



DO NOW! Write out your $x8 \times 9$ table on your whiteboard.

LO: To calculate using measures



Crucial vocabulary

Converting Units

Key Vocabulary

mass

gram

kilogram

capacity

volume

millilitre

litre

millimetre

centimetre

kilometre

foot

inch

ounce

pound

stone

pint

gallon

Converting Mass

$$1 \text{ tonne} = 1000\text{kg}$$

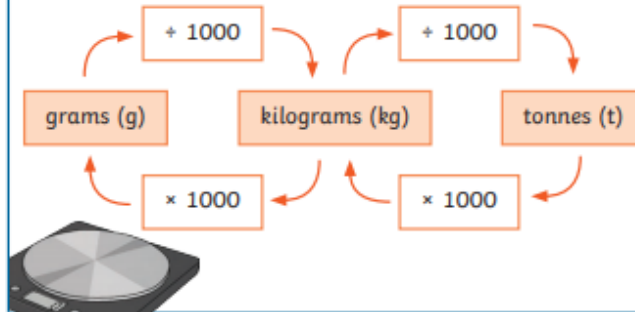
$$1000\text{g} = 1\text{kg}$$

$$\frac{1}{10} \text{ kg} = 0.1\text{kg} = 100\text{g}$$

$$\frac{1}{4} \text{ kg} = 0.25\text{kg} = 250\text{g}$$

$$\frac{1}{2} \text{ kg} = 0.5\text{kg} = 500\text{g}$$

$$\frac{3}{4} \text{ kg} = 0.75 = 750\text{g}$$



Converting Length

$$1000\text{m} = 1\text{km}$$

$$100\text{cm} = 1\text{m}$$

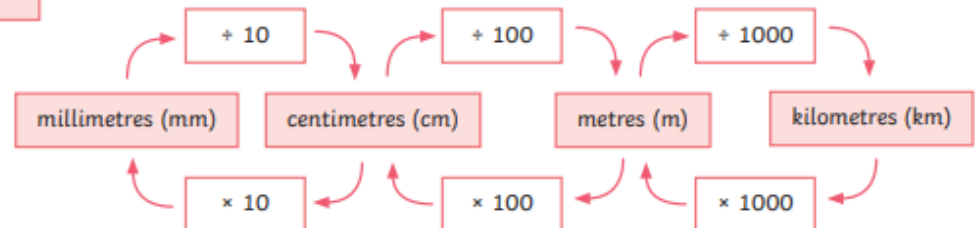
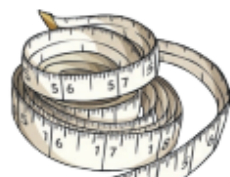
$$10\text{mm} = 1\text{cm}$$

$$\frac{1}{2} \text{ m} = 0.5\text{m} = 50\text{cm}$$

$$\frac{1}{4} \text{ m} = 0.25\text{m} = 25\text{cm}$$

$$\frac{3}{4} \text{ m} = 0.75\text{m} = 75\text{cm}$$

$$\frac{1}{10} \text{ m} = 0.01\text{m} = 10\text{cm}$$



Knowledge Organiser

Converting Capacity

$$1000\text{ml} = 1\text{l}$$

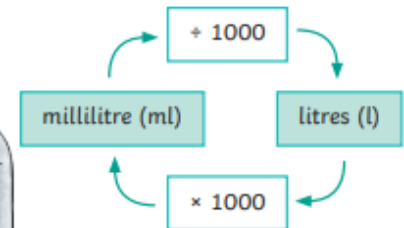
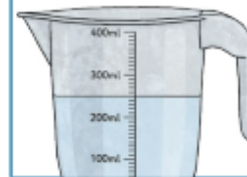
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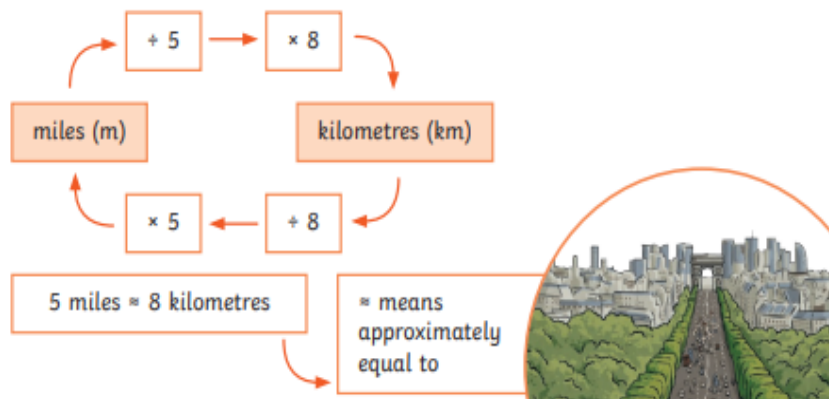
$$\frac{3}{4} \text{ l} = 0.75\text{l} = 750\text{ml}$$

$$\frac{1}{100} \text{ l} = 0.01\text{l} = 10\text{ml}$$



Miles to Kilometres

You might measure the length of a road or the distance between two cities in miles or kilometres.



Time

Minute 1 minute = 60 seconds

Hour 1 hour = 60 minutes

Day 1 day = 24 hours

Week 1 week = 7 days

Year 1 year = 12 months = 52 weeks = 365 days



Imperial Measures

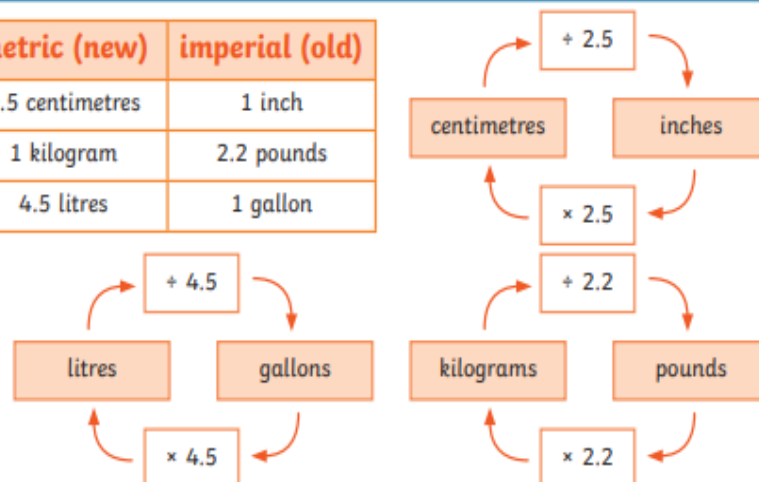
Things that could be measured using imperial units:

- Someone's height in feet and inches
- The mass of a bag of sugar in ounces
- The mass of a sack of potatoes in pounds
- A person's mass in stones
- A carton of milk in pints
- The amount of water in a bath in gallons

1 foot = 12 inches
1 pound = 16 ounces
1 stone = 14 pounds
1 gallon = 8 pints

Metric to Imperial Conversions

metric (new)	imperial (old)
2.5 centimetres	1 inch
1 kilogram	2.2 pounds
4.5 litres	1 gallon



1) Complete the sentences.

There are _____ grams in 1 kilogram.

There are _____ kilograms in 1 tonne.

There are _____ millimetres in 1 centimetre.

There are _____ centimetres in 1 metre.

There are _____ metres in 1 kilometre.

2) Complete the conversions.

3 kg = _____ g

7,000 m = _____ km

3.5 kg = _____ g

2.9 km = _____ m

3) There are _____ mm in 10 cm

Revision...

1) Complete the sentences.

There are 1,000 grams in 1 kilogram.

There are 1,000 kilograms in 1 tonne.

There are 10 millimetres in 1 centimetre.

There are 100 centimetres in 1 metre.

There are 1,000 metres in 1 kilometre.

2) Complete the conversions.

$$3 \text{ kg} = \underline{3,000} \text{ g}$$

$$7,000 \text{ m} = \underline{7} \text{ km}$$

$$3.5 \text{ kg} = \underline{3,500} \text{ g}$$

$$2.9 \text{ km} = \underline{2,900} \text{ m}$$

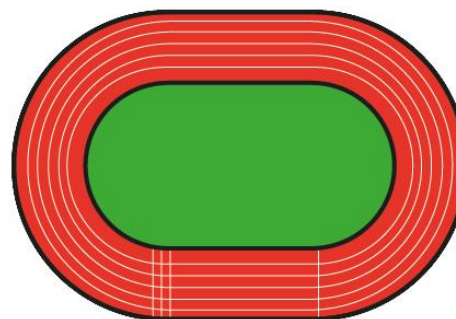
3) There are 100 mm in 10 cm

Calculate with metric measures Think about...

- 1 An Olympic racetrack is 400 metres all the way around.

- a) Jack runs 2 laps.

How far does Jack run?

 m

- b) Rosie runs 3 laps.

How far does Rosie run?

Write your answer in metres and kilometres.

 m km

2

Mo has 2 litres of orange juice.

He drinks 200 ml.

He then shares the rest equally between 6 glasses.

How much orange juice is poured into each glass?

Answer

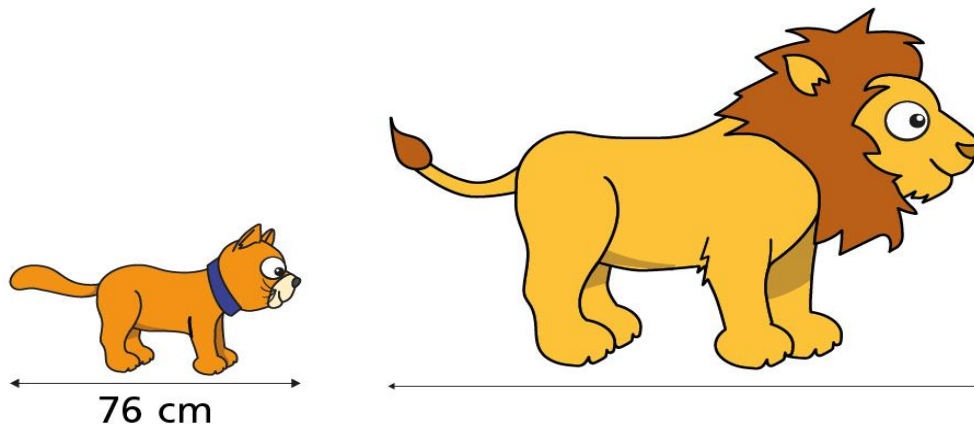
Change 2 litres to ml = 2000 ml

2000 ml - 200 ml (Mo's drink) = 1800 ml

1800 ml $\div$ 6 = 300 ml

3

A cat measures 76 cm from its nose to its tail.



The length of a lion is 3 times as long as a cat.

How long is a lion?

Give your answer in **metres**.

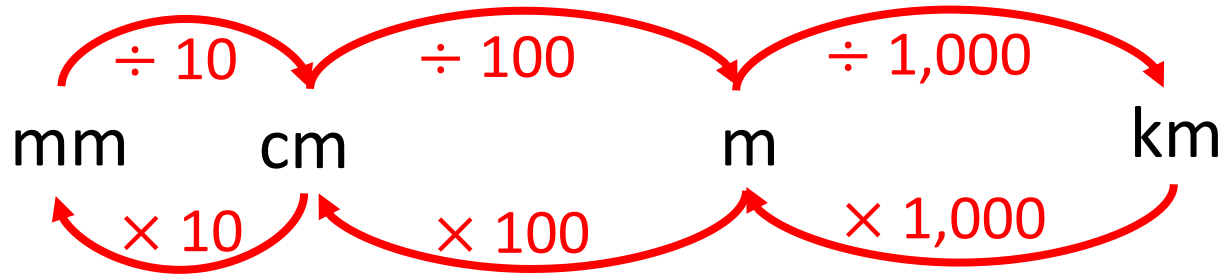
Answer

$$76 \times 3 = 228 \text{ cm}$$

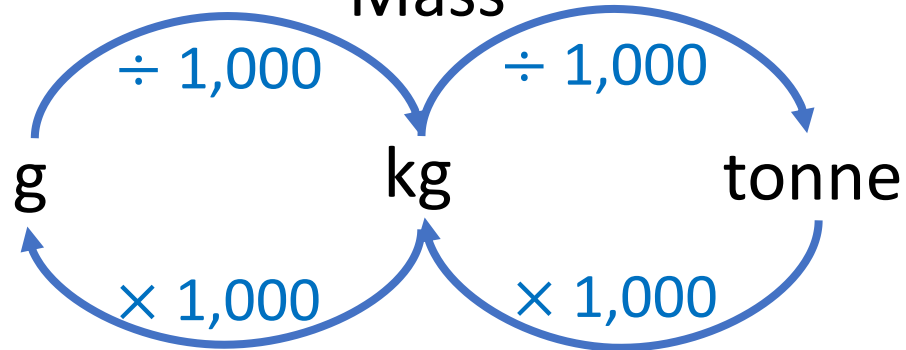
Question says change to metres = $100 \text{ cm} = 1 \text{ metre}$

$$228 \text{ cm} = 2.28 \text{ m}$$

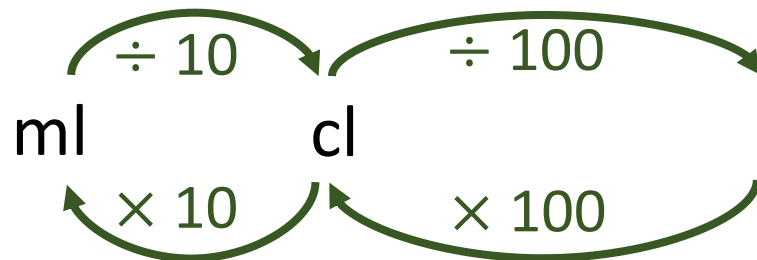
Length



Mass



Capacity



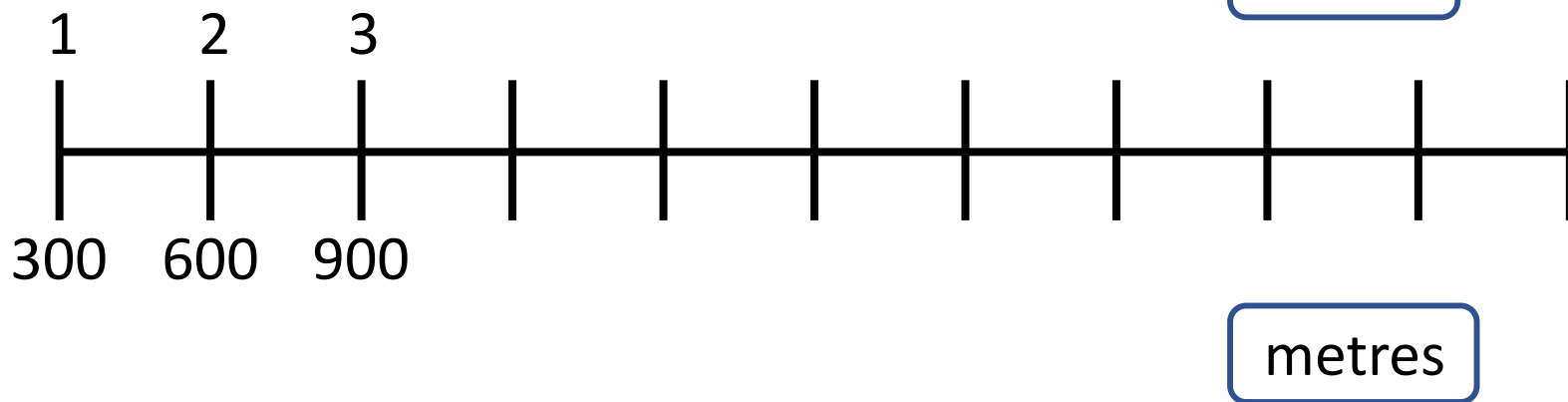
Eva, Alex, Ron, Amir and Mo are running around their school playground.

1 lap of the school playground is 300 m.



Eva runs 3 laps.
How far does she run?

900 m



Eva, Alex, Ron, Amir and Mo are running around their school playground.

1 lap of the school playground is 300 m.

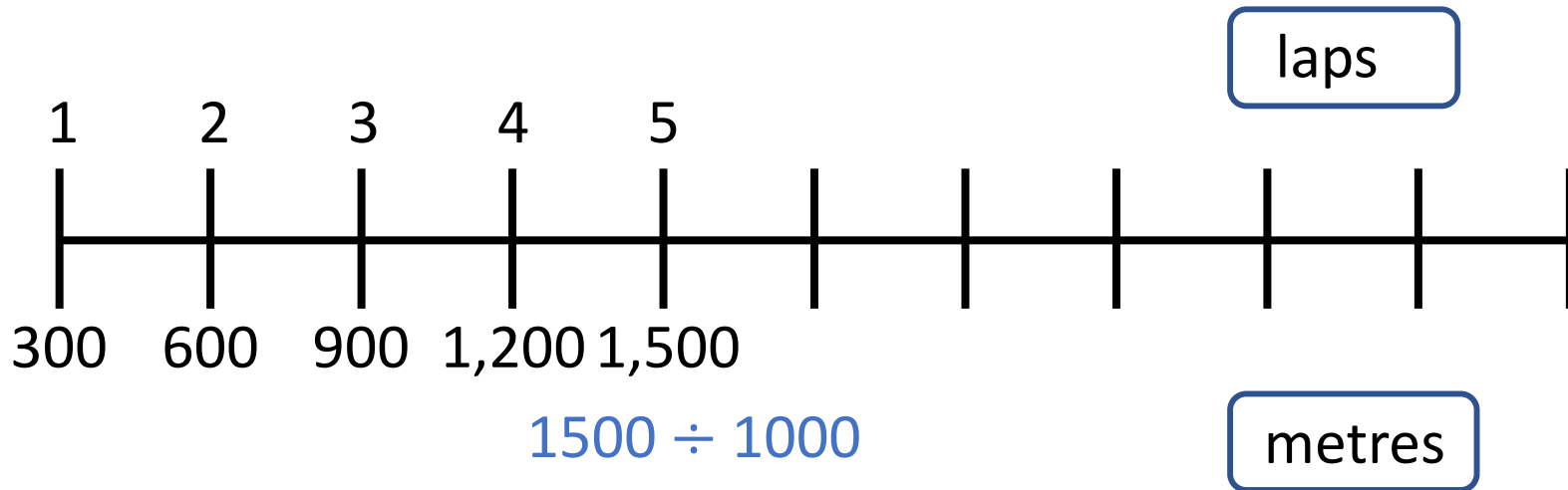


Alex runs 5 laps.

