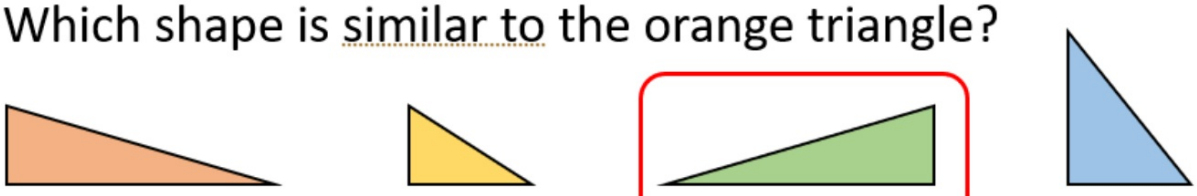


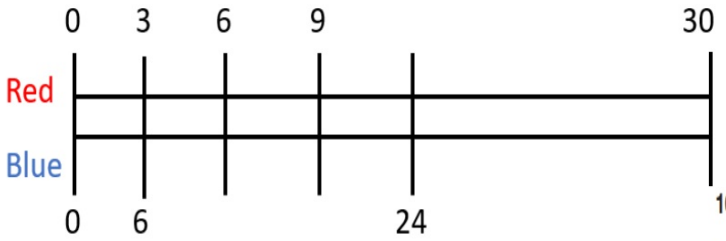
3) A parcel has a mass of 550 g.
What is the mass of 14 of these parcels in kilograms?

7.7 kg

4) What is 8 degrees colder than 3°C? −5°C

Starter/Assessment

1) For every 3 red counters there are 6 blue counters.



a) Complete the double number line.

b) If there are 9 red counters, how many blue counte
are there?

c) If there are 24 blue counters, how many red count
are there?

Challenge

100g of cheese costs **46p**.

Peter buys **250g** of the cheese.

How much does he pay?

£

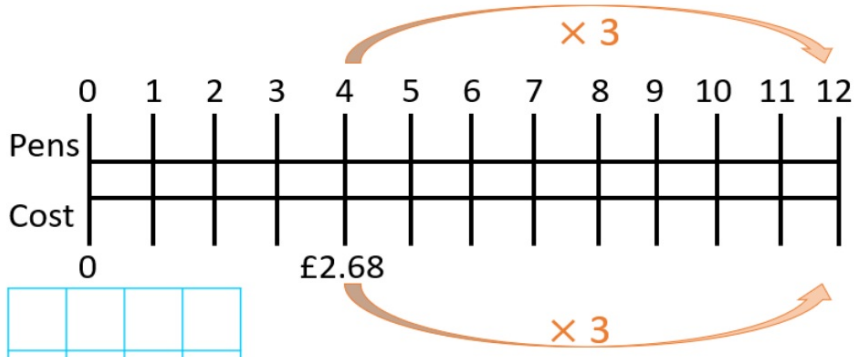
I do:

multiplicative
proportion
double

- What is the multiplicative relationship between _____ and _____?
- If 3 _____ cost £_____, how much do 12 _____ cost?
- If 5 _____ cost £_____, how can you work out what 1 _____ costs?
- Once you know what 1 _____ costs, how can you work out what 8 _____ cost?
- How can a double number line help you solve this proportion problem?

4 pens cost £2.68

Use the double number line to work out the cost of 12 pens.



	2	. 6	8
×			3
	8	. 0	4
	2	2	

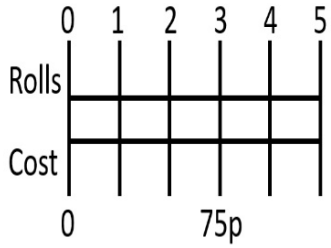
12 pens cost £8.04

We do:

multiplicative
proportion
double

Challenge

Eva buys 3 bread rolls for 75p

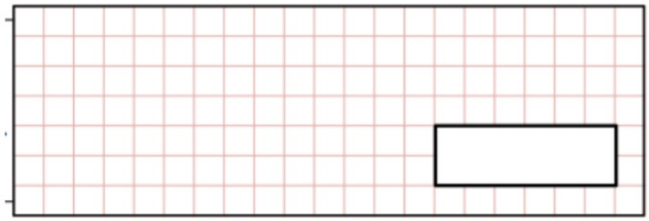


What is the cost of 5 bread rolls?

A meal in a restaurant costs the same for each person.

For **11** people the total cost is **£253**

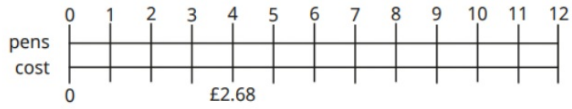
What is the total cost for 12 people?



