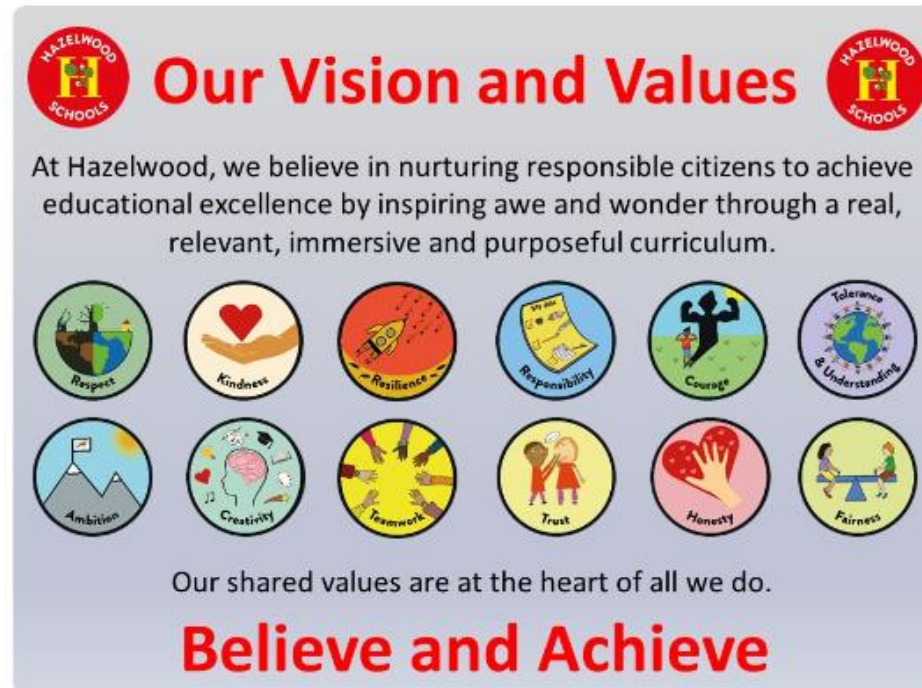




# **Year 3 & Year 4 Maths Parent Workshop**

Wednesday 24<sup>th</sup> January 2024

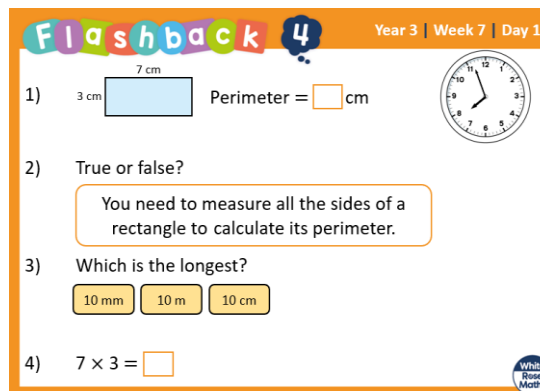
# Maths Vision at Hazelwood




**AT HAZELWOOD SCHOOLS, WE BELIEVE THAT MATHS IS AN ESSENTIAL PART OF EVERYDAY LIFE. LEARNING IS, THEREFORE, FOCUSED ON CHILDREN SECURING A STRONG CONCEPTUAL UNDERSTANDING OF MATHS AND DEVELOPING THE SKILLS AND SELF-CONFIDENCE REQUIRED TO APPLY THEIR MATHEMATICAL KNOWLEDGE TO CREATIVELY SOLVE PROBLEMS.**

# Maths Vision at Hazelwood

- **Fluent recall of mental maths facts.** For example, times tables, number bonds.
- To **reason** mathematically – children need to be able to **explain** the mathematical concepts with number sense; they must explain **how** they got the answer and **why** they are correct.
- **Problem solving** – applying their skills to real-life contexts.

A worksheet titled 'Flashback 4' with a blue speech bubble icon containing the number 4. The header also says 'Year 3 | Week 7 | Day 1'. It contains four math problems. Problem 1 shows a rectangle with a height of 3 cm and a width of 7 cm, followed by 'Perimeter =  cm'. Problem 2 asks 'True or false?' with a text box stating 'You need to measure all the sides of a rectangle to calculate its perimeter.' Problem 3 asks 'Which is the longest?' with three buttons: '10 mm', '10 m', and '10 cm'. Problem 4 is '7 x 3 = '. A clock icon is in the top right, and a 'White Rose Maths' logo is in the bottom right.

Flashback 4 Year 3 | Week 7 | Day 1

1)  Perimeter =  cm

2) True or false?  
You need to measure all the sides of a rectangle to calculate its perimeter.

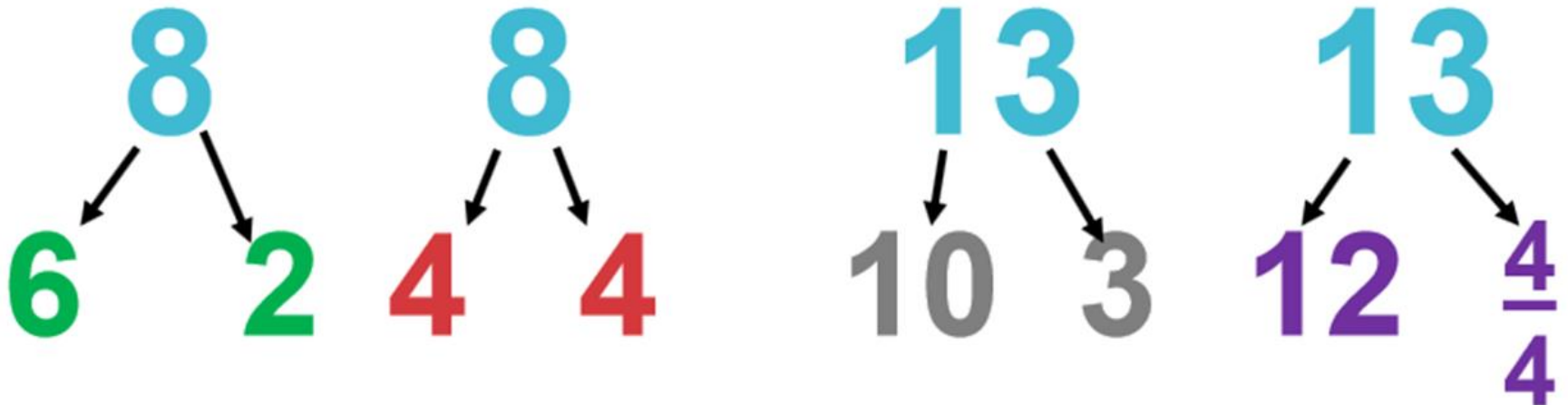
3) Which is the longest?