How far does she run?

Write your answer in kilometres.

1.5 km



Eva, Alex, Ron, Amir and Mo are running around their school playground.

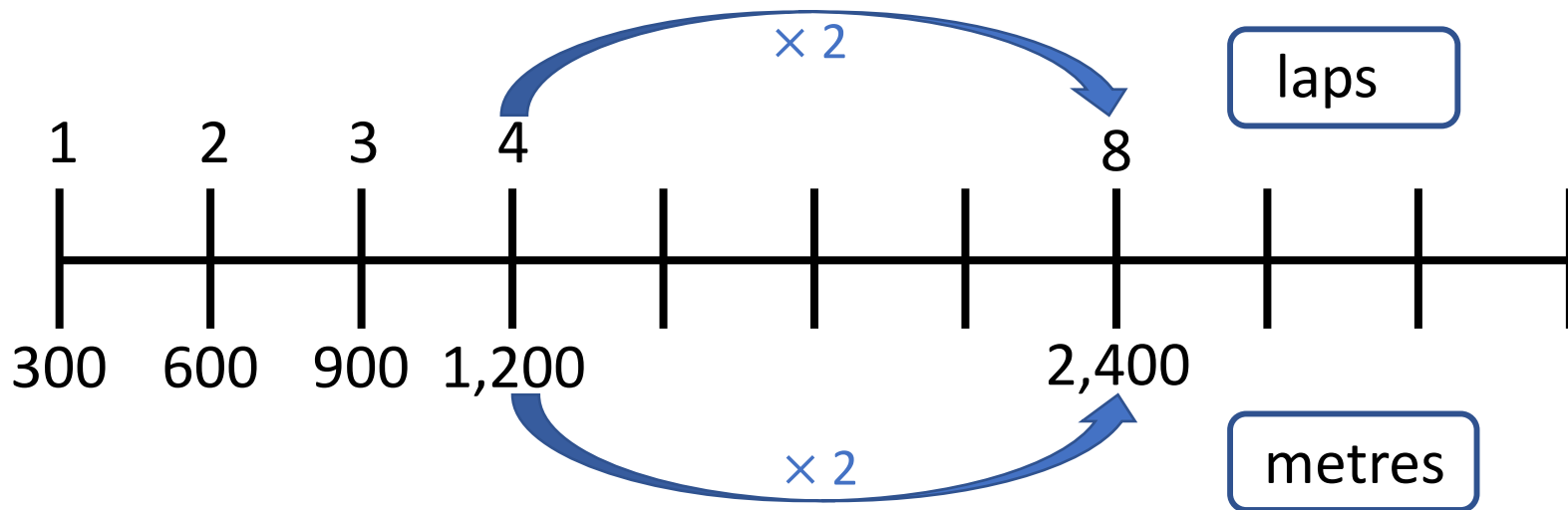
1 lap of the school playground is 300 m.



Ron runs 2.4 km

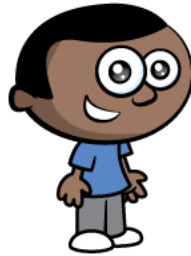
How many laps does he run?

$$2.4 \times 1,000 = 2,400$$



Eva, Alex, Ron, Amir and Mo are running around their school playground.

1 lap of the school playground is 300 m.

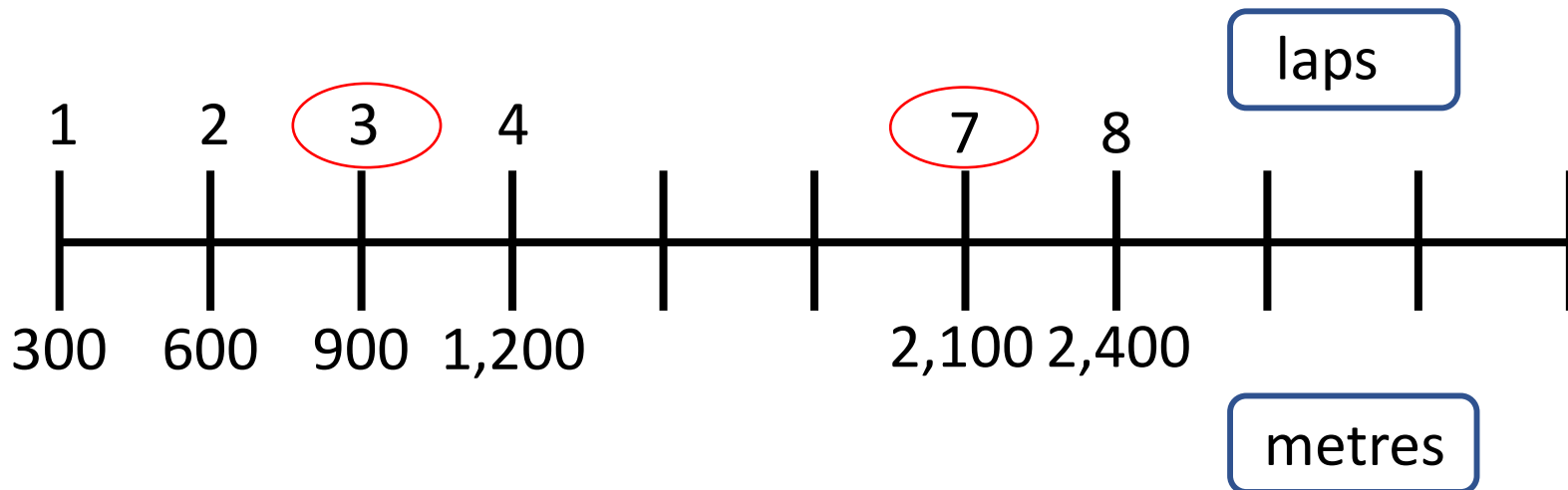


Amir runs 900 m
Mo runs 2,100 m



How many more laps did Mo run?

Mo ran 4 more laps



A parcel has a mass of 426 g.



Have a think



Whitney receives a parcel that has a mass 4 times greater.

What is the mass of Whitney's parcel?
Give your answer in kg.

426 g

W 426 g 426 g 426 g 426 g ×

1,704 g

1.704 kg

Th	H	T	O
	4	2	6
			4
1	7	0	4
	1	2	

Hexagons Mon

- 8 A bag contains 200 sweets.
Each sweet weighs 1.5 g.
The bag itself weighs 16 g.
Huan has some bags of sweets. The total mass is 1.264 kg.
How many bags of sweets does Huan have?

- 9 Here is a recipe for 8 cupcakes.
a) Complete the recipe for 24 cupcakes.

Cupcakes (makes 24)

	butter
	sugar
	eggs
	vanilla extract
	flour
	milk

Cupcakes (makes 8)

100 g butter
100 g sugar
2 eggs
1 tsp vanilla extract
120 g flour
4 tbsp milk

- b) Mo has half a kilogram of butter and plenty of the other ingredients.
What is the greatest number of cupcakes he can make using this recipe?

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Mon- Over to you...Hexagon Extension and Octagons

1) Use the bar models to help you to solve the following questions.



- a) A plane is loaded with three crates. Each crate has a mass of 3300kg. It is then filled with fuel. The mass of the fuel is twice the mass of a crate. What is the total mass of the cargo and fuel in tonnes?

Total mass = _____			
Crate _____	Crate _____	Crate _____	Fuel _____

- b) A climber has climbed $\frac{7}{8}$ of the way up a mountain and stops to rest 450m away from the summit. How high is the mountain in kilometres?

Total Height of Mountain = _____							
							450m

Squares Mrs Lund

- 5 A bag of apples weighs 350 g.



A box can hold 12 bags of apples.



What would be the mass of 20 boxes of apples?

Give your answer in **kilograms**.

- 6 Dani is collecting rainwater in a 1-litre jug.

On Monday, she collects 220 ml of water.

On Tuesday, she collects a quarter of a litre of water.

At the end of Wednesday, Dani sees she only needs another 0.1 litres until her jug is full.

How much water did Dani collect on Wednesday?

- 7 Jack wants to find out the mass of his suitcase.

Jack weighs 34.5 kg.

He steps onto the scales and it shows 47 kg and 200 g.

How heavy is his suitcase?



- 8 A bag contains 200 sweets.

Each sweet weighs 1.5 g.

The bag itself weighs 16 g.

Huan has some bags of sweets. The total mass is 1.264 kg.

How many bags of sweets does Huan have?

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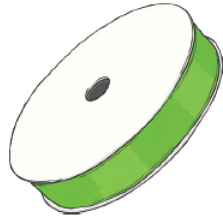
b) Mo has half a kilogram of butter and plenty of the other ingredients.

What is the greatest number of cupcakes he can make using this recipe?



I have a 2m piece of ribbon and use 50 cm of it to make a card.

How much ribbon do I have left?



twinkl.com

Triangles Mrs Lund

9

Here is a recipe for 8 cupcakes.

a) Complete the recipe for 24 cupcakes.

Cupcakes (makes 24)

butter

sugar

eggs

vanilla extract

flour

milk

Cupcakes (makes 8)

100 g butter

100 g sugar

2 eggs

1 tsp vanilla extract

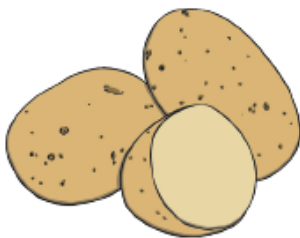
120 g flour

4 tbsp milk



I have a 8kg bag of potatoes, but dropped half of them on the way home.

How many kilograms of potatoes do I have left?



twinkl.com



There is 500ml of water in the small bottle. The big bottle contains 3 times as much.

How much water is in the big bottle?



twinkl.com

9

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a) Complete the recipe for 24 cupcakes.

Cupcakes (makes 24)

butter

sugar

eggs

vanilla extract

flour

milk

Cupcakes (makes 8)

100 g butter

100 g sugar

2 eggs

1 tsp vanilla extract

120 g flour

4 tbsp milk

Extension task



A bag contains 20 apples.

Each apple has a mass of 75 g.

The bag itself has a mass of 18 g.

Jack has some bags of apples. 

The total mass is 9.108 kg.

How many bags of apples does Jack have?

Challenge...

Have a think





A bag contains 20 apples.

Each apple has a mass of 75 g.

The bag itself has a mass of 18 g.

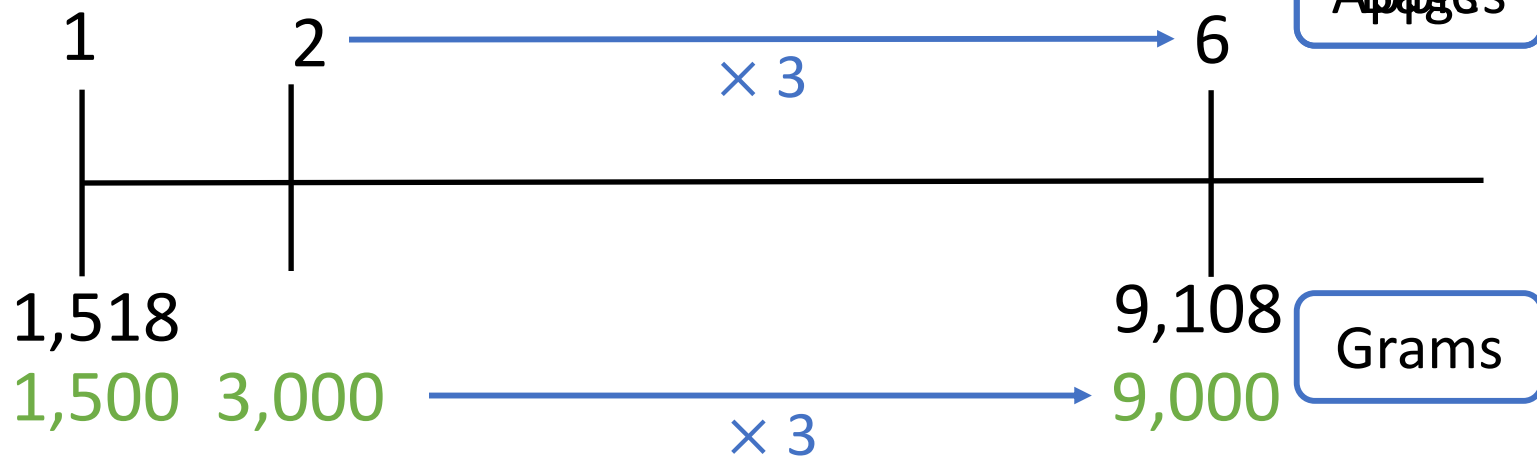
Jack has 6 bags
of apples.

Jack has some bags of apples.



The total mass is 9.108 kg.

How many bags of apples does Jack have?



Monday- Key skills

Maths Meeting



DO NOW ! Front of maths books under today's LO

Flashback 4

Year 6 | Week 7 | Day 3

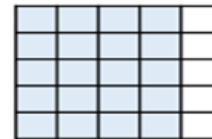
1) How many kilograms are there in a tonne?

2) I think of a number and subtract 17

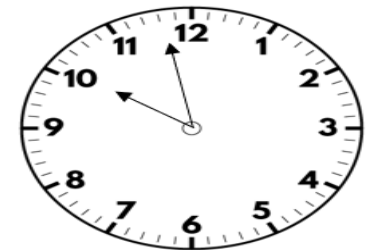
My answer is 23

Write this information as an equation.

3) What percentage is shaded?

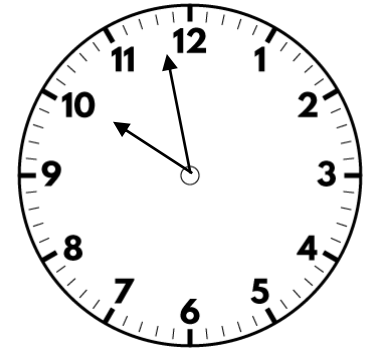


4) What is the mathematical name of this shape?



1) How many kilograms are there in a tonne?

1,000



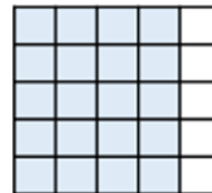
2) I think of a number and subtract 17

My answer is 23

Write this information as an equation.

$$x - 17 = 23$$

3) What percentage is shaded?



80%

4) What is the mathematical name of this shape?

Parallelogram



Crucial vocabulary

Converting Units

Key Vocabulary

mass

gram

kilogram

capacity

volume

millilitre

litre

millimetre

centimetre

kilometre

foot

inch

ounce

pound

stone

pint

gallon

Converting Mass

$$1 \text{ tonne} = 1000\text{kg}$$

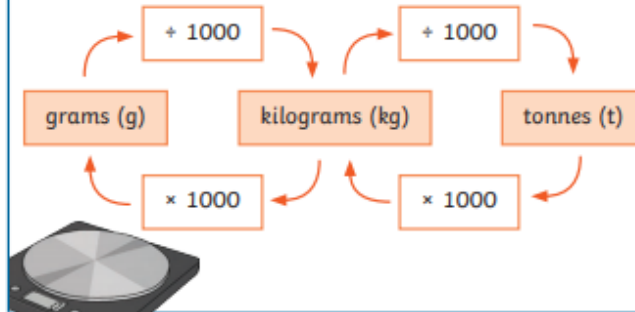
$$1000\text{g} = 1\text{kg}$$

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$$\frac{1}{2} \text{ kg} = 0.5\text{kg} = 500\text{g}$$

$$\frac{3}{4} \text{ kg} = 0.75 = 750\text{g}$$



Converting Length

$$1000\text{m} = 1\text{km}$$

$$100\text{cm} = 1\text{m}$$

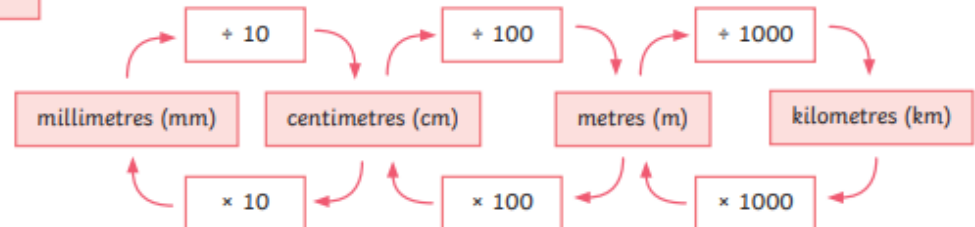
$$10\text{mm} = 1\text{cm}$$

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$$\frac{1}{10} \text{ m} = 0.01\text{m} = 10\text{cm}$$



Knowledge Organiser

Converting Capacity

$$1000\text{ml} = 1\text{l}$$

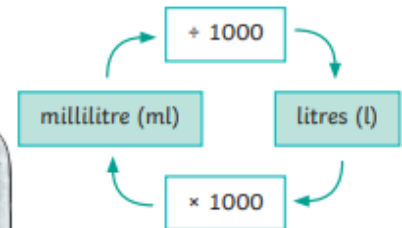
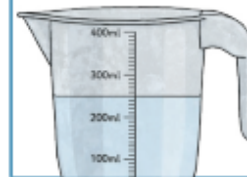
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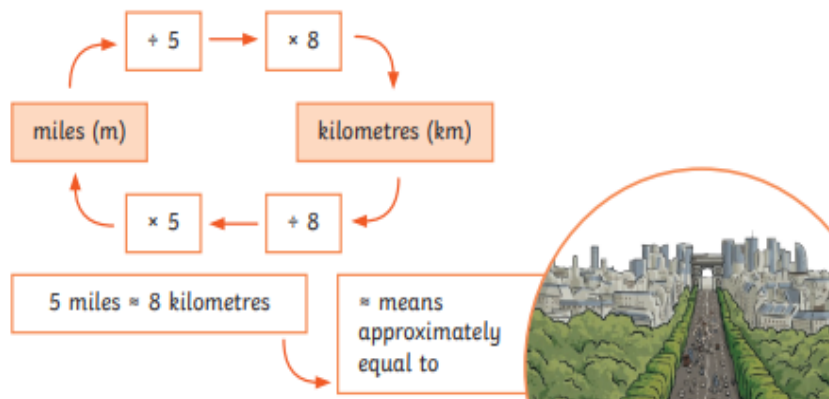
$$\frac{3}{4} \text{ l} = 0.75\text{l} = 750\text{ml}$$

$$\frac{1}{100} \text{ l} = 0.01\text{l} = 10\text{ml}$$



Miles to Kilometres

You might measure the length of a road or the distance between two cities in miles or kilometres.



