

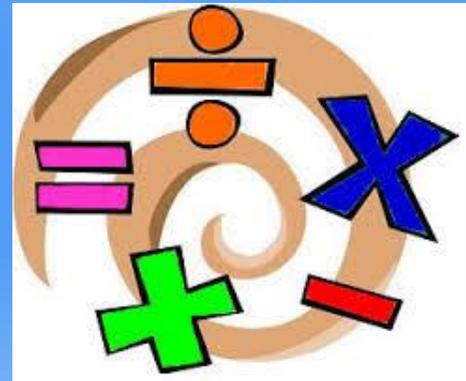
# Welcome to Cake and Calculation

~

focusing on addition

Wednesday 29<sup>th</sup> January

Led by Mrs Bown



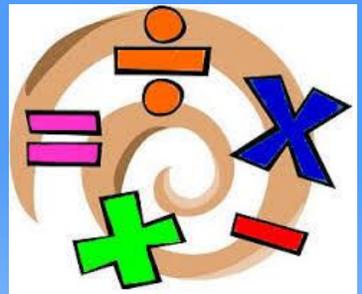
# Timetable of the morning

8:40 Tea, Coffee and Cake

9:00 Demonstration by Skylark Class of 99 Club  
and TT Rockstars

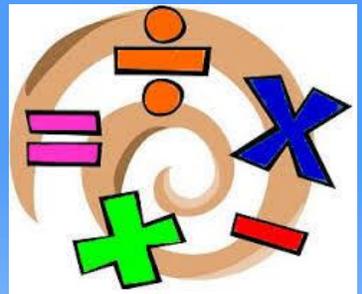
9:20 A chance to visit the classrooms – EYFS to  
Yr 5

9:55 Meet back in the hall

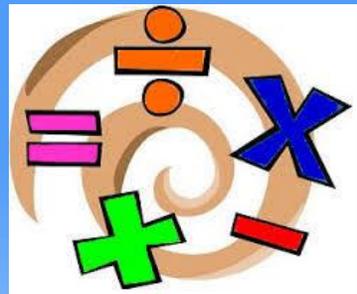
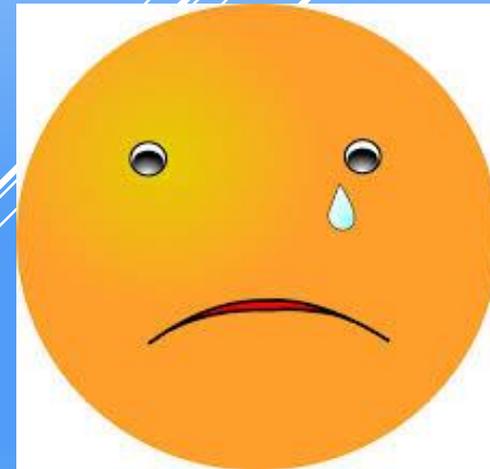
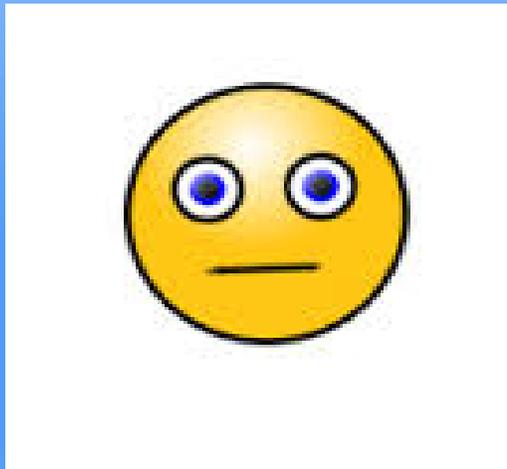
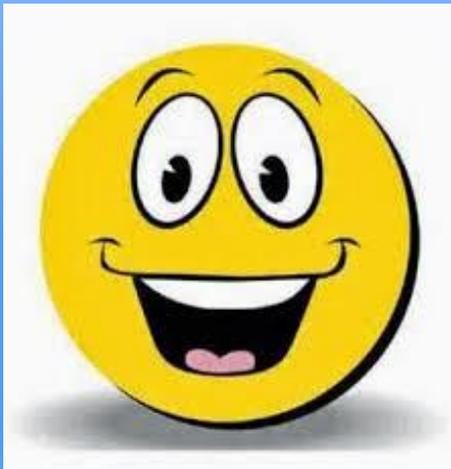