4)  $7 \times 3 =$

White Rose Maths

# Number Sense

Number sense is knowing what numbers mean by themselves and in relation to one another, the ability to partition (break apart numbers) into a variety of ways, and being able to manipulate numbers for different purposes.



# Year 3 Curriculum

## Year 3

	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 term	<div>Number</div> <div>Place value</div> <div>VIEW</div>			<div>Number</div> <div>Addition and subtraction</div> <div>VIEW</div>				<div>Number</div> <div>Multiplication and division</div> <div>VIEW</div>				
Spring term	<div>Number</div> <div>Multiplication and division</div> <div>VIEW</div>		<div>Measurement</div> <div>Length and perimeter</div> <div>VIEW</div>			<div>Number</div> <div>Fractions</div> <div>VIEW</div>		<div>Measurement</div> <div>Mass and capacity</div> <div>VIEW</div>				
Summer term	<div>Number</div> <div>Fractions</div> <div>VIEW</div>	<div>Measurement</div> <div>Money</div> <div>VIEW</div>	<div>Measurement</div> <div>Time</div> <div>VIEW</div>			<div>Geometry</div> <div>Shape</div> <div>VIEW</div>	<div>Statistics</div> <div>VIEW</div>		<div>Consolidation</div>			

# Year 4 Curriculum

## Year 4

	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 term	<div>Number</div> <div>Place value</div> <div>VIEW</div>				<div>Number</div> <div>Addition and subtraction</div> <div>VIEW</div>		<div>Measurement</div> <div>Area</div> <div>VIEW</div>		<div>Number</div> <div>Multiplication and division</div> <div>VIEW</div>		<div>Consolidation</div>	
Spring term	<div>Number</div> <div>Multiplication and division</div> <div>VIEW</div>			<div>Measurement</div> <div>Length and perimeter</div> <div>VIEW</div>		<div>Number</div> <div>Fractions</div> <div>VIEW</div>			<div>Number</div> <div>Decimals</div> <div>VIEW</div>			
Summer term	<div>Number</div> <div>Decimals</div> <div>VIEW</div>		<div>Measurement</div> <div>Money</div> <div>VIEW</div>		<div>Measurement</div> <div>Time</div> <div>VIEW</div>		<div>Consolidation</div>		<div>Geometry</div> <div>Shape</div> <div>VIEW</div>		<div>Statistics</div> <div>VIEW</div>	<div>Geometry</div> <div>Position and direction</div> <div>VIEW</div>

# Calculation Policy - Year 3



Objective and Strategies	Concrete	Pictorial	Abstract
<b>Addition - Year 3</b>			
<b>Column method - no regrouping</b>	<p><math>24 + 15 =</math> Add together the ones first then add the tens. Use the Base 10 blocks first before moving onto place value counters.</p>	<p>After practically using the base 10 blocks and place value counters, children can draw the counters to help them to solve additions. <math>37 + 18 = 55</math></p>	<p><math>21 + 42 =</math></p> <p>Used for calculations where the ones do not require exchanging place value.</p>
<b>Column method - regrouping</b>	<p>Make both numbers on a place value grid.</p> <p>Add up the ones and exchange 10 ones for one 10. Repeat for each place value column</p>	<p>Children can draw a pictorial representation of the columns and place value counters to further support their learning and understanding.</p>	<p><math display="block">\begin{array}{r} 536 \\ + 85 \\ \hline 621 \\ 11 \end{array}</math></p> <p>Start with the ones, then 10s and so on. Carry over the 10s or 100s.</p>

# Calculation Policy - Year 4



Objective and Strategies	Concrete	Pictorial	Abstract
<b>Addition - Year 4,5 &amp; 6</b>			
<b>Year 4</b> Add numbers with up to 4 digits			
<b>Year 5</b> Add decimals with 2 decimal places, including money			
<b>Year 6</b> Add several numbers of increasing complexity			

# Maths at Hazelwood

Concrete - Use of manipulatives to understand the concept.

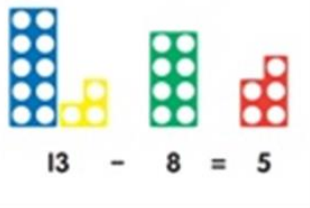
Pictorial - A visual representation which cements understanding from the concrete phase.

Abstract - Written understanding of concepts.



