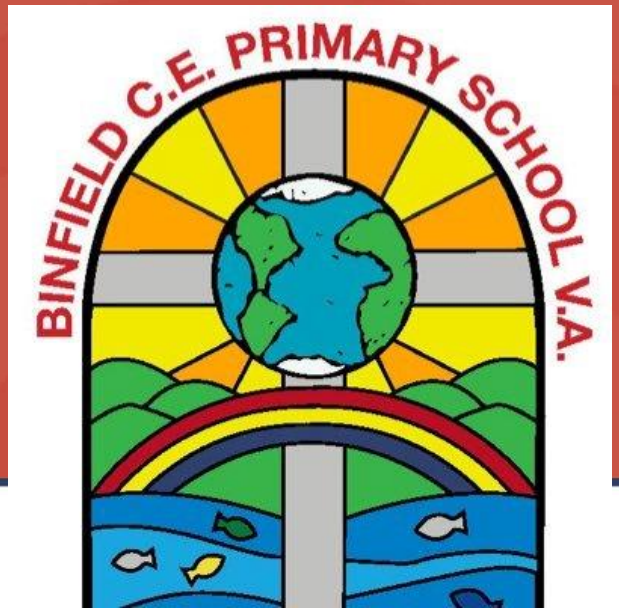
KS1 Meeting	KS2 Meeting
Why	
- Old curriculum - Changes in the new curriculum (2016) - Emphasis on problem solving - Reasoning skills and talk - Maths in everyday life - Rote learning vs application - SATS - Knowledge and application of number	- Old curriculum - Changes in the new curriculum (2016) - Emphasis on problem solving - Reasoning skills and talk - Maths in everyday life - Rote learning vs application - SATS - Knowledge and application of number
How - White rose (demo some learning materials) - Resources - Practical/pictorial - Stem sentences and talk - Example types of question - Maths mins - Number bonds/ number fluency/timestables - Models – numberlines, part-whole models, bar models	- White rose (demo some learning materials) - Resources - Practical/pictorial - Stem sentences and talk - Example types of question - Maths mins - Number bonds/ number fluency/timestables - Models – numberlines, part-whole models, bar-models – should be embedded - Calculation methods
How can you help - Numbots - Talking to your children/practical activities/games - Maths with Mike – consistency between home and school plus resources	TTR/Numbots/CT - Talking to your children/practical activities/games - Maths with Mike – consistency between home and school plus resources



Key Stage 2

Maths information morning

Aims of this morning:

- To show how maths is taught in our school
- To help you help your children at home
- To direct you to resources to help with this

National Curriculum

- Before and after 2016
- Less emphasis on rote-learning
- Children had been struggling to apply maths to reasoning problems
- Children needed a deeper understanding of the structure of the maths they are completing

Key Skills

- Reasoning skills and talk
- Maths in everyday life
- Rote learning vs application
- Assessments, SATs and later learning
- Children still need good fluency in the basics

Our curriculum

- Maths Mastery
- Small Steps

Concrete – Pictorial – Abstract (CPA)

Research shows that all children, when introduced to a new concept, should have the opportunity to build competency by following the CPA approach. This features throughout our schemes of learning.

Concrete

Children should have the opportunity to work with physical objects/concrete resources, in order to bring the maths to life and to build understanding of what they are doing.

Pictorial

Alongside concrete resources, children should work with pictorial representations, making links to the concrete.
Visualising a problem in this way can help children to reason and to solve problems.

Abstract

With the support of both the concrete and pictorial representations, children can develop their understanding of abstract methods.

$$5 + 7$$

Year 3 – Year Overview

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number **Place value**			Number **Addition and subtraction**					Number **Multiplication and division A**			
Spring	Number **Multiplication and division B**			Measurement **Length and perimeter**			Number **Fractions A**			Measurement **Mass and capacity**		
Summer	Number **Fractions B**			Measurement **Money**		Measurement **Time**			Geometry **Shape**		Statistics	Consolidation

Year 4 – Year Overview

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number **Place value**				Number **Addition and subtraction**			Measurement **Area**	Number **Multiplication and division A**			Consolidation
Spring	Number **Multiplication and division B**			Measurement **Length and perimeter**		Number **Fractions**				Number **Decimals A**		
Summer	Number **Decimals B**		Measurement **Money**		Measurement **Time**		Consolidation	Geometry **Shape**		Statistics	Geometry **Position and direction**	

Year 5 – Year Overview

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number **Place value**			Number **Addition and subtraction**		Number **Multiplication and division A**			Number **Fractions A**			
Spring	Number **Multiplication and division B**			Number **Fractions B**		Number **Decimals and percentages**			Measurement **Perimeter and area**		**Statistics**	
Summer	Geometry **Shape**			Geometry **Position and direction**		Number **Decimals**			Number **Negative numbers**	Measurement **Converting units**		Measurement **Volume**

Year 6 – Year Overview

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number **Place value**		Number **Addition, subtraction, multiplication and division**					Number **Fractions A**		Number **Fractions B**		Measurement **Converting units**
Spring	**Ratio**		**Algebra**		Number **Decimals**		Number **Fractions, decimals and percentages**		Measurement **Area, perimeter and volume**		**Statistics**	
Summer	Geometry **Shape**			Geometry **Position and direction**	Themed projects, consolidation and problem solving							

Step 1 Numbers to 1,000,000

Step 2 Numbers to 10,000,000

Step 3 Read and write numbers to 10,000,000

Step 4 Powers of 10

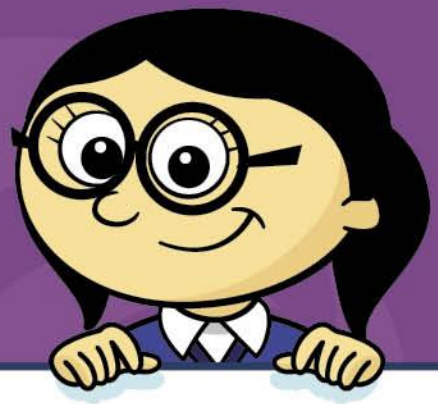
Step 5 Number line to 10,000,000

Step 6 Compare and order any integers

Step 7 Round any integer

RECOGNISE EQUIVALENT FRACTIONS

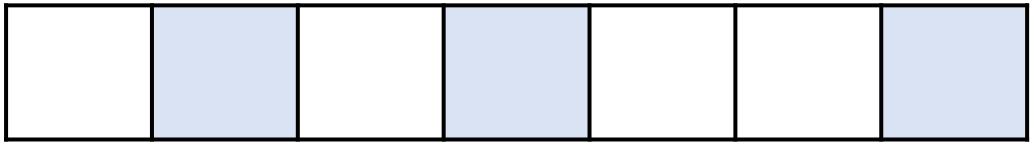
White Rose Maths



Get ready

Here is your starter.

1) What fraction is represented?



2) List all of the factors of 12

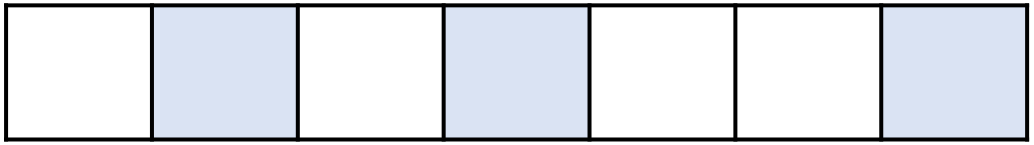
3) List all of the common factors of 20 and 24

4) What is the missing number?

$$\frac{1}{2} = \frac{3}{}$$

1) What fraction is represented?

$\frac{3}{7}$



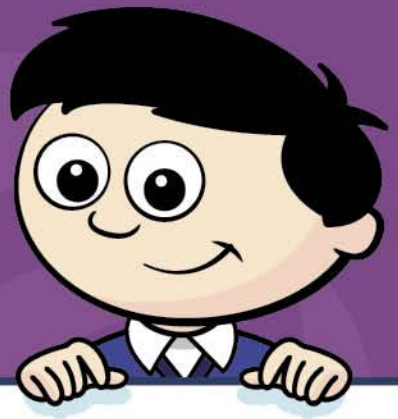
2) List all of the factors of 12 1, 2, 3, 4, 6, 12

3) List all of the common factors of 20 and 24

1, 2, 4

4) What is the missing number?

$$\frac{1}{2} = \frac{3}{6}$$

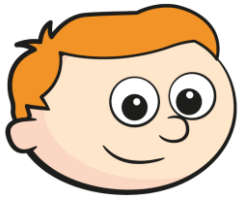


Let's learn

Get ready for today's new learning.

Ron is making fraction walls to help him find equivalent fractions.

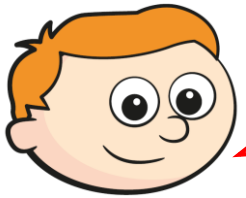
1 whole							
$\frac{1}{2}$				$\frac{1}{2}$			
$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$



I can see that $\frac{3}{4}$ is equivalent to $\frac{6}{8}$

Ron is making fraction walls to help him find equivalent fractions.

1 whole											
$\frac{1}{3}$				$\frac{1}{3}$				$\frac{1}{3}$			
$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$		$\frac{1}{6}$	
$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$



I can see that $\frac{2}{3}$ is equivalent to $\frac{4}{6}$ and $\frac{8}{12}$

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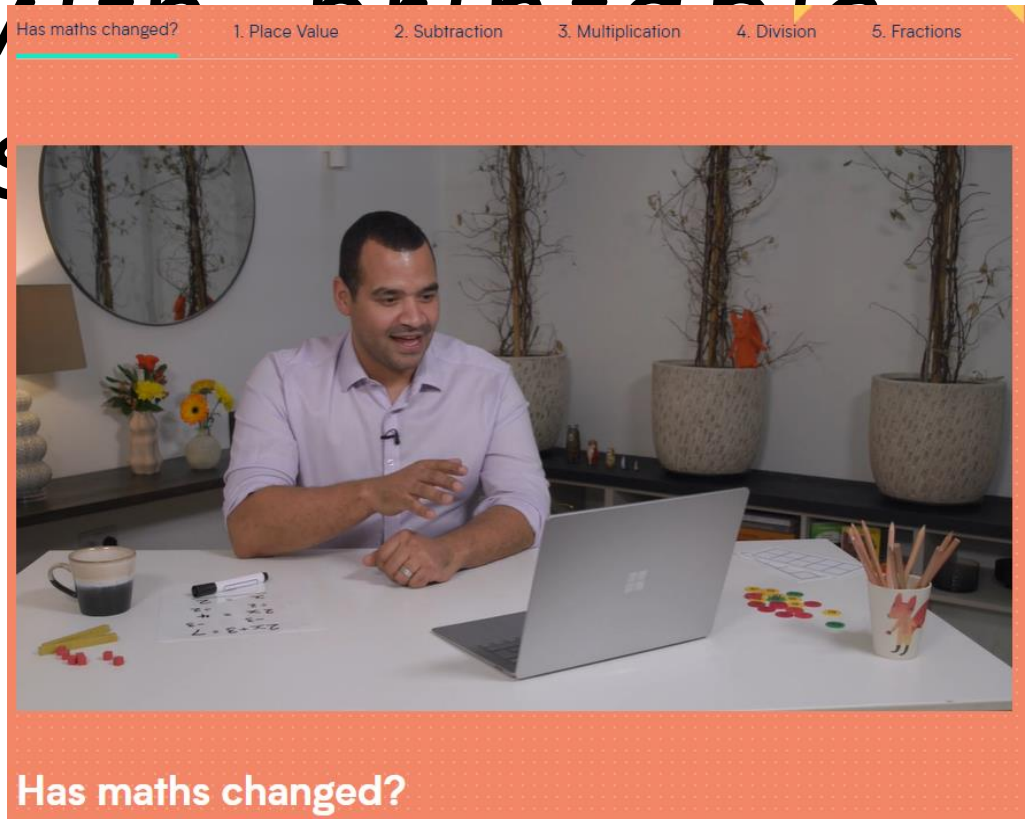
What can children do at home?