Task 1

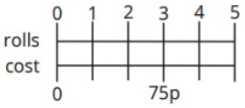
You do

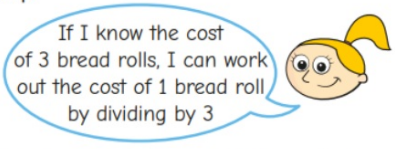
- 4 pens cost £2.68



  - Use the double number line to work out the cost of 12 pens.
  - Use a double number line to help you work out the cost of buying:
    - 36 pens
    - 360 pens
  - Use a double number line to help you work out how many pens can be bought for:
    - £1.34
    - £26.80

- Eva buys 3 bread rolls for 75p.





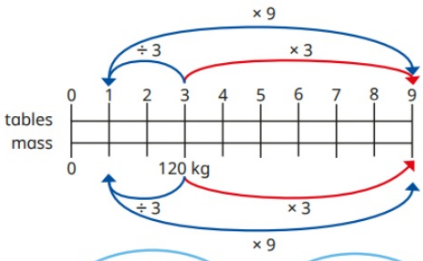
Tell a partner how this will help Eva to find the cost of 5 bread rolls.

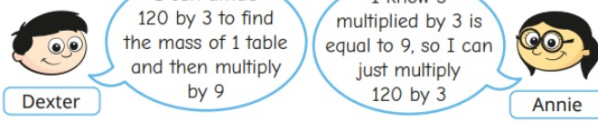
What is the cost of 5 bread rolls?

Task 2:

- 3 tables have a total mass of 120 kg.

  Dexter and Annie are working out the mass of 9 tables.





Use both methods to find the mass of 9 tables.

Whose method do you prefer?

Challenge

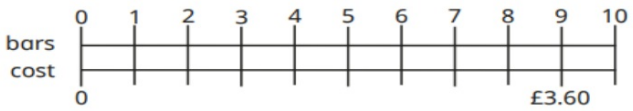
- A shop sells flour at the price of 54p for 0.3 kg.

  How much would it cost to buy these masses of flour?

150 g	700 g	2 kg	5.2

Task 3: We do

The cost of 9 chocolate bars is £3.60



If 9 chocolate bars cost £3.60, then 10 chocolate bars will cost £4.60

Do you agree with Tiny?

Explain your answer.

You do

It costs a company 12p to make 10 marbles.

Marbles are sold in boxes of 500 for £6.50

How much profit does the company make on every box of marbles?

How did you work it out?

A car travelling at a constant speed travels 24 km in 12 minutes.

How far will the car travel in 1 hour?

How long will it take the car to travel 84 km?

How did you work it out?

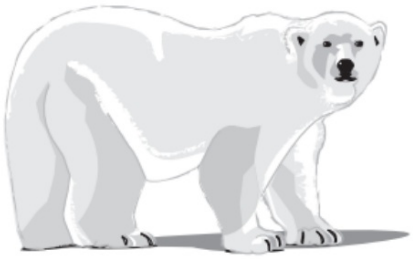
Challenge:

Peanuts cost **60p** for **100 grams**.

What is the cost of **350 grams** of peanuts?

Plenary:

In a zoo, the adult polar bear weighs three times more than the baby elephant.

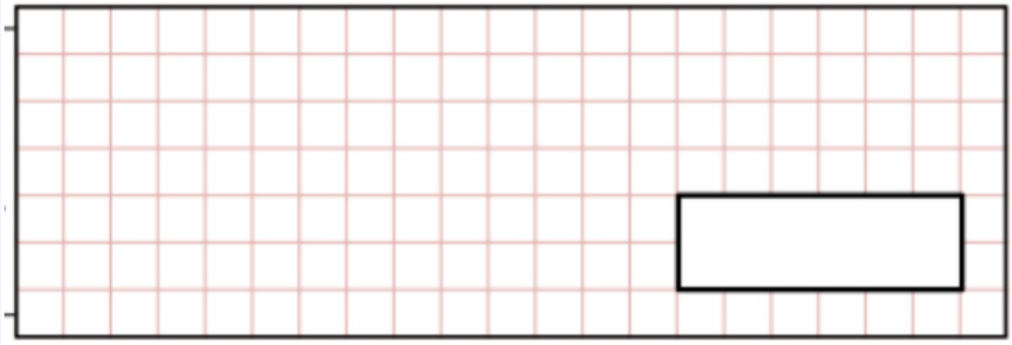


polar bear

elephant

Together they weigh 700 kilograms.