Time

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Hour 1 hour = 60 minutes

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Imperial Measures

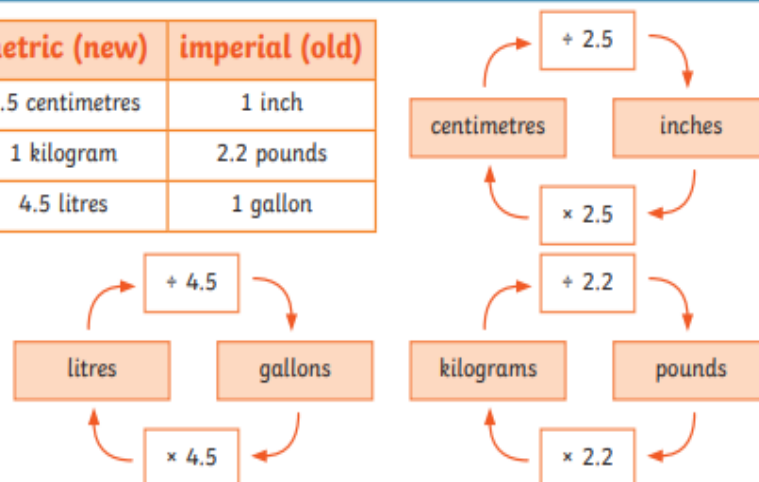
Things that could be measured using imperial units:

- Someone's height in feet and inches
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- The mass of a sack of potatoes in pounds
- A person's mass in stones
- A carton of milk in pints
- The amount of water in a bath in gallons

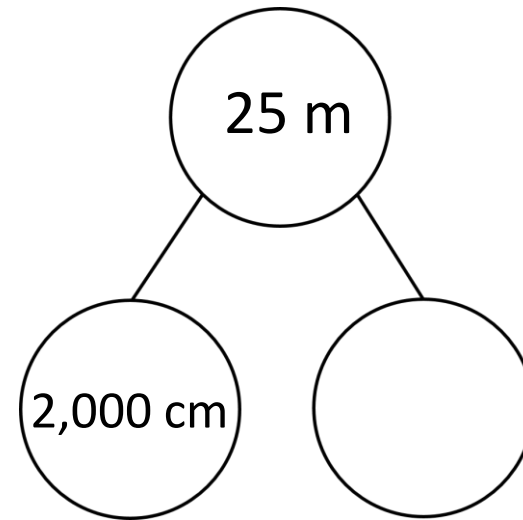
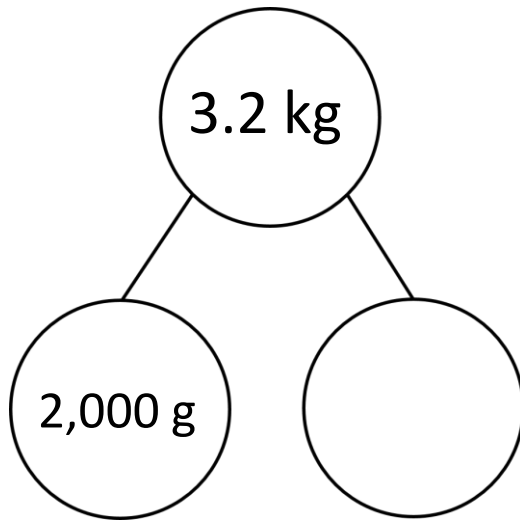
1 foot = 12 inches
1 pound = 16 ounces
1 stone = 14 pounds
1 gallon = 8 pints

Metric to Imperial Conversions

metric (new)	imperial (old)
2.5 centimetres	1 inch
1 kilogram	2.2 pounds
4.5 litres	1 gallon



1) Complete the part-whole models.



2) Complete the conversions.

$$4.3 \text{ l} = \underline{\hspace{2cm}} \text{ ml}$$

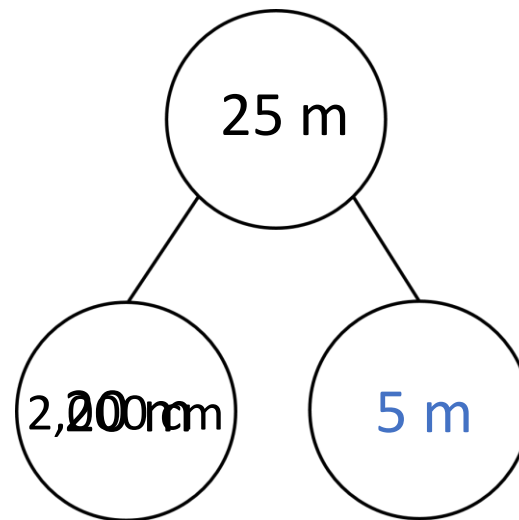
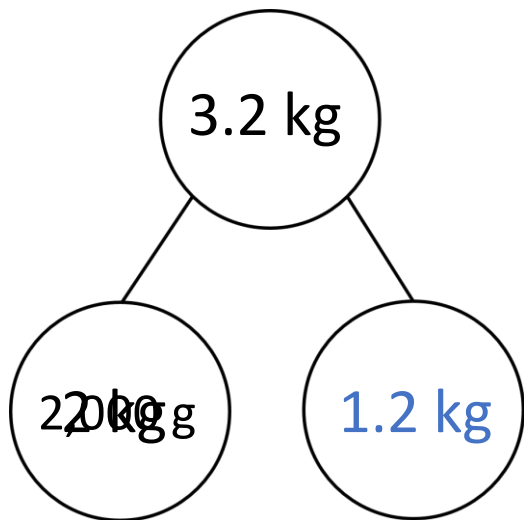
$$70 \text{ mm} = \underline{\hspace{2cm}} \text{ cm}$$

$$43 \text{ l} = \underline{\hspace{2cm}} \text{ ml}$$

$$77 \text{ mm} = \underline{\hspace{2cm}} \text{ cm}$$

RECAP....

1) Complete the part-whole models.



2) Complete the conversions.

$$4.3 \text{ l} = \underline{4,300} \text{ ml}$$

$$70 \text{ mm} = \underline{7} \text{ cm}$$

$$43 \text{ l} = \underline{43,000} \text{ ml}$$

$$77 \text{ mm} = \underline{7.7} \text{ cm}$$

Miles and kilometres



Miles



Kilometres



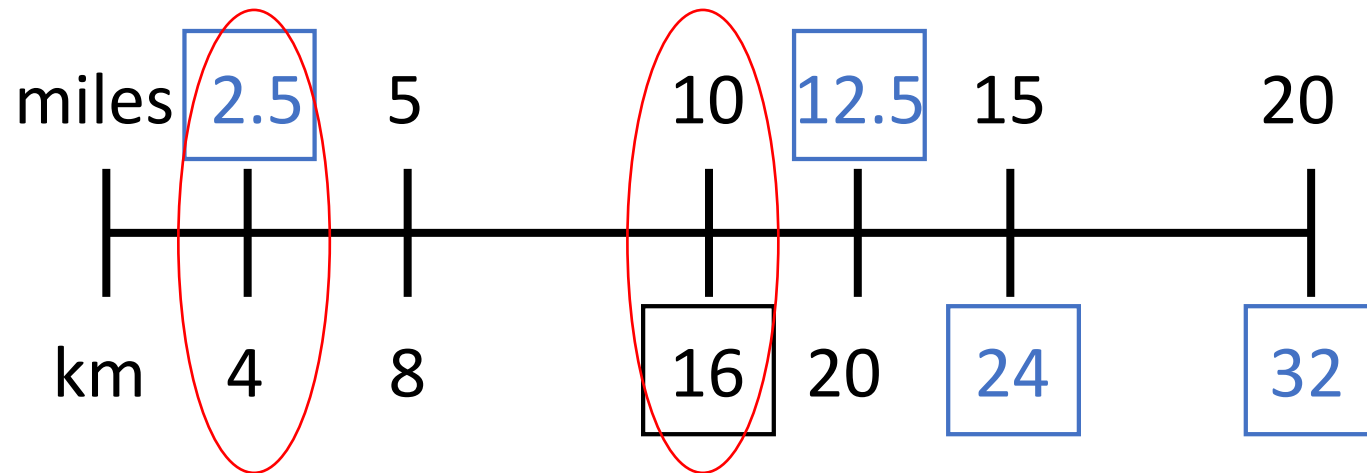
5 miles $\approx$ 8 km

1 mile		1 mile		1 mile		1 mile		1 mile	
1 km	1 km	1 km	1 km	1 km	1 km	1 km	1 km	1 km	

1 mile $>$ 1 km

1 mile $<$ 2 km

5 km $<$ 8 miles



$$5 \text{ miles} \approx 8 \text{ km}$$

$$\begin{array}{cc} \times 35 & \times 35 \\ \downarrow & \downarrow \end{array}$$

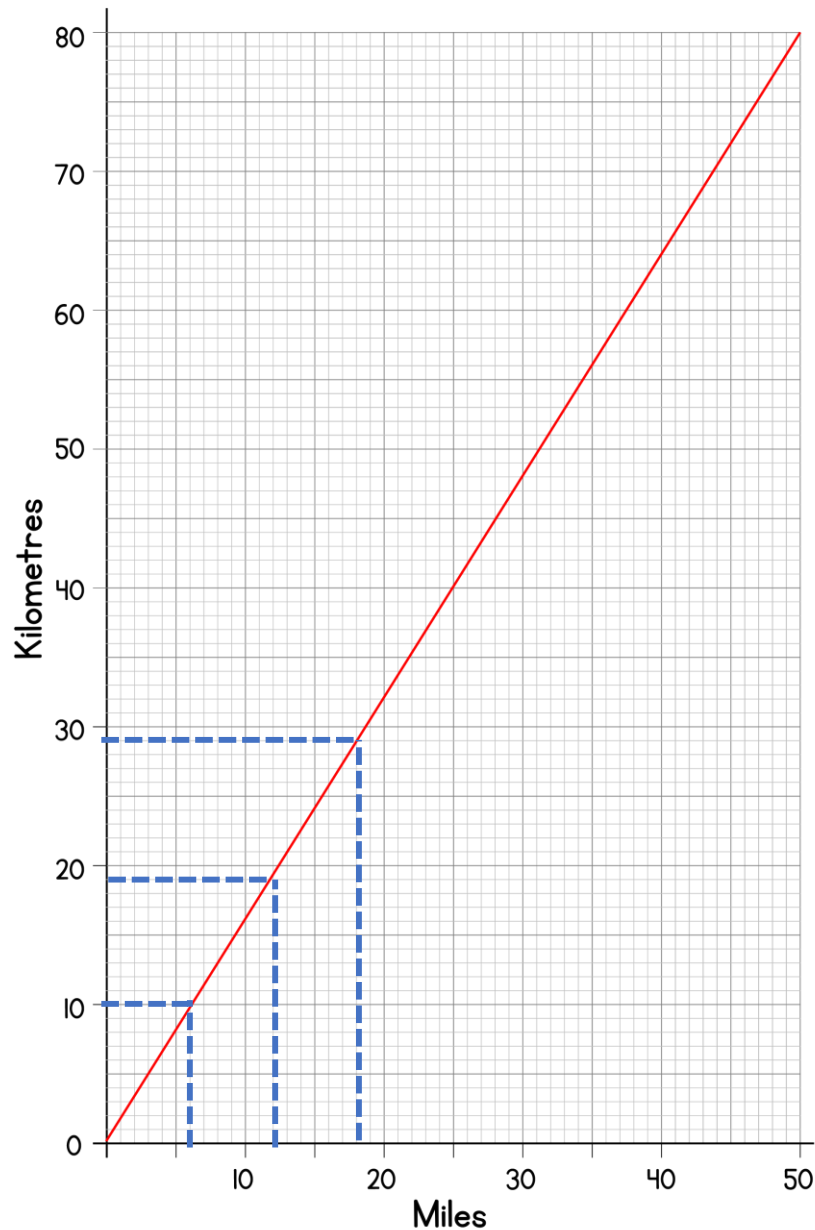
$$40 \text{ miles} \approx \underline{44} \text{ km}$$

$$\underline{25} \text{ miles} \approx 40 \text{ km}$$

$$5,000 \text{ miles} \approx \underline{8,000} \text{ km}$$

Have a think





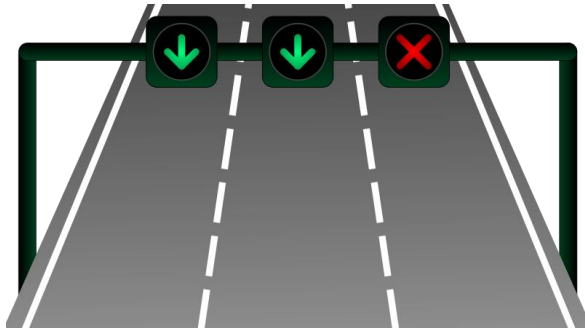
29 km $\approx$ 18 miles

Have a think



1) 19 km $\approx$ 12 miles

2) 10 km $\approx$ 6 miles



In Italy the motorway speed limit is 130 km/h.
In the UK the motorway speed limit is 70 mph.

In which country is the speed limit higher? **Italy**

$$5 \text{ miles} \approx 8 \text{ km}$$

$$\begin{array}{cc} \times 14 & \times 14 \\ \downarrow & \downarrow \end{array}$$

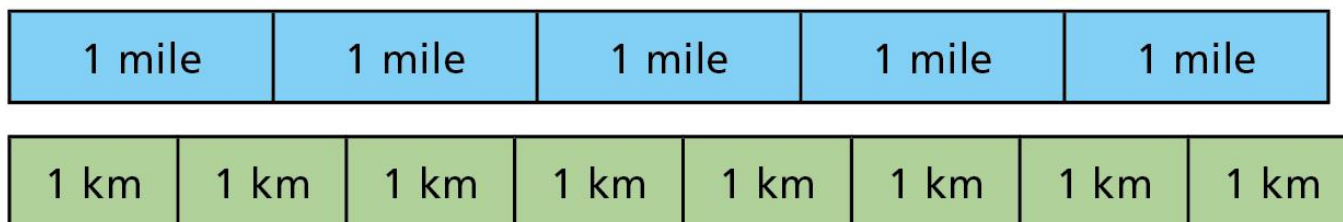
$$70 \text{ miles} \approx \underline{112} \text{ km}$$

Miles and kilometres

Tues- Guided Mrs Cooper Triangles
and Squares

1 Tick the statements that are true.

Use the bar model to help you.



- a) 5 miles is approximately equal to 8 kilometres. ☐
- b) 1 mile is longer than 1 kilometre. ☐
- c) 2 kilometres is longer than 1 mile. ☐
- d) 2 kilometres is longer than 2 miles. ☐

$$5 \text{ miles} \approx 8 \text{ km}$$

Mrs Cooper- Guided Squares and Triangles

Complete the table below.

Miles	Kilometres
5 miles	
40 miles	
	72 kilometres
	104 kilometres

5



If 5 miles is approximately 8 kilometres, then 10 miles is approximately 13 kilometres.

Here is Whitney's working out.

$$\begin{array}{ccc} + 5 & \begin{array}{c} \swarrow \quad \searrow \end{array} & \begin{array}{c} 5 \text{ miles} \approx 8 \text{ km} \\ 10 \text{ miles} \approx 13 \text{ km} \end{array} & \begin{array}{c} \swarrow \quad \searrow \end{array} & + 5 \end{array}$$

Explain Whitney's mistake.





- 6 A marathon is approximately 26.2 miles.
How far is this in kilometres?

Diving into Mastery

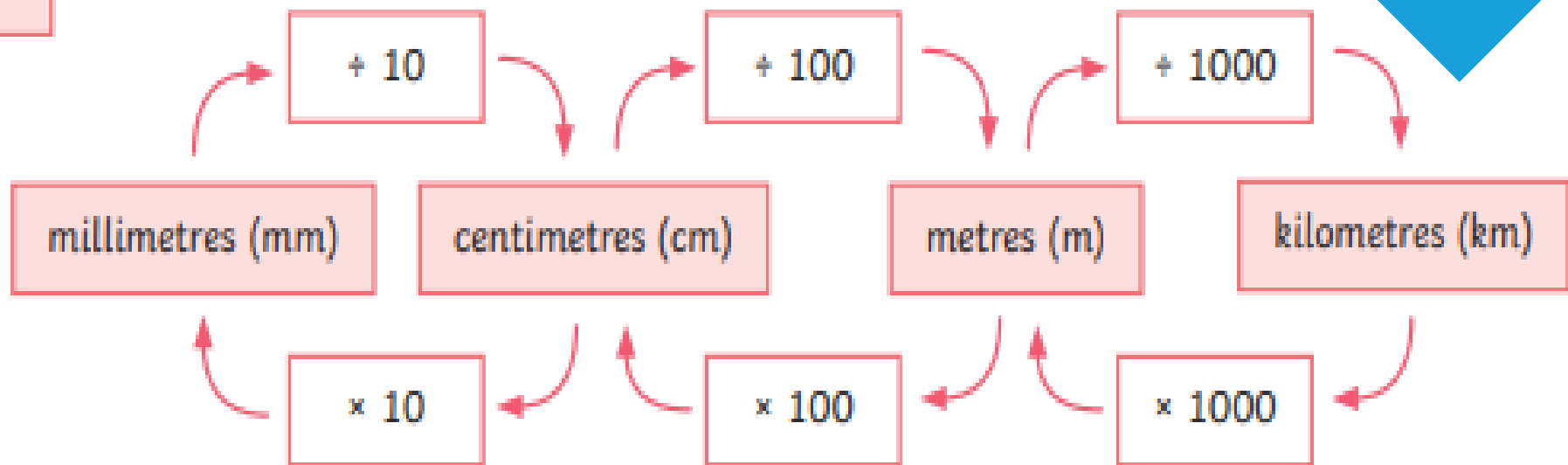


Revision...

Kilometres

twinkl

Key learning...





Complete the table to show how far each child walked during Fitness Friday.

	Distance in Metres	Distance in Kilometres
Arlo	3000	3
Bryony	4700	4.7
Chen	1750	1.75 or 1¾
Daniel	6000	6
Eesa	2500	2.5
Frankie	1080	1.08



1) Jana's fitness watch recorded the distance she walked each day in metres. Convert each distance to kilometres.

	Distance in Metres	Distance in Kilometres
Monday	4000	
Tuesday	6000	
Wednesday	4500	
Thursday	6600	
Friday	7050	



2) Alan's fitness tracker recorded the distance he walked each day in kilometres. Convert each distance to metres.