# Aims

- To get an insight into how maths is taught at Great Wishford
- To take part in a variety of activities with your children
- To share with you the strategies and methods used at school so that they are mirrored at home



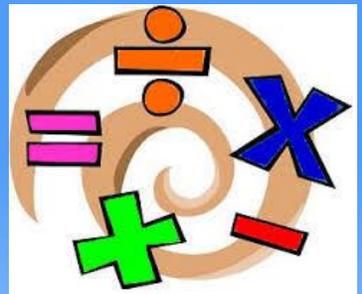
On a scale of one to ten, how much do you honestly enjoy mathematics?



Research suggests that as many as 60% of adults would rather clean the toilet than work out a maths problem.

An even larger percentage say:

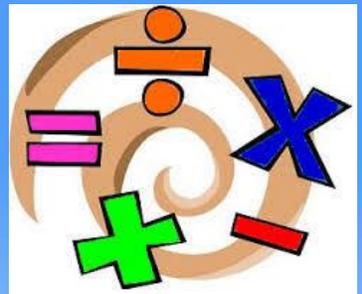
I was never  
any good at  
maths.



# The Maths Curriculum

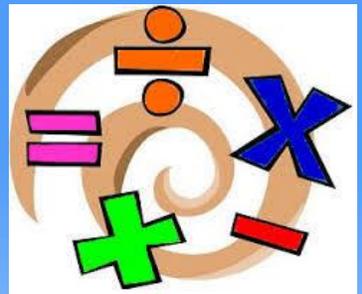
Children should:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions



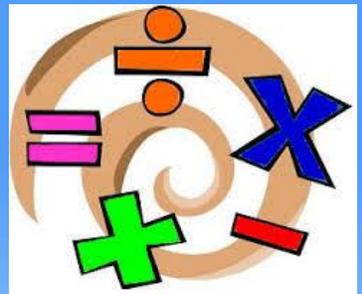
# At Great Wishford we aim for our children:

- to be an **active** participant in their own learning
- to be **confident** and numerate
- to be **fluent** in their mathematics at the appropriate level
- to be able to **reason** about their learning using the correct mathematical vocabulary
- to be able to **apply** their skills and knowledge as they progress through their learning
- to develop an appreciation that mathematics is a **key skill** that equips them for life
- to **enjoy** mathematics



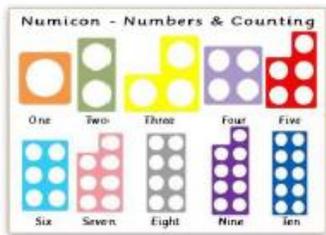
# Calculation Policy

- Concrete
- Pictorial
- Abstract
- Vocabulary
- Stem sentences



# Concrete

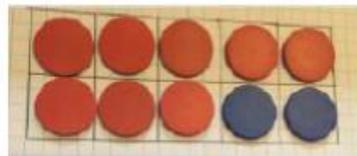
Concrete is the 'active' stage, using concrete objects/manipulatives to solve problems. Manipulatives are selected upon the most appropriate for the concept. Teachers may vary which manipulatives are used for a concept. Examples of concrete objects used in lessons include:



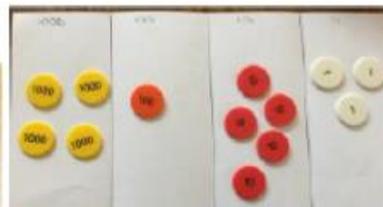
Numicon



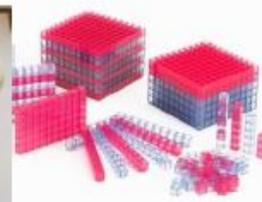
Bead strings



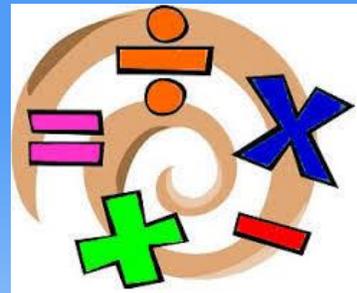
Tens frames



Place value counters

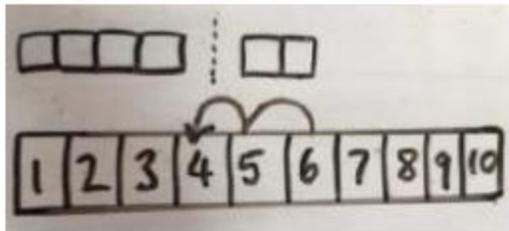


Dienes (Base 10)

