0 8.1 2.25

LI: to understand metric measures.

one digit per box

Underline your date and LI

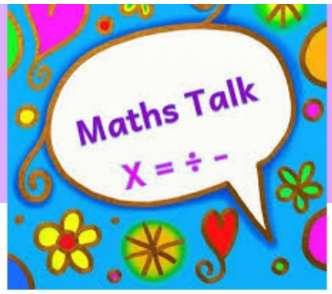
Our Learning Journey

Step 1	Metric measures
Step 2	Convert metric measures
Step 3	Calculate with metric measures
Step 4	Miles and kilometres
Step 5	Imperial measures

Key vocabulary

MEASUREMENT (GENERAL)
measure, measurement
size
compare
unit, standard unit
metric unit, imperial unit

measuring scale, division
guess, estimate
enough, not enough
too much, too little
too many, too few
nearly, roughly, about, close to
about the same as, approximately
just over, just under, exactly



Key questions

- Which units could you use to measure length/mass/capacity?
- Which is the most appropriate unit to measure the _____ of a _____? Why?
- Why do you think _____ is not an appropriate estimate?
- Why would you not use kilometres to measure the length of the classroom? What would you use?
- What is the difference between capacity and volume?

Starter/Recap

Flashback 4

Year 6 | Week 12 | Day 1

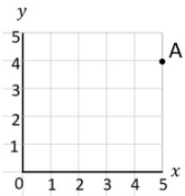
MMXII

1) $50 = \frac{2}{5}$ of $\square$

2) There are 6 sweets in a third of a bag.
How many sweets are in the full bag?

3) $\frac{1}{2}$ a cake is shared with 4 children.
What fraction of the cake do they each get?

4) What are the coordinates of A?



White Rose Maths

Challenge:

1. Write in words a number greater than 457,999.
2. Is -10 greater or less than -7?
3. Estimate to the nearest centimetre:
   4.1 cm + 2.8 cm
4. 720 ÷ 6
5. A recipe for 8 cakes uses 300 g of flour. How much flour for 4 cakes?
6. Round 78.24 to the nearest whole number.

Starter/Recap

Flashback 4

Year 6 | Week 12 | Day 1

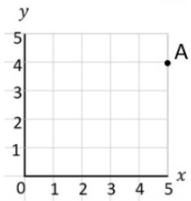
MMXII

1) $50 = \frac{2}{5}$ of 125

2) There are 6 sweets in a third of a bag.
How many sweets are in the full bag? 18

3) $\frac{1}{2}$ a cake is shared with 4 children.
What fraction of the cake do they each get? $\frac{1}{8}$

4) What are the coordinates of A?



(5, 4)

White Rose Maths

Challenge:

1. Write in words a numbe greater than 457,999. Five hundred thousand*
2. Is -10 greater or less tha -7? Less than
3. Estimate to the nearest centimetre:
   4.1 cm + 2.8 cm = 7 cm
4. 720 ÷ 6 = 120
5. A recipe for 8 cakes use 300 g of flour. How mucl flour for 4 cakes? 150 g
6. Round 78.24 to the nearest whole number. 78

Assessment

1) Circle the most appropriate unit.

Length can be measured in ml / cm / kg

Mass can be measured in l / tonne / km

Capacity can be measured in mm / g / ml

2) Match each length to a sensible estimate.

The height of a giraffe		5 cm
The length of a ladybird		5 m
The length of a rubber		5 mm

Challenge:

9b. Match the units of measurement to the correct categories.

weight	cm^3
length	centimetres
distance	centilitres
volume	mm^2
area	metres
	kilograms

10b. Circle the odd one out.

A. 1.5L

B. 200cl

C. $\frac{2}{8}$ of 358mm

D. $125cm^3$

11b. Tick the noun that is more likely to have an area of $7{,}140m^2$.

- theme park
- classroom
- football pitch

Assessment

1) Circle the most appropriate unit.

Length can be measured in ml / cm / kg

Mass can be measured in l / tonne / km

Capacity can be measured in mm / g / ml

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The height of a giraffe

The length of a ladybird

The length of a rubber

5 cm

5 m

5 mm

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11b. Tick the noun that is more likely to have an area of $7,140m^2$.

- theme park
- classroom
- football pitch

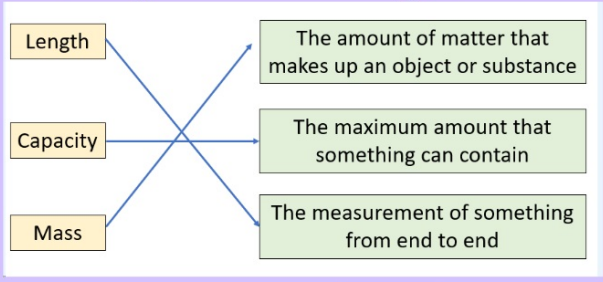
9b. Weight – kilog
centimetres, metr
cm^3; area – mm^2.

10b. $\frac{2}{8}$ of 358mm
of volume.

11b. football pitch

I do

Key knowledge



Length	The measurement of something from end to end
Capacity	The maximum amount that something can contain
Mass	The amount of matter that makes up an object or substance

Sort the metric units into the correct categories.

cm ml g

tonne km

1 tonne = 1000kg

We do

The capacity of a bottle of shampoo.

3 l	30 ml	300 ml	3 ml

The length of a book.

20 cm	200 cm	2 m	20 mm

The mass of an adult dog.

15 g	15 kg	1.5 kg	150 kg

Task 1:

You do

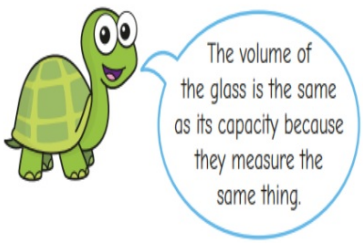
Task 2:

- Sort the units of measurement into the table.

km	l	kg	mm	tonnes	g	cm	ml	m

Length	Mass	Capacity

- Tiny is thinking about volume and capacity.



Do you agree with Tiny?

Talk about it with a partner.

- Choose the most appropriate unit for each measurement.
  - the length of a table

    km | kg | cm | mm
  - the mass of a car

    g | kg | l | tonnes
  - the capacity of a water bottle

    cm^3 | g | mm | ml
- Choose the most accurate estimate for each measurement.
  - the mass of an apple

    100 g | 10 g | 100 kg | 10 kg
  - the height of a door

    200 mm | 20 cm | 0.2 km | 2 m
  - the capacity of a glass

    2 ml | 20 ml | 200 ml | 2,000 ml

Task 3: **Reasoning**

Challenge:

Reasoning and problem solving

It is impossible to measure the mass of a car in grams!

Do you agree with Amir?

Explain your thinking.

Ron's dog is about $\frac{1}{4}$ of the height of the door.

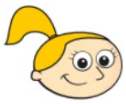
Ron is three times the height of his dog.

Estimate the height of Ron and his dog.

Whitney and Eva are measuring the length of a football pitch.