# Concrete, Pictorial and Abstract

Although we've presented CPA as three distinct stages, it is important to go back and forth between each stage to reinforce concepts.



$$13 - 8$$

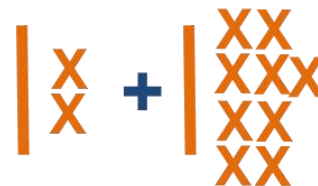
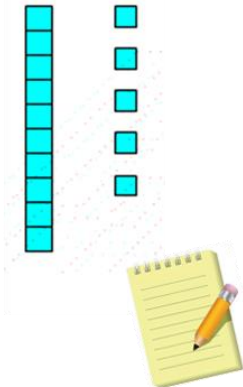
Active / Concrete



Building visual images



Abstract



$$12 + 19$$

# Metacognition

Examples of questions to promote metacognitive thinking include:

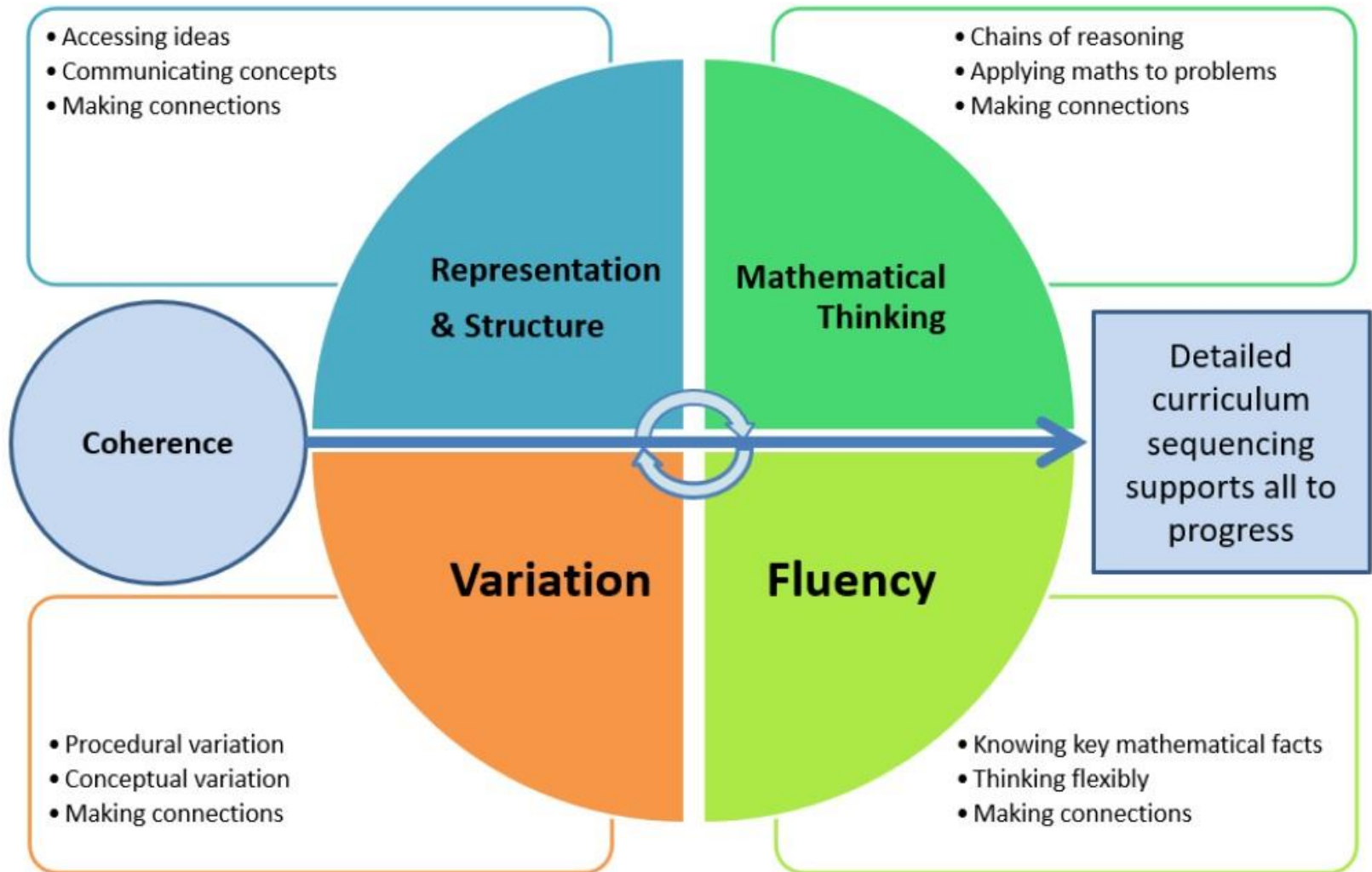
- How did you find out?
- Why do you think that?
- How do you know this?
- Can you show me?
- How do you prove this?
- Is there another way to solve this problem?

Metacognition is an important factor of mathematical problem solving. Metacognition is **the ability to monitor and control our own thoughts, how we approach the problem, how we choose the strategies to find a solution, or ask ourselves about the problem.**



# Mastery for all

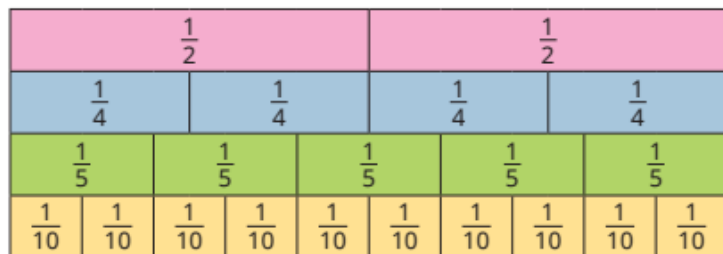
## Teaching for Mastery



# Bar Modelling



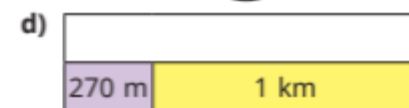
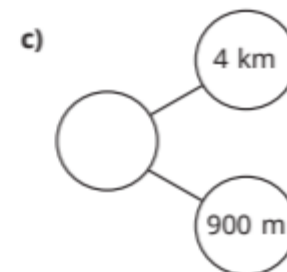
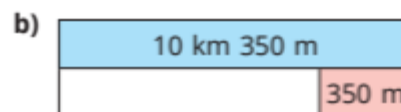
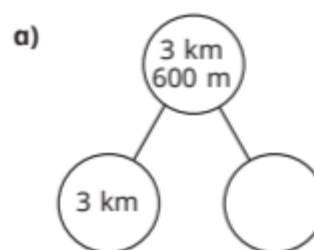
- 3 Use the fraction wall to decide whether the fractions are equivalent or not.