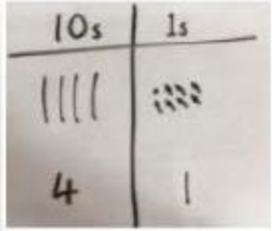


# Pictorial

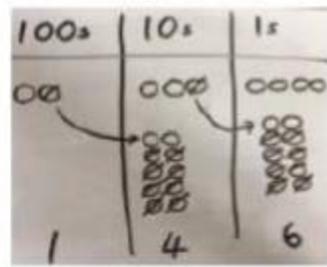
Pictorial is the 'seeing' stage, using representations of the objects involved in maths problems. This stage encourages children to make a mental connection between the physical object and abstract levels of understanding, by drawing or looking at pictures, circles, diagrams or models which represent the objects in the problem. Examples of pictorial representations include:



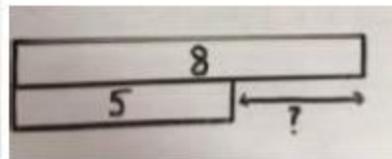
Representing what they see



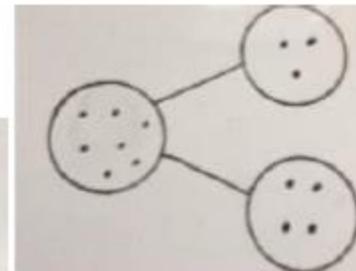
Base 10 pictorially



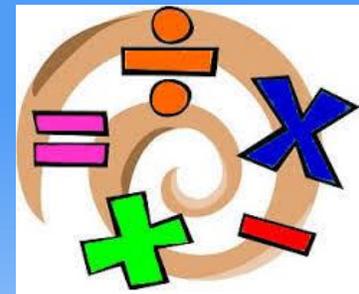
Counters pictorially



Bar models



Part-whole models



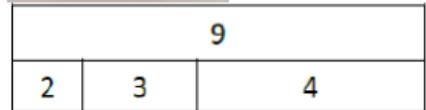
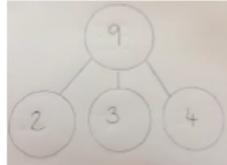
# Abstract

Abstract is the 'symbolic' stage, where children are able to use abstract symbols to model and solve maths problems. The 'abstract' concept is introduced when children have a firm understanding of the 'concrete' and 'pictorial'. This includes number sentences, number lines and formal column methods of calculation.

The abstract number line:  
What is 2 more than 4?  
What is the sum of 2 and 4?  
What is the total of 4 and 2?  
 $4 + 2$

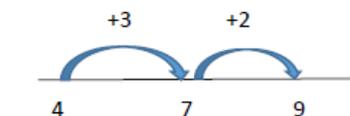


$2 + 3 + 4 = 9$ . Four is a part, three is a part, two is a part and the whole is nine.



Number lines.

$4 + 3 + 2 = 9$

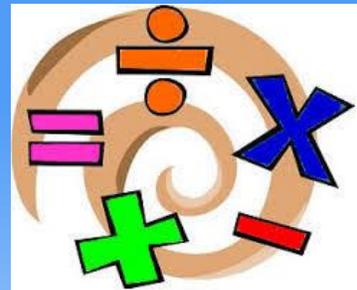


$$\begin{array}{r} 20 + 3 \\ - 40 + 0 \\ \hline 60 + 3 = 63 \end{array}$$

$$\begin{array}{r} 23 \\ + 40 \\ \hline \end{array}$$

$$\begin{array}{r} 317 \\ + 46 \\ \hline 363 \\ \hline 1 \end{array}$$

	3	3	8	4		
+	1	4	2	1		
	4	8	0	5		
		1				

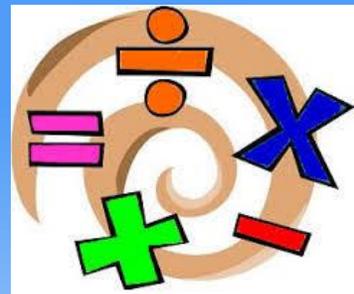


# Vocabulary

## **Addition**

+, add, more, plus, make, sum, total, altogether, part part, whole, score, double, near double, exchange, carry, column, one more, two more... ten more, how many more to make...?, how many more is... than...?, how much more is...?

equals, sign, is the same as, tens boundary, hundreds boundary, inverse, column addition



# Stem sentences

I know

I think

I agree because...