Maths with Mike – videos and parent guides with printable resources



https://whiteroseeducation.com/parent-pupil-resources/maths/maths-with-michael

Home Learning

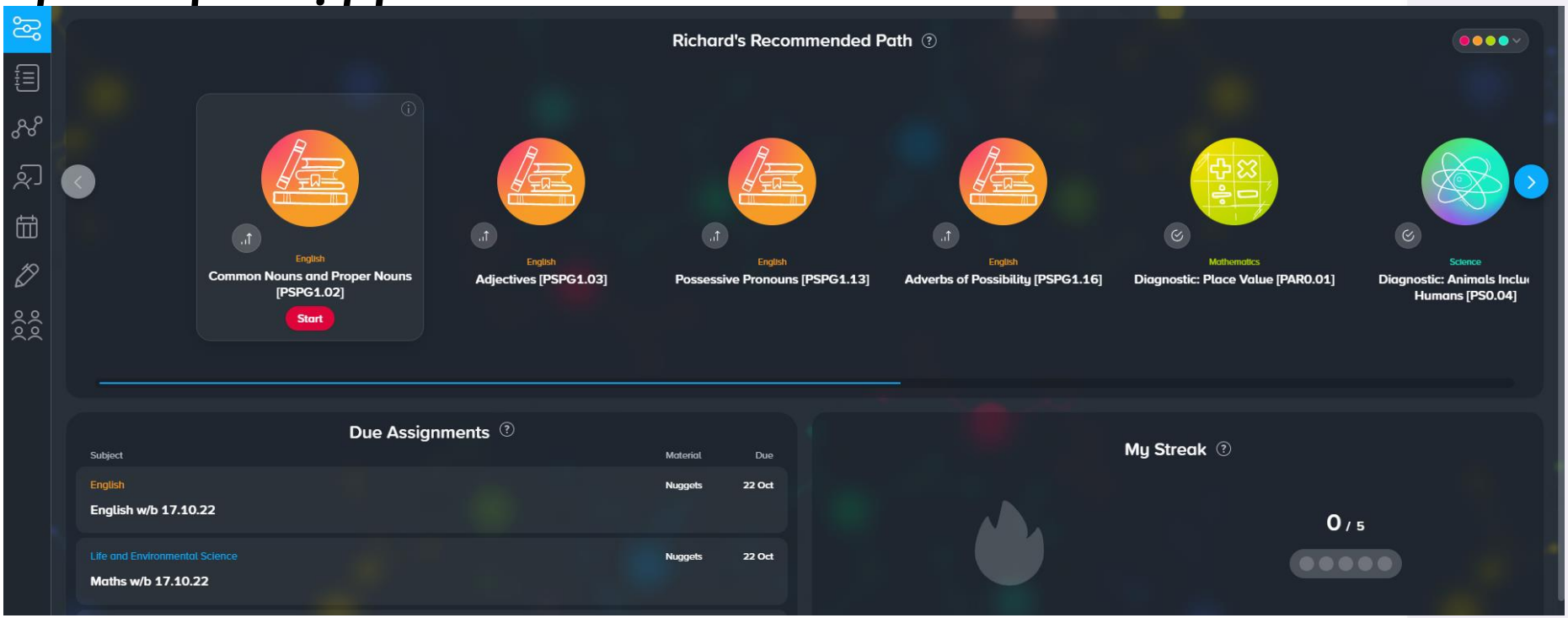
All of our 'home learning' lessons for early years through to Year 9 are available now. Lessons for Years 10 and 11 are being added as they are due to be taught in our schemes of learning. Every lesson comes with a short video showing you clearly and simply how to help your child complete the activity successfully.

White Rose Home Learning – videos that give you a good idea of the lessons your child will be learning and the strategies teachers will be using to explain concepts to your children.

https://whiterosemaths.com/homelearning?year=year-6-new

Century Tech.

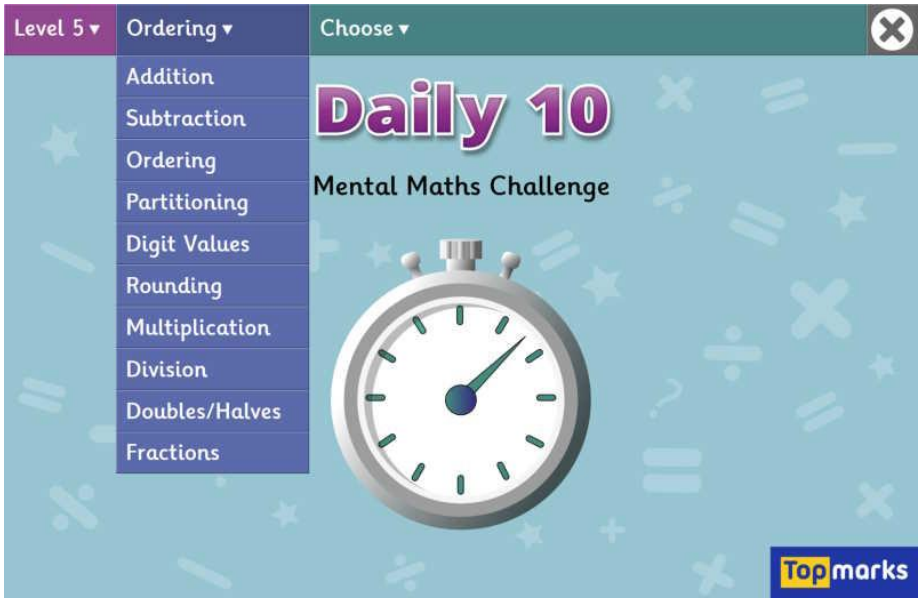
If you identify something your child struggles with, log into CT, type it into the search bar and a nugget will teach your child how



Hit the Button

https://www.topmarks.co.uk/maths-games/hit-the-button

Daily 10



https://www.topmarks.co.uk/maths-games/daily10

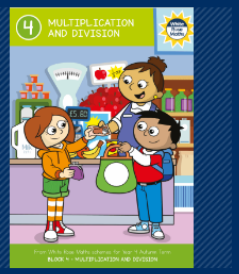
White Rose Resources

Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6

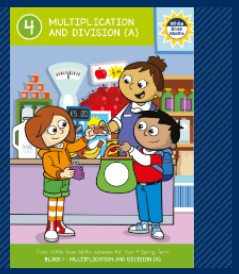
Autumn Block 1
Place value

Autumn Block 2
Addition and subtraction

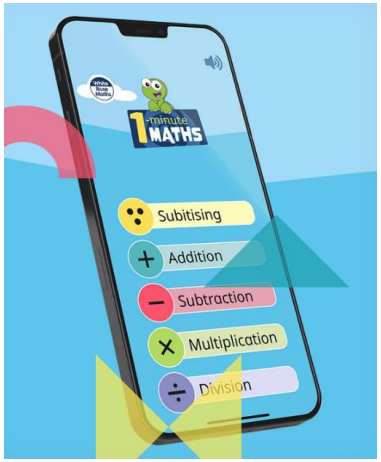
Autumn Block 3
Length and perimeter



Autumn Block 4
Multiplication and division



Spring Block 1a
Multiplication and division (a)



https://whiterosemaths.com/parent-resources

Times Tables

So important – underpins ability to access multiplication, division

The National Curriculum expects certain times tables to be learned in different year groups. But children learn at different speeds and we should be teaching the child, rather than sticking too rigidly to this.

Expectations for times tables for each year group:	
Year 1	Count in multiples of 2, 5 and 10. Recall and use all doubles to 10 and corresponding halves.
Year 2	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
Year 3	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Year 4	Recall and use multiplication and division facts for multiplication tables up to 12x12.
Year 5	Revision of all times tables and division facts up to 12x12.
Year 6	Revision of all times tables and division facts up to 12x12.

White Rose Maths

My target 45 facts

	3	4	5	6	7	8	9	10	11	12	
3	9	12	15	18	21	24	27		33	36	3
	4	16	20	24	28	32	36		44	48	4
		5	25	30	35	40	45		55	60	5
			6	36	42	48	54		66	72	6
				7	49	56	63		77	84	7
					8	64	72		88	96	8
						9	81		99	108	9
							10				10
								11	121	132	11
									12	144	12

Multiplication is commutative!

TT Rockstars – daily practise, even for a short period will greatly help!

Jamming: game choice
Gig: baseline assessment
Garage: focussed
Studio: all tables
Soundcheck: 25 questions

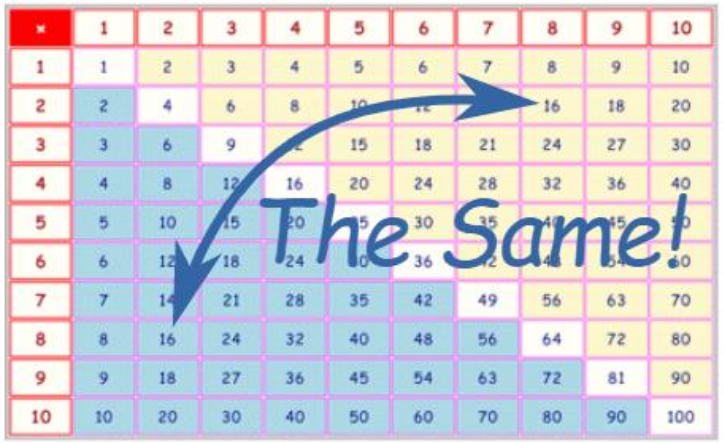
Get the children in here.

What do you do with your children?

What have you done in the past that has worked?

Every multiplication has a twin, which may be easier to remember.

For example if you forget 8×2, you might remember 2×8=16. This way, you only have to remember half the table.



×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Remembering Squares Can Help

1×1 = 1

2×2 = 4

3×3 = 9

4×4 = 16

5×5 = 25

6×6 = 36

7×7 = 49

8×8 = 64

9×9 = 81

10×10 = 100

11×11 = 121

12×12 = 144

2 add the number to itself (in other words, double it)
Example $2 \times 9 = 9 + 9 = 18$

4 double, then double again
Example 4×9: double 9 is 18, double 18 is **36**

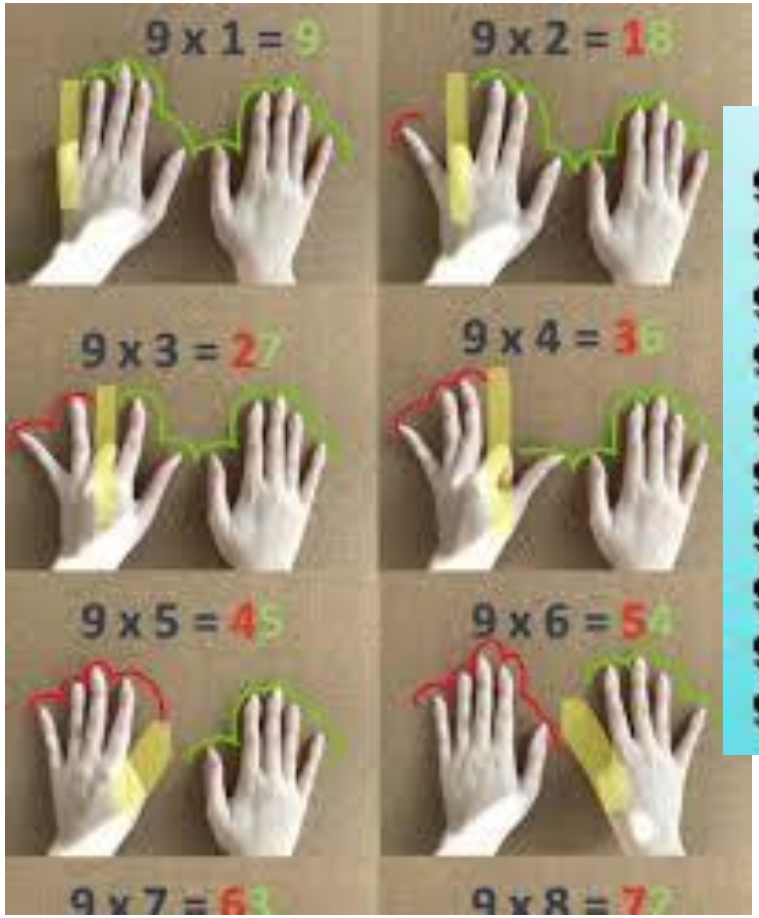
5 Cut in half, then times 10
Example: 5x6: Cut 6 in half to get 3, then times 10 for **30**