Write **is** or **is not** to complete the sentences.

- a)  $\frac{1}{2}$  \_\_\_\_\_ equivalent to  $\frac{2}{4}$       d)  $\frac{3}{10}$  \_\_\_\_\_ equivalent to  $\frac{2}{5}$   
 b)  $\frac{1}{4}$  \_\_\_\_\_ equivalent to  $\frac{2}{10}$       e)  $\frac{4}{5}$  \_\_\_\_\_ equivalent to  $\frac{8}{10}$   
 c)  $\frac{1}{2}$  \_\_\_\_\_ equivalent to  $\frac{5}{10}$       f)  $\frac{3}{4}$  \_\_\_\_\_ equivalent to  $\frac{4}{5}$

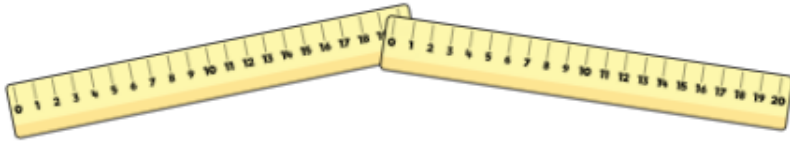
- 5 Complete the models.



The bar model is used in teaching for mastery to help children to 'see' mathematical structure. It is not a method for solving problems, but a way of revealing the mathematical structure within a problem and gaining insight and clarity to help solve it.

# Bar Modelling

Lucy buys 2 rulers.

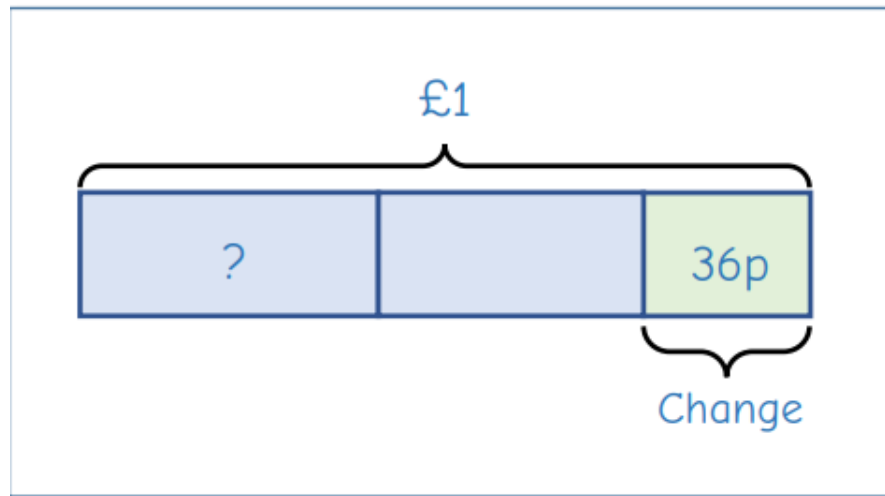
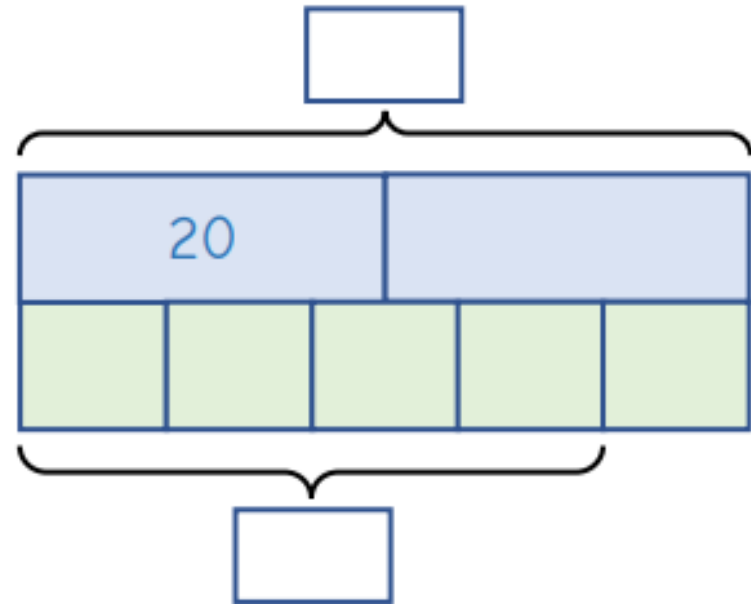


She pays with a £1 coin.

She gets 36p change.

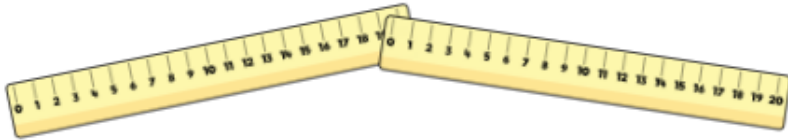
How much does one ruler cost?

Work out the missing values.



# Bar Modelling

Lucy buys 2 rulers.



She pays with a £1 coin.