I am going to measure in metres.

Whitney



I am using kilometres to measure the pitch.

Eva

Which unit of measurement is more appropriate?

Explain your reasoning.

Plenary:

14 This 850 ml bottle of squash makes 17 drinks.

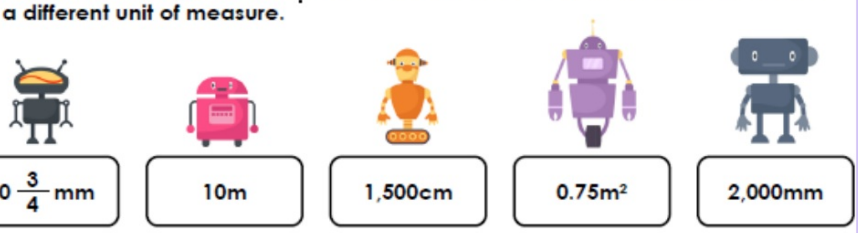
How many millilitres of squash are in each drink?

ml

1 mark

Reflection

1. In order to help categorise each robot, a robotics factory has labelled each one with a different unit of measure.



$10\frac{3}{4}$ mm	10m	1,500cm	$0.75m^2$	2,000mm
2 tonnes	$8\frac{3}{8}$ miles	0.95L	1,850ml	$8m^3$

Investigate the different possible groups that the robots could be categorised into.

How would you go about solving this question?
What steps would you use?

09.12.25

LI: To convert metric measures

one digit per box

Underline your date and LI

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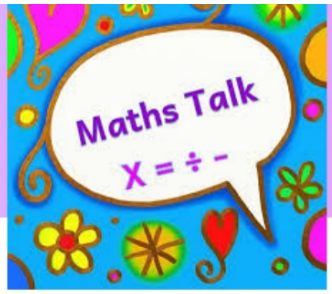

Key questions

- What is the same and what is different about kilometres and kilograms?
- What is the same and what is different about 1.5 km and 1.500 km?
- What do you notice about the conversions from metres to kilometres and grams to kilograms?
- Do you need to multiply or divide by 10/100/1,000? How do you know?

Starter/Recap

Flashback 4 — Year 6 | Week 12 | Day 2

CCCLVI

1) Choose the most accurate estimation of the mass of a banana.

120 kg 1.2 kg 120 g 12 g

2) $\frac{1}{9} \times 2 + 4 =$ ☐

3) $\frac{2}{5} \times \frac{3}{7} =$ ☐

4) $7{,}501 \div 3 =$ ☐

White Rose Maths

Challenge:

1. Write in words an even number greater than 911,911.
2. Give two numbers less than 0 but greater than -7.
3. Estimate 31 mm more than 79 mm to the nearest centimetre.
4. ☐ = 5,500 ÷ 11
5. A recipe for 6 pies uses 180 g of flour. How much flour for 9 pies?
6. Round 16.48 to one decimal place.

Starter/Recap

Flashback 4

Year 6 | Week 12 | Day 2

CCCLVI

1) Choose the most accurate estimation of the mass of a banana.

120 kg 1.2 kg (120 g) 12 g

2) $\frac{1}{9} \times 2 + 4 =$ $4\frac{2}{9}$

3) $\frac{2}{5} \times \frac{3}{7} =$ $\frac{6}{35}$

4) $7{,}501 \div 3 =$ 2,500 r 1

White Rose Maths

Challenge:

1. Write in words an even number greater than 911,911. One million*
2. Give two numbers less than 0 but greater than -7. -1, -3*
3. Estimate 31 mm more than 79 mm to the nearest centimetre. 11 cm
4. 500 = 5,500 ÷ 11
5. A recipe for 6 pies uses 180 g of flour. How much flour for 9 pies? 270 g
6. Round 16.48 to one decimal place. 16.5

Assessment

1) Circle the most appropriate unit.

Length can be measured in l / m / g

Mass can be measured in ml / kg / km

Capacity can be measured in l / g / cm

2) Match each item to a sensible estimate.

A can of pop	335 ml
A tin of paint	5 ml
A teaspoon of medicine	5 l

Challenge:

9b. Complete the following statement.

38% of 675cm is equal to ____m.

10b. Put these measurements in order from largest to smallest.

10% of 0.56ml	0.001L	0.024L
0.206ml	$\frac{1}{4}$ of 0.18L	0.203L

11b. Complete the missing operation and measurement to convert between L and ml.

60.002L ☐ = _____ml

Assessment

1) Circle the most appropriate unit.

Length can be measured in l / m / g

Mass can be measured in ml / kg / km

Capacity can be measured in l / g / cm

2) Match each item to a sensible estimate.

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A teaspoon of medicine → 5 ml

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0.206ml	$\frac{1}{4}$ of 0.18L	0.203L

11b. Complete the missing operation and measurement to convert between L and ml.

60.002L ☐ = _____ml

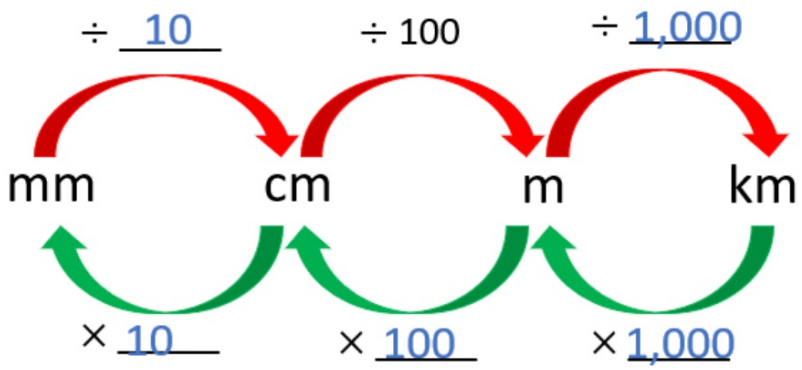
9b. 2.565m

10b. 0.203L; $\frac{1}{4}$ of 0.18L (0.045L); 0.024L; 0.001L; 0.206ml; 10% of 0.56ml (0.056ml)

11b. x 1,000; 60,002

I do:

Complete the diagram to show the conversions.



Complete the sentences.

There are 10 millimetres in 1 centimetre.

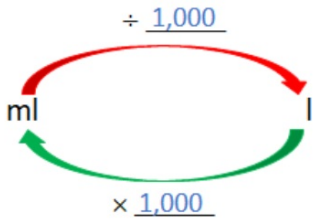
There are 100 centimetres in 1 metre.

There are 1,000 metres in 1 kilometre.

Have a think

We do:

Complete the diagram to show the conversions.