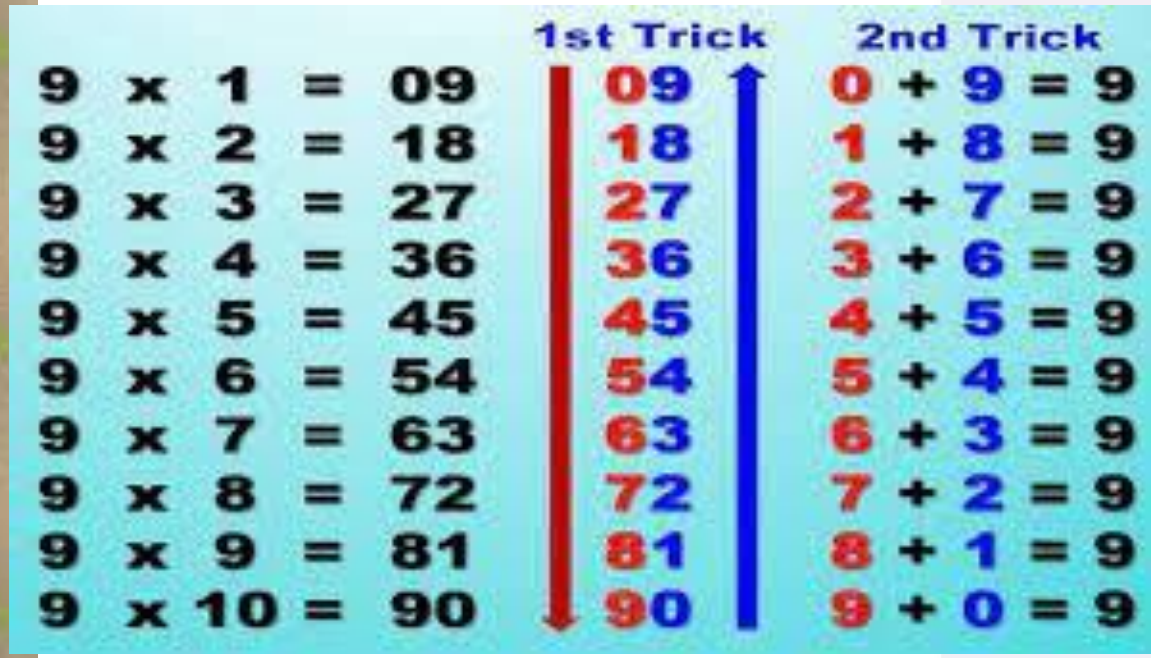
Or times 10 then cut in half
Example: 5x9: 9 times 10 is 90, then cut in half for **45**

Also the last digit goes 5, 0, 5, 0, ... like this: **5**, 1**0**, 1**5**, 2**0**, ...

5678 $56 = 7 \times 8$

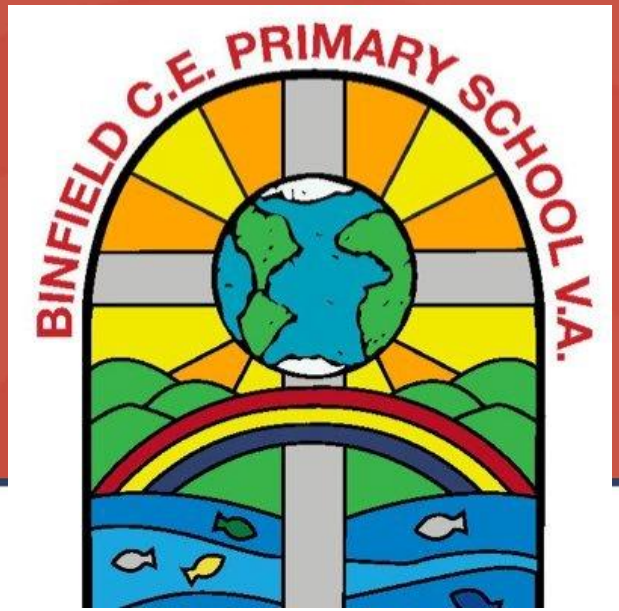
Decimal numbers: 0.4×0.6 can be calculated by doing 4×6





Take some time to fill in a multiplication square with your child to find any particular areas of weakness in times tables. Start with the easy ones and notice if your child is less fluent as they move through the numbers. These are the ones to work on!

X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144



Addition and Subtractio

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As children move through the school, they should be increasingly able to complete many addition and subtraction calculations mentally

368-125

300 - 100 = 200

60 - 20 = 40

8 - 5 = 3

The answer is 243

124 + 235

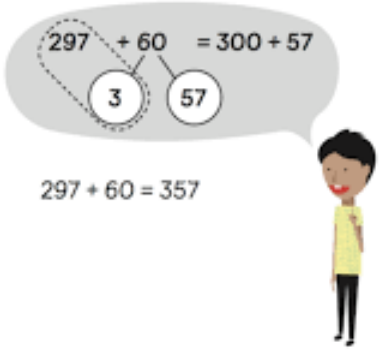
100 + 200 = 300

20 + 30 = 50

4 + 5 = 9

300 + 50 + 9 = 359

3 Add 297 and 60.



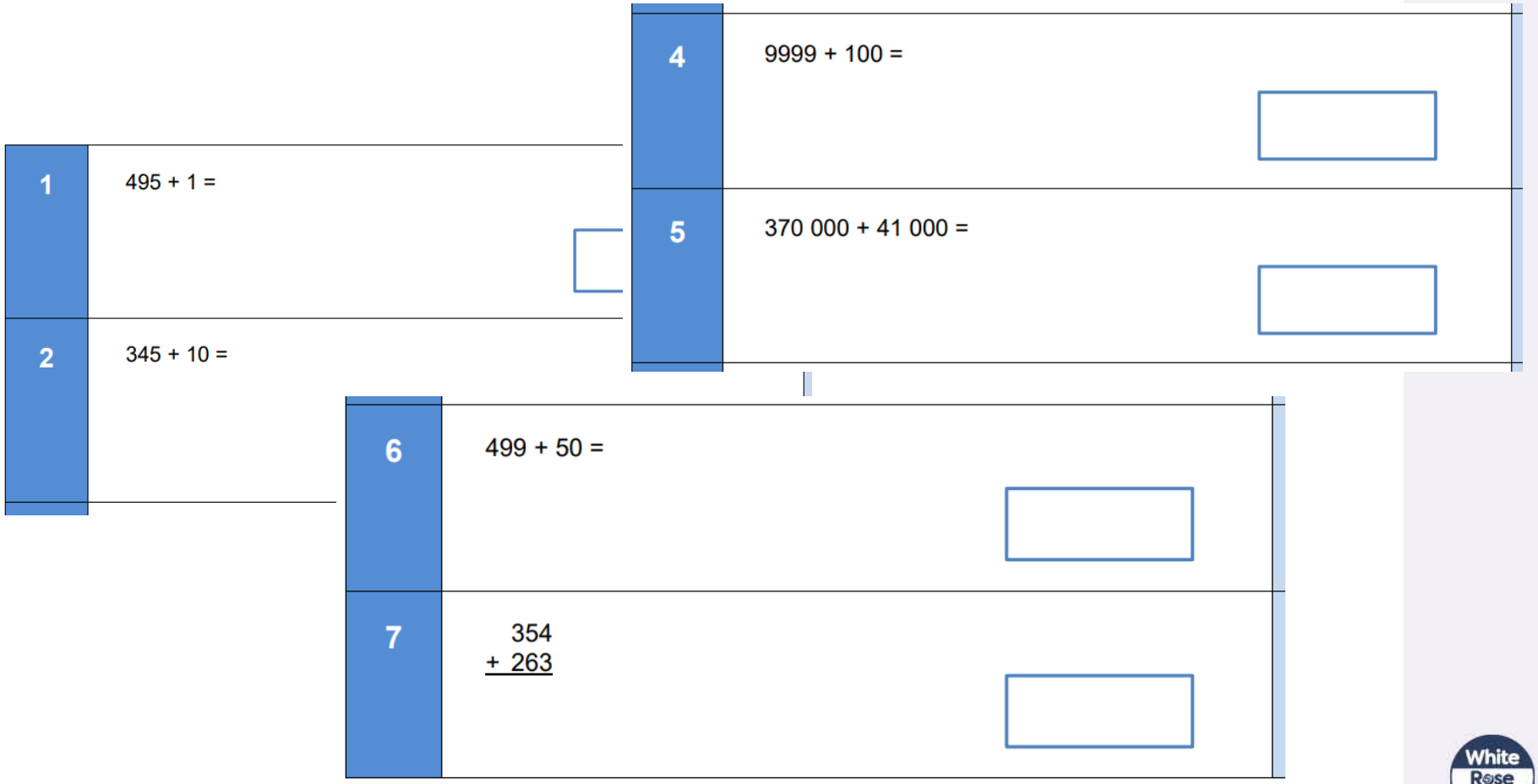
(Maths – No Problem! Primary Maths Series Textbook 3A, Page 51)

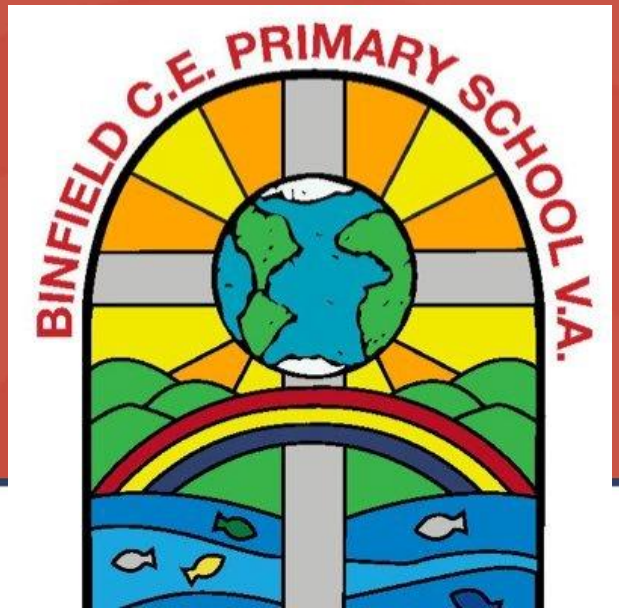
34 + 9 =
34 + 10 = 44
44 – 1 = 43

or

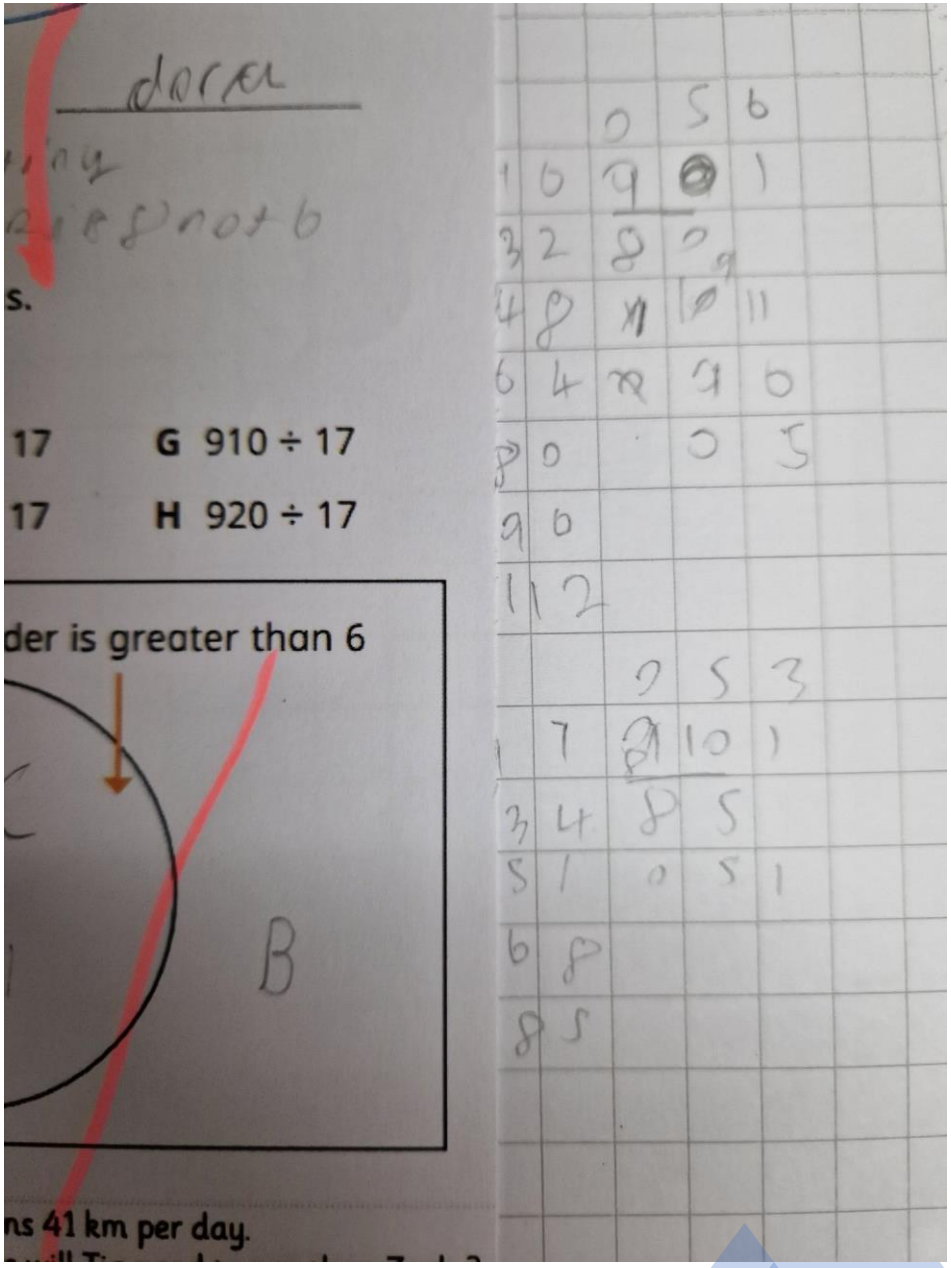
83 – 38 =
83 – 40 = 43
43 + 2 = 45

Have a go at some of the worksheets on your tables with your child. Pick the appropriate level of challenge and see if they can do it in their heads or whether they need to use a formal method!





