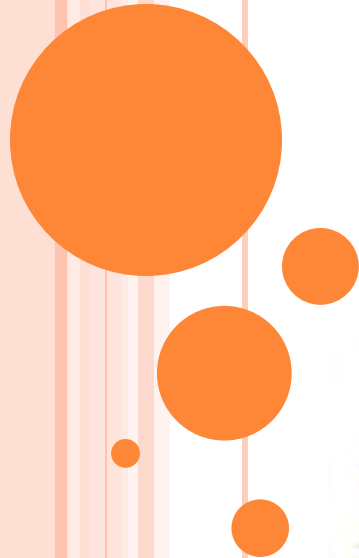


Year 5

Stay and Share

November 2016



Gobham Primary School
Caring Proud Successful
OUTSTANDING!



Welcome to Year 5...

COBHAM Primary School

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TRUST
Takes years to build, seconds to break and forever to repair.

THE POWER OF TRUTH

Struggle today, strength tomorrow

Tolerance
R respect
U nity
S strength
T ruth

Respect



Class 5

Class 5 is a great class with some of our oldest children. Many of them begin to have responsibilities across the school that involve helping other children and assisting with the school's smooth running. Class 5 is a busy, hard working, fun year and the children are always 'chomping at the bit' eagerly for their turn to be Class 6.

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Maths in Year 5...

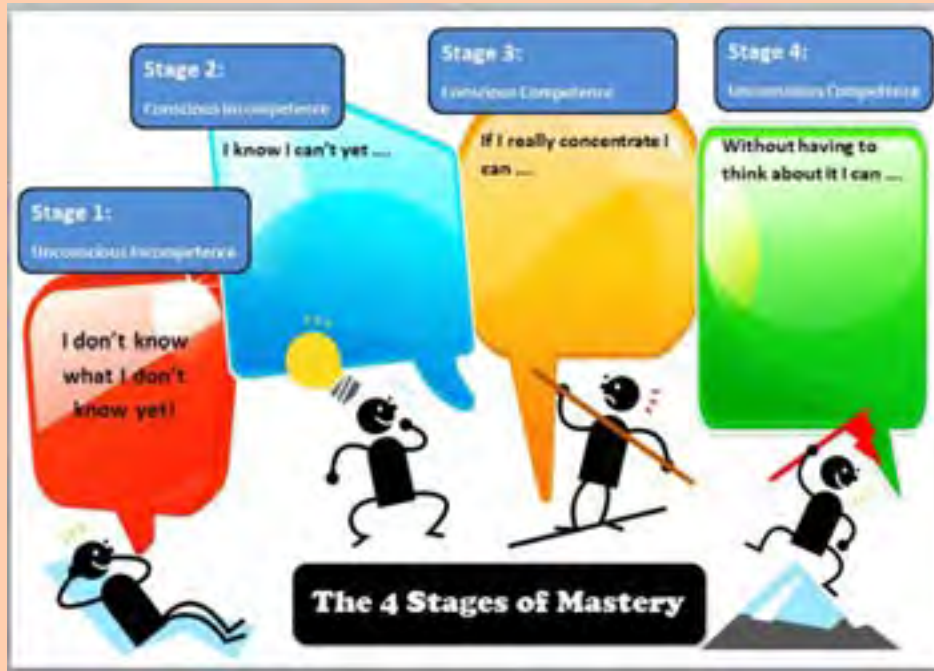
- Year 5 maths has developed and changed rapidly over the last two years and encompasses all of the skills and knowledge the children have explored so far throughout their learning journey.
- Our main priority in maths this year is to develop the children's ability to reason, explain and master their own curriculum to have a secure subject knowledge.
- Weekly recap, consolidation and mastery lessons have so far enabled the children to develop their reasoning skills and fully understand the topics we have been exploring.





Recap, Consolidation and Mastery

? ← Answer	!
Draw it!	First I... Oh, I see! Explain
Prove it!	
Maths Story	Odd one out



mastering
MATHS



Maths in Year 5...

- Here is an example of a recap, consolidation and mastery question that we have already explored:

Recap and Consolidation

The table shows the number of emergency phone calls made on two different days.