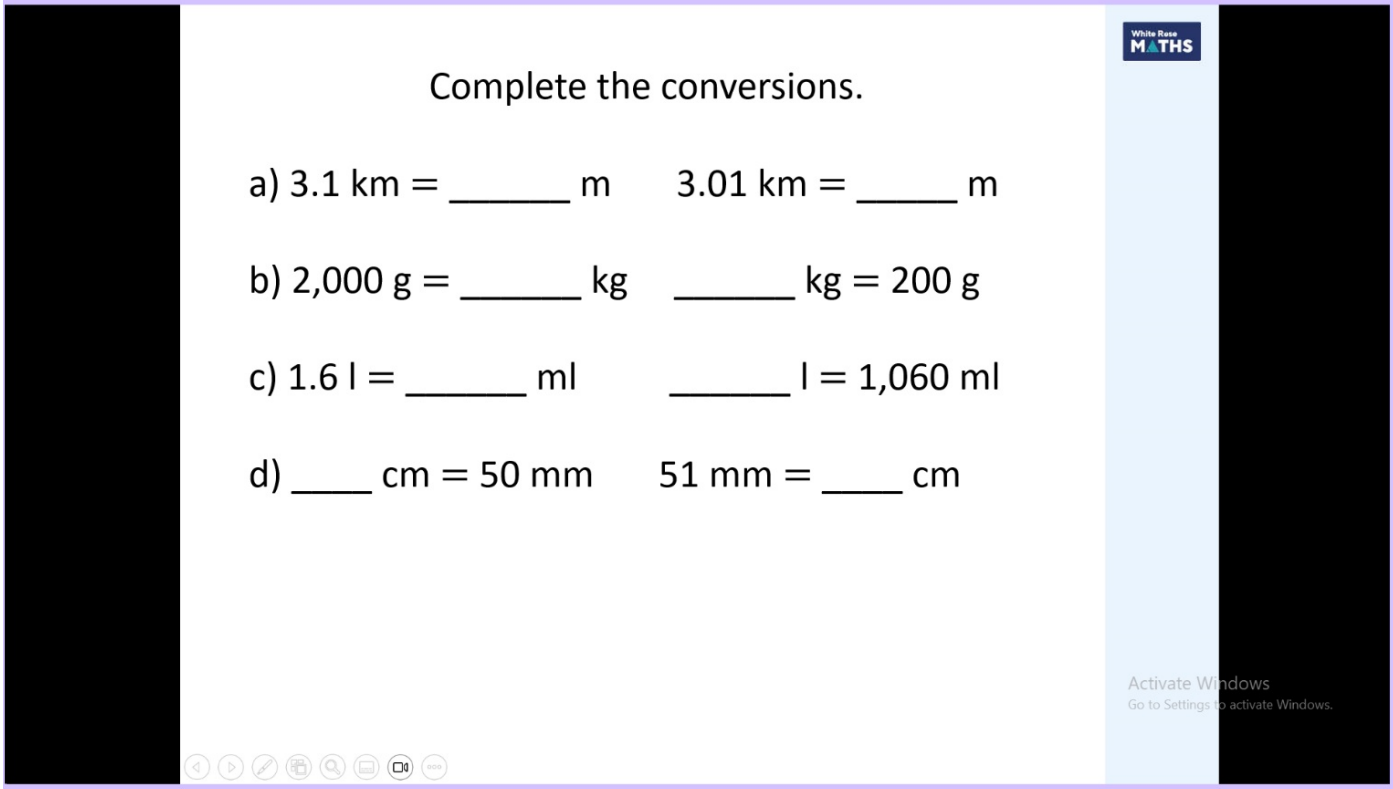
Complete the sentence.

There are 1,000 millilitres in 1 litre.

One thousandth
One thousandth of a litre
1 ml = 0.001 l

Have a think

We do:


Complete the conversions.
a) 3.1 km = _____ m
3.01 km = _____ m
b) 2,000 g = _____ kg
_____ kg = 200 g
c) 1.6 l = _____ ml
_____ l = 1,060 ml
d) ____ cm = 50 mm
51 mm = ____ cm
White Rose MATHS
Activate Windows
Go to Settings to activate Windows.

You do

Task 1

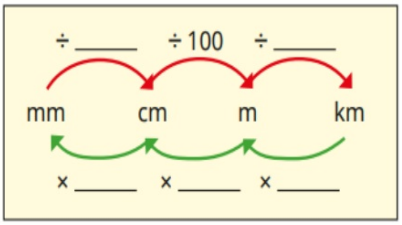
- There are 1,000 g in 1 kg and 1,000 kg in 1 tonne.

  Use this fact to complete the tables.

g	kg
3,000	
	4
2,500	

kg	tonnes
7,000	
	8
9,500	

- Complete the diagram to show the conversions.



Use the diagram to complete the table.

mm	cm	m	km
1,500,000			
	250,000		
			3.4

Task 2

- Complete the bar model.

1 litre	1 litre	1 litre	1 litre	$\frac{1}{2}$ litre
1,000 ml				

Complete the sentences.

- $4\frac{1}{2}$ litres = _____ ml
- _____ litres = 2,000 ml
- 3 litres = _____ ml
- 2,500 ml = _____ litres

- Write <, > or = to compare the measurements.

100 ml ◯ 0.1 l

15 cm ◯ 1.5 m

25 l ◯ 2,500 ml

1,500 mm ◯ $1\frac{1}{2}$ m

4,020 ml ◯ 4.2 l

1.5 km ◯ 150 m

- A bag of flour has a mass of 200 g.

  Scott uses 3 bags of flour when baking.

  How much flour does he use?

Task 3:

Challenge:

Reasoning and problem solving

Put the capacities in order, starting with the smallest.

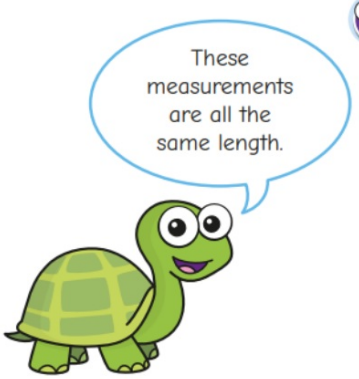
3 litres	3,500 ml
0.4 litres	0.035 litres
450 ml	330 ml

Compare answers with a partner.

Dani thinks that 12,000 g is greater than 20 kg because 12,000 > 20

Do you agree?

Explain your answer.



34,000 mm	3,400 cm
34 m	0.034 km

Do you agree with Tiny?

Explain your answer.

Plenary:

23 Adam has a bag of fruit that weighs **1.25 kilograms**.

He takes out a banana. Now the bag of fruit weighs **1.1 kg**.

Next, he takes out an orange. Now the bag weighs **920 g**.

How much **more** does the orange weigh than the banana?