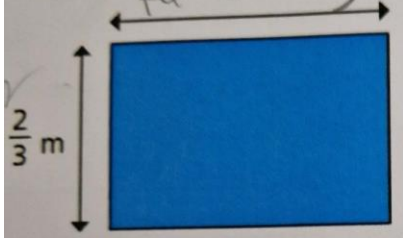
Presentation
What has gone wrong here and how can we avoid it?


17 G 910 ÷ 17
17 H 920 ÷ 17
der is greater than 6
B
ns 41 km per day.

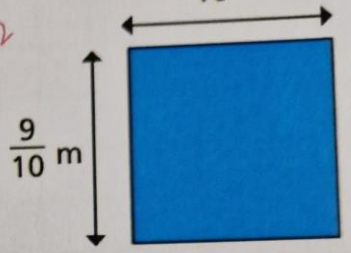
Diving

Calculate the area of the shapes.

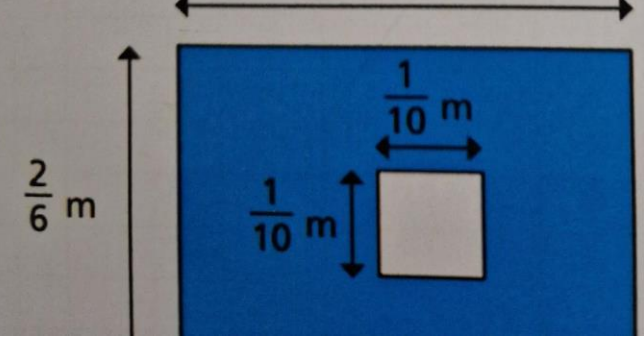
a)

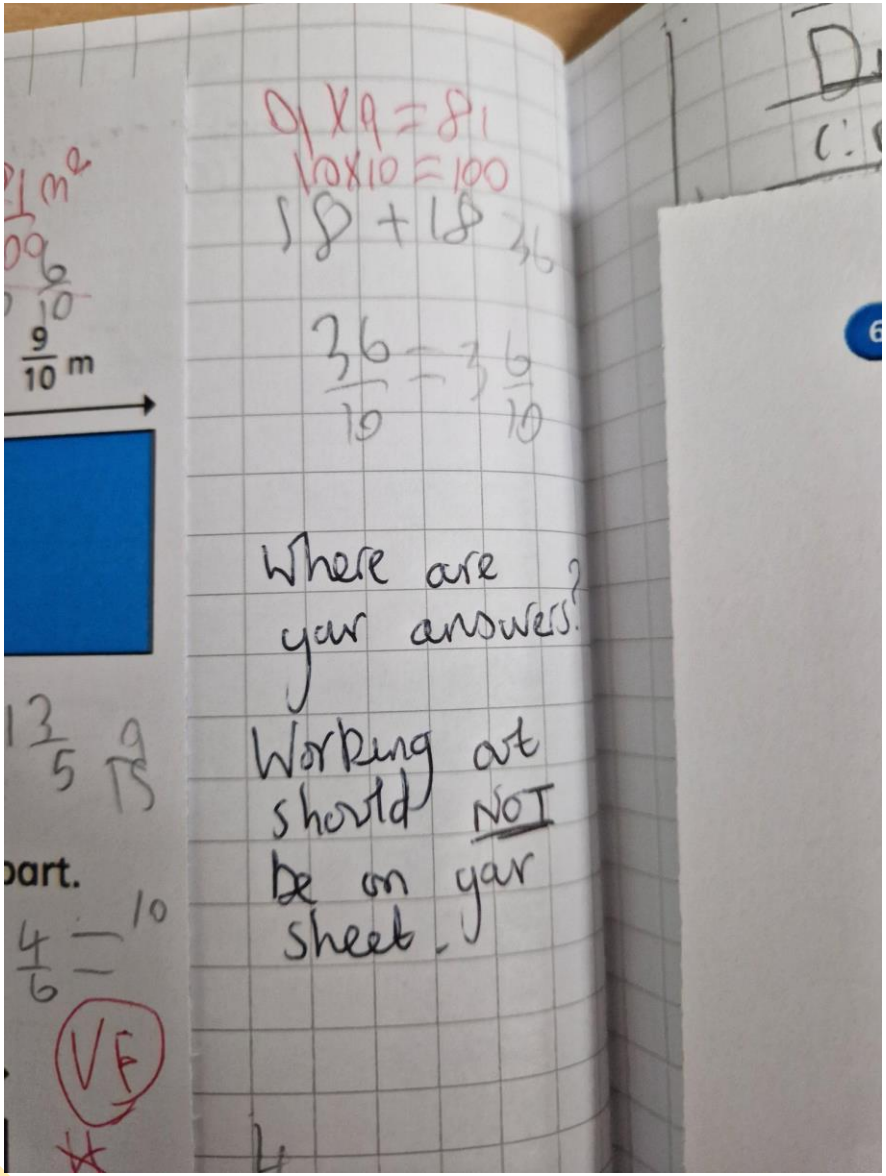


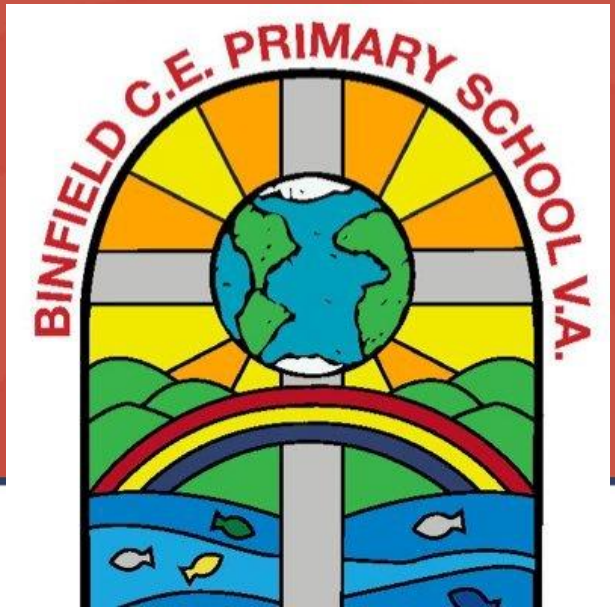
b)



Work out the area of the shaded part.




9 x 9 = 81
10 x 10 = 100
18 + 18 = 36
36/10 = 3 6/10
Where are your answers?
Working out should NOT be on your sheet.
9/10 m
VF

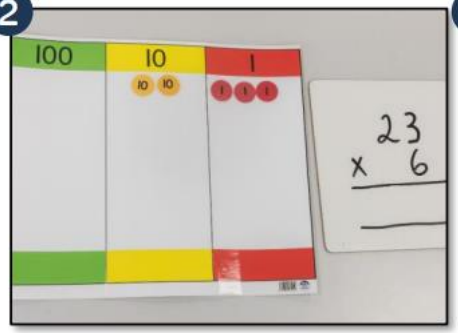


Multiplication

1

We are going to multiply 23 by 6 using place value counters and a place value grid to help us.

2



First build the number 23 in a single row on a place value grid and write the calculation on a whiteboard or piece of paper.

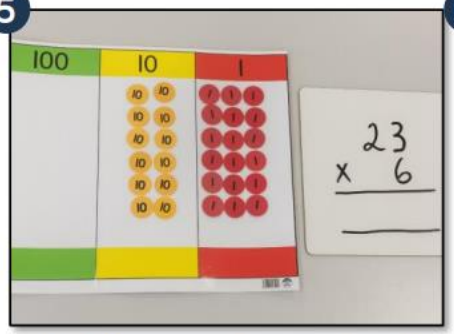
3

Ask "How many lots of 23 do we need to show?"
They should be able to tell you that we need to show 6 lots of 23 because we're multiplying 23 by 6

4

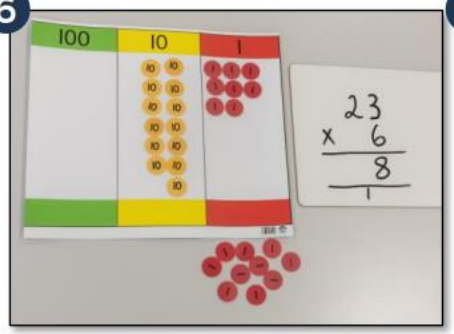
Ask your child to show 6 rows of 23 on the place value grid.

5



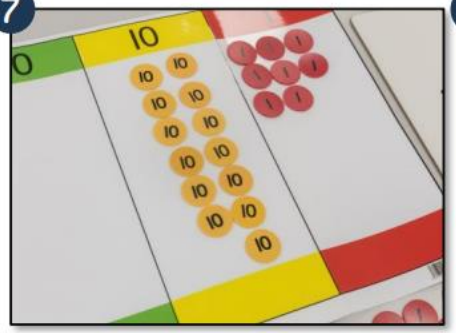
Ask "How many ones are there? Can we make an exchange?" That's right there are 18 ones and we can exchange 10 ones for 1 ten.

6



Replace 10 ones with 1 ten. Show this in the calculation highlighting that the 8 represents the remaining ones counters and the 1 below the line represents the ten counter.

7



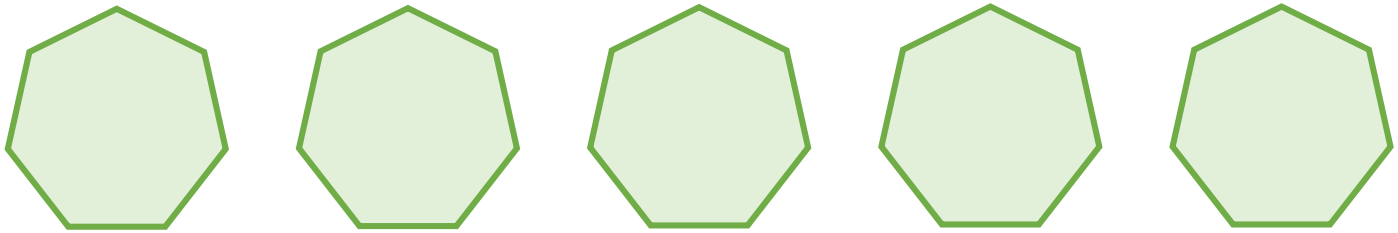
Ask "How many tens are there? Can we make an exchange?" That's right there are 13 tens and we can exchange 10 tens for 1 hundred.

8

Show the exchange in the place value grid and on the calculation. Now we have 1 hundred, 3 tens and 8 ones.
23 multiplied by 6 is equal to 138

White Rose Maths

Complete the sentences.

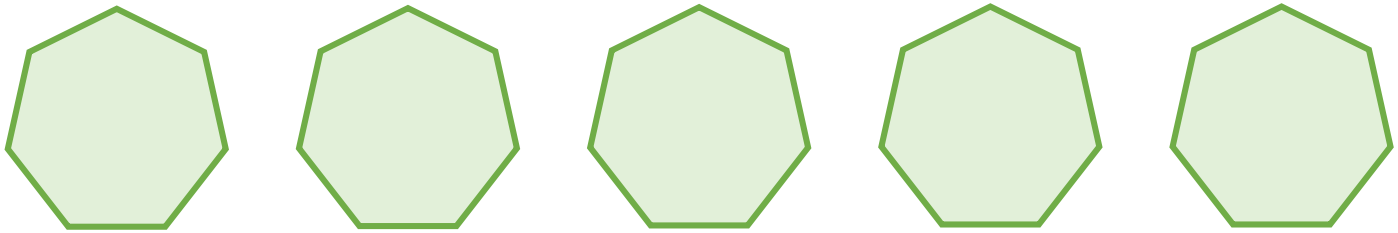


There are 5 heptagons.