	Distance in Kilometres	Distance in Metres
Monday	8	
Tuesday	4.7	
Wednesday	3.25	
Thursday	8.03	
Friday	7½	



1) Jana's fitness watch recorded the distance she walked each day in metres. Convert each distance to kilometres.

	Distance in Metres	Distance in Kilometres
Monday	4000	
Tuesday	6000	
Wednesday	4500	
Thursday	6600	
Friday	7050	



2) Alan's fitness tracker recorded the distance he walked each day in kilometres. Convert each distance to metres.

	Distance in Kilometres	Distance in Metres
Monday	8	
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Friday	7½	



1) Jana's fitness watch recorded the distance she walked each day in metres. Convert each distance to kilometres.

	Distance in Metres	Distance in Kilometres
Monday	4000	
Tuesday	6000	
Wednesday	4500	
Thursday	6600	
Friday	7050	



2) Alan's fitness tracker recorded the distance he walked each day in kilometres. Convert each distance to metres.

	Distance in Kilometres	Distance in Metres
Monday	8	
Tuesday	4.7	
Wednesday	3.25	
Thursday	8.03	
Friday	7½	

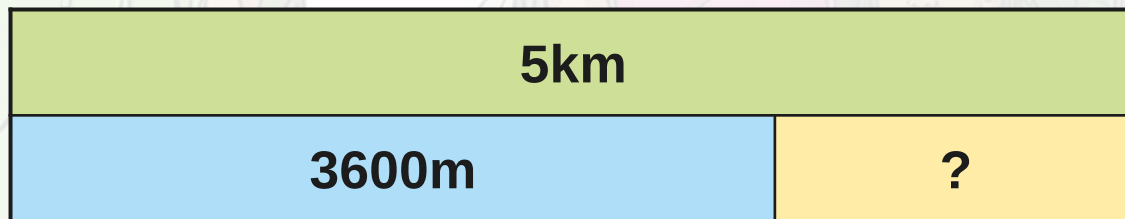


Kilometres

Dividing



Grace's fitness watch shows that she has walked 3600m today.
How much further does she need to walk to reach 5km?



$$5\text{km} = 5000\text{m}$$

$$5000\text{m} - 3600\text{m} = 1400\text{m}$$

$$1400\text{m} = 1.4\text{km}$$

Grace needs to walk 1400m, or 1.4km, further to reach 5km.



Work out whether each statement below is true or false and explain how you know.



	Distance Walked
Arlo	3200m
Bryony	3.7km
Chen	$\frac{1}{2}$ km
Daniel	2.8km
Eesa	3070m

Bryony and Eesa walked the same distance.

False. 3070m is 3.07km, which is less than 3.7km.

Chen walked 800m.

False. Chen walked half a kilometre, which is 500m.

Arlo and Daniel walked 6km in total.

True. Daniel walked 2800m. $3200\text{m} + 2800\text{m} = 6000\text{m}$, which is 6km.

Kilometres

Deepest
↑



Use the clues below to find out how far each child swam at the school swimathon.

Explain how you worked out each answer.

	Distance in Kilometres
Arlo	$\frac{1}{2}\text{km}$ or 0.5km
Bryony	1.5km
Chen	2.7km
Daniel	2.2km



Arlo + Bryony =
2000m

Arlo swam a quarter
of this distance.

Bryony + Chen =
4200m

Chen - Arlo = Daniel

$$5 \text{ miles} \approx 8 \text{ km}$$

Tues- Mrs Lund- Hexagons and Octagons

Complete the table below.

Miles	Kilometres
5 miles	
40 miles	
	72 kilometres
	104 kilometres

$$5 \text{ miles} \approx 8 \text{ km}$$

Tues- Mrs Lund- Hexagons and Octagons

Complete the table below.

Miles	Kilometres
5 miles	
40 miles	
	72 kilometres
	104 kilometres



Distances between Towns

I can convert between miles and kilometres.



Here is a distance chart between different towns. The measurements given are in miles. They may not be geographically accurate.

	Manchester	Leeds	York	Wolverhampton	Durham
Manchester	-	45	72	75	129
Leeds	45	-	24	117	82
York	72	24	-	130	73
Wolverhampton	75	117	130	-	188
Durham	129	82	73	188	-

1. Use the conversion: 5 miles = 8 kilometres to calculate the distances between these towns.

Towns	Distance in Kilometres
a) Manchester and Leeds	
b) Leeds and Wolverhampton	
c) York and Manchester	
d) Wolverhampton and York	
e) Durham and Leeds	

2. Ted is driving from Wolverhampton to Durham. He needs to go via Manchester. How much longer is the journey than if he went directly to Durham? Write your answer in kilometres and show how you worked out the answer.

Hexagons Mrs Lund



Converting Miles and Kilometres

I can convert between miles and kilometres.



To convert from miles to kilometres, divide the number of miles by 5, then multiply by 8.

1. Use the conversion information above to convert these measurements from miles to kilometres. The first one has been done for you.

100 miles	$100 \div 5 = 20$ $20 \times 8 = 160$	160km
120 miles		
150 miles		
125 miles		
155 miles		

Converting Miles and Kilometres

I can convert between miles and kilometres.

To convert from miles to kilometres, divide the number of miles by 5, then multiply by 8.

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Converting Miles and Kilometres

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120 miles		
150 miles		
125 miles		
155 miles		

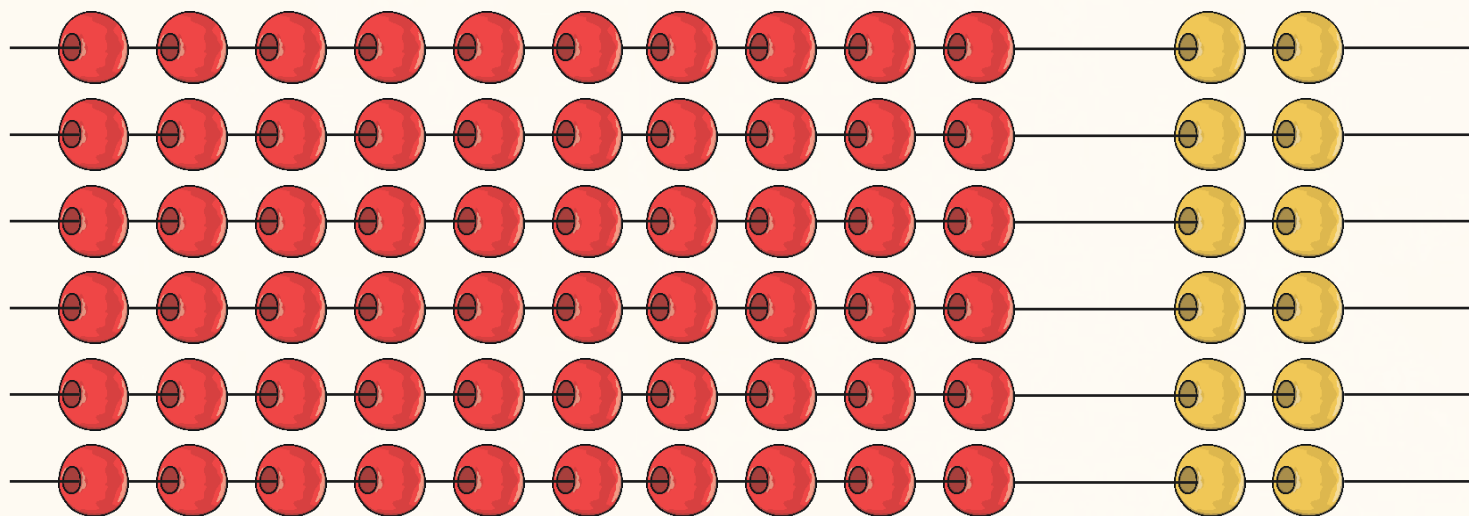
Tues - Key skills

Maths Meeting





Complete the sentences and calculation to match the picture.



$$6 \text{ lots of } 10 \text{ beads} = 60$$

$$6 \text{ lots of } 2 \text{ beads} = 12$$

$$6 \text{ lots of } 12 \text{ beads} = 72$$

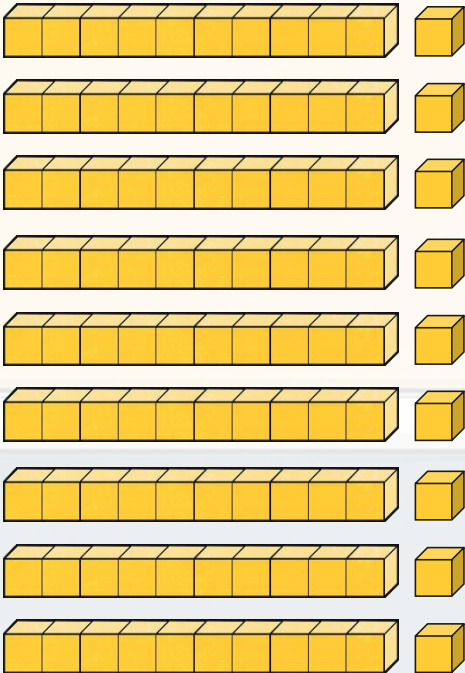
$$6 \times 10 + 6 \times 2 = 6 \times 12 = 72$$

11 and 12 Times Table

Diving



Complete the table.

Draw It!	Describe It!	Calculate It!
 A visual representation of the number 99 using base ten blocks. There are 9 horizontal rods, each composed of 10 small cubes (representing tens), and 9 individual small cubes (representing ones) placed to the right of each rod.	9 lots of 10 = 90 9 lots of 1 = 9 9 lots of 11 = 99	Possible answers $9 \times 11 = 99$ $9 \times 10 + 9 \times 1 = 99$



Complete these calculations.

$$7 \times 12 = 84$$

$$132 = 12 \times 11$$

$$55 \div 11 = 5$$

$$12 = 24 \div 2$$



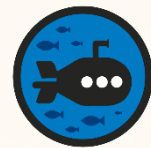


Freya bought 12 lollipops that cost 48p altogether. How much did one lollipop cost?

$$48p \div 12 = 4p$$



11 and 12 Times Table Deeper



Solve the calculations. Which is the odd one out and why?

$$1 \times 11 = 11$$

$$88 \div 8 = 11$$

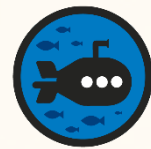
$$132 \div 12 = 11$$

$$12 \div 1 = 12$$

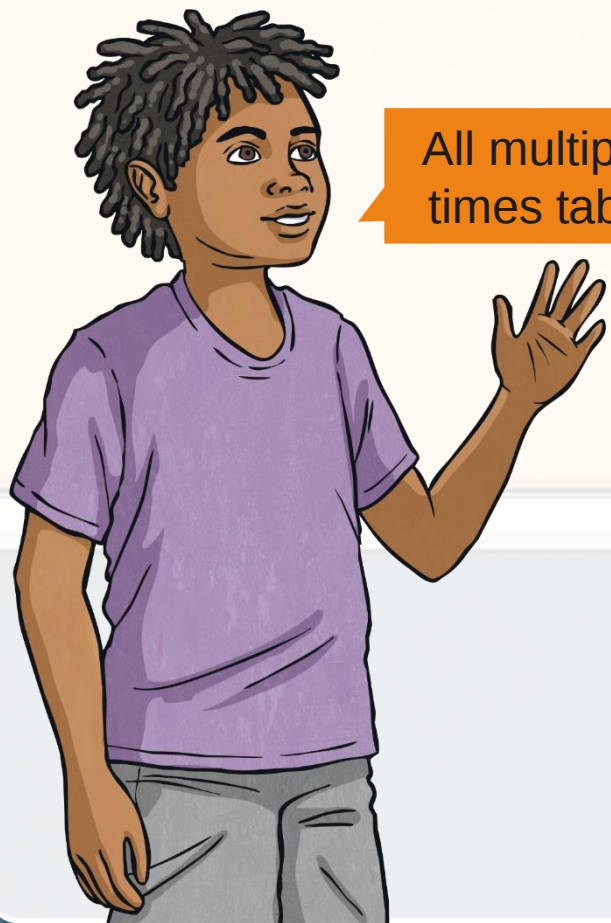
$12 \times 1 = 12$ is the odd one out because it is the only calculation with the answer 12. The answer to the other calculations is 11.



11 and 12 Times Table Deeper

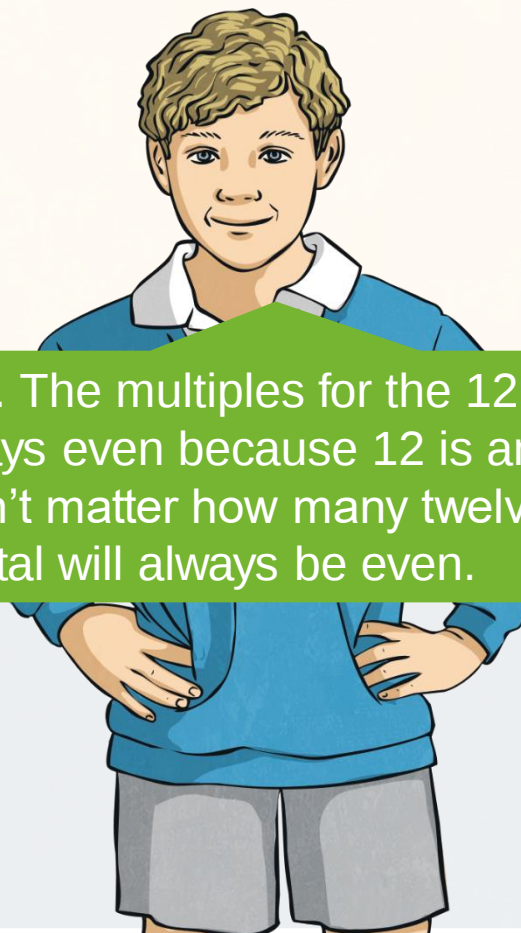


Read the statement below. Is it always, sometimes or never true?
Explain your reasoning.



All multiples in the 12 times table are even.

This is always true. The multiples for the 12 times table are always even because 12 is an even number. It doesn't matter how many twelves there are - the total will always be even.



Which calculation is the odd one out.

$$134 + 216 =$$

$$1400 \div 4 =$$

$$5 \times 70 =$$

$$70\% \text{ of } 500 =$$

$$965 - 715 =$$



Diving into Mastery

Wednesday 2nd March



twinkl



Area and Perimeter

Weds 2.3.22 LO:

- Recognise that shapes with the same areas can have different perimeters and vice versa.

DO NOW!
Whiteboards

True or False ?

Area and perimeter

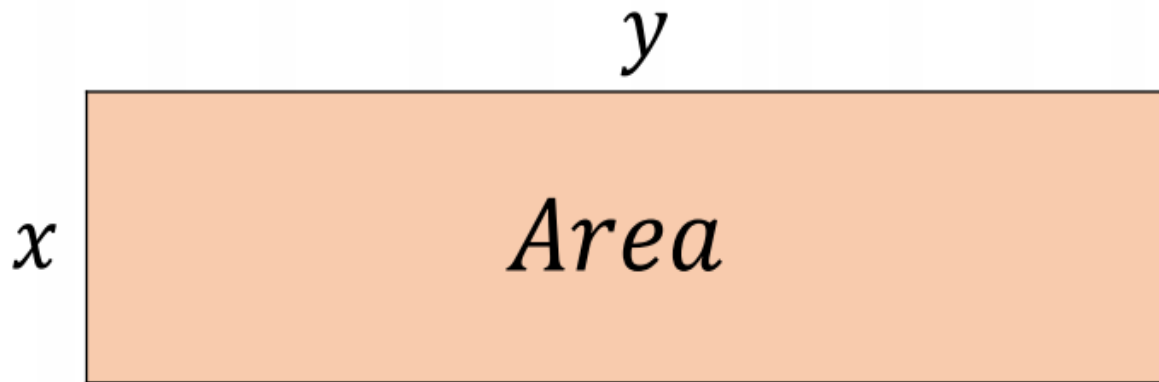


x y

Area

$$\text{Area} = xy$$
$$x = \text{Area} \div y$$
$$y = \text{Area} \div x$$

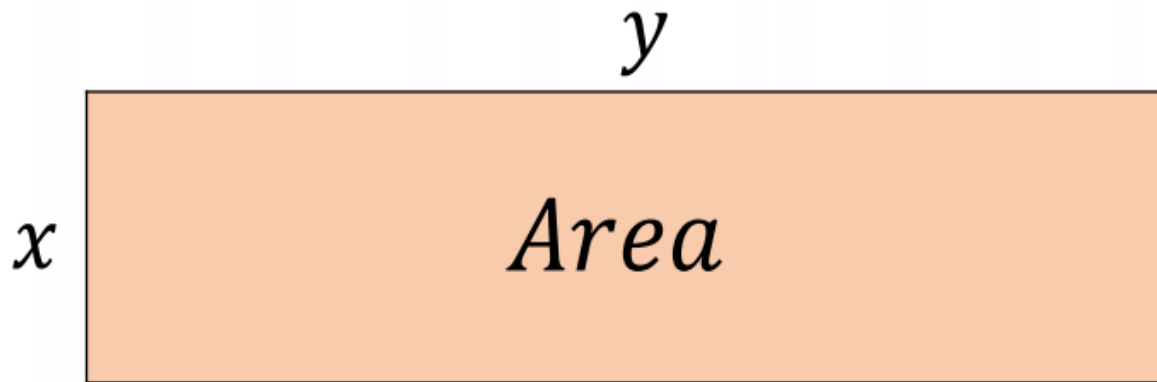
White Rose



$$\text{Area} = xy$$

$$x = \text{Area} \div y$$

$$y = \text{Area} \div x$$



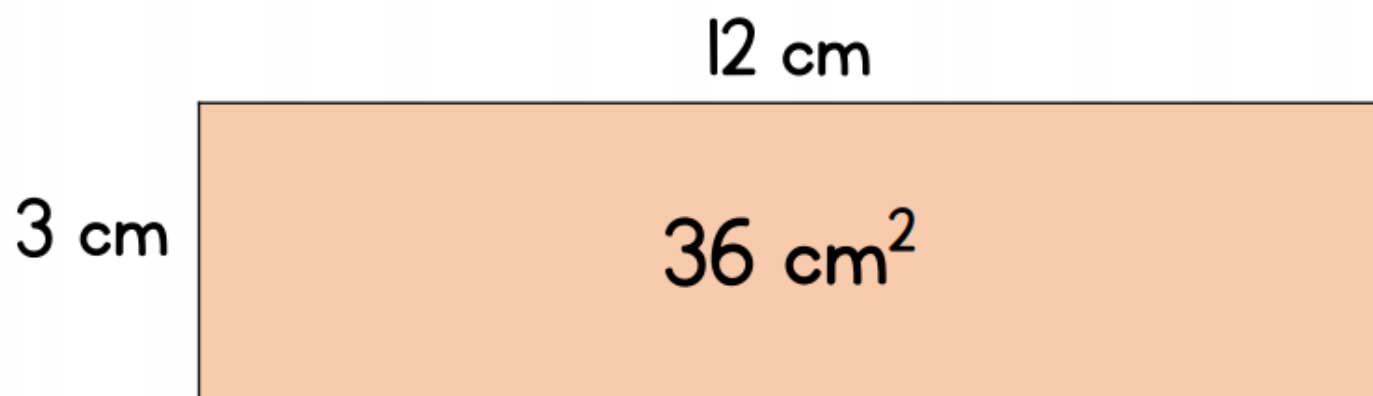
$$\text{Area} = xy$$

$$x = \text{Area} \div y$$

$$y = \text{Area} \div x$$

True

Check using numbers.



$$36 = 12 \times 3$$

$$12 = 36 \div 3$$

$$3 = 36 \div 12$$

Crucial vocabulary...