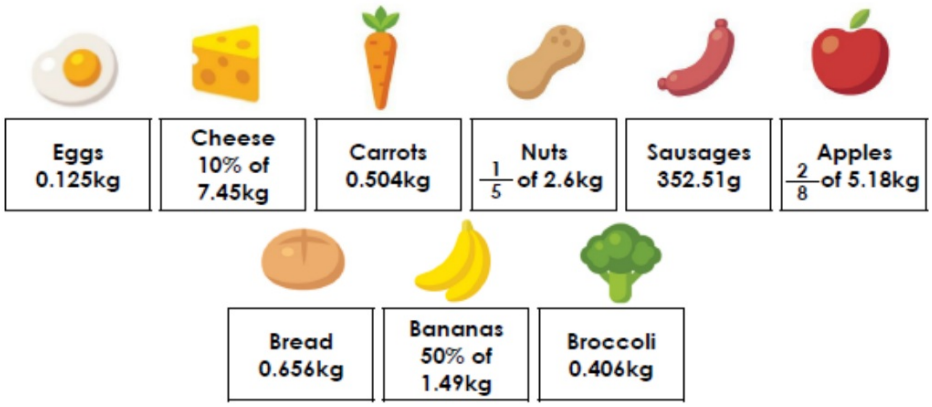
Show your method

g

2 marks

Reflection

1. A carrier bag has a maximum weight allowance of 4kg.
Sam buys 7 items in total and fills his bag to capacity.



Eggs 0.125kg	Cheese 10% of 7.45kg	Carrots 0.504kg	Nuts $\frac{1}{5}$ of 2.6kg	Sausages 352.51g	Apples $\frac{2}{8}$ of 5.18kg

Bread 0.656kg	Bananas 50% of 1.49kg	Broccoli 0.406kg

Sam has at least 3 different items in his bag. Explore the different combination of items he could have bought. How many of each item did he buy?

How would you go about solving this question?
What steps would you use?

10.1 2.25

LI: To calculate with metric measures

one digit per box

Underline your date and LI

Our Learning Journey

- Step 1: Metric measures
- Step 2: Convert metric measures
- Step 3: Calculate with metric measures
- Step 4: Miles and kilometres
- Step 5: Imperial measures

ocabulary

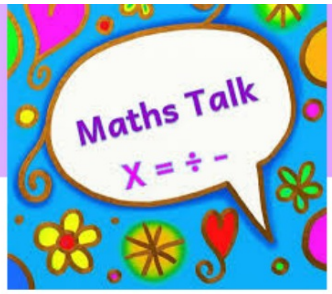
c measurements

ial measurements

	METRIC	IMPERIAL
Length	millimetre, centimetre, metre, kilometre	inch, foot, yard, mile
Mass	milligram, gram, kilogram	ounce, pound, stone
Capacity	millilitre, centilitre, litre	pint, gallon

Miles, feet and inches are old units of length. These are **units of length** but are not now commonly used in matl

- There are 12 inches in a foot.
- An inch is roughly equal to 2.5 centimetres.
- A foot is roughly equal to 30 centimetres.



Key questions

- What operation are you going to use? Why?
- How could you use a bar model to help you understand the question?
- How many grams are there in one kilogram?
- Does it matter if the items in the question are measured in different units? Why?
- How can you convert between metres and centimetres?

Flashback 4

Year 6 | Week 12 | Day 3

D

) 1 ton = ☐ kg

) $\frac{9}{10}$ of 250 g = ☐ g

) $2\frac{2}{5} + 1\frac{3}{10} =$ ☐

) 4,032 × 36 = ☐

1. Write in words an even, 6-digit number < 101,110.
2. Which number is exactly halfway between 10 and -20?
3. If using cm, how would you round to the nearest metre?
4. 4,900 ÷ ☐ = 70
5. A recipe for 6 pizzas uses 450 g of flour. How much flour for 5 pizzas?
6. Can 5.54 round to 6?

	METRIC	IMPERIAL
Length	millimetre, centimetre, metre, kilometre	inch, foot, yard, mile
Mass	milligram, gram, kilogram	ounce, pound, stone
Capacity	millilitre, centilitre, litre	pint, gallon

Miles, feet and inches are old units of length. These are **units of length** but are not now commonly used in math

- There are 12 inches in a foot.
- An inch is roughly equal to 2.5 centimetres.
- A foot is roughly equal to 30 centimetres.

Starter/Recap

Flashback 4

Year 6 | Week 12 | Day 3

D

1) 1 ton = 1,000 kg

2) $\frac{9}{10}$ of 250 g = 225 g

3) $2\frac{2}{5} + 1\frac{3}{10} = 3\frac{7}{10}$

4) 4,032 × 36 = 145,152

White Rose Maths

Challenge:

1. Write in words an even, 6-digit number < 101,110. One hundred thousand*
2. Which number is exactly halfway between 10 and -20? -5
3. If using cm, how would you round to the nearest metre? The nearest 100.
4. 4,900 ÷ 70 = 70
5. A recipe for 6 pizzas uses 450 g of flour. How much flour for 5 pizzas? 375 g
6. Can 5.54 round to 6? Yes, when rounded to the nearest whole number.

*Various answers, one example given

Assessment

lete the sentences.

: are _____ grams in 1 kilogram.

: are _____ kilograms in 1 tonne.

: are _____ millimetres in 1 centimetre.

: are _____ centimetres in 1 metre.

: are _____ metres in 1 kilometre.

lete the conversions.

= _____ g

g = _____ g

7,000 m = _____ km

2.9 km = _____ m

are ____ mm in 10 cm

10a. Tick the correct statement.

A. $\frac{3}{5}$ of a litre can fill two 350ml glas maximum capacity.

B. Tim has drunk 2,050ml of water. He drink 0.05L more to reach his 3L targe

C. If 15% has been poured out of a fu bottle, there will be 1.105L left.

11a. A large bag of potatoes weigh and a box of sugar weighs $\frac{3}{5}$ of th weight of potatoes.

How heavy is the sugar in grams?

12a. Four girls have their hair cut an donate it for wigs.

Maddie	Niamh	Amy	Eden
____m	45% of 125cm	$\frac{4}{7}$ of 140cm	0.120

The total length of hair donated is 182.25cm. How much hair did Mad donate?

Assessment

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 kg = 3,000 g
3.5 kg = 3,500 g
7,000 m = 7 km
2.9 km = 2,900 m

3) There are 100 mm in 10 cm

Challenge:

10a. Tick the correct statement.

A. $\frac{3}{5}$ of a litre can fill two 350ml glasses to maximum capacity.

B. Tim has drunk 2,050ml of water. He must drink 0.05L more to reach his 3L target.

C. If 15% has been poured out of a full 1.3L bottle, there will be 1.105L left.

11a. A large bag of potatoes weighs 6kg and a box of sugar weighs $\frac{3}{5}$ of the weight of potatoes.

How heavy is the sugar in grams?

12a. Four girls have their hair cut and donate it for wigs.

Maddie	Niamh	Amy	Eden
____m	45% of 125cm	$\frac{4}{7}$ of 140cm	0.120m

The total length of hair donated is 182.25cm. How much hair did Maddie donate?

10a. C
11a. 3,600g
12a. 0.34m

I do:

ddy, Tommy and Mo are running around their round.