Each heptagon has 7 sides.

There are 35 sides altogether.

Complete the missing numbers.



There are 5 heptagons.

Each heptagon has 7 sides.

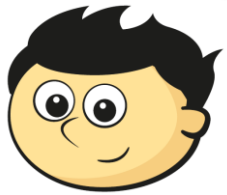
There are 35 sides altogether.

$7 + 7 + 7 + 7 + 7 = 35$

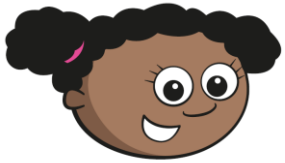
$5 \times 7 = 35$

$7 \times 5 = 35$

Who is older?

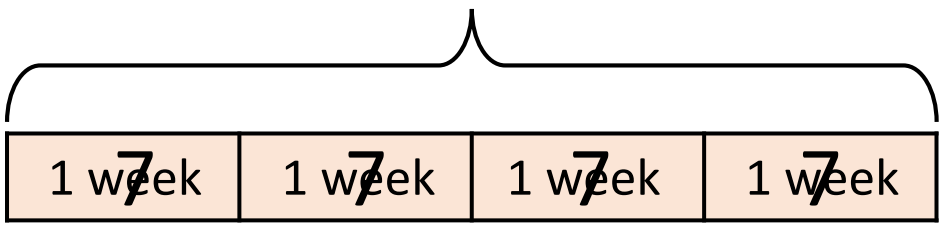


I'm 21 days older than Ron!



I'm 4 weeks older than Ron.

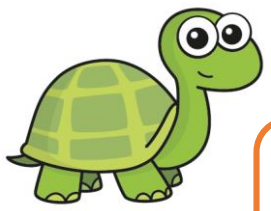
28 days



One week = 7 days

4 × 7 = 28

Whitney is older than Jack.

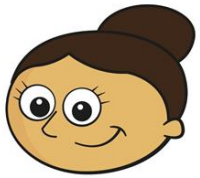


I'm not confident with my 7 times-tables yet.

So I can add 5 lots and 2 lots together.

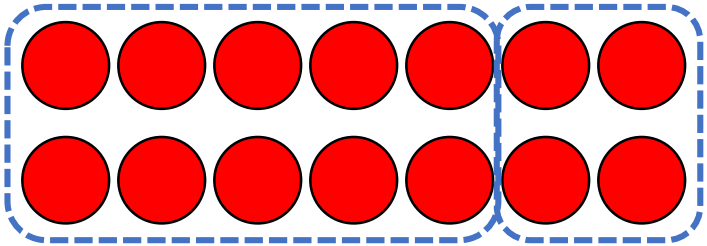
14

Why don't you use your 2 and 5 times-tables to help you. Watch…

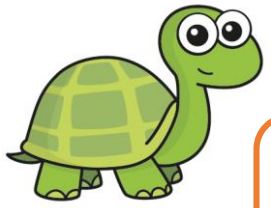


$$7 \times 2 = 14$$

$5 \times 2 = 10$ $2 \times 2 = 4$

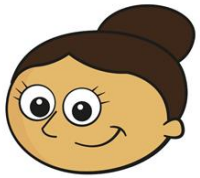


$$10 + 4 = 14$$



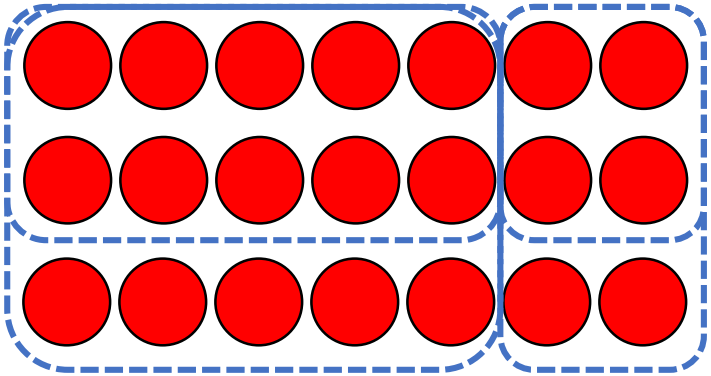
So I can add 5 lots and 2 lots together.

Why don't you use your 2 and 5 times-tables to help you. Watch…



$7 \times 3 = 21$

$5 \times 3 = 15$ $2 \times 3 = 6$

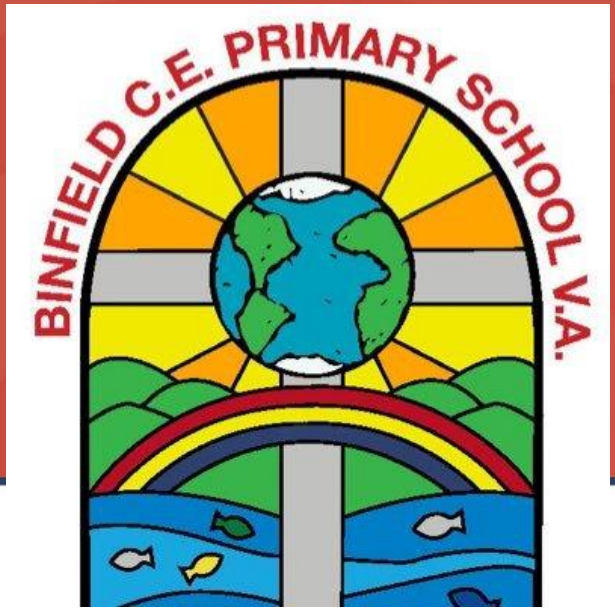


$15 + 6 = 21$

Have a go at some multiplication problems with the resources on your table.

Years 3 and 4 - use counters to show the multiplication calculation that your parents set you!

Years 5 and 6 - solve the word problems on your table. Can you represent the



Division

1

We are going to divide 471 by 3 using place value counters and a place value grid to help us.

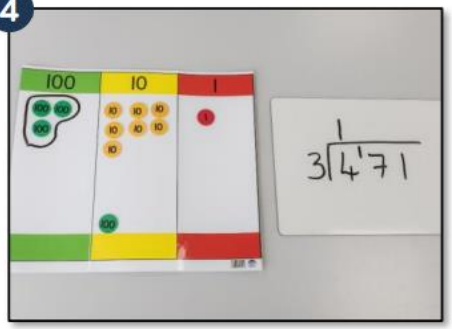
2

First build the number 471 on a place value grid and record the calculation as a short division on a whiteboard or piece of paper.

3

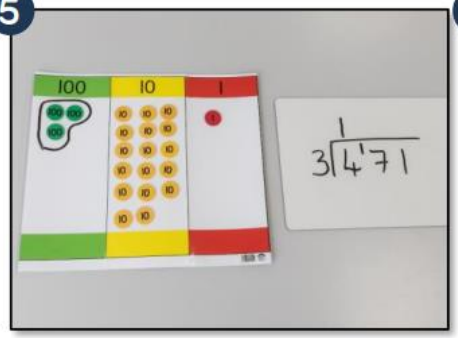
Ask "How many groups of 3 hundreds are there in 4 hundred?" They should be able to tell you that there is 1 group of 3 hundreds and there is 1 hundred left over.

4



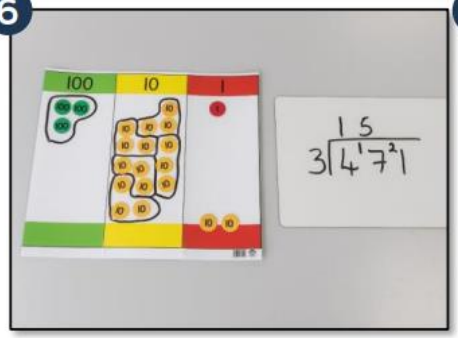
Show this in the place value grid and in the calculation. There aren't any more groups of 3 hundreds so the remaining hundred counter is placed in the tens column.

5



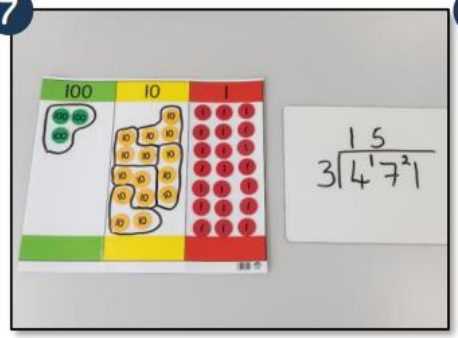
Ask "How many tens can we exchange 1 hundred for?" 1 hundred is equal to 10 tens so replace the hundred counter with 10 tens.

6



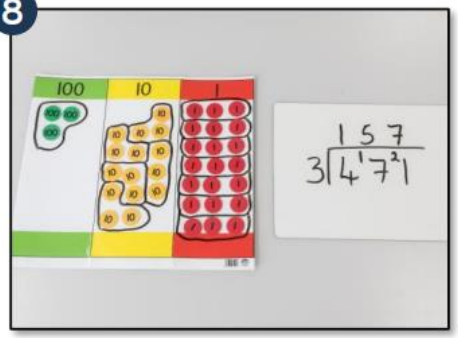
Ask "How many groups of 3 tens are there in 17 tens?" There are 5 groups of 3 tens and 2 tens left over. These tens are placed in the ones column.

7



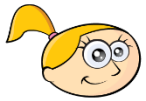
Ask "How many ones can we exchange each ten for?"
1 ten is equal to 10 ones so we can exchange 2 tens for 20 ones.

8

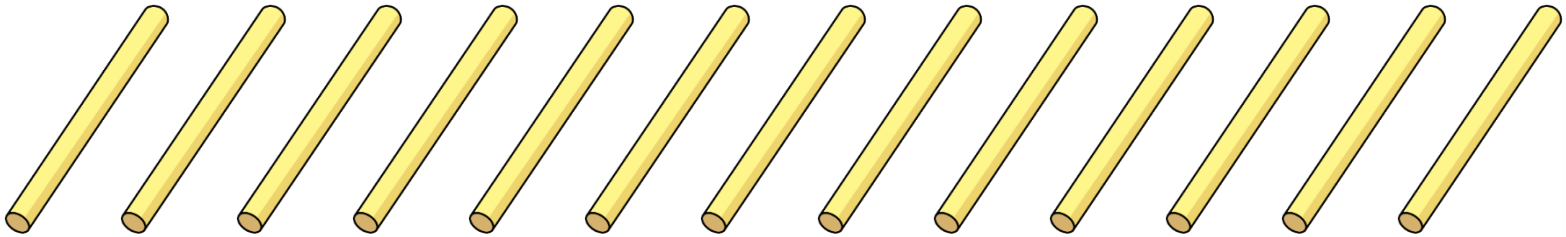


Ask "How many groups of 3 ones are there in 21 ones?" There are 7 groups of 3 ones in 21 ones and no ones left over.
471 divided by 3 is equal to 157

White Rose Maths



Eva has 13 straws. She wants to make them into triangles. How many triangles can she make?



$13 \div 3 = 4$ r1

Tommy has 14 straws. He wants to make them into triangles. How many triangles can he make?

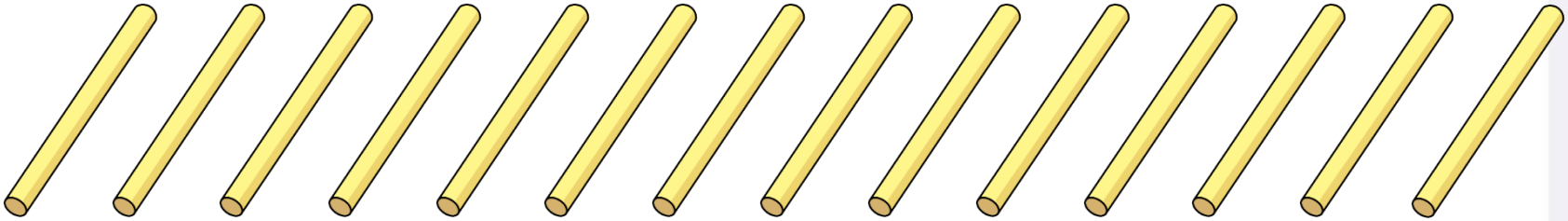
Dora has 15 straws. She wants to make them into triangles. How many triangles can she make?