Round the numbers to the required degree of accuracy:

	Number of phone calls	Nearest 100	Nearest 1000
Day 1	36298		
Day 2	79810		





Maths in Year 5...

- Here is an example of a recap, consolidation and mastery question that we have already explored:

Recap and Consolidation

Sally is thinking of a number. She says 'My number is a multiple of 3. It is also 3 less than a multiple of 4.'

Find three different numbers that could be Sally's number.





Maths in Year 5...

- Here is an example of a recap, consolidation and mastery question that we have already explored:

Recap, consolidation and mastery

- I am thinking of a number. When it is divided by 9, the remainder is 3.
When it is divided by 2, the remainder is 1.
When it is divided by 5, the remainder is 4.
What is my number?

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Visual Images...

	base-10 blocks		2-color counters
	pattern blocks		geoboards
	calculators		unifix cubes



connecting cubes	dice
counters	colored counters
counting bears	base ten blocks





Visual Images...

- Visual images have become a main focus when introducing new concepts to the children to enable them to actually see their learning in picture formation.
- With every new concept introduced, the children will explore it in the following way:
 - *Using real life contexts*
 - *Visual images to provide a visual aid*
 - *Application to a range of different questions*





Working example...

- To find the multiples of numbers, you can use arrays to help you:

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Let's Learn

1 bakes 4 rows of biscuits.

	$1 \times 6 = 6$
	$2 \times 6 = 12$
	$3 \times 6 = 18$
	$4 \times 6 = 24$





Working example...

- To find the factors of numbers, you can use arrays to help you:

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Finding Factors

Lesson 2

Is there more than one way of doing it?

Let's Learn

1. does it this way.

$18 = 2 \times 9$

2 is a factor of 18. 9 is also a factor of 18.

2. does it in two different ways.

$18 = 1 \times 18$

1, 2, 9 and 18 are factors of 18.

$18 = 2 \times 9$





To help us find prime numbers, we can organise cubes into square or rectangular arrangements.

If the cubes can only be arranged in one way, the number is a prime number as it only has two factors: itself and 1.

Working example...

3 = $\square \times \square$
 $3 = 1 \times 3$
I can only arrange 3 pots in one way.

6 = $\square \times \square$
 $6 = 1 \times 6$
 $6 = 2 \times 3$
6 has four different factors.

7 = $\square \times \square$
 $7 = 1 \times 7$
7 has two factors, 1 and 7.

8 = $\square \times \square$
 $8 = 1 \times 8$
 $8 = 2 \times 4$
8 has four different factors.



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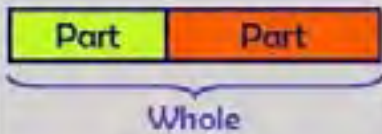
Respect



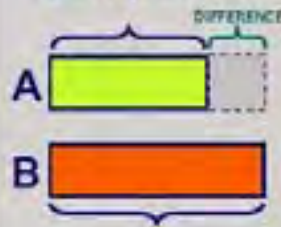
The Bar Model

Solving Problems with Bar Modeling

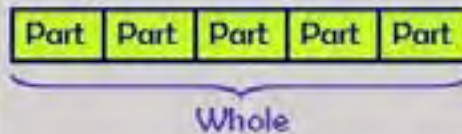
Part-Part-Whole



Comparison

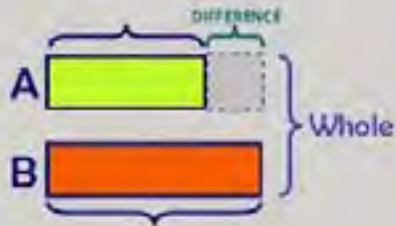


Equal Parts of a Whole

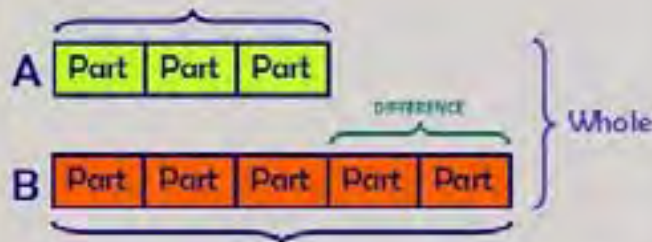


an Equal Part is a UNIT

Comparison AND Part-Part-Whole



Comparison AND Equal Parts of Wholes



an Equal Part is a UNIT



Bar Modelling

Jacob cuts 4 metres of ribbon into **three** pieces.