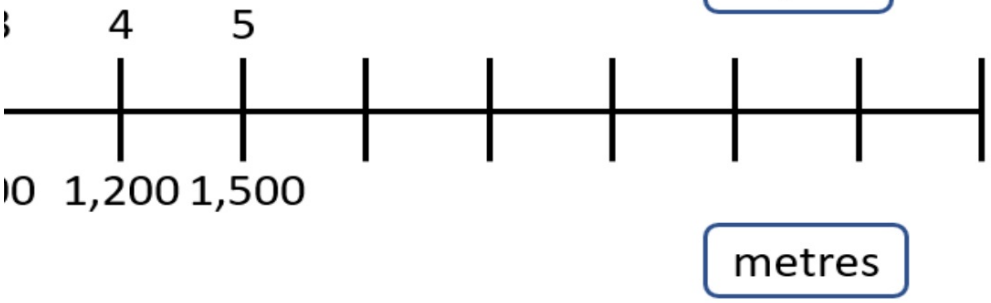
school playground is 300 m.

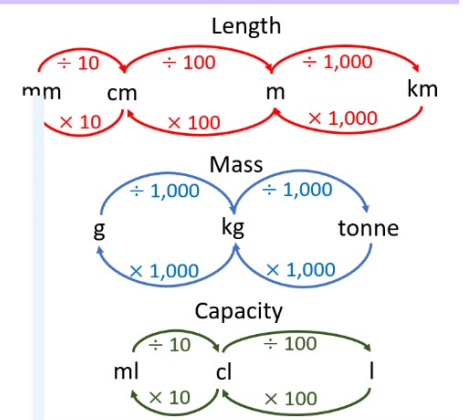
Alex runs 5 laps.

How far does she run?

Write your answer in kilometres.

Have a think





We do:

Eva, Alex, Teddy, Tommy and Mo are running around their school playground.

1 lap of the school playground is 300 m.

Teddy runs 2.4 km

How many laps does he run?

Have a think

250 ml of juice.

imes as much.

does Kim drink?

nswer in litres.

do Esther and Kim drink in total?

You do

ece of ribbon measuring 1.75 m.

second piece of ribbon.

96 cm of ribbon in total.

ne second piece of ribbon in centimetres?

mass of 440 grams.

mass of 27 of these parcels?

nswer in kilograms.

rker can carry a maximum of 12.5 kg.

of these parcels can she carry?

We do/

- One gram of silver costs £0.55

  How much does half a kilogram of silver cost?

- Aisha uses these ingredients to make muffins.

  600 g caster sugar
  0.6 kg butter
  18 eggs
  $\frac{3}{4}$ kg flour
  10 g baking powder

  The mass of each egg is 50 g.

  What is the total mass of the ingredients in kil

- There are 28 nails in a packet.

  Each nail has a mass of 2 g.

  - What is the total mass of nails in 60 packe

    Give your answer in kilograms.

  - The mass of nails in a large box is 0.5 kg.

    How many nails does it hold?

Task 3: We do/you do Challenge:

Reasoning and problem solving

Ron makes a stack of his comic books.

Each comic book is 2.5 mm thick.

The total height of the stack is 11.5 cm.

How many comic books does he have?

The total mass of a box and a crate is 3.4 kg.

The crate is 900 g heavier than the box.

What is the mass of the crate?

Teddy, Annie and Jack cycle as far as they can in one hour.

- Teddy cycles $\frac{5}{6}$ of the distance that Jack cycles.
- Annie cycles 1,350 m less than Teddy.
- Jack cycles 5.4 km.

How far does Teddy cycle?

How far does Annie cycle?

How far do the three children cycle in total?

Plenary:

I do

21 The height of the tallest person in history is 8 feet 11 inches.

Conversion table	
One foot	30 centimetres
One inch	2.5 centimetres

Use this conversion table to calculate the height of the tallest person, in **centimetres**.

Show your method

cm

2 marks

What did I do?

Step 1

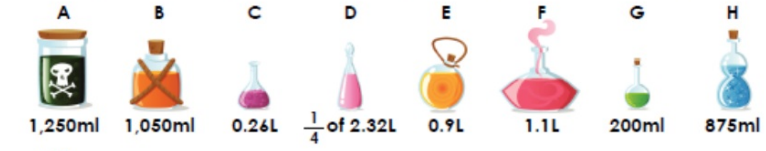
Step 2

Step 3

Reflection

1. Professor Fronkin is trying to organise his chemical cabinet.

He has different chemicals in a variety of bottles and he wants to make a new potion.



Find the different combination of potions Professor Fronkin can use to fill his new bottle as close to maximum capacity as possible. You must use at least 3 chemicals.

How would you go about solving this question?
What steps would you use?

11.1.2.25

LI: To convert miles and kilometres

Underline your date and LI

one digit per box

Vocabulary

convert
miles
kilometres
metric
imperial

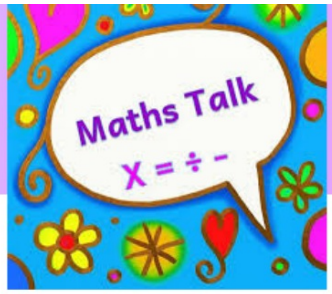
	METRIC	IMPERIAL
ength	millimetre, centimetre, metre, kilometre	inch, foot, yard, mile
lass	milligram, gram, kilogram	ounce, pound, stone
apacity	millilitre, centilitre, litre	pint, gallon

Our Learning Journey

- Step 1: Metric measures
- Step 2: Convert metric measures
- Step 3: Calculate with metric measures
- Step 4: Miles and kilometres
- Step 5: Imperial measures

Miles, feet and inches are old units of length. These are **units of length** but are not now commonly used in matl

- There are 12 inches in a foot.
- An inch is roughly equal to 2.5 centimetres.
- A foot is roughly equal to 30 centimetres.



Key questions

- Which is further, one mile or one kilometre?
- What does the word "approximately" mean?
- What does the symbol "≈" mean?
- How can you use the key fact of 5 miles ≈ 8 km to calculate how many kilometres are approximately equal to 20 miles?
- When might you need to convert between miles and kilometres?

Starter/Recap

Flashback 4

Year 6 | Week 12 | Day 4

MMXX

1) A book has a mass of 385 g.
What is the mass of 12 of the books?
Give your answer in kilograms.

2) $\frac{1}{5}$ of $\square = 15$

3) $\frac{3}{4} \times 4 = \square$

4) Express $\frac{1}{2}$ as a percentage and as a decimal.