Perimeter, Area and Volume

Knowledge Organiser

Key Vocabulary

perimeter

area

volume

cubic units (e.g. cm^3)

cuboid

width

length

rectangle

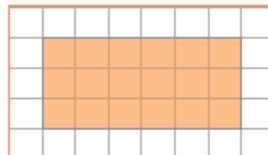
rectilinear

parallelogram

perpendicular height

Area of Rectangles

$\text{length} \times \text{width} = \text{area of a rectangle}$



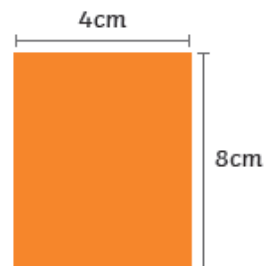
Counting squares:

$\text{area} = 18\text{cm}^2$

Use formula:

$6\text{cm} \times 3\text{cm}$

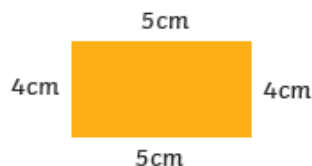
$\text{area} = 18\text{cm}^2$



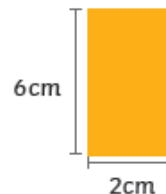
$8\text{cm} \times 4\text{cm} \text{ area} = 32\text{cm}^2$

Perimeter of Rectangles

$\text{perimeter} = \text{length} + \text{width} + \text{length} + \text{width}$
or $(\text{length} + \text{width}) \times 2$



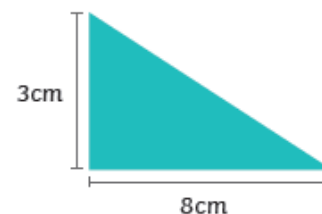
$5\text{cm} + 4\text{cm} + 5\text{cm} + 4\text{cm}$
 $\text{area} = 18\text{cm}^2$



$(6 + 2) \times 2$
 $\text{area} = 16\text{cm}^2$

Area of Triangles

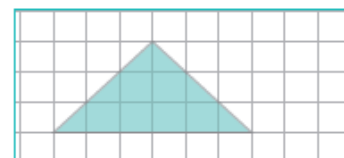
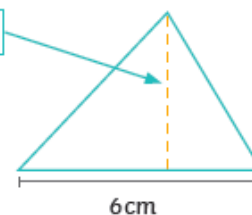
$\text{base} \times \text{perpendicular height} \div 2 = \text{area of a triangle}$



$8\text{cm} \times 3\text{cm} \div 2$
 $\text{area} = 12\text{cm}^2$

perpendicular height = 5cm

$6\text{cm} \times 5\text{cm} \div 2$
 $\text{area} = 15\text{cm}^2$



Counting squares:

6 whole squares = 6cm^2

6 half squares = 3cm^2

$6\text{cm}^2 + 3\text{cm}^2 = 9\text{cm}^2$

$\text{area} = 9\text{cm}^2$

Using formula:

$6\text{cm} \times 3\text{cm}$
 $\div 2 = 9\text{cm}^2$

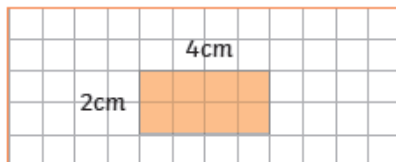
Crucial vocabulary...

Perimeter, Area and Volume

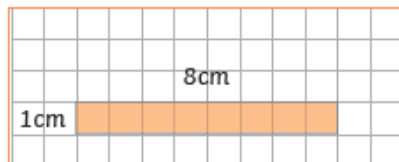
Knowledge Organiser

Perimeter and Area

Shapes with the same area can have different perimeters.

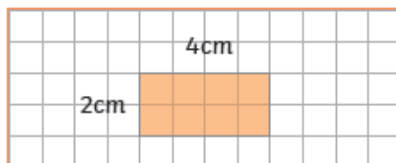


area = 8cm^2 perimeter = 12cm

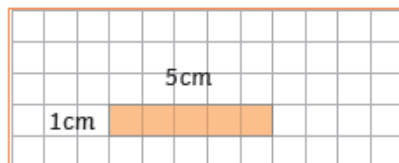


area = 8cm^2 perimeter = 18cm

Shapes with the same perimeter can have different areas.



area = 8cm^2 perimeter = 12cm

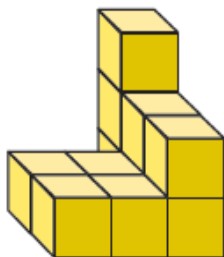


area = 5cm^2 perimeter = 12cm

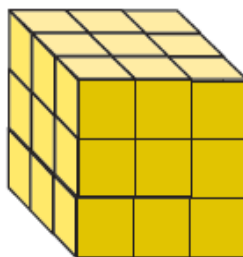
Volume - Counting Cubes



= 1cm^3



11cm^3

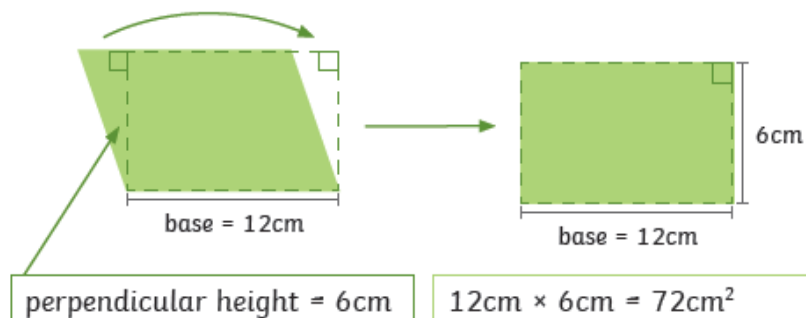


27cm^3

Area of Parallelograms

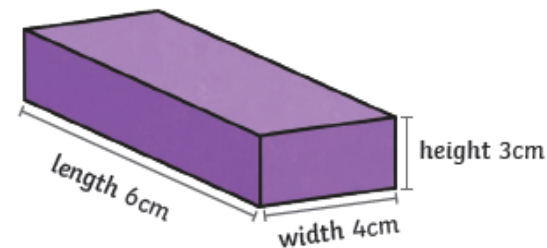
base $\times$ perpendicular height = area of a parallelogram

A parallelogram can be transformed into a rectangle.



Volume of Cuboids

length $\times$ width $\times$ height = volume of a cuboid



Multiply dimensions in **any** order:

$3\text{cm} \times 6\text{cm} \times 4\text{cm}$

volume = 72cm^3

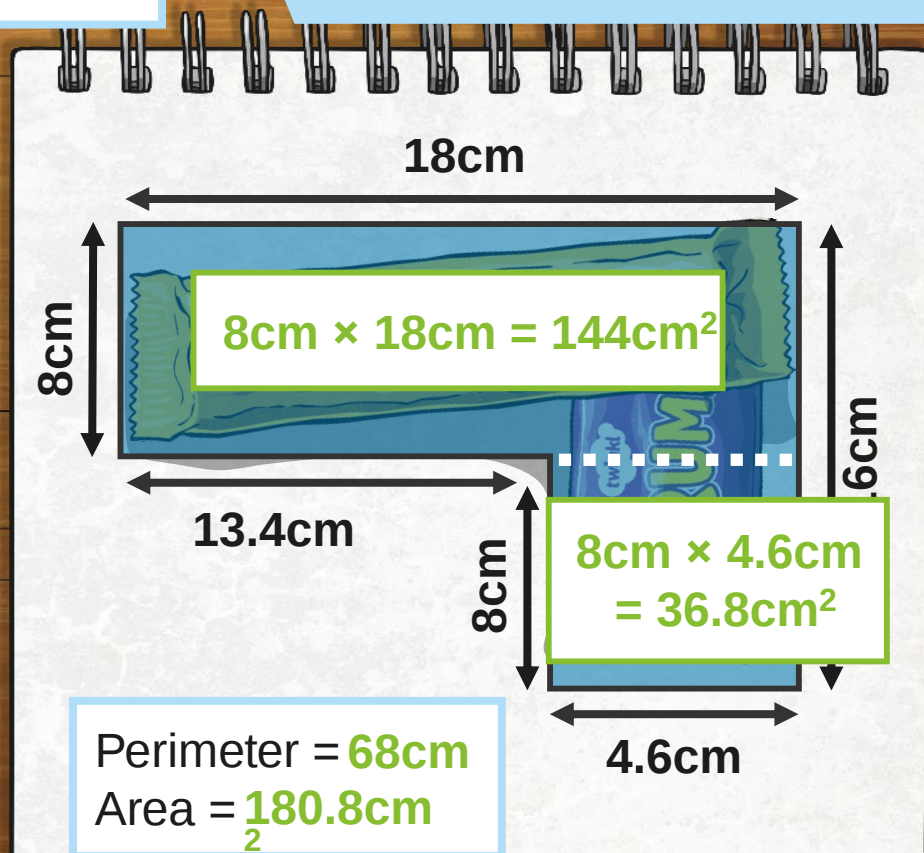


Perimeter = **44cm**
Area = **96cm²**

Perimeter = **23cm**
Area = **28cm²**

Give the missing values for the blue shapes (not to scale).

This shape can be split into two rectangles. We can work out the area of each rectangle separately then add the two area measurements together to find the total area of the shape.





Perimeter = 28cm
Area = 24cm²

Give the missing values for the shapes (not to scale).

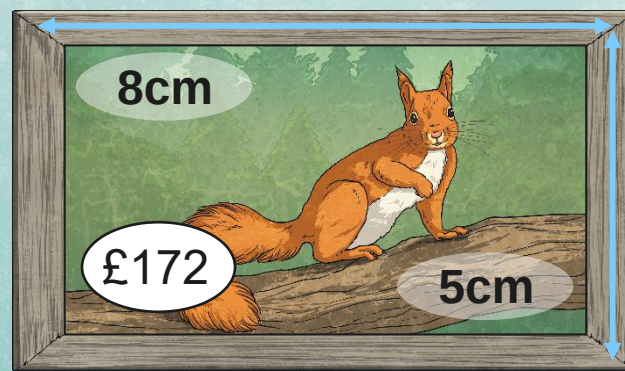
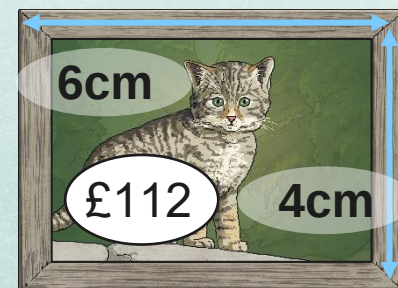


Perimeter = 20cm
Area = 24cm²



Each 1cm^2 of a painting = **£3 per cm^2**

Each cm of the frame that will go along the outside edge of the painting =
£2 per cm

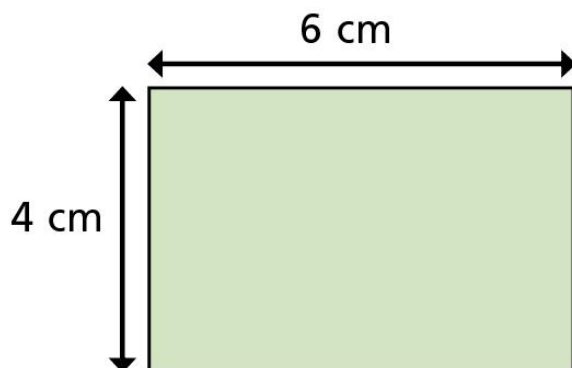


Guided- Squares Mrs Lund

2

Work out the areas and perimeters of the shapes.

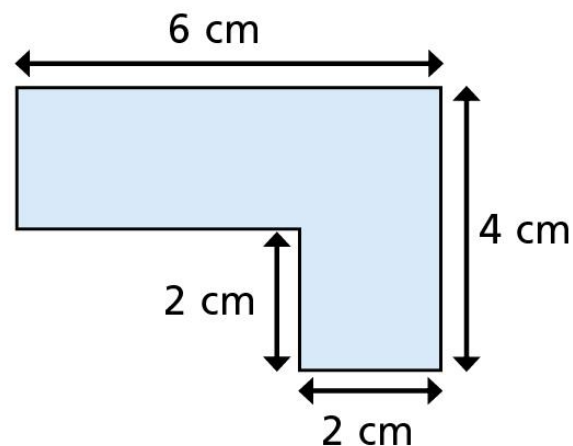
a)



perimeter = cm

area = cm²

b)



perimeter = cm

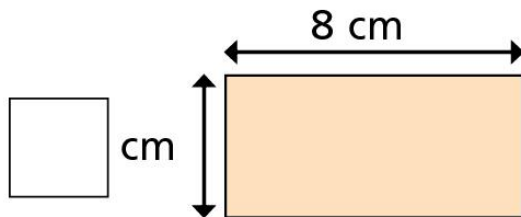
area = cm²

Squares- Mrs Lund

3

Work out the missing values.

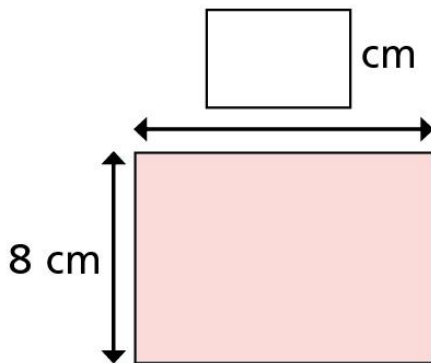
a)



$$\text{area} = 32 \text{ cm}^2$$

$$\text{perimeter} = \boxed{} \text{ cm}^2$$

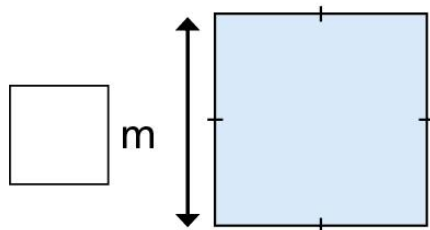
b)



$$\text{area} = \boxed{} \text{ cm}^2$$

$$\text{perimeter} = 40 \text{ cm}$$

c)



$$\text{area} = \boxed{} \text{ m}^2$$

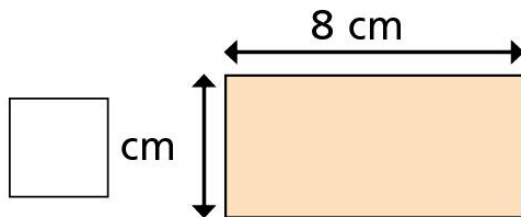
$$\text{perimeter} = 36 \text{ m}$$

Squares- Mrs Lund

3

Work out the missing values.

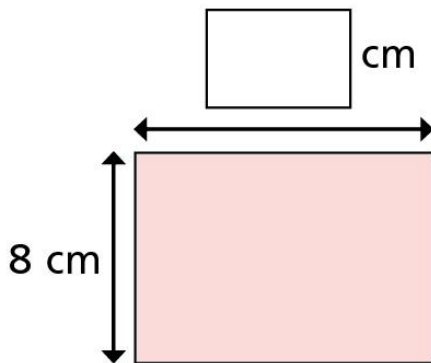
a)



$$\text{area} = 32 \text{ cm}^2$$

$$\text{perimeter} = \boxed{} \text{ cm}^2$$

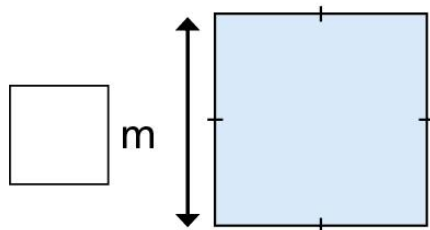
b)



$$\text{area} = \boxed{} \text{ cm}^2$$

$$\text{perimeter} = 40 \text{ cm}$$

c)

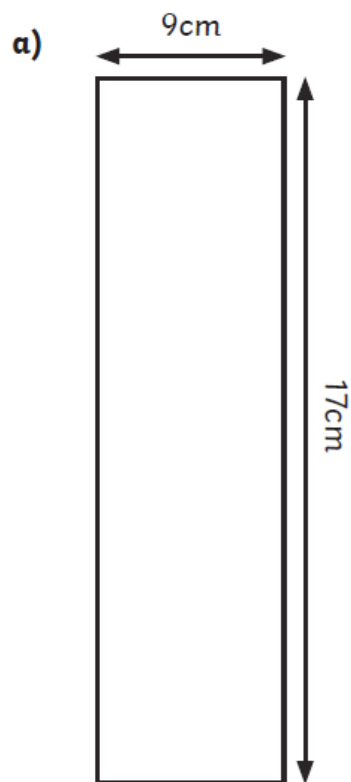


$$\text{area} = \boxed{} \text{ m}^2$$

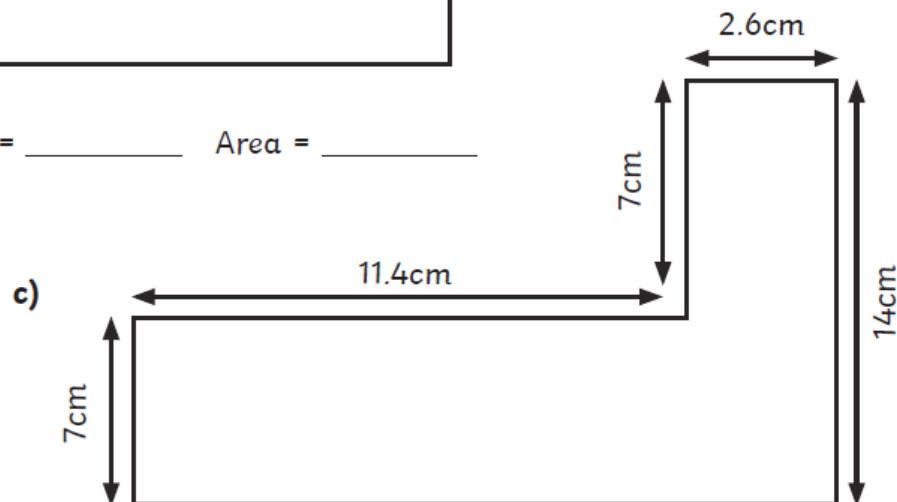
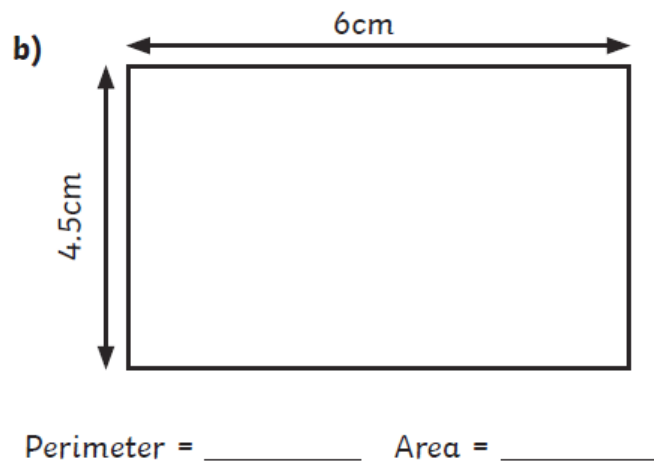
$$\text{perimeter} = 36 \text{ m}$$

Squares- Mrs Lund

1) Calculate the area and perimeter of the following rectilinear shapes (not to scale).