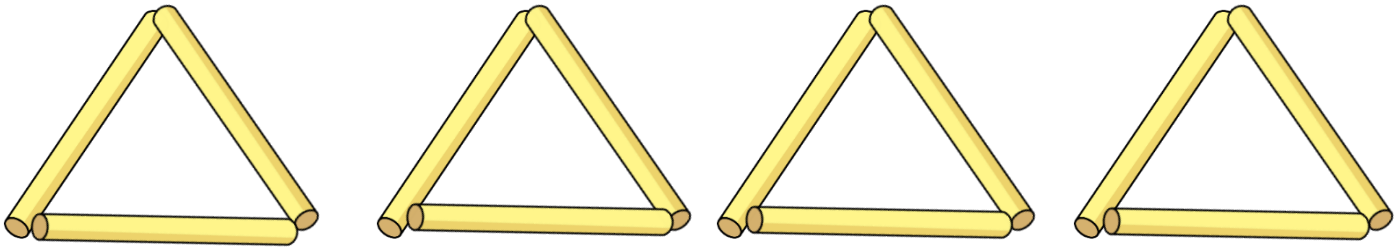
Jack has 16 straws. He wants to make them into triangles. How many triangles can he make?

Have a think

Tommy has 14 straws. He wants to make them into triangles. How many triangles can he make?

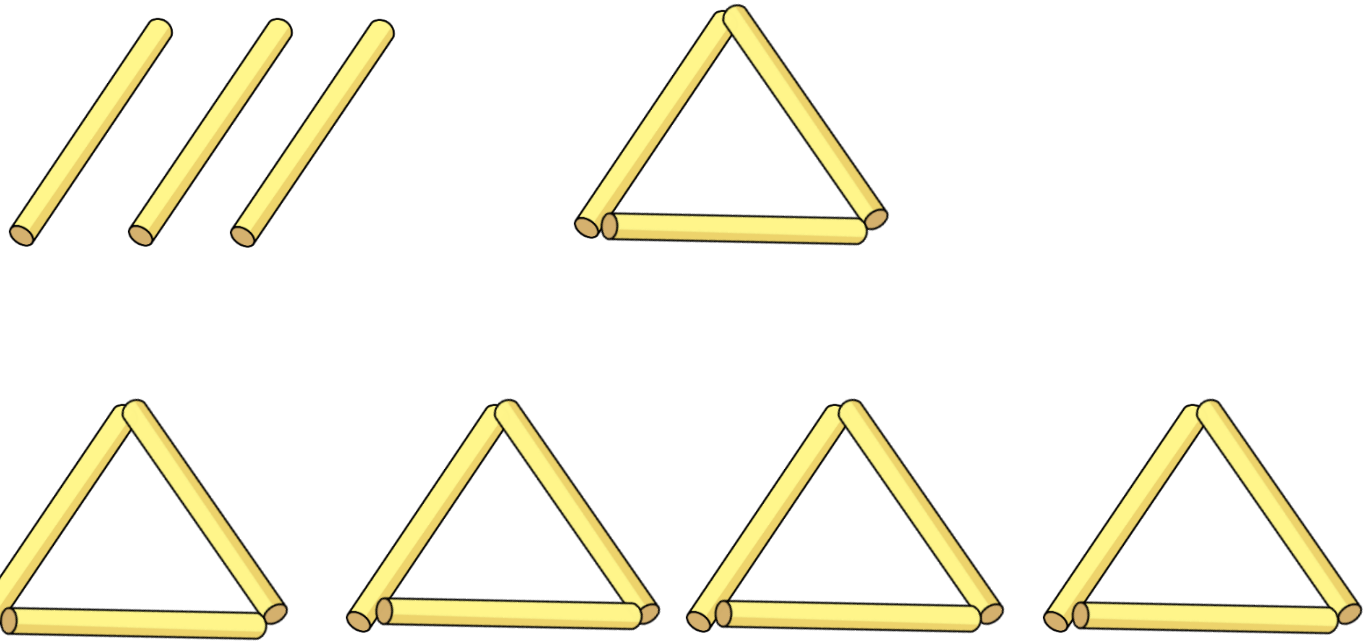
$$14 \div 3 = 4 \text{ r} 2$$





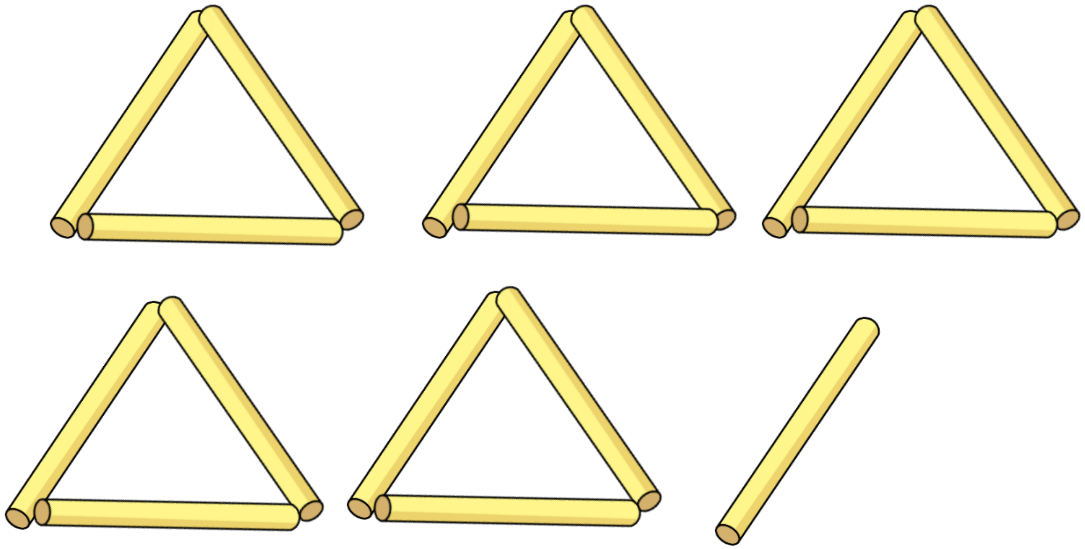
Dora has 15 straws. She wants to make them into triangles. How many triangles can she make?

$$15 \div 3 = 5$$



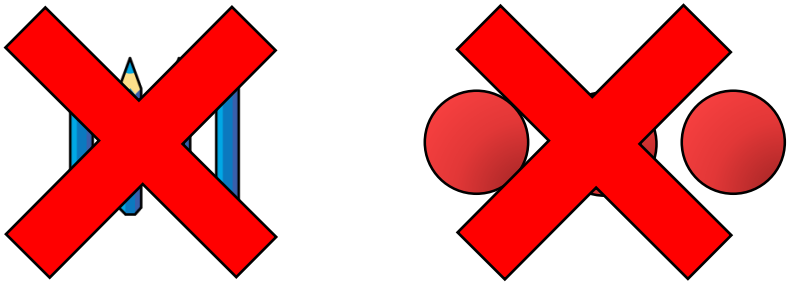
Jack has 16 straws. He wants to make them into triangles. How many triangles can he make?

$$16 \div 3 = 5 \text{ r} 1$$



There are 4,884 crayons and they come in packs of 4

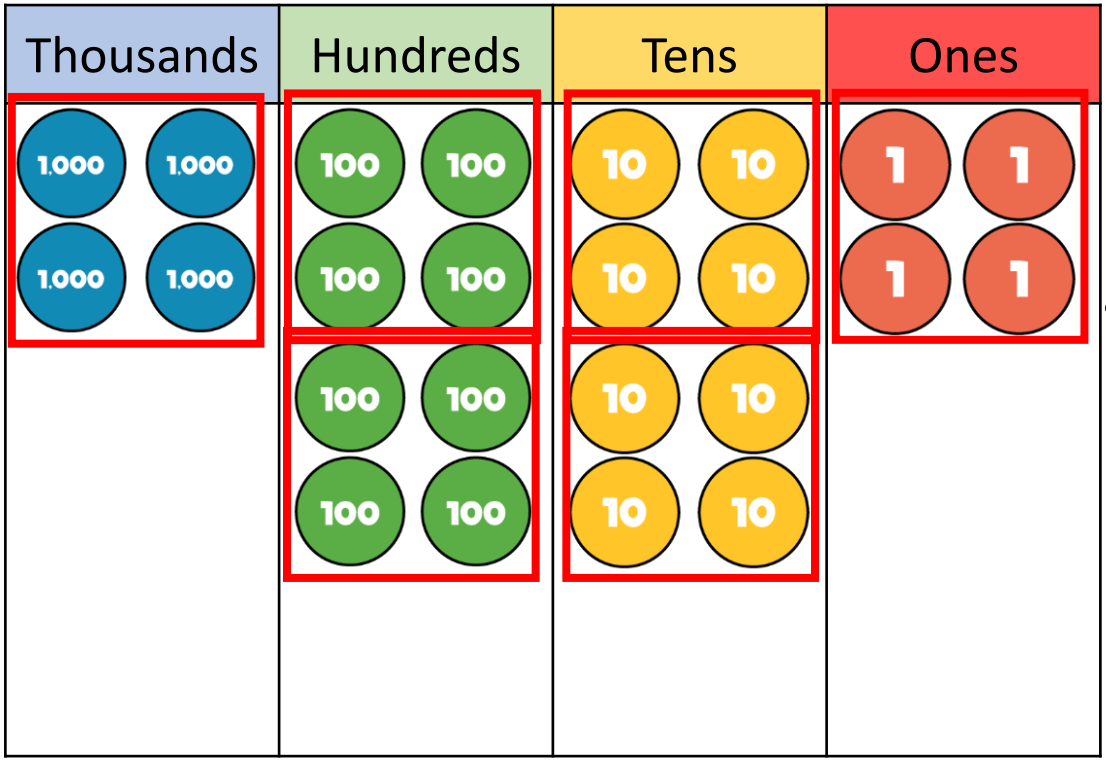
How many packs are there?



If your child makes a mistake, model that mistake, see what happens and show them where they have made the mistake.