White Rose Maths

Challenge:

1. Replace a digit in 584,300 so it is more than 590,000.
2. 187,654 + 111,543
3. Are more numbers prime or composite from 1 to 10?
4. 3,687 ÷ 3
5. $\frac{1}{2} + \frac{3}{8}$
6. List in ascending order: 0.65, 0.56, 1.05, 0.656

Starter/Recap

Flashback 4

Year 6 | Week 12 | Day 4

MMXX

1) A book has a mass of 385 g.
What is the mass of 12 of the books?
Give your answer in kilograms. 4.62 kg

2) $\frac{1}{5}$ of 75 $= 15$

3) $\frac{3}{4} \times 4 =$ $\frac{12}{4}$ or 3

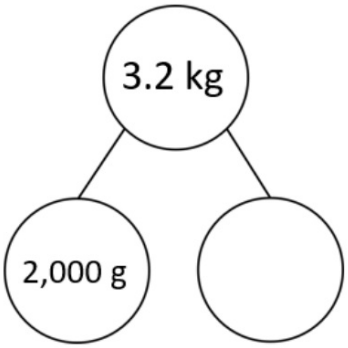
4) Express $\frac{1}{2}$ as a percentage and as a decimal. 50% 0.5

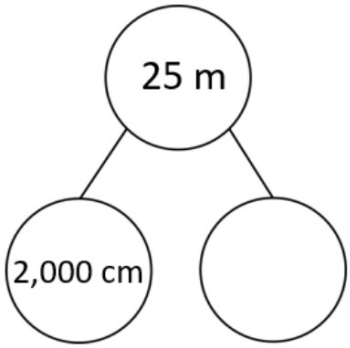
Challenge:

1. Replace a digit in 584,300 so it is more than 590,000. 594,300
2. 187,654 + 111,543 = 299,197
3. Are more numbers prime or composite from 1 to 10? Composite
4. 3,687 ÷ 3 = 1,229
5. $\frac{1}{2} + \frac{3}{8} = \frac{7}{8}$
6. List in ascending order: 0.65, 0.56, 1.05, 0.656
   0.56, 0.65, 0.656, 1.05

Assessment

1) Complete the part-whole models.





2) Complete the conversions.

4.3 l = _____ ml 70 mm = _____ cm

43 l = _____ ml 77 mm = _____ cm

Challenge:

9a. Calculate the missing conversions.

5 miles ≈ 8km □ miles ≈ 0.4km

$\frac{3}{4}$ mile ≈ □ □ miles ≈ 2km

10a. Tick the correct statement.

A. $\frac{1}{4}$ of 6 miles is approximately equivalent to 2.4km.

B. 2.5 miles is approximately equivalent to 5km.

C. 75% of 20 miles is approximately equivalent to 20km.

11a.

Jack stopped after 75% of his 160km journey.

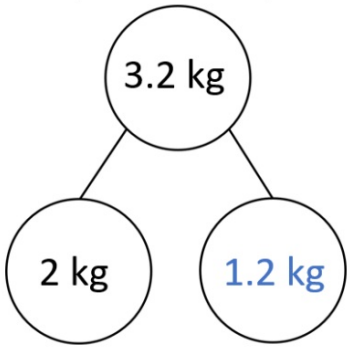
Jacob stopped after 85.25 miles.

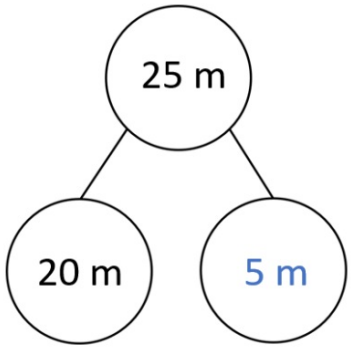
Lily travelled $\frac{3}{4}$ of her 71 mile journey.

Who travelled the farthest?

Assessment

1) Complete the part-whole models.





2) Complete the conversions.

4.3 l = 4,300 ml

43 l = 43,000 ml

70 mm = 7 cm

77 mm = 7.7 cm

Challenge:

9a. Calculate the missing conversions.

5 miles ≈ 8km

□ miles ≈ 0.4km

$\frac{3}{4}$ mile ≈ □

□ miles ≈ 2km

9a. 0.25 miles, 1.2

10a. A

11a. Jacob

10a. Tick the correct sta

A. $\frac{1}{4}$ of 6 miles is approximately equivalent to 2.4km.

B. 2.5 miles is approximately equivalent to 5km.

C. 75% of 20 miles is approximately equivalent to 20km.

11a.

Jack stopped after 75% of his 160km journey.

Jacob stopped after 85.25 miles.

Lily travelled $\frac{3}{4}$ of her 71 mile journey.

Who travelled the farthest?

I do

Learning Intention: To convert Miles and kilometres.

Miles and kilometres

Distances in the UK are usually measured in miles.

Distances in Europe are usually measure in kilometres.

5 miles ≈ 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 mile ◯ 1 km

1 mile ◯ 2 km

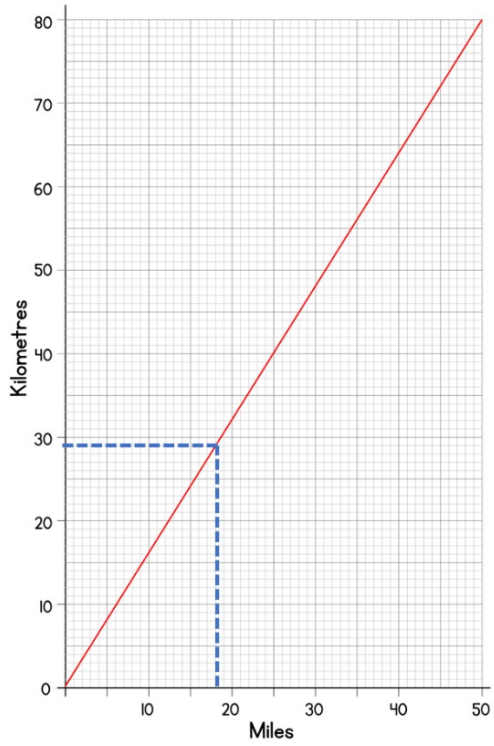
5 km ◯ 8 miles

Vocabulary

convert
miles
kilometres
metric
imperial

We do/you do

Learning Intention: To convert Miles and kilometres.



29 km ≈ 18 miles

1) ____ km ≈ 12 miles

2) 10 km ≈ ____ miles

Task 1

You do
5 miles = 8km

Task 2 Challenge

- Use the fact 5 miles ≈ 8 km to complete the conversions.

10 miles ≈ ____ km	32 km ≈ ____ miles
15 miles ≈ ____ km	40 km ≈ ____ miles
25 miles ≈ ____ km	64 km ≈ ____ miles

Mo cycles 45 miles over the course of 3 days.

On day 1, he cycles 16 km.

On day 2, he cycles 10 miles further than he did on day 1

How far does he cycle on day 3?

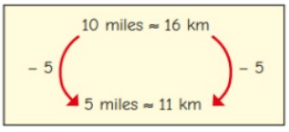
Give your answer in miles and in kilometres.

Challenge

- Write <, > or = to compare the distances.

100 km ◯ 100 miles	48 km ◯ 28 miles
1.6 km ◯ 1 mile	0.5 miles ◯ 1 km

- Here are Tiny's workings to convert 5 miles to kilometres.



Explain Tiny's mistake.

Move onto problems on the table

Plenary

Step 1

21 The height of the tallest person in history is 8 feet 11 inches.

Conversion table	
One foot	30 centimetres
One inch	2.5 centimetres

Use this conversion table to calculate the height of the tallest person, in **centimetres**.