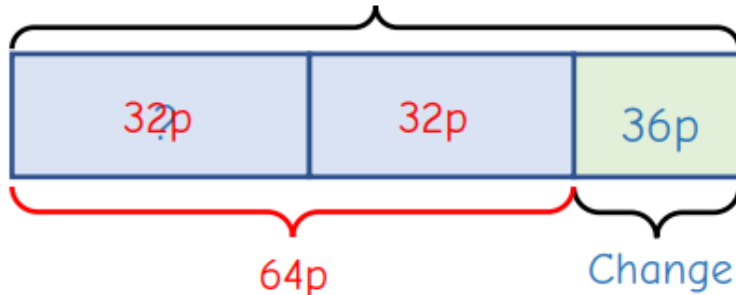
She gets 36p change.

How much does one ruler cost?

One ruler costs 32p.

$$100\text{p} - 36\text{p} = 64\text{p}$$

£1 (100p)

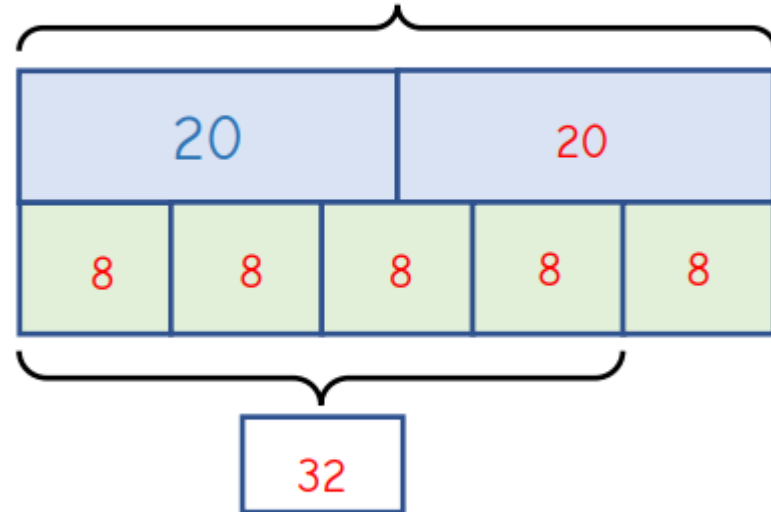


$$64\text{p} \div 2 = 32\text{p}$$

Work out the missing values.

$$2 \times 20 = 40$$

40



$$40 \div 5 = 8$$

$$4 \times 8 = 32$$

# Parent Activities

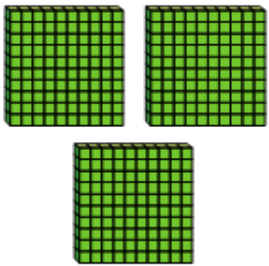
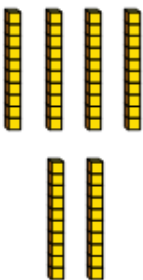



## Recognising Number with Base 10

Make different number representations using the Base 10 concrete manipulatives when adding and subtracting. Try the following:

1.  $534 + 56 =$       2.  $892 + 48 =$       3.  $678 + 143 =$

$\underline{3}42 + \underline{2}0 = \underline{\hspace{2cm}}$

Hundreds	Tens	Ones
		

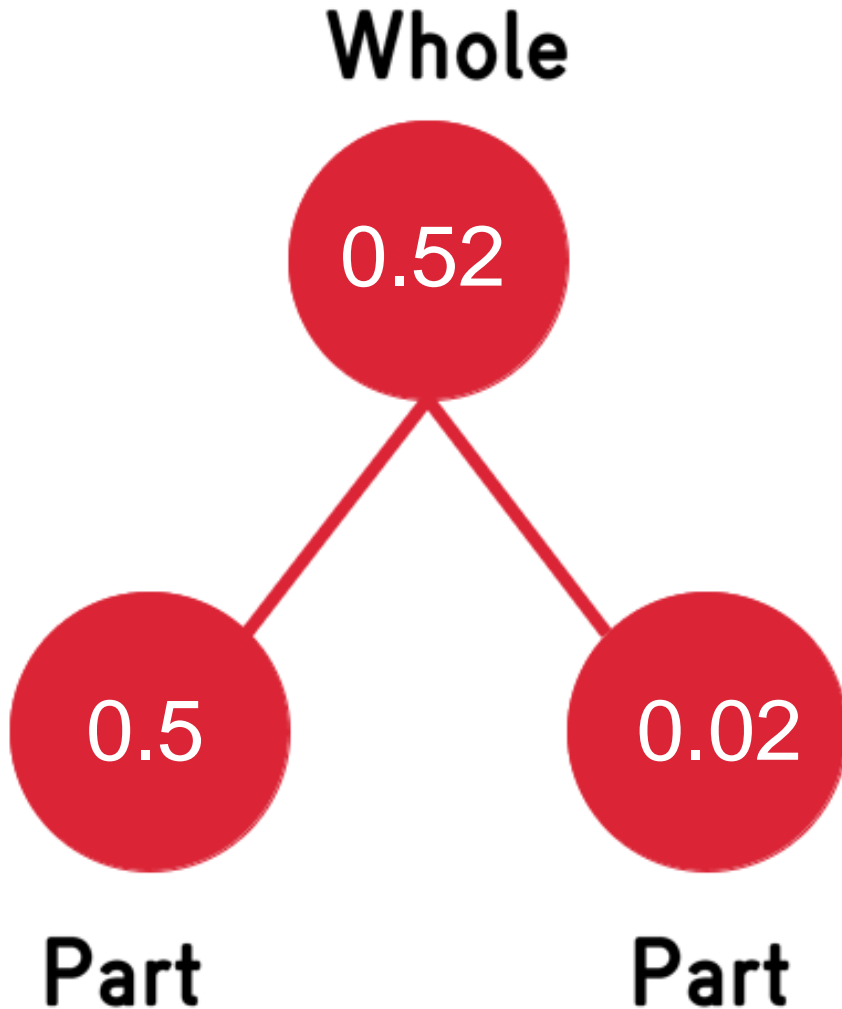
4 tens plus 2 tens is equal to          tens.