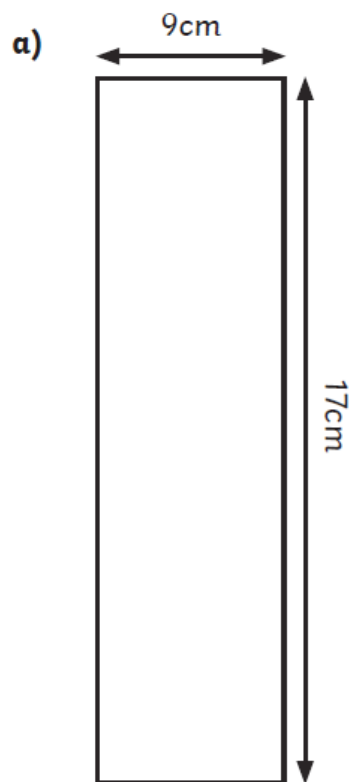
Perimeter = _____ Area = _____



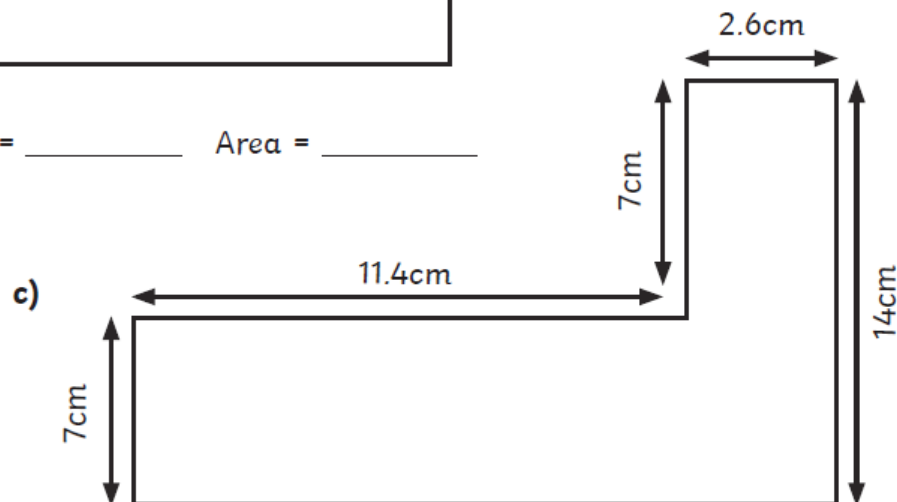
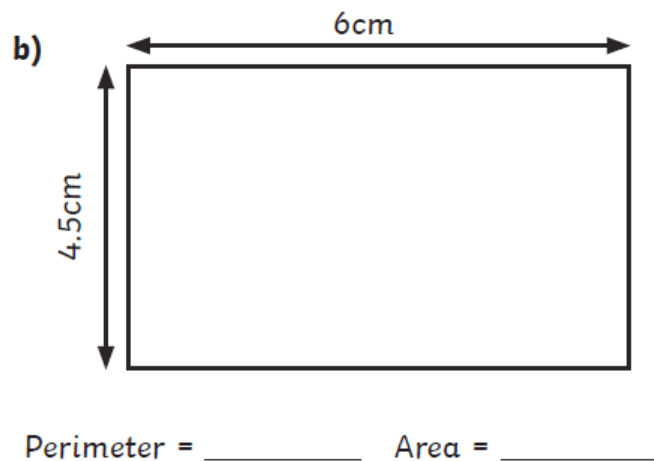
Perimeter = _____ Area = _____

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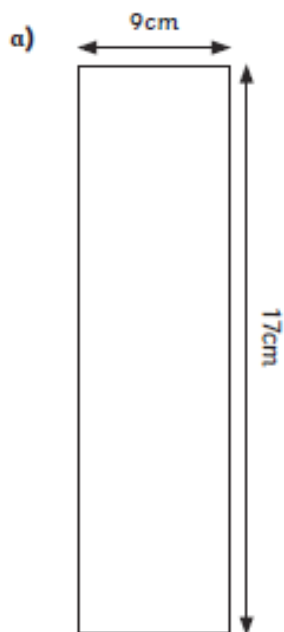


Perimeter = _____ Area = _____

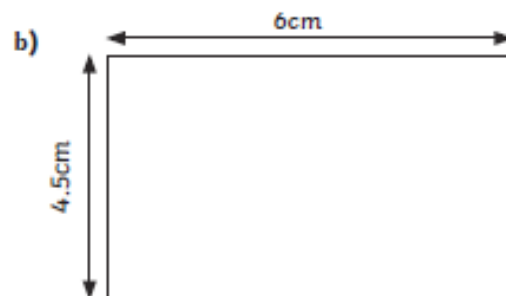
Hexagons



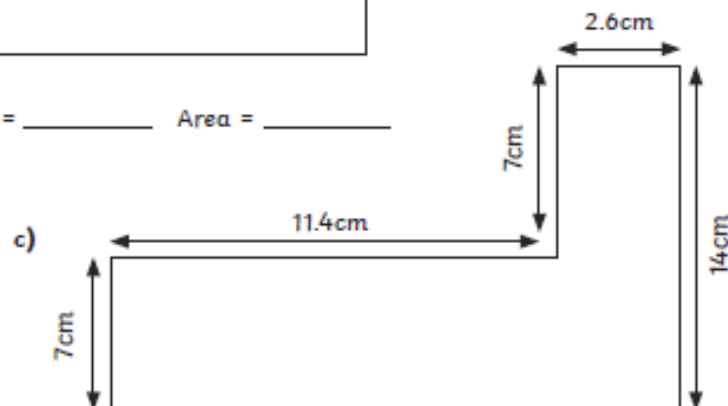
1) Calculate the area and perimeter of the following rectilinear shapes (not to scale).



Perimeter = _____ Area = _____



Perimeter = _____ Area = _____

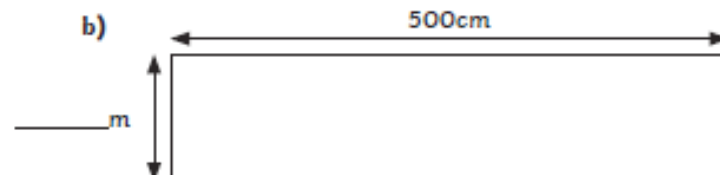


Perimeter = _____ Area = _____

2) Give the missing values for each shape.



Perimeter = _____ Area = 32cm^2



Perimeter = 14m Area = _____ m^2

Challenge...

- 1) Investigate if Alice's and Oliver's statements are true or false by drawing example shapes for each.



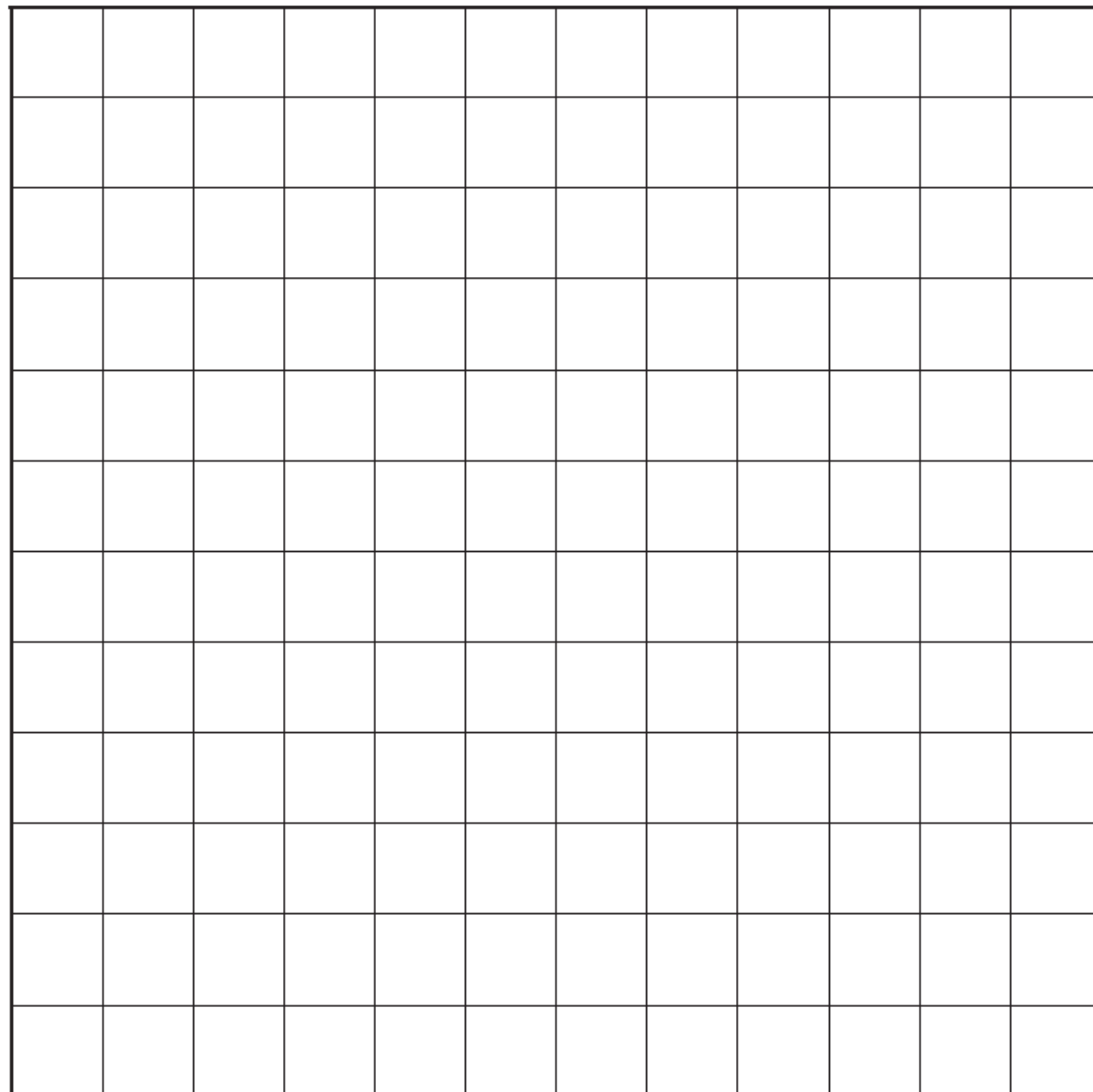
Oliver

I can draw a shape with the same perimeter and the same area.



Alice

I can draw two shapes that have an area of 4cm^2 but different perimeters.



Triangles –work out areas and then answers the questions - independent work

Measuring Area of Chocolate Boxes

Find the area of the chocolate boxes and record your answers

1.		2.		Area =
	Area =			
3.		4.		
	Area =		Area =	
5.			Area =	

Measuring Area of Chocolate Boxes Questions

1. What is the area of chocolate box number 2?

2. Which chocolate box has the largest area?

3. Which chocolate box has the smallest area?

4. What is the difference in area between chocolate box number 1 and 5?

Octagons- EW plan and Maths meeting for them

Weds

Maths Meeting





Recall and Use Multiplication
and Division Facts for the 12x
Table

1

$$5 \times 12 =$$

2

$$108 \div 12 =$$

3

$$12 \times 1 =$$

4

$$48 \div 12 =$$

5

$$12 \times 12 =$$

6

$$120 \div 12 =$$

7

$$12 \times 8 =$$

8

$$24 \div 12 =$$

9

$$3 \times 12 =$$

10

$$84 \div 12 =$$

11

$$12 \times 6 =$$

12

$$132 \div 12 =$$

Answers

1. $5 \times 12 = 60$

7. $12 \times 8 = 96$

2. $108 \div 12 = 9$

8. $24 \div 12 = 2$

3. $12 \times 1 = 12$

9. $3 \times 12 = 36$

4. $48 \div 12 = 4$

10. $84 \div 12 = 7$

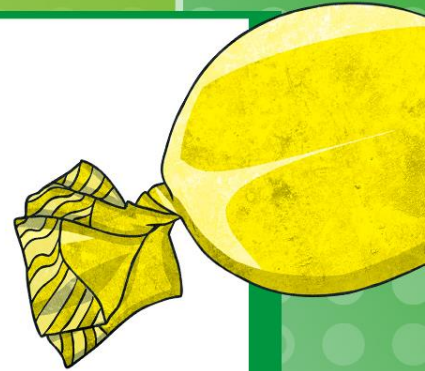
5. $12 \times 12 = 144$

11. $12 \times 6 = 72$

6. $120 \div 12 = 10$

12. $132 \div 12 = 11$

Ratio and Proportion



Ratio and Proportion



Billy buys 12 lollies for £6.



How much do 6 lollies cost?

£3.00

How much for 24 lollies?

£12.00

What would be the total cost for 30 lollies?

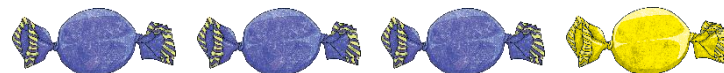
£15.00

Ratio and Proportion

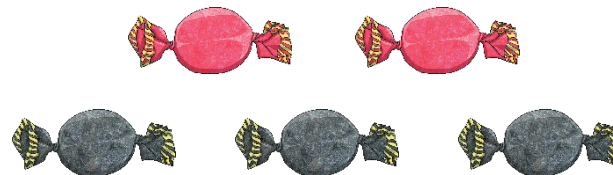


Ruth has two boxes of sweets

In the first box, the ratio of purple and yellow sweets is 3:1.



In the second box, for every two pink sweets there are three black sweets. (2:3)



There is the same number of sweets in each box.

There are 12 black sweets in the second box.

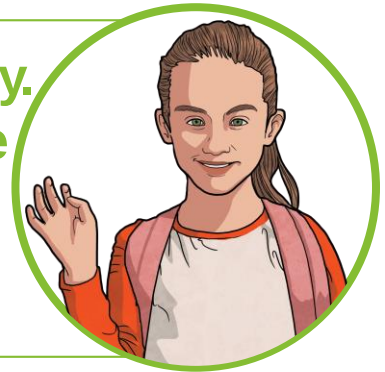
How many sweets are there in total?

40 sweets

Ratio and Proportion

Sam wants to make some juice for a birthday party. The drink is made using twelve parts orange juice and eight parts lemonade.

Sam makes 2.4 litres of this drink.

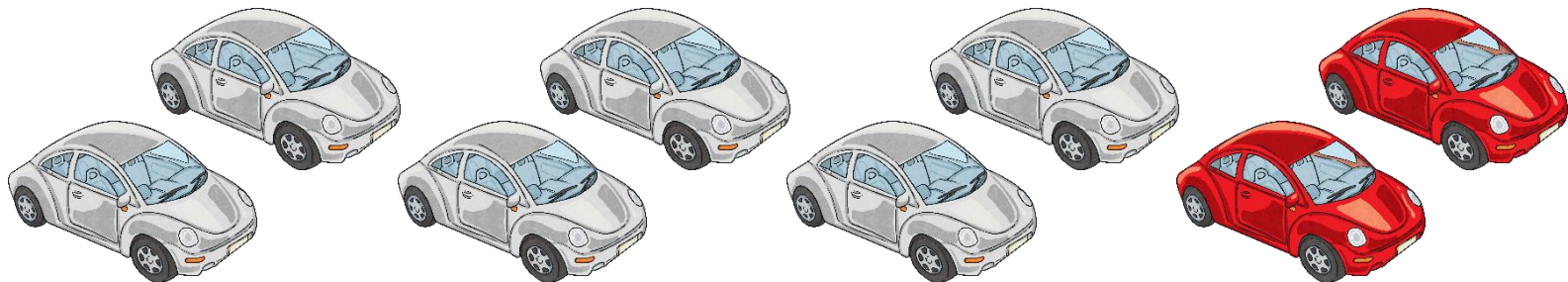


How much orange juice does she need?

1440ml or 1.44 L

Ratio and Proportion

The ratio of silver and red cars in the car park is 6:2.



What does this mean?

If there are 16 more silver cars than red cars in the car park, what is the total number of red cars in the car park?

8 red cars

Ratio and Proportion

Two shops sell the same chocolate but in different-sized packaging.



Shop A	Shop B
100g chocolate bar £4.20	150g chocolate bar £6.60



Which shop is better value for money?

Shop A

Ratio and Proportion



Callum draws two similar quadrilaterals.