Show your method

cm

2 marks

Reflection

1. Harry has been asked to make a route on the map below for a holiday. The route has to be between 480 and 650 miles long and has to visit at least three different places. The journey must also return to the place it started.

Distance from Edinburgh	
Dumfries	110km
Leeds	$218\frac{3}{4}$ miles
Chester	370km
Anglesey	494km
Sheffield	80% of 500km
Birmingham	$287\frac{1}{2}$ miles

Distance from Leeds	
Chester	15% of 900km
Anglesey	156.25 miles
Sheffield	58km
Birmingham	$\frac{1}{4}$ of 740km

Distance from Anglesey	
Sheffield	148.75 miles
Birmingham	245km

Distances from Chester	
Anglesey	$75\frac{5}{8}$ miles
Sheffield	122km
Birmingham	76.25 miles

Distance from Dumfries	
Leeds	32% of 750km
Chester	281.92km
Anglesey	250 miles
Sheffield	305km
Birmingham	$228\frac{1}{8}$ miles

Distance from Sheffield	
Birmingham	70% of 200km

Explore the different combinations of journeys that Harry can go on for his holiday.

How would you go about solving this question?
What steps would you use?

1 2 1 2 25

LI: To understand imperial measures

one digit per box

Underline your date and LI

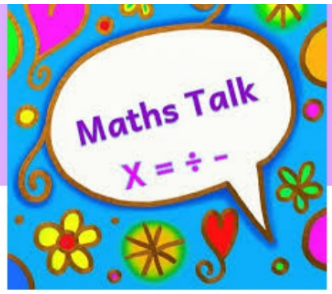
Our Learning Journey

Step 1	Metric measures
Step 2	Convert metric measures
Step 3	Calculate with metric measures
Step 4	Miles and kilometres
Step 5	Imperial measures

Key vocabulary

MEASUREMENT (GENERAL)
measure, measurement
size
compare
unit, standard unit
metric unit, imperial unit

measuring scale, division
guess, estimate
enough, not enough
too much, too little
too many, too few
nearly, roughly, about, close to
about the same as, approximately
just over, just under, exactly



Key questions

- When do you use imperial measures instead of metric measures?
- Why is it easier to convert between metric measures than between imperial measures?
- Which is greater, one foot or one metre?
- Which is shorter, one centimetre or one inch?
- Which is heavier, one pound or one stone?

Starter/Recap

Flashback 4

Year 6 | Week 12 | Day 5

LXXXIV

1) 5 miles is approximately equal to 8 km. How many miles are approximately equal to 40 km?

2) If $\frac{3}{4}$ of a number is 36, what is $\frac{5}{8}$ of the number?

3) $\frac{5}{9} \div 3 =$ ☐

4) Adjacent angles on a straight line sum to ☐ degrees.

White Rose Maths

Challenge:

1. Replace a digit in 353,15 so it is less than 352,000
2. 301,672 + 161,545
3. Find two prime numbers with a sum of 30.
4. 1,370 ÷ 3
5. $\frac{1}{6} + \frac{3}{12} + \frac{1}{2}$
6. Find a number between 0.45 and 0.46.

Starter/Recap

Flashback 4

Year 6 | Week 12 | Day 5

LXXXIV

1) 5 miles is approximately equal to 8 km. How many miles are approximately equal to 40 km? 25 miles

2) If $\frac{3}{4}$ of a number is 36, what is $\frac{5}{8}$ of the number? 30

3) $\frac{5}{9} \div 3 =$ $\frac{5}{27}$

4) Adjacent angles on a straight line sum to 180 degrees.

White Rose Maths

Challenge:

1. Replace a digit in 353,153 so it is less than 352,000 351,153
2. 301,672 + 161,545 = 463,2
3. Find two prime numbers with a sum of 30. 17 and 13*
4. 1,370 ÷ 3 = 456 r2
5. $\frac{1}{6} + \frac{3}{12} + \frac{1}{2} = \frac{11}{12}$
6. Find a number between 0.45 and 0.46. 0.455*

Assessment

1) Circle the most appropriate unit.

Length can be measured in tonnes / kg / mm

Mass can be measured in tonnes / km / ml

Capacity can be measured in cl / m / cm

2) Complete the conversions.

200 ml = _____ l 85 cm = _____ mm

20 ml = _____ l 85 cm = _____ m

Challenge:

10b. Tick the correct statements below.

A. $\frac{1}{2}$ pint ≈ 0.28 litres

B. 2 inches = $\frac{1}{12}$ foot

C. 10% of 1oz ≈ 0.28 grams

11b. Match the measurements to their conversions or approximate conversions.

25% of 1ft 0.25lb $\frac{1}{10}$ of 1oz

4oz 2.8g 3''

12b. Fill in the missing measurements.

☐ pounds = 5.5 stone

2.5 inches = ☐ cm

☐ pounds ≈ 1.5 ounces

Assessment

1) Circle the most appropriate unit.

Length can be measured in tonnes / kg / mm

Mass can be measured in tonnes / km / ml

Capacity can be measured in cl / m / cm

2) Complete the conversions.

200 ml = 0.2 l 85 cm = 850 mm

20 ml = 0.02 l 85 cm = 0.85 m

Challenge:

10b. Tick the correct statements below.

A.	$\frac{1}{2}$ pint	≈	0.28 litres
B.	2 inches	=	$\frac{1}{12}$ foot
C.	10% of 1oz	≈	0.28 grams

10a. A

11b. 25% of 1ft = 3''; 0.25lb

11b. Match the conversions or c

1oz ≈ 2.8g

25% of 1ft

12b. 77 pounds = 5.5 stone

6.35cm; 0.1 pounds ≈ 1.5 o

4oz 2.8g 3''

12b. Fill in the missing measurements.