## Challenge:

Can you use Base 10 to demonstrate how you calculated an abstract addition or subtraction problem?



# Parent Activities



## Decimal place value

Create a value using digit fans for your partner e.g. 0.52

Can you use place value counters to partition it into tenths and hundredths?

Challenge: What if I add one tenth what number would I have now?

# Parent Activities

## Solve problems involving giving change

Start with a £20 note and choose 3 items on the table to purchase.

How much change should you receive from £20 if you buy those 3 items?

How much more is one item than another?

1 How much change would you get from a £10 note?



£  and  p

£  and  p



3 Draw three coins in each box to make the statements correct.

£26.70

=



Is there more than one way to make each statement correct?

# Parent Activities



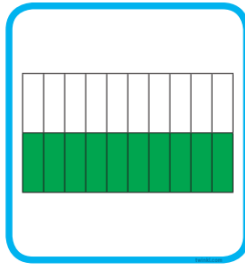
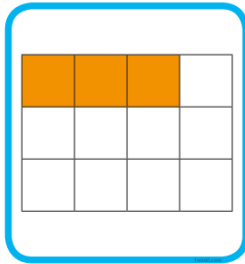
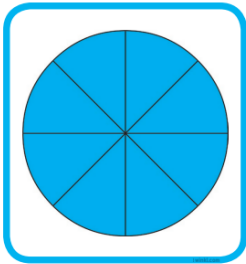
## Fraction Match up

Match up the fraction to the picture representation.

*There are \_\_\_\_\_ equal parts in the whole so the denominator is \_\_\_\_\_.*

*\_\_\_\_\_ parts are shaded so the numerator is \_\_\_\_\_.*

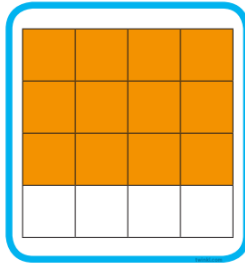
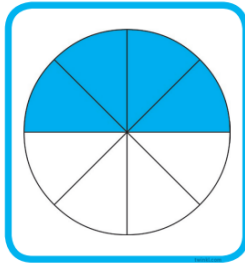
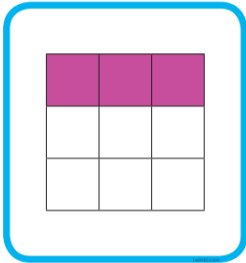
**Challenge:**  
Can you  
identify an  
equivalent  
fraction?



$$\frac{8}{8}$$

$$\frac{3}{12}$$

$$\frac{10}{20}$$



$$\frac{3}{9}$$

$$\frac{4}{8}$$

$$\frac{12}{16}$$

# Parent Activities



**Challenge:** Can you convert digital time to analogue?

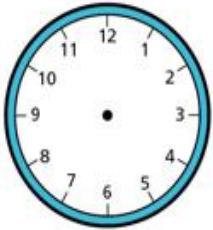
## Telling the Time

Use the clocks on the table to match with the time flashcards or ask a partner to set the time to whatever you suggest.



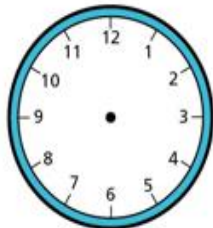
Draw the hands on the clocks to show the correct times.

a)



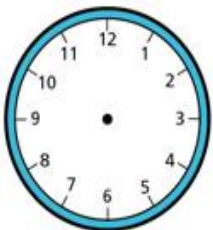
15 minutes past 6

c)



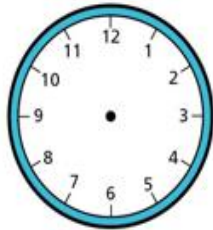
25 minutes to 9

b)



15 minutes to 9

d)



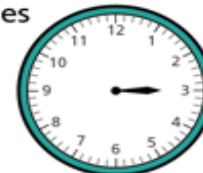
5 minutes to 12

The time is 10 past 3



Draw hands on the clocks to show what time it will be:

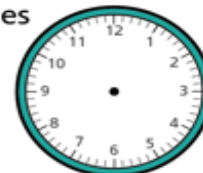
a) in 10 minutes



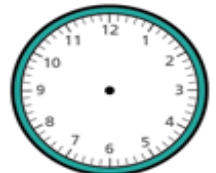
c) in 120 seconds



b) in 60 minutes



d) in 1.5 hours



# Parent Activities



## More or Less

Choose 2 number cards. Can you compare the numbers you chose using  $<$ ,  $>$  or  $=$

What could the missing digits be?

a) 4,523 is greater than 4,5\_\_7

b) 7,000  $<$  \_\_,513

c) 3,854  $>$  3,85\_\_

d) 5,650  $>$  4,\_\_ 7\_\_

Compare answers with a partner.