My larger quadrilateral has sides that are 3 times the lengths of the smaller one. (3:1)

The perimeter of the larger quadrilateral is 36cm.

The length and width of both quadrilaterals are even numbers.

What is the largest possible area for the small rectangle?

8cm²

Ratio and Proportion

Laura is cooking some chocolate chip muffins for her friends and family.

She has the list of some ingredients to make 6 chocolate chip muffins:



6 muffins

300g self raising flour

60g butter

72g caster sugar

66g chocolate chips

3 muffins

150g

30g

36g

33g

How much of each ingredient does Laura need to make 3 muffins?

Ratio and Proportion

Laura is cooking some chocolate chip muffins for her friends and family.

She has the list of some ingredients to make 6 chocolate chip muffins:



6 muffins

300g self raising flour

60g butter

72g caster sugar

66g chocolate chips

10 muffins

500g

100g

120g

110g

How much of each ingredient does Laura need to make 10 muffins?

Ratio and Proportion

Laura is cooking some chocolate chip muffins for her friends and family.

She has the list of some ingredients to make 6 chocolate chip muffins:



300g self raising flour

60g butter

72g caster sugar

66g chocolate chips

Laura has 198g of white chocolate chips.

What is the maximum number of muffins she can make?

18 muffins

Ratio and Proportion

Liam has emptied his piggy bank. He has some 20p and £1 coins.

For every three 20p coins he has, he has one £1 coin.

There are 12 coins in the jar in total.



How much money is in the jar?

£4.80

$$267 \times 76 = 20\,292$$

Use this fact to calculate:

$$26.7 \times 7.6 =$$

$$2.67 \times 760 =$$

$$267 \times 0.76 =$$

$$26.7 \times 76\,000 =$$

$$20\,292 \div 7.6 =$$

$$202.92 \div 26.7 =$$

$$10\,146 \div 76 =$$



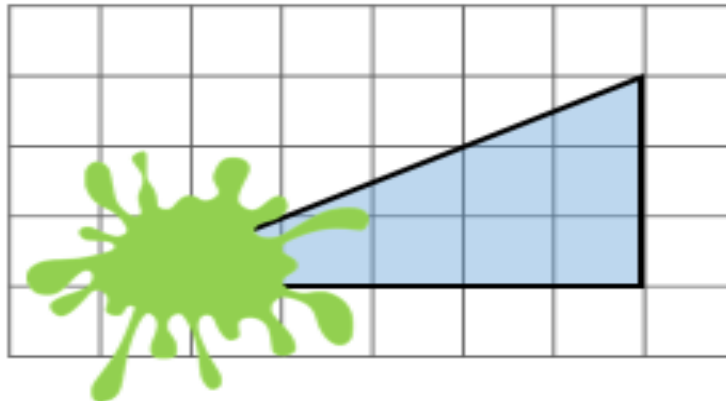
Thurs 3rd March

LO: To find the area of triangles



Part of a triangle has been covered.

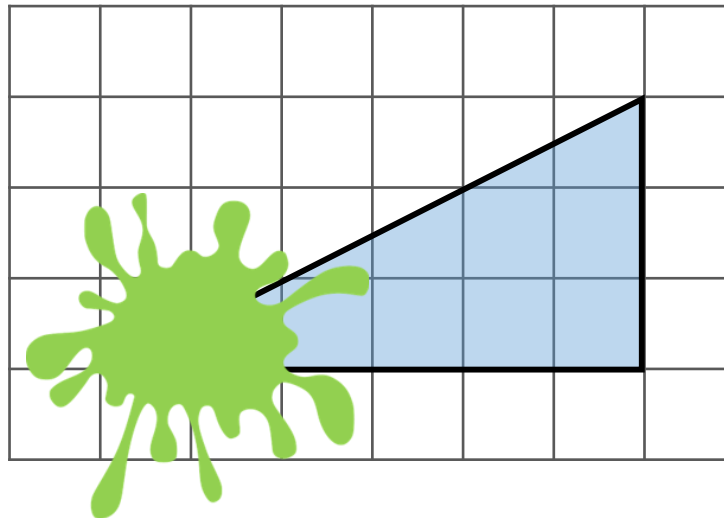
Estimate the area of the whole triangle.



Do now...whiteboards

Part of a triangle has been covered.

Estimate the area of the whole triangle.



Crucial vocabulary...

Perimeter, Area and Volume

Knowledge Organiser

Key Vocabulary

perimeter

area

volume

cubic units (e.g. cm^3)

cuboid

width

length

rectangle

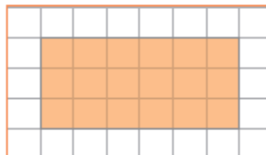
rectilinear

parallelogram

perpendicular height

Area of Rectangles

$\text{length} \times \text{width} = \text{area of a rectangle}$



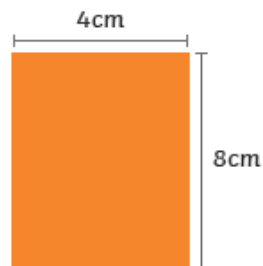
Counting squares:

$\text{area} = 18\text{cm}^2$

Use formula:

$6\text{cm} \times 3\text{cm}$

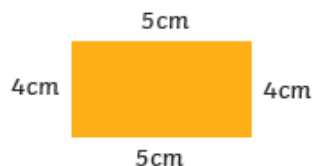
$\text{area} = 18\text{cm}^2$



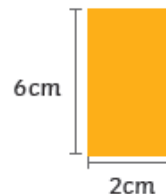
$8\text{cm} \times 4\text{cm} \text{ area} = 32\text{cm}^2$

Perimeter of Rectangles

$\text{perimeter} = \text{length} + \text{width} + \text{length} + \text{width}$
or $(\text{length} + \text{width}) \times 2$



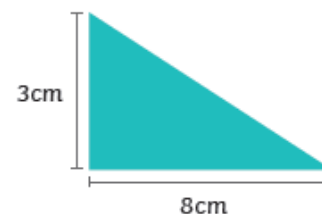
$5\text{cm} + 4\text{cm} + 5\text{cm} + 4\text{cm}$
 $\text{area} = 18\text{cm}^2$



$(6 + 2) \times 2$
 $\text{area} = 16\text{cm}^2$

Area of Triangles

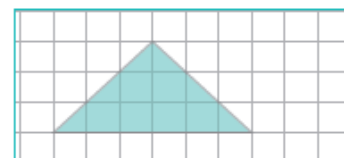
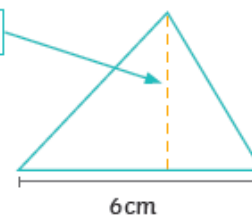
$\text{base} \times \text{perpendicular height} \div 2 = \text{area of a triangle}$



$8\text{cm} \times 3\text{cm} \div 2$
 $\text{area} = 12\text{cm}^2$

perpendicular height = 5cm

$6\text{cm} \times 5\text{cm} \div 2$
 $\text{area} = 15\text{cm}^2$



Counting squares:

6 whole squares = 6cm^2

6 half squares = 3cm^2

$6\text{cm}^2 + 3\text{cm}^2 = 9\text{cm}^2$

$\text{area} = 9\text{cm}^2$

Using formula:

$6\text{cm} \times 3\text{cm}$
 $\div 2 = 9\text{cm}^2$

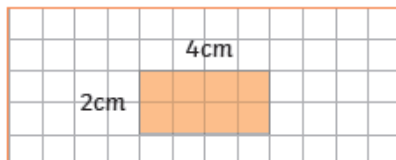
Crucial vocabulary...

Perimeter, Area and Volume

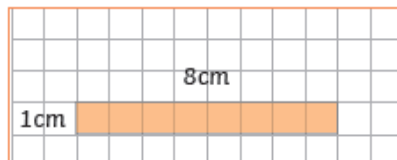
Knowledge Organiser

Perimeter and Area

Shapes with the same area can have different perimeters.

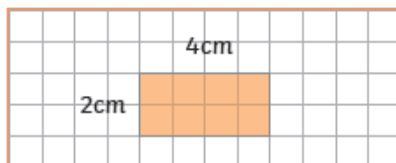


area = 8cm^2 perimeter = 12cm

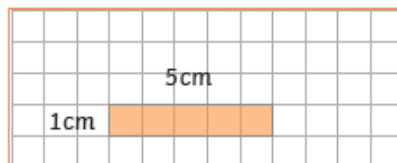


area = 8cm^2 perimeter = 18cm

Shapes with the same perimeter can have different areas.



area = 8cm^2 perimeter = 12cm

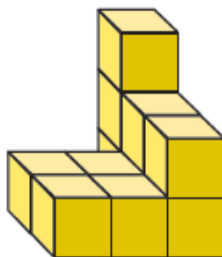


area = 5cm^2 perimeter = 12cm

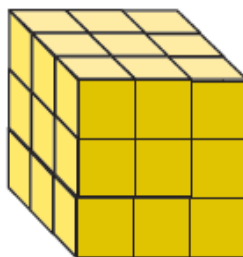
Volume - Counting Cubes



= 1cm^3



11cm^3

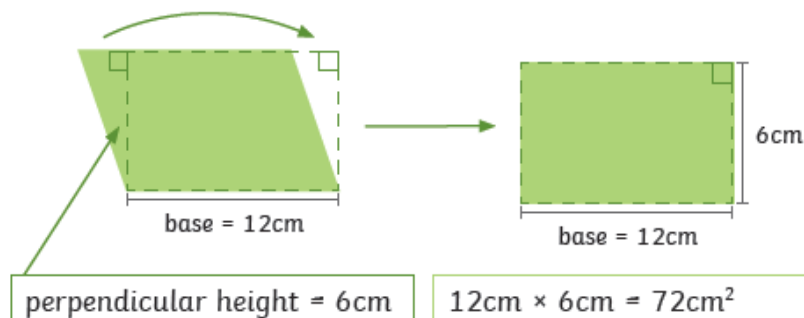


27cm^3

Area of Parallelograms

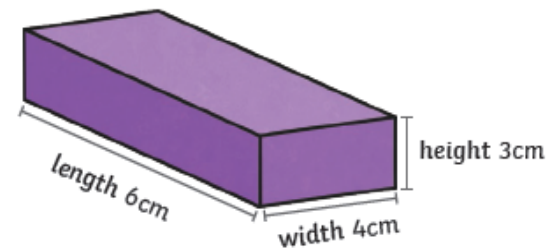
base $\times$ perpendicular height = area of a parallelogram

A parallelogram can be transformed into a rectangle.



Volume of Cuboids

length $\times$ width $\times$ height = volume of a cuboid



Multiply dimensions in **any** order:

$3\text{cm} \times 6\text{cm} \times 4\text{cm}$

volume = 72cm^3

<https://vimeo.com/507596408>

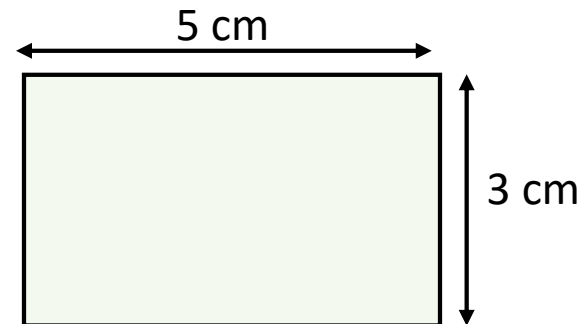
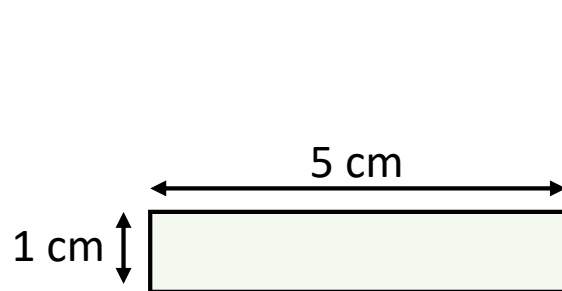
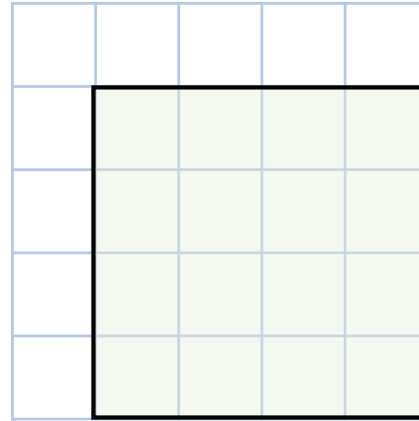
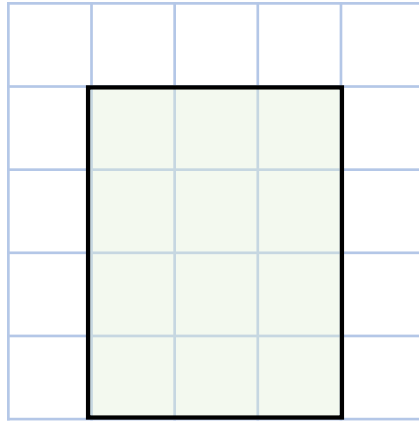


GET READY

Extra help...

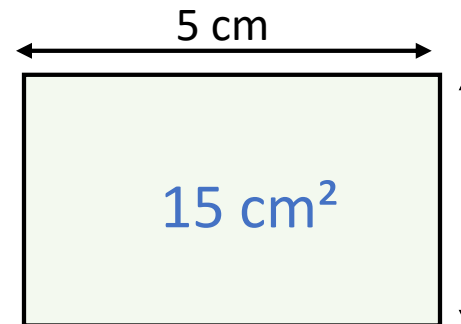
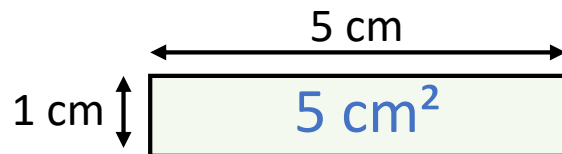
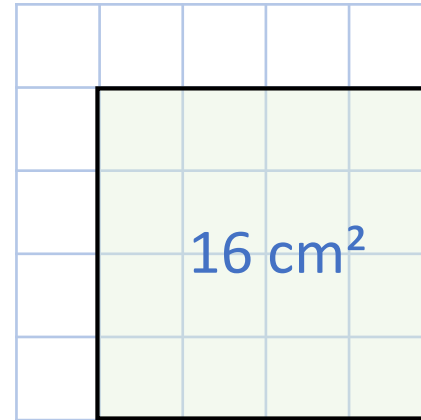
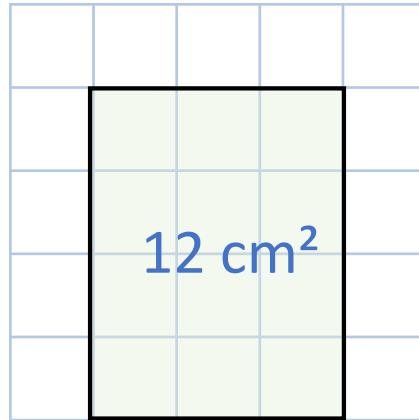


- 1) Work out the area of the shapes.
Each square represents 1 cm^2

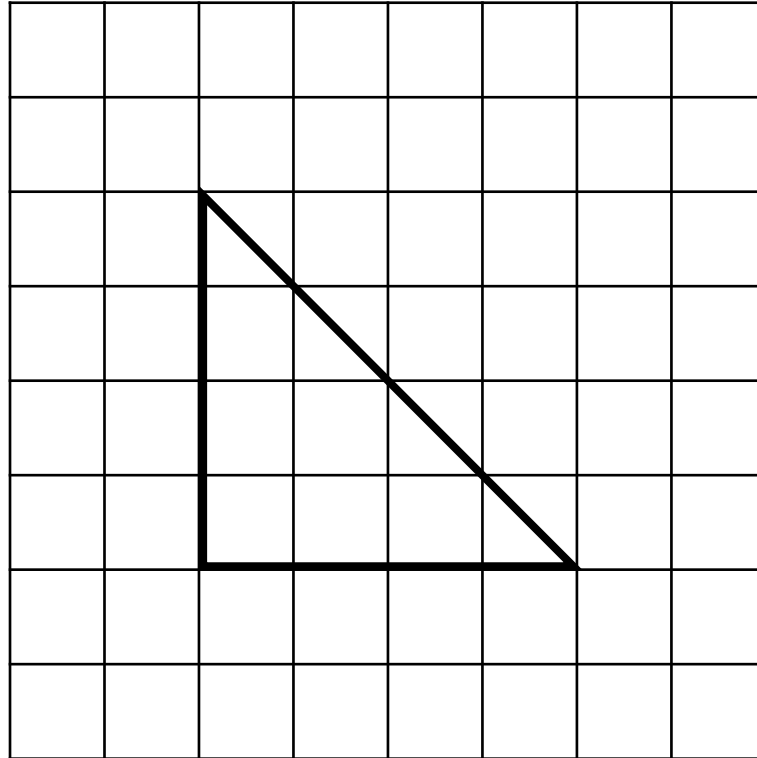


Recap...

- 1) Work out the area of the shapes.
Each square represents 1 cm^2

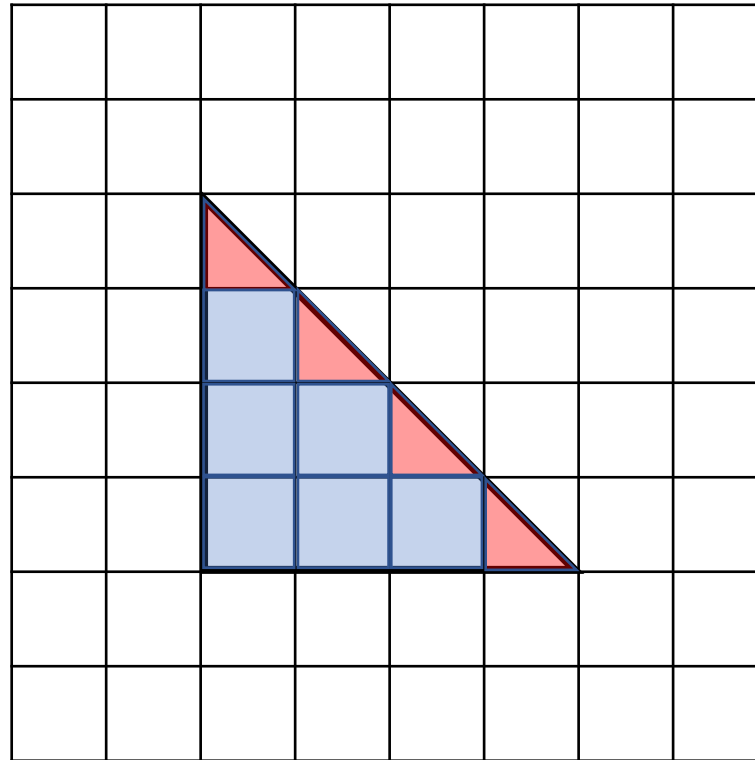


Each square represents 1 cm^2



How could we find the area of the triangle?