☐ pounds = 5.5 stone

2.5 inches = ☐ cm

☐ pounds ≈ 1.5 ounces

I do

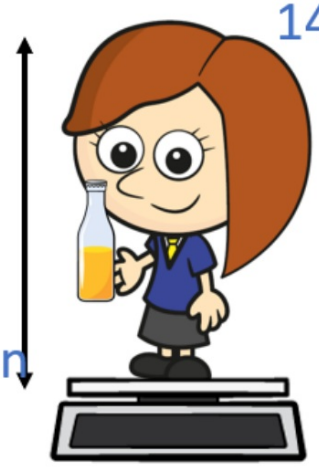
Key knowledge

16 ounces = 1 pound

14 pounds = 1 stone

Feet and inches
Pints

8 pints = 1 gallon



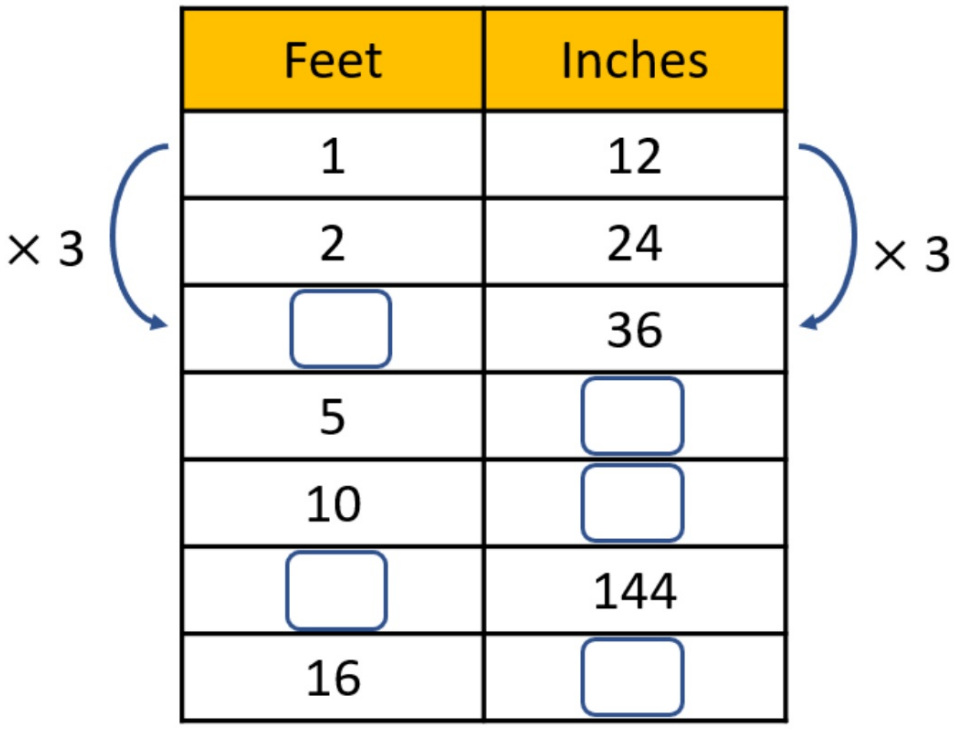
Pounds and ounces

12 inches = 1 foot

1 inch ≈ 2.5 cm

I do

1 foot = 12 inches Have a think



We do

5 feet
and 8 inches

1 foot = 12 inches

How tall is Annie in inches?

Task 1

- Sort the units of measurement into the table.

millilitre	centimetre	mile	gram	litre
stone	inch	metre	millimetre	tonne
gallon	ounce	pound	foot	kilometre

	Length	Mass	Capacity
Metric			
Imperial			

- 1 inch ≈ 2.5 cm

- 1 foot = 12 inches

Use these key facts to complete the conversions.

- 2 inches ≈ _____ cm
- _____ inches ≈ 7.5 cm
- _____ inches ≈ 25 cm
- 12 inches ≈ _____ cm
- 2 feet = _____ inches
- 5 feet = _____ inches
- 20 feet = _____ inches
- 100 feet = _____ inches

Task 2

- 1 gallon = 8 pints

Use this key fact to complete the conversions.

- 2 gallons = _____ pints
- 10 gallons = _____ pints
- _____ gallons = 40 pints
- _____ gallons = 104 pints

- 1 pound (lb) = 16 ounces

- 1 stone = 14 pounds (lb)

Use these key facts to complete the conversions.

- 2 pounds = _____ ounces
- 5 pounds = _____ ounces
- _____ pounds = 240 ounces
- 2 stones = _____ lb
- 5 stones = _____ lb
- _____ stones = 154 lb

- Scott's bike has a mass of 24 pounds.
  Nijah's bike has a mass of $1\frac{1}{2}$ stones.
  What is the difference between the mass of the two bikes?

- At sports day, Huan jumps 2 feet and 3 inches.
  Dora jumps 15 cm further than Huan.
  How far does Dora jump?

Task 3

Challenge

Reasoning and problem solving

At sports day, the children drink a total of 60 gallons of water.

Each child drinks 3 pints.

How many children are at the sports day?

Compare methods with a partner.

Mr Hall is 6 foot 2 inches tall.

Ms Lee is 162 cm tall.

Who is taller?

How much taller are they?

Compare methods with a partner.

Amir wants to make a cake.

Here are some of the ingredients he needs:

- 8 ounces caster sugar
- 6 ounces flour
- 6 ounces butter

This is what he has in his cupboards:

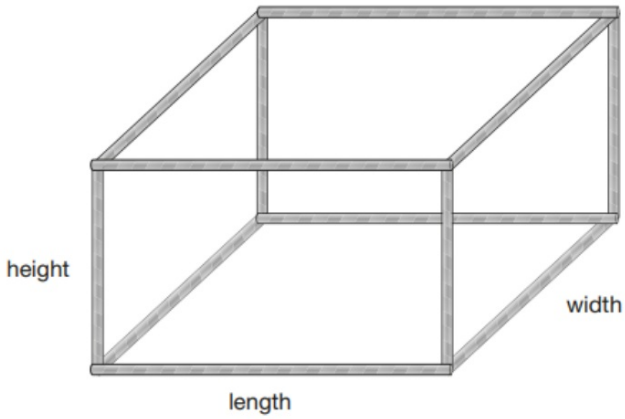
- 0.5 lb caster sugar
- 0.25 lb flour
- $\frac{3}{8}$ lb butter

Does Amir have enough ingredients to bake the cake?

If not, how much more does he need to buy?

Plenary

17 Kim makes a cuboid model using straws.



She uses straws that are 7.5 cm long for the height.

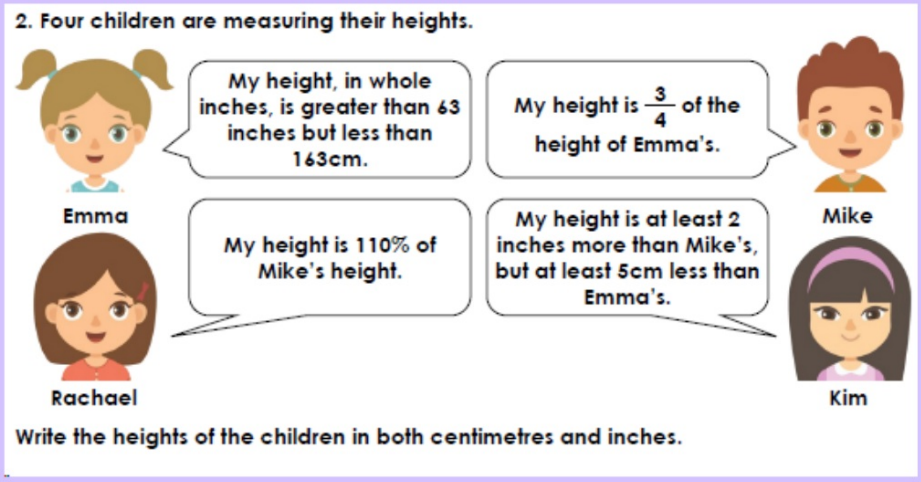
She uses straws that are 11 cm long for the length.

She uses straws that are 8.5 cm long for the width.

What is the **total** length of all the straws in her model?

Show your method

Reflection



How would you go about solving this question?
What steps would you use?