There are 4,884 crayons and they come in packs of 4

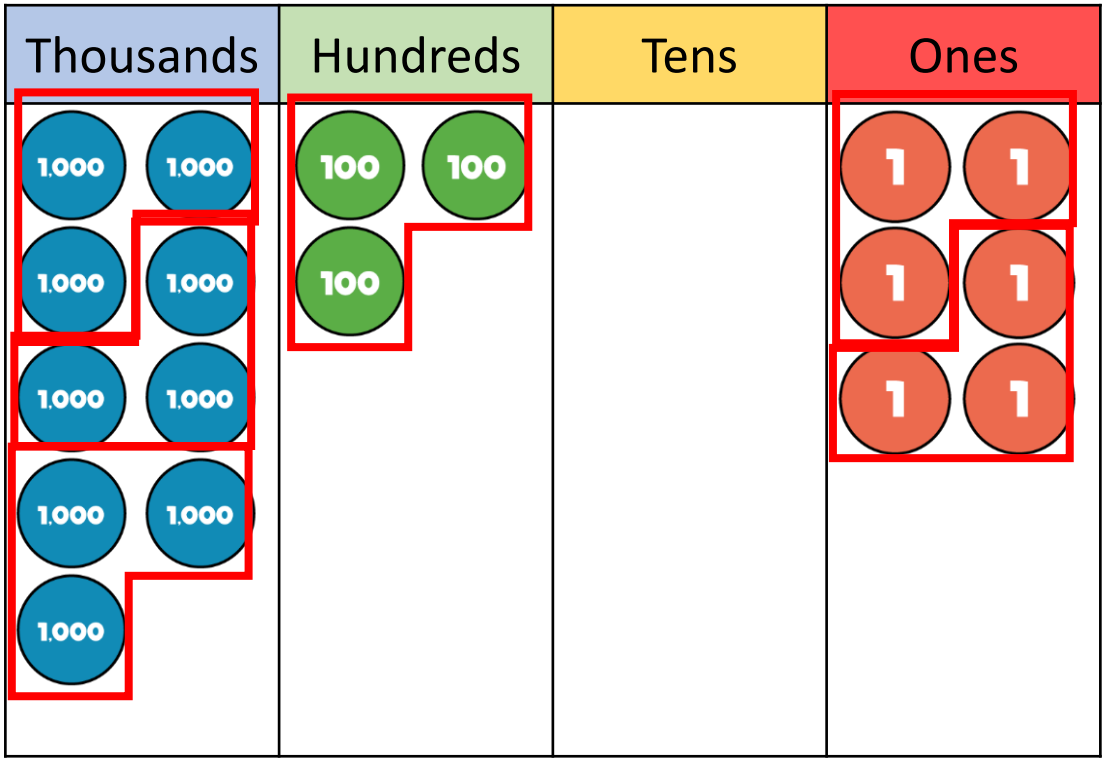
How many packs are there? 1,221 packs



$$\begin{array}{r} 1\ 2\ 2\ 1 \\ 4\overline{)\ 4\ 8\ 8\ 4} \end{array}$$

9,306 ÷ 3

Have a think

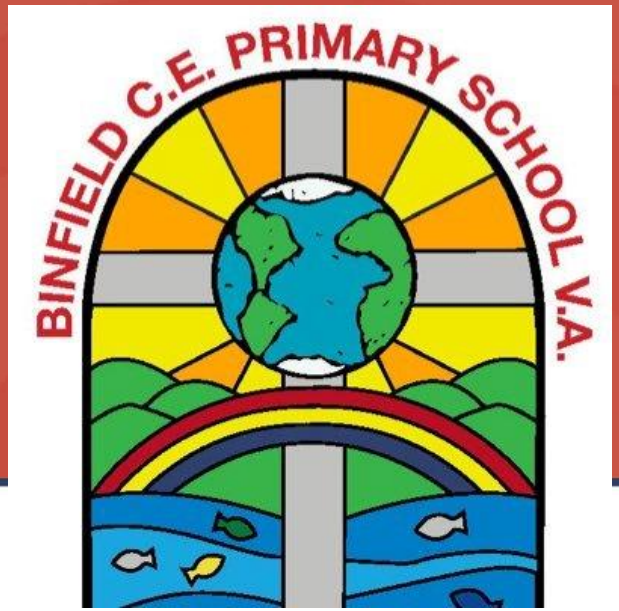


$$\begin{array}{r|llll} & 3 & 1 & 0 & 2 \\ \hline 3 & 9 & 3 & 0 & 6 \end{array}$$

Have a go at some division problems with the resources on your table.

Years 3 and 4 - use counters to show the division calculation that your parents set you!

Years 5 and 6 - solve the worded problems on your table. Can you represent the problem using the counters?



Multi-step problems

A coach has 55 seats and a minibus has 17 seats.

431 people from a school go on a school trip.

The school books 6 coaches and 8 minibuses.

How many spare seats will there be?

What can you work out first? Next?

$55 \times 6 = 330$

$50 \times 6 = 300$

$5 \times 6 = 30$

$17 \times 8 = 136$

$10 \times 8 = 80$

$7 \times 8 = 56$

Have a think

A coach has 55 seats and a minibus has 17 seats.

431 people from a school go on a school trip.

The school books 6 coaches and 8 minibuses.

How many spare seats will there be?

$55 \times 6 = 330$

$50 \times 6 = 300$

$5 \times 6 = 30$

$17 \times 8 = 136$

$10 \times 8 = 80$

$7 \times 8 = 56$

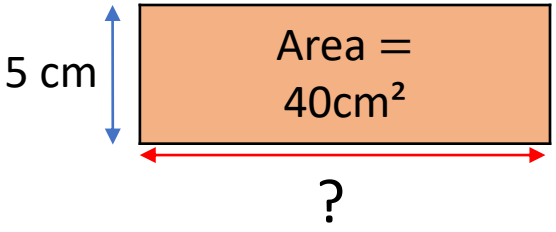
$330 + 136 = 466$

$466 - 431 = 35$

There will be 35 spare seats.

The area of a rectangular tile is 40 cm²

The width of the tile is 5 cm



$40 \div 5$

A strip of tiles is made by laying tiles end-to-end.

How long is a strip with 15 tiles? 120 cm

What information do you need to work out first?

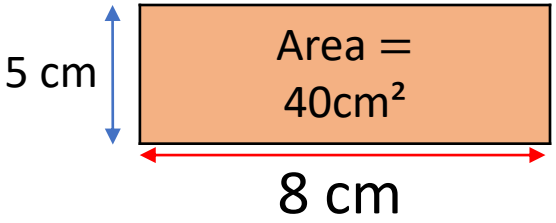
The length of one tile is 8 cm

$15 \times 8 = 120$ cm

Have a think

The area of a rectangular tile is 40 cm²

The width of the tile is 5 cm



A strip of tiles is made by laying tiles end-to-end.

How many tiles are needed to make a strip 4 m long?

4 m = 400 cm

8 × __50__ = 400

Have a think

8 × 5 = 40

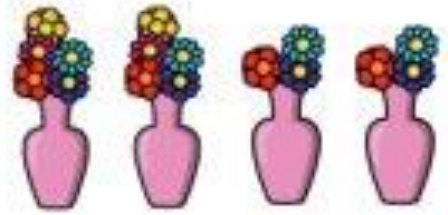
Children often do not know where to start or which operation to use.

Help identify what step needs to be done first – use what you know to work out what you don't know! Highlight key words that tell what operation to use.

Break the question down into

Bar models are a great way to visualise questions to help with understanding of the different stages involved in answering the

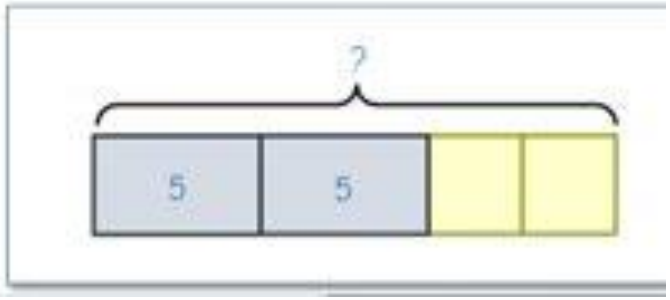
1 Bob has some flowers.



He has 2 vases of 5 flowers.

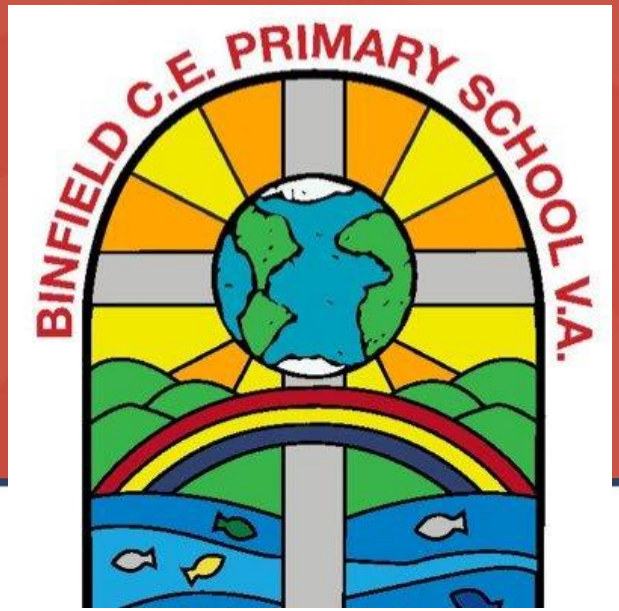
He has 2 vases of 3 flowers.

How many flowers does he have in total?



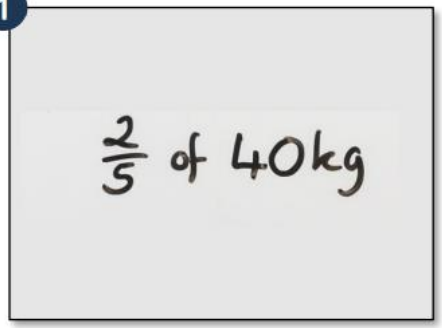
Have a go at some problems. Use the bar models to solve them.

Choose the appropriate level of challenge. The first questions are simpler, whilst the final ones can be very tricky!



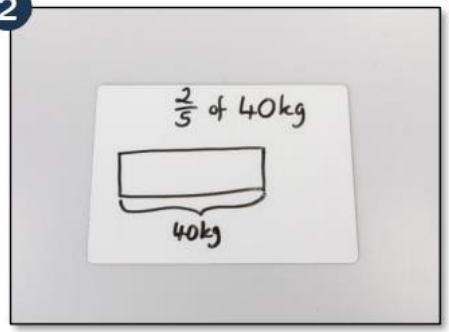
Fractions

1



We are going to work out $\frac{2}{5}$ of 40 kg

2

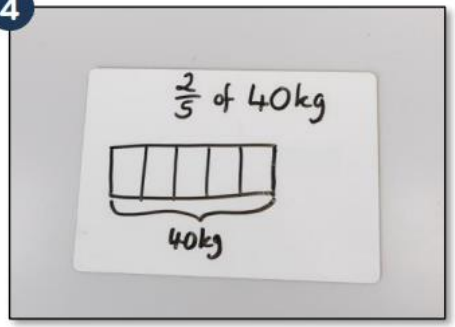


Ask your child what the whole is. That's right, it's 40 kg. Get them to draw a bar (or rectangle) and label it 40 kg to show the whole.

3

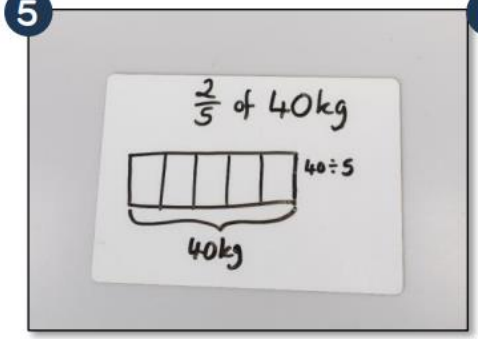
Ask, "How many parts should we spilt the bar into?". We are finding two-fifths so we should split the bar into 5 equal parts.

4



Ask your child to explain how the bar model represents the question.

5

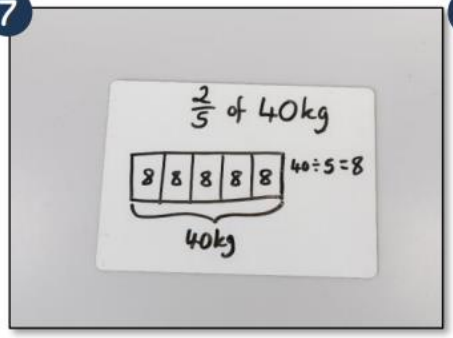


Ask, "How can we work out the value of each box?". The whole is worth 40 and there are 5 equal parts so we should do 40 ÷ 5

6

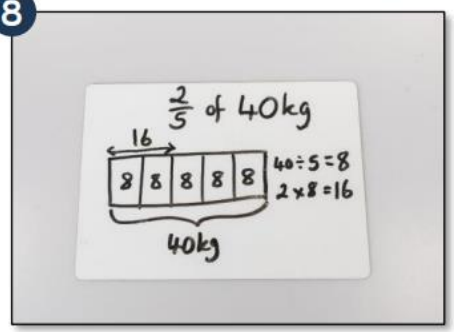
40 ÷ 5 = 8 so ask your child to write 8 in each part. Remember this stands for 8 kg, therefore $\frac{1}{5}$ of the whole is equal to 8 kg.