Each square represents 1 cm^2



8 cm^2

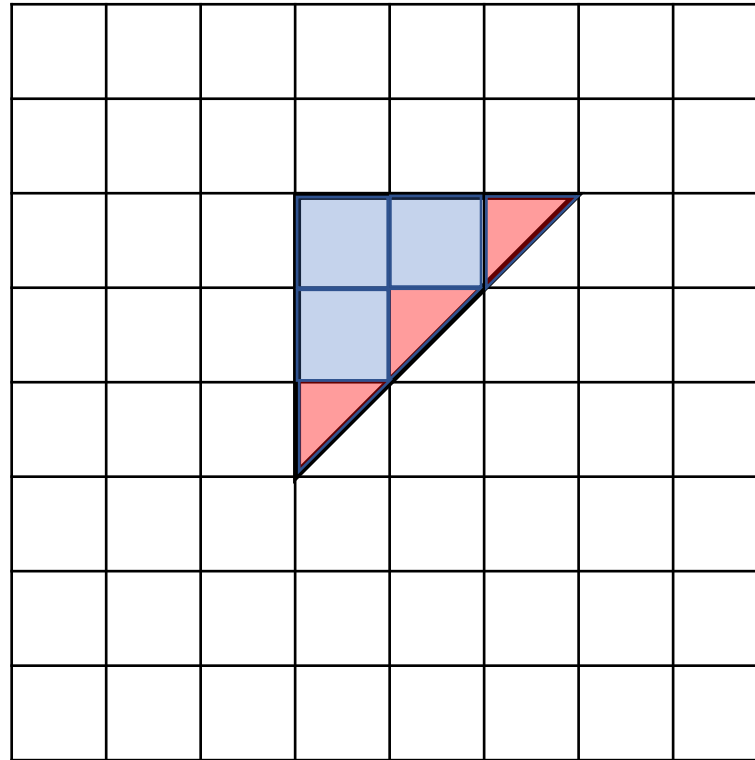
Count the squares

6 whole squares

4 half squares = 2 full squares

8 squares

Each square represents 1 cm^2



4.5 cm^2

3 whole squares

3 half squares = 1 full square
and half a square

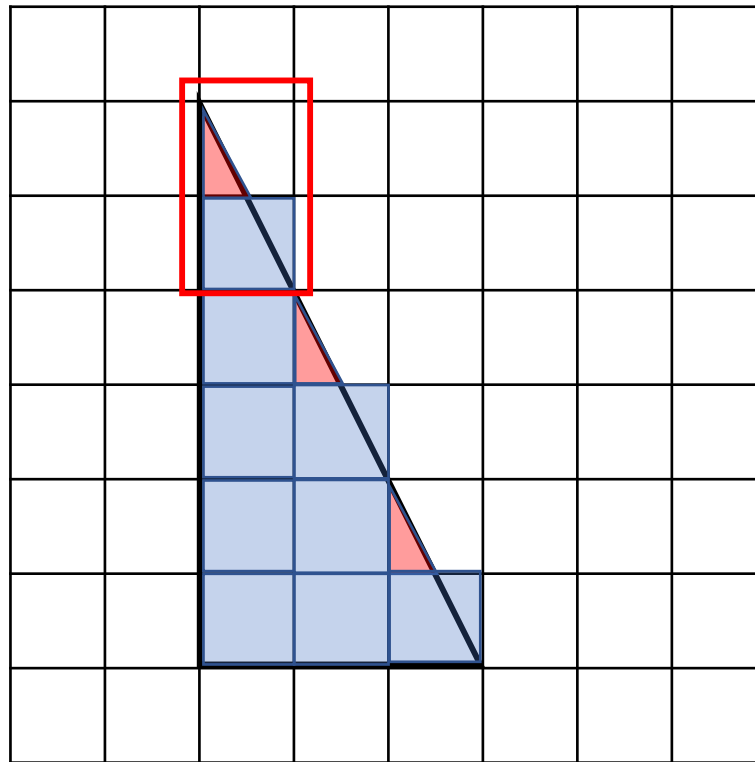
4 squares
and half a
square

Each square represents 1 cm^2

Have a think



Find the area of the triangle.



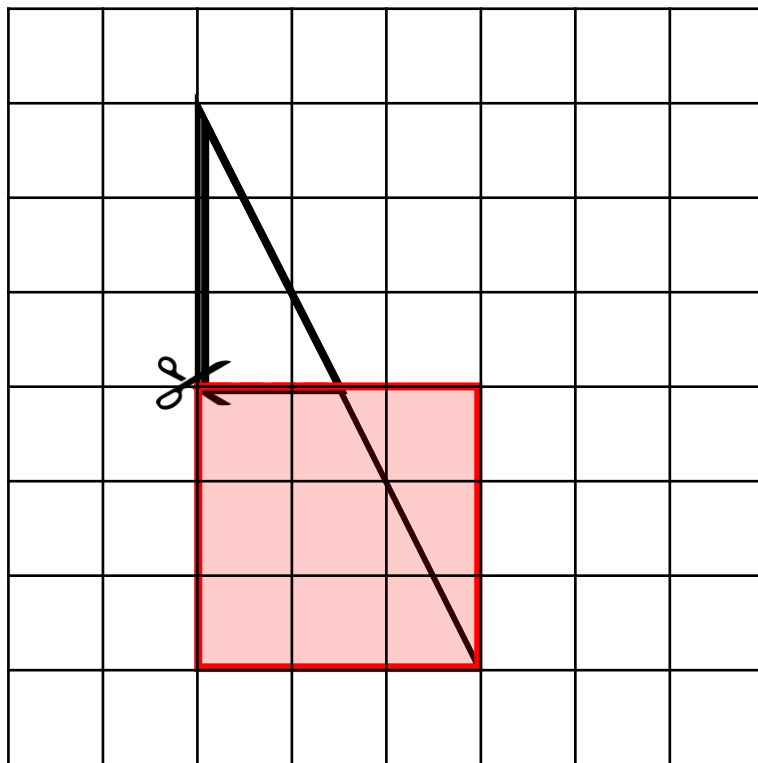
9 squares

9 cm^2

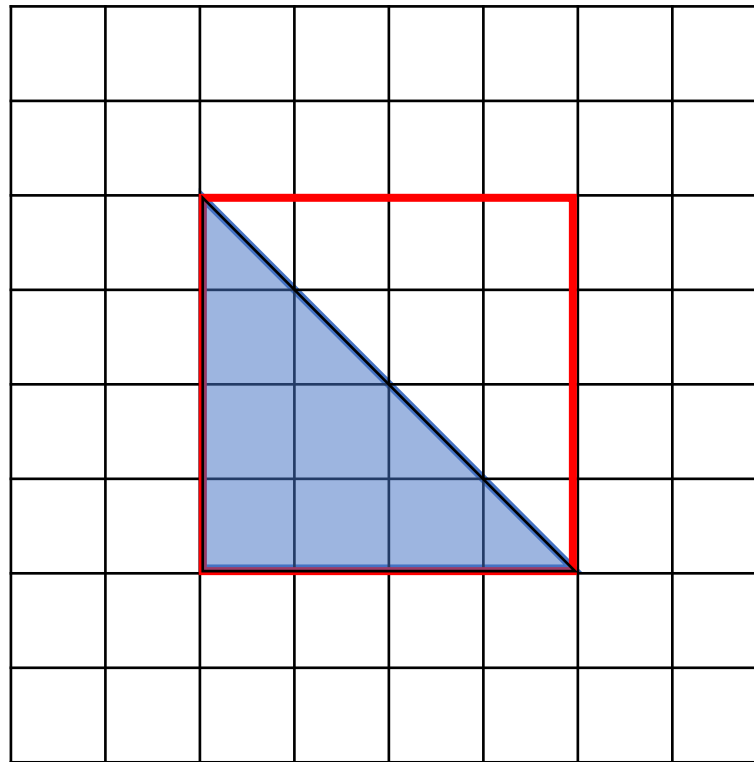
I think this because...

Each square represents 1 cm^2

Find the area of the triangle.



$$3 \times 3 = 9 \text{ squares}$$
$$9 \text{ cm}^2$$



Make a rectangle

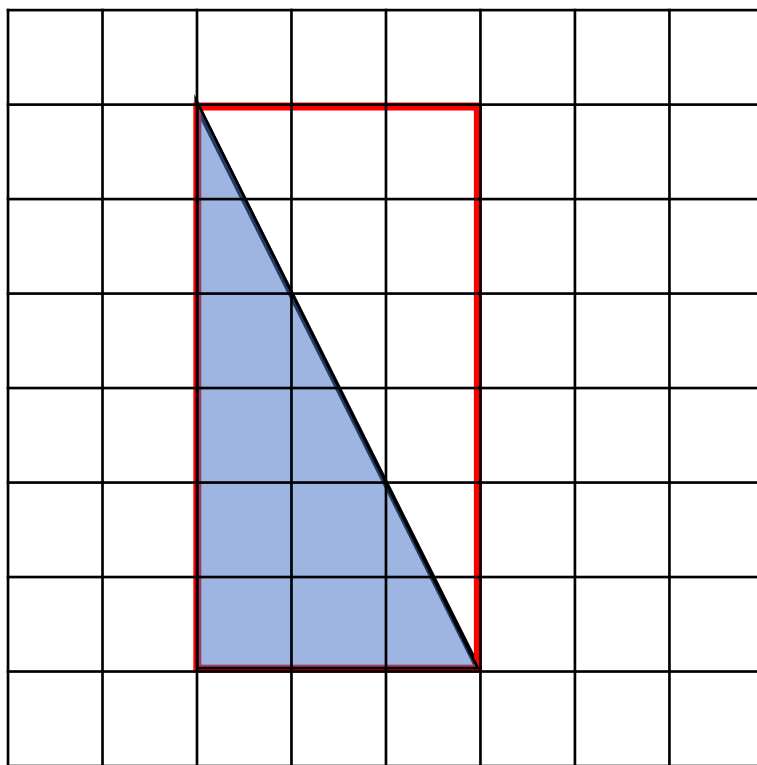
Area of rectangle

$$4 \times 4 = 16 \text{ squares}$$

Area of triangle

$$16 \div 2 = 8 \text{ squares}$$

Find the area of the triangle

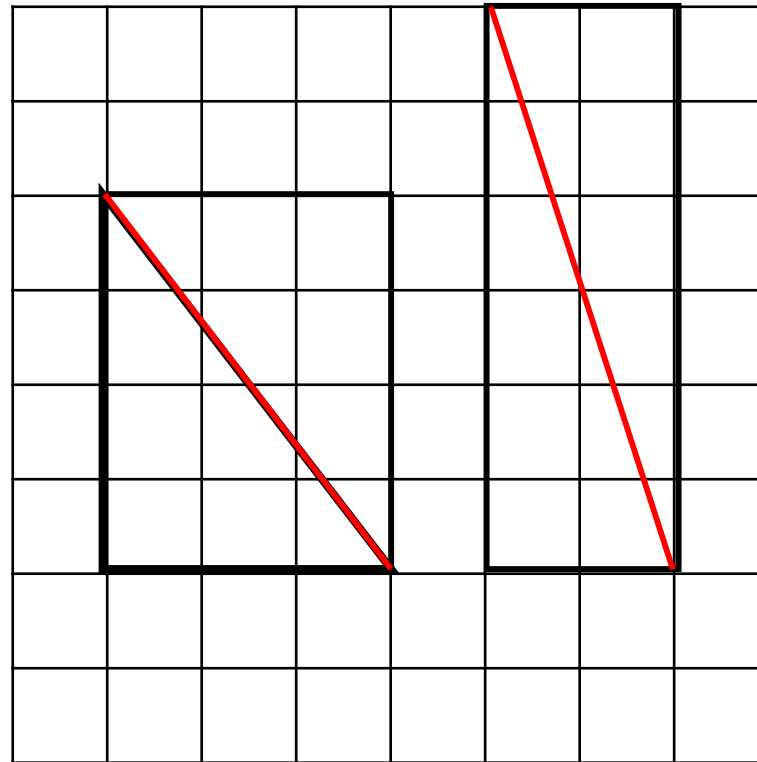


$$6 \times 3 = 18 \text{ squares}$$

$$18 \div 2 = 9 \text{ squares}$$

Draw a triangle with an area of 6 cm^2

Area of the
rectangle =
 12 cm^2



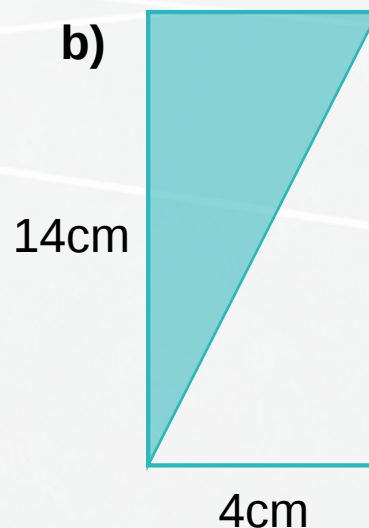
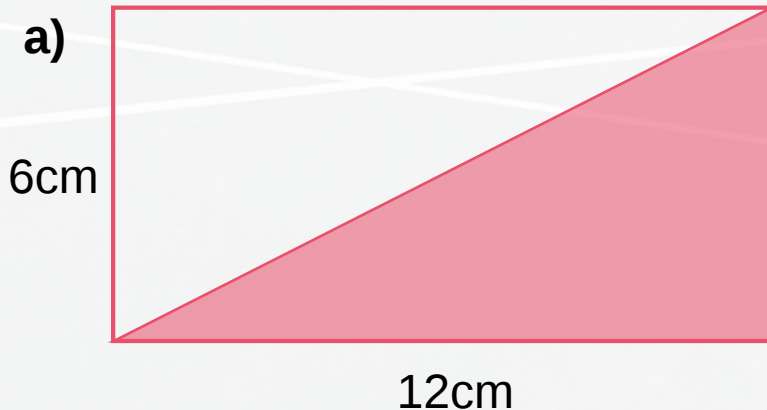
The area of a triangle is half the area of a rectangle that has the same base and height.

Area of a Triangle (2)



Calculate the area of each of the shaded right-angled triangles by working out the area of the complete rectangle then dividing it by

2



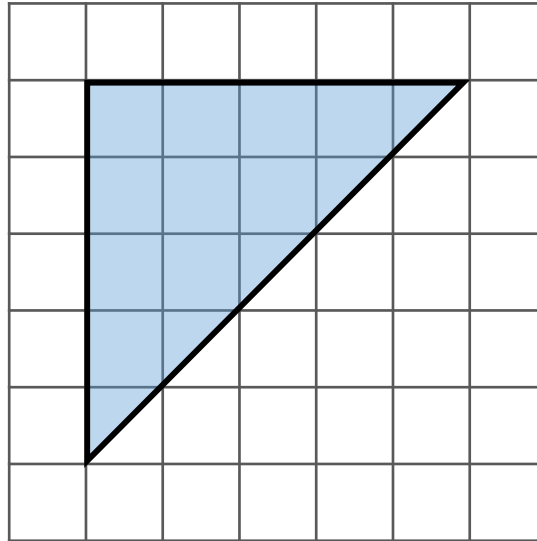
a) Area of rectangle = 72cm^2
Area of triangle = 36cm^2

b) Area of rectangle = 56cm^2
Area of triangle = 28cm^2

YOUR TURN

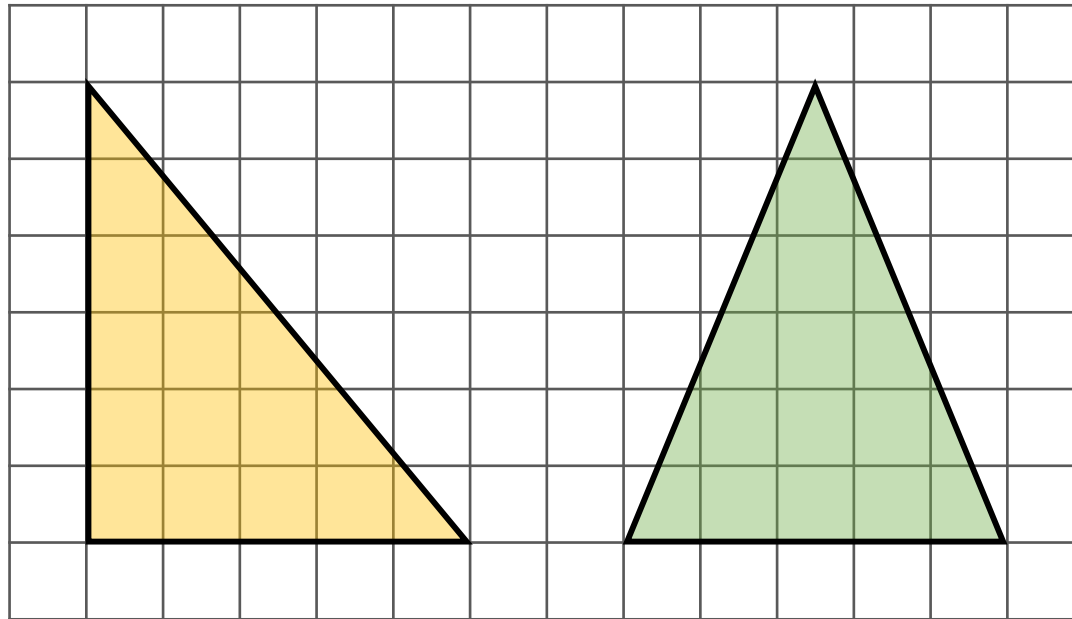
Triangles/Squares-
complete 1-4 only





Mo says the area of this triangle is 15cm^2
Is Mo correct? If not, explain his mistake.

What is the same about these two triangles?
What is different?



Can you create a different right angled triangle with the same area?

Annie is calculating the area of a right-angled triangle.



I only need to know the length of any two sides to calculate the area of a triangle.

Do you agree with Annie? Explain your answer.

Thurs- EW plan

Daily
Maths
Meeting