Write  $<$ ,  $>$  or  $=$  to compare the numbers.

a) 6,000  3,981

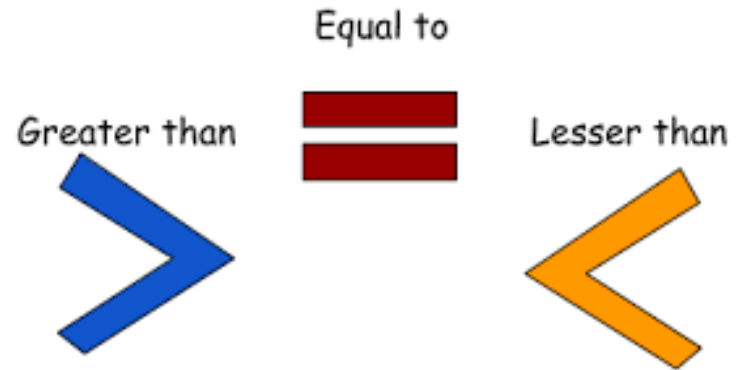
d) 32  2,000

b) 4,512  4,521

e) £6,418  £6,419

c) 900  1,200

f) 2,500 mm  2,060 mm



Teddy and Scott have some digit cards.



Teddy makes the number 4,571

Scott says his number is greater than Teddy's.

Teddy says Scott's number must start with a 5

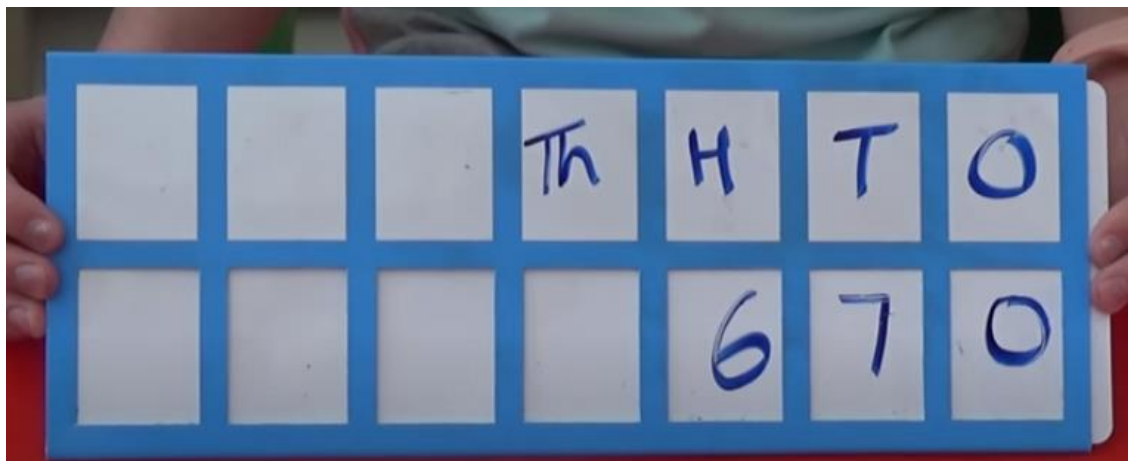
Is Teddy correct? \_\_\_\_\_

Explain how you know.



# Parent Activities

Using place value sliders to  
multiply and divide by 10 and 100



Roll the die to make a 3 digit number.

Place it into your place value slider carefully looking at the columns.

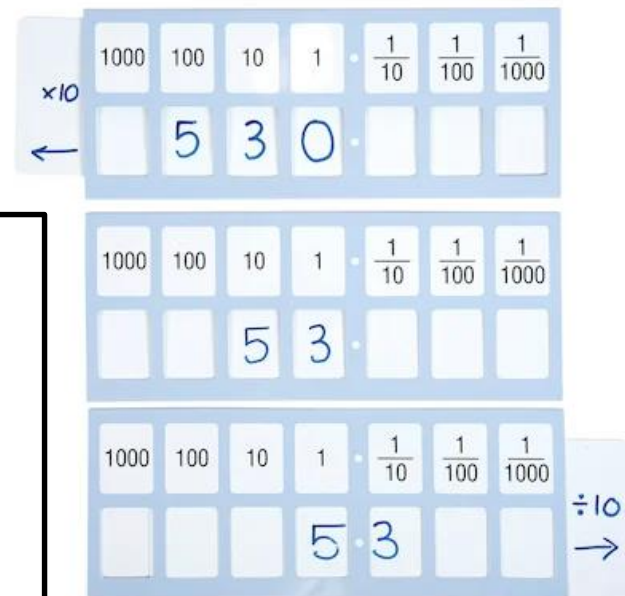
Complete the 4 number sentences to win a point. First to 5 points!

$$\underline{\quad} \times 10 =$$

$$\underline{\quad} \div 10 =$$

$$\underline{\quad} \times 100 =$$

$$\underline{\quad} \div 100 =$$



# Parent Activities



## Multiplication Fluency

Create your own counting stick using post it notes or use the loop cards to match the number sentence with the answer.



I have...	Who has...?
7	the product of 8 and 7

I have...	Who has...?
56	10 lots of 7

I have...	Who has...?
70	7 multiplied by 7

## Challenge:

Can you count your chosen times table backwards as well as forwards?

6	12	18	24
30	36	42	48

# Parent Activities







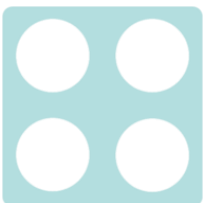



## Times tables grid

Using Numicon, counters or cubes, build a times table of your choice.

Show me 9x \_\_\_\_.

How can I work out 5x \_\_\_\_ using 10x \_\_\_\_ to help me?