The length of the first piece is **1.28** metres.

The length of the second piece is **1.65** metres.

Work out the length of the third piece.

4 metres		
1.28 metres	1.65 metres	

Maths in Year 5...

The Bar Model is a tool the children use to support their maths learning in problem solving situations to help interpret the questions they are exploring.



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Bar Modelling

Lara had some money.

She spent £1.25 on a drink.

She spent £1.60 on a sandwich.

She has **three-quarters** of her money left.

How much money did Lara have to **start with**?

		?	
£1.25 + £1.60	?	?	?
£2.85	£2.85	£2.85	£2.85

Maths in Year 5...

The Bar Model is a tool the children use to support their maths learning in problem solving situations to help interpret the questions they are exploring.



Methods explored...



Written calculations
Add numbers with up to four digits, using the formal written (columnar) method

$$\begin{array}{r} \pounds 12.32 \\ + \pounds 11.81 \\ \hline \pounds 24.13 \\ \hline \end{array}$$

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \hline \end{array}$$

Using Dienes

Diagram illustrating the use of Dienes blocks for the addition $262 + 145 =$. The blocks are arranged to show the sum: 2 hundreds, 6 tens, and 2 units plus 1 hundred, 4 tens, and 5 units. The result is shown as 3 hundreds, 0 tens, and 7 units.

Answer: 1431





Maths in Year 5...

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Concise method for adding decimals



Example

$$\begin{array}{r} 123.9 \\ 7.25+ \\ \hline 131.15 \\ \hline 1.1 \end{array}$$

$$\begin{array}{r} 6.72 \\ 9.56+ \\ \hline 15.28 \\ \hline 1 \end{array}$$

Once secure with the previous methods the children will be introduced to adding decimals to decimals (and decimals to whole numbers), ensuring that place value is maintained throughout.

Children may, at this stage, record a '0' in any spare space in order to assist them in maintaining place value.





Maths in Year 5...

Formal written methods (3/4)



This process is then repeated for three-digit numbers, with the children experiencing first the calculation without a need to 'exchange' and then involving 'exchanging'.

Example
 $243 - 122 = ?$

$$\begin{array}{r} 243 \\ - 122 \\ \hline 121 \end{array}$$

so $243 - 122 = 121$

Example
 $443 - 237 = ?$

$$\begin{array}{r} 4\overset{3}{\cancel{4}}3 \\ - 237 \\ \hline 206 \end{array}$$

Example
 $400 - 199 = ?$

$$\begin{array}{r} 4\overset{9}{\cancel{0}}0 \\ - 199 \\ \hline 201 \end{array}$$

While teaching this method it is vital to reinforce the importance of choosing the most efficient method to subtract, e.g. $300 - 12$ would be quicker to solve mentally; subtracting 10 and then 2.



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The 'half a house' method (2)



Children will then extend upon this method, introducing decimals to 2 decimal places and then beyond.

Example

$$13 \div 5 =$$

How many 5s are in 13?

$$\begin{array}{r} 02.6 \\ 5 \overline{) 13.0} \end{array}$$

Estimation will be encouraged first.

This will then be extended to decimals in the context of money.

$$£4.29 \div 4 =$$

$$\begin{array}{r} £1.0725 \\ 4 \overline{) £4.2900} \end{array}$$

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Multiplication

Example

$$4.62 \times 3 = ?$$

$$\begin{array}{r} 4.62 \\ \times 3 \\ \hline 13.86 \\ \hline 1 \end{array}$$

Short multiplication methods

Example

$$46 \times 19 = ?$$

$$\begin{array}{r} 46 \\ \times 19 \\ \hline 414 \\ 460 \\ \hline 874 \end{array}$$

- Step 1: Multiply top amount x units
- Step 2: Multiply top amount x tens
- Step 3: Add the answers together

This method will also be used to multiply HTU x TU and decimal numbers

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