How much does the polar bear weigh?



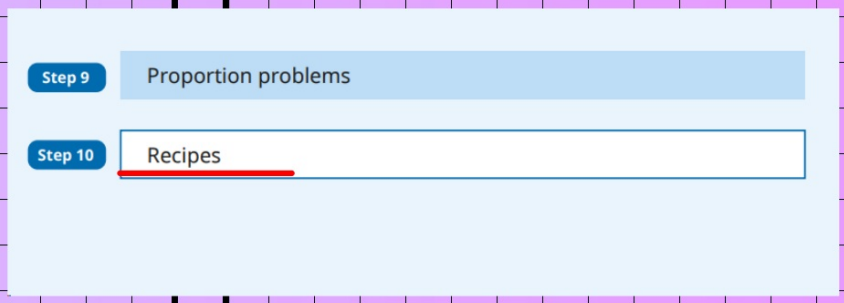
Learning Intention: To solve problems with recipes

one digit per box

15/01/26

Our Learning Journey

Underline your date and LI



quantities
factors
ingredient

Flashback 4

Year 6 | Week 3 | Day 1

VI

1) Ron needs 150 g of butter to make 30 biscuits.
How much does he need to make 50 biscuits?

2) The rectangle is enlarged by a scale factor of 3
How long are the sides of the enlarged rectangle?

3) To measure the mass of an object, which could we use?

cm kg tonnes litres mm

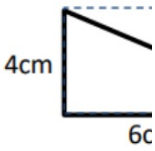
4) 19 × 5 = ☐

White Rose Maths

Challenge

Write $3\frac{4}{5}$ as an improper fraction.

What is the area of this triangle?



Round 6257.5 to the nearest 10

Find the value of x if $3x + 1 = 16$.

The flight time from Boston to London is 6 hours 2
London at 4:05pm. What time did I set off from Bo

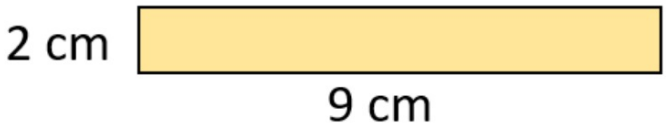
Flashback 4

Year 6 | Week 3 | Day 1

VI

1) Ron needs 150 g of butter to make 30 biscuits.
How much does he need to make 50 biscuits? 250 g

2) The rectangle is enlarged by a scale factor of 3
How long are the sides of the enlarged rectangle?



6 cm and 27 cm

3) To measure the mass of an object, which could we use?

cm kg tonnes litres mm

4) $19 \times 5 =$ 95

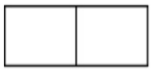
White Rose Maths

Starter/Assessment

1) The ratio of lemons to apples is 4 : 1 
Complete the ratio table.

Lemons	Apples
4	1
12	
	6
40	

2) The ratio of boys to girls in a class is 2 : 3
There are 10 boys in the class. How many girls are there?

Boys 

Girls 

Challenge

Adjust the recipe so it is for:

a 3 people

b 2 people

c 1 person

d 9 people

Carbonara Pasta Recip Serves 6
480g Spaghetti
10 Slices of bacon
3 Egg yolks
100g Parmesan
150g Peas

I do

quantities
factors
ingredient

- How can a double number line help you decide how much of each ingredient you need?
- How many times more people are there? How will this affect the amount of each ingredient needed?
- Do you need to find the amounts needed for one person first? Why or why not?
- What is the greatest number of _____ you can make with _____ ?
- How does changing the quantities in a recipe link to using scale factors?

Soup recipe

Serves 4 people.

1 onion
3 carrots
10 g cheese
400 ml water

This recipe for soup serves 4 people.

How much of each ingredient would I need for 8 people?