				
4	8	12	16	20
				
24	28	32	36	40

# Parent Activities

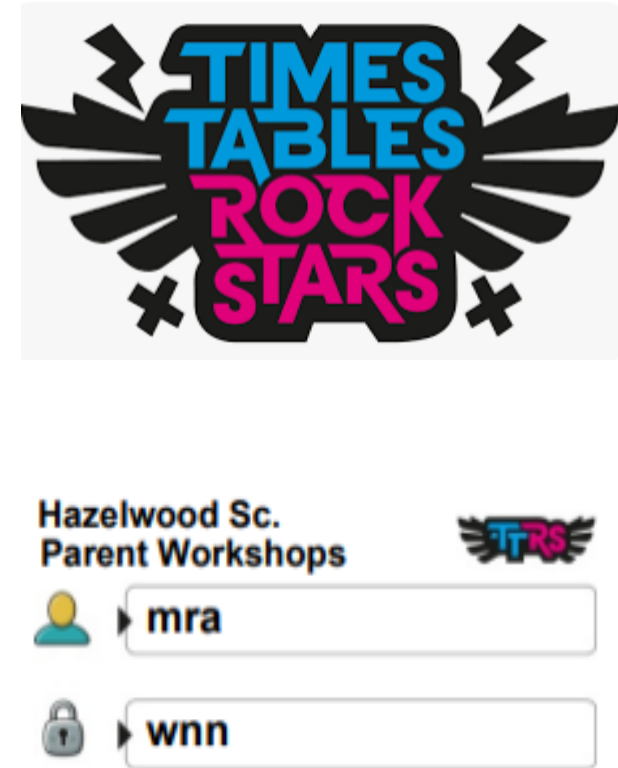


## Times Table Rock Stars

This programme supports times table recall speeds.

Incorrect answers are always immediately corrected in front of the pupil so that they start to associate the correct answer to every question and TTRS works out which times tables facts each pupil is consistently taking longer to answer and gradually starts to present these facts more frequently until pupils have mastered them.

It will also ask related division questions 20% of the time in order to reinforce division facts.



# Parent Activities - Challenge!



A sandwich and a drink cost £5.  
A sandwich and 3 drinks cost £8.  
How much does a sandwich cost?

£5	
S	D

Can you use manipulatives or bar modelling to help solve this?

£8			
S	D	D	D

I know that 2 drinks are equal to the difference between £8 and £5.

I know that 2 drinks are equal to £3 so 1 drink must be £1.50.

$$£5 - £1.50 = £3.50$$



# How Can You Support at Home

## 1-Minute White Rose App

1-Minute Maths is a free app aimed at EYFS and KS1 children to help build greater confidence with their number and fluency skills. The app aims to support children in recognising a small number of items without counting them (subitising) and the four calculations of addition, subtraction, multiplication and division.



## Times Tables Rock Stars

Class teachers set the times tables that they need their pupils to focus on. Highly engaging and the children really enjoy it!

Teachers can monitor and view each child's progress



# How Can You Support at Home

Times tables can be practised in a variety of ways at home

[Maths Frame](#) – Free resource that gives you an indication at the speed at which the questions are asked.

## Multiplication Tables Check

This activity exactly mirrors the 'Multiplication Tables Check' that will be given to children at the end of Year 4. They are tested on their multiplication tables up to 12 x 12. There are twenty-five questions and children have six seconds to answer each question and three seconds between questions. The questions are generated randomly using the same rules as the 'Multiplication Tables Check' (see below).

Results can be downloaded and printed at the end of the test.

A similar activity which tests recall of [number bonds](#) can be found [here](#).

For more multiplication games click [here](#).

Multiplication Table	Minimum number of items in each form	Maximum number of items in each form
1	Not applicable	Not applicable
2	0	2
3	1	3
4	1	3
5	1	3
6	2	4
7	2	4
8	2	4
9	2	4
10	0	2
11	1	3
12	2	4



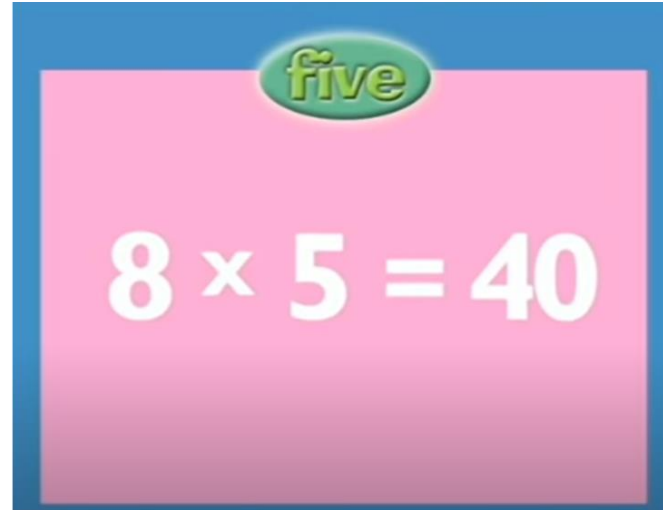
## [YouTube](#)

Times tables on a broomstick can help develop fluency when skip counting.



# How Can You Support at Home

## Times Tables Songs



Singing along to songs will **help children memorise the multiplication facts for each times table**. They are designed to be simple, memorable, and fun so that they support understanding with times table facts.

# How Can You Support at Home

## Times Tables Grids

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

**Speed Tables**

PRINT CHANGE

Name: \_\_\_\_\_

QUIT

x	5	4	8	9	7	3	1	2	10	6
8										
5										
9										
4										
6										
1										
7										
10										
3										
2										

Time Taken : \_\_\_\_\_

Developed by Mark Copson at www.primarygames.co.uk

A multiplication chart is a table that shows the products of two numbers. Usually, one set of numbers is written on the left column and another set is written as the top row.



# How Can You Support at Home

Firstly, a positive attitude goes a long way – so as much encouragement and support as possible (but we don't need to tell you that!)

## **Some further tips:**

- Make times tables fun;
- Climb stairs counting in multiples
- Play verbal times tables games
- Listen to and learn times tables songs
- Play online maths games

Always encourage your child to talk to you, their teacher, or another adult they trust, if they express persisting anxieties about the check.

# Thank you very much for listening!