7



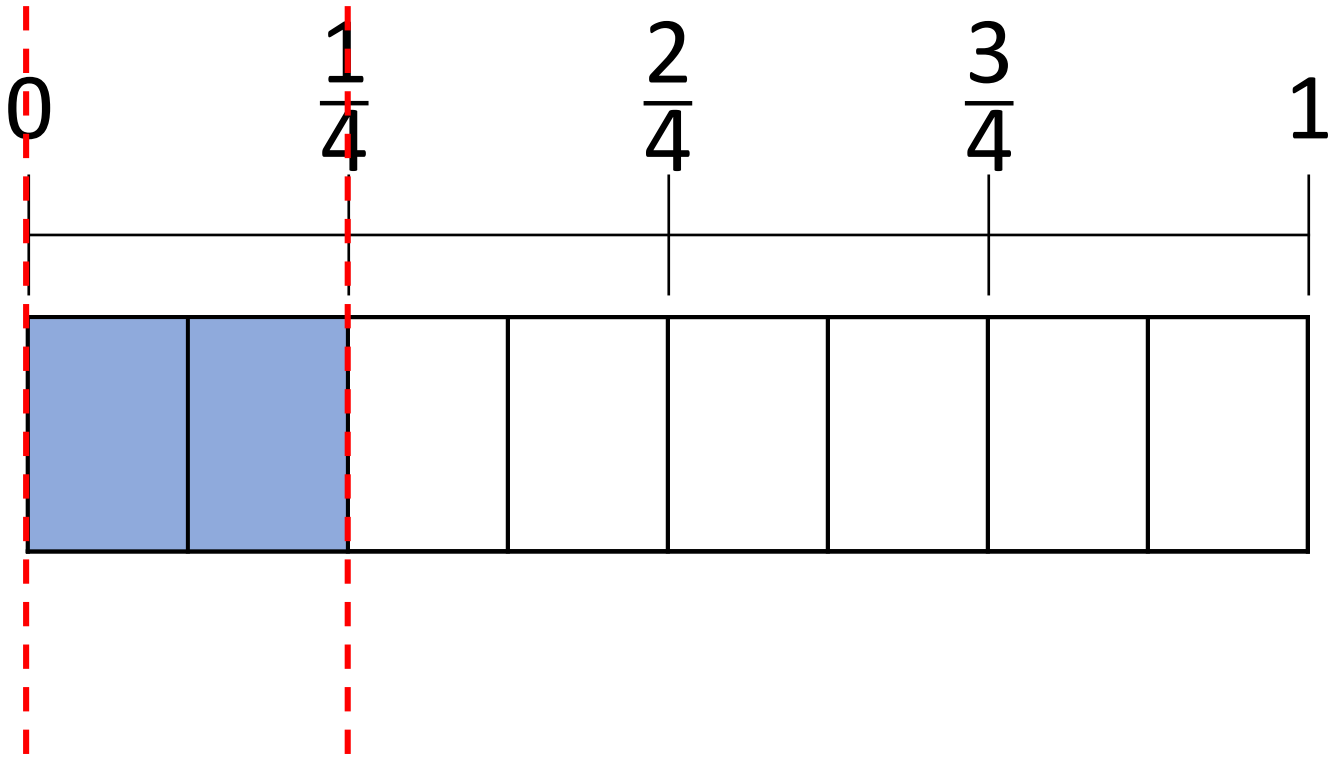
Ask "If we know that $\frac{1}{5}$ of 40 kg is equal to 8 kg, how can we find $\frac{2}{5}$ of 40 kg?"

8

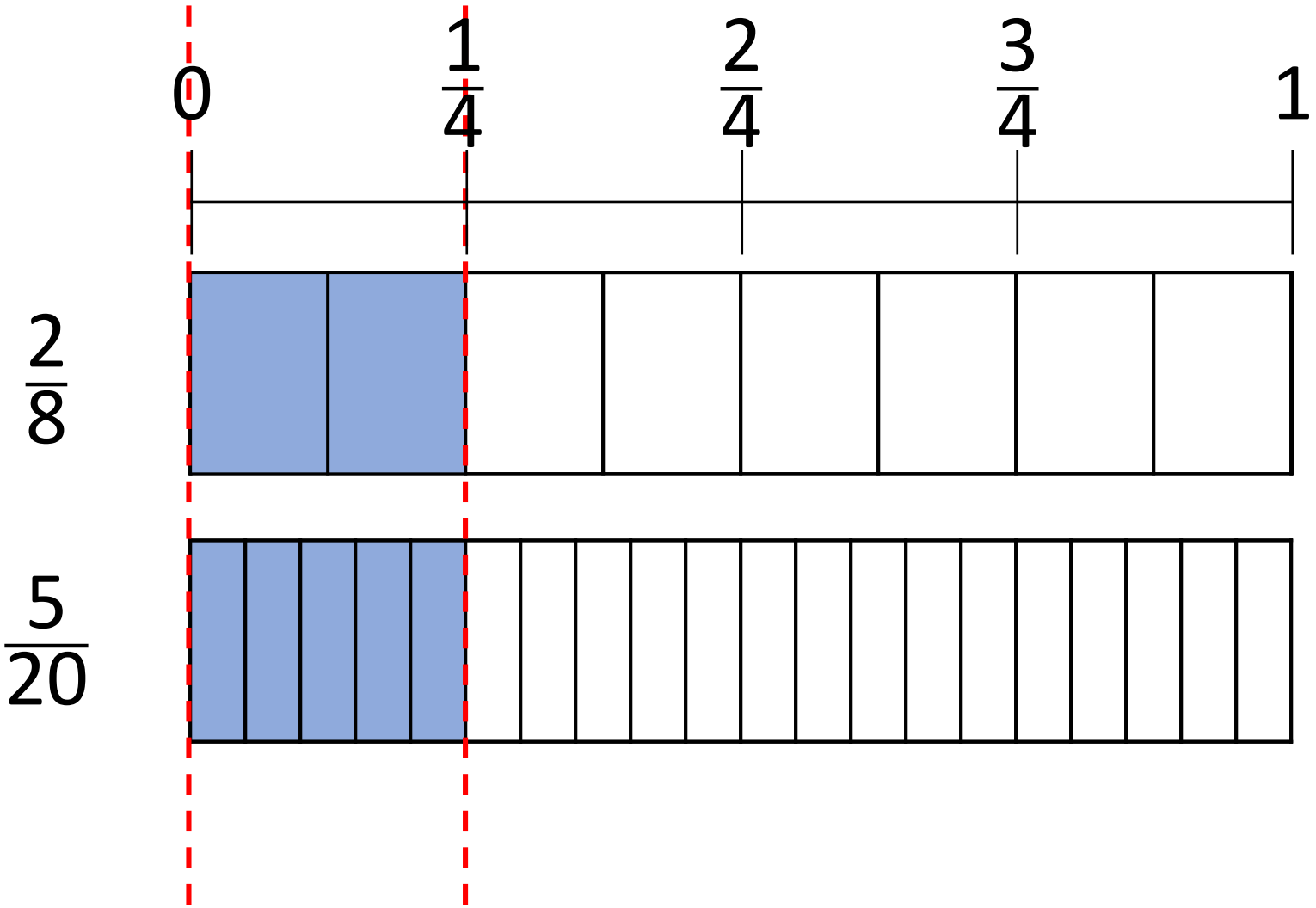


That's right, to find $\frac{2}{5}$ we need to find the total value of 2 of the parts.
2 × 8 kg = 16 kg therefore
$\frac{2}{5}$ of 40 kg = 16 kg.

White Rose Maths

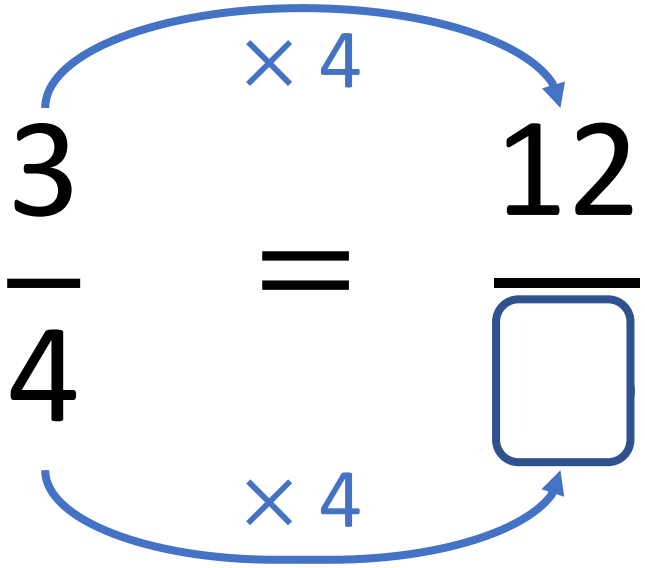


$\frac{2}{8}$ is equivalent to $\frac{1}{4}$


0
1/4
2/4
3/4
1
2/8
5/20

Have a think

$$\frac{1}{4} = \frac{\square}{8} = \frac{3}{\square} = \frac{\square}{20} = \frac{\square}{\square}$$


× 4
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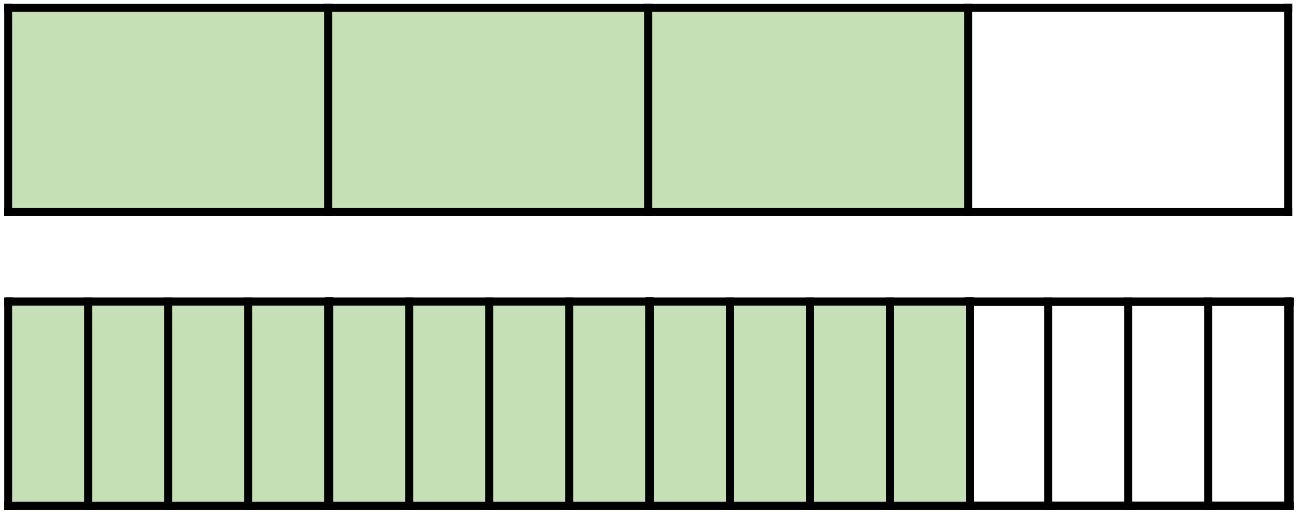
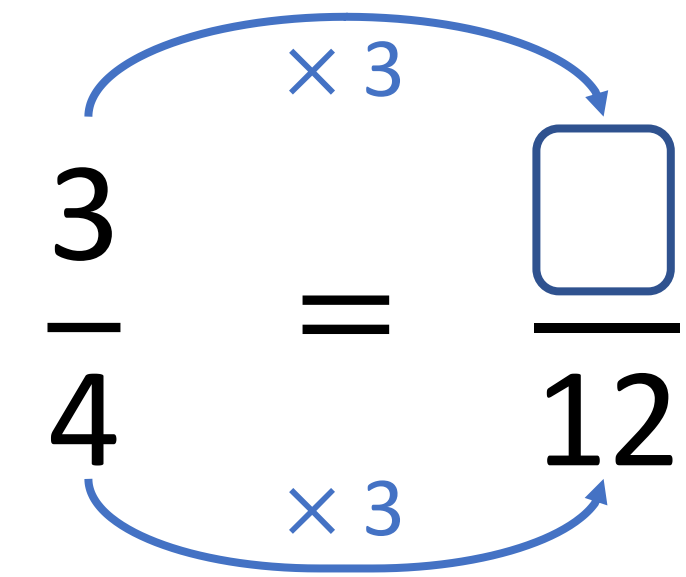
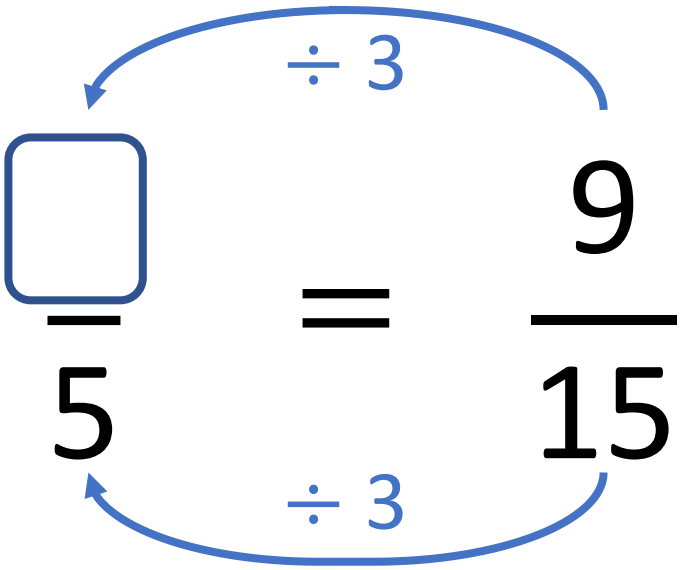


Have a think





Thanks for coming!

Any questions?