We do

quantities factors

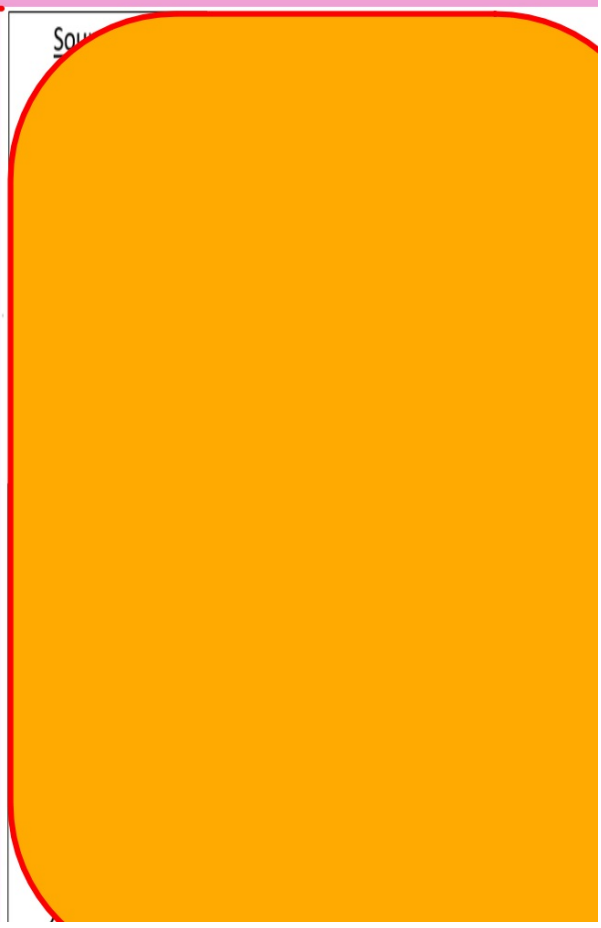
Have a think

Soup recipe

Serves 4 people.

1 onion
3 carrots
10 g cheese
400 ml water

How much of each ingredient would I need for 10 people?



Task 1

You do

- Here are some ingredients for cupcakes.

  Tom wants to make 10 cupcakes.

  Explain to a partner how to work out what ingredients Tom will need.

  How much of each ingredient will Tom need to make the different numbers of cupcakes?

Cupcakes (makes 5)

100 g flour

2 eggs

40 g sugar

15 cupcakes | 20 cupcakes | 25 cupcakes

- Here are some ingredients for soup.

  How much of each ingredient is needed to make soup for the different numbers of people?

Soup (for 6 people)

1 onion

60 g butter

180 g lentils

1.2 litres stock

480 ml tomato juice

2 people | 1 person | 9 people

Task 2

- Sam is making pancakes.

  She follows a recipe with this list of ingredients.

  She has 1.2 litres of milk and wants to make as many pancakes as she can.

  How many eggs will she need?

Pancakes

120 g plain flour

2 eggs

300 ml milk

- Here are the ingredients for an apple crumble.

  How much of each ingredient is needed to make apple crumble for the different numbers of people?

Apple crumble (5 people)

300 g plain flour

225 g brown sugar

200 g butter

450 g apples

10 people | 12 people

Challenge

- A baker uses 12 eggs to make 108 muffins.

  How many muffins will 20 eggs make?

  How many different ways can you work it out?

Reasoning - WE DO

Here are the ingredients for 10 flapjacks.

Flapjacks (makes 10)

- 120 g butter
- 100 g brown sugar
- 4 tablespoons golden syrup
- 250 g oats
- 40 g sultanas

Huan has 180 g butter.

What is the greatest number of flapjacks he can make?

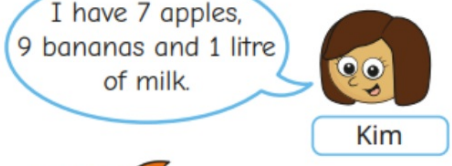
How much of each of the other ingredients will he need?

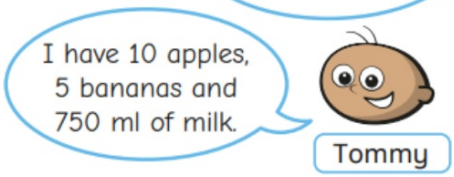
YOU DO

Here are the ingredients for making one smoothie.

Smoothie

- 2 apples
- 3 bananas
- 500 ml milk

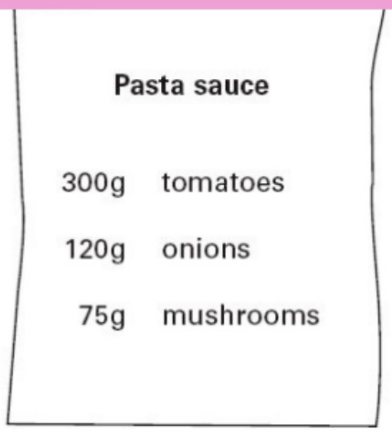




Who can make the most smoothies?

Plenary - WE DO

Here is a recipe for pasta sauce.



Josh makes the pasta sauce using 900g of tomatoes.

What weight of onions should he use?

g

[1 mark]

Friday 9th February

2022 Paper 3 Reasoning