I disagree because...

If I know...then...

In my opinion...

The answer is because...

We know that...so...

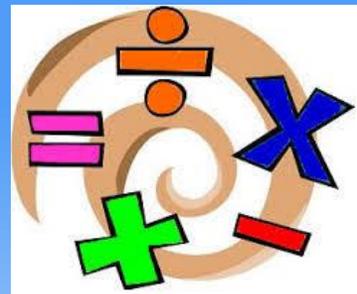
The difference between...is...

I know that...so I would try...

I approached it by...

I was systematic because...

So far I have discovered...



# Fluency

- 99 Club
- TT Rockstars
- Calculations

- Find the answers:

$$4 \times 12 =$$

$$5 \times 9 =$$

$$7 \times 8 =$$

$$8 \times 11 =$$

- Fill in the gaps:

$$4 \times \underline{\quad} = 12$$

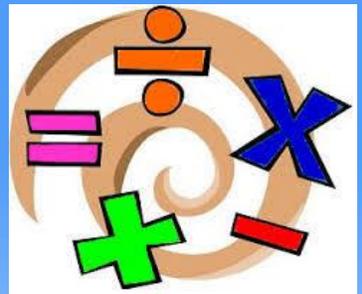
$$8 \times \underline{\quad} = 64$$

$$32 = 4 \times \underline{\quad}$$

$$6 = 24 \div \underline{\quad}$$

- Leila has 6 bags with 5 apples in each.

How many apples does she have altogether?



# Reasoning

- $\square \times \square = 48$

Which pair of numbers could go in the boxes? Could any other numbers go in the boxes?

- Complete these calculations:

$$7 \times 8 = 7 \times 4 \times 2 =$$

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

$$12 \times 4 = 12 \times 2 \times 2 =$$

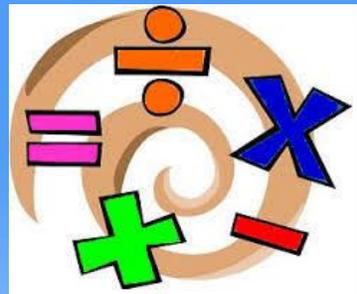
Which calculations have the same answer? Can you explain why?

- True or False

$$6 \times 8 = 6 \times 4 \times 2$$

$$6 \times 8 = 6 \times 4 + 4$$

Explain your reasoning.



# Problem Solving

Find three possible values for

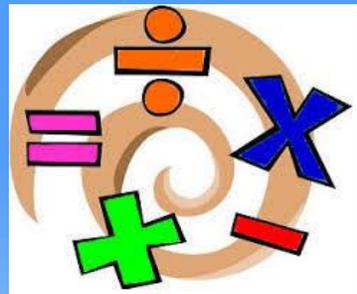
$\bigcirc$  and  $\Delta$

$\bigcirc \times \Delta = 24$

• I am thinking of 2 secret numbers where the sum of the numbers is 16 and the product is 48. What are my secret numbers?

Can you make up 2 secret numbers and tell somebody what the sum and product are?

• How many multiplication and division sentences can you write that have the number 72 in them?



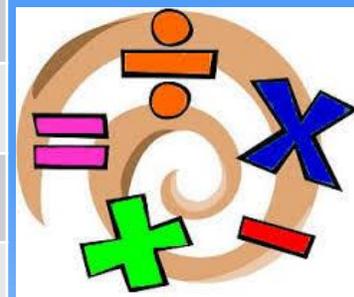
# PING PONG TIMES TABLE



One of the most important things you can do to help your child is to support them in learning their tables.

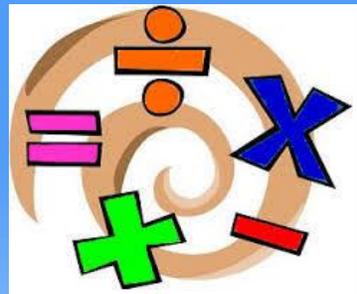
The red numbers indicate how many tables you know if you know 2s, 5s 10s.

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



There will now  
be a  
Multiplication  
Tables Check  
(MTC) in Year  
4.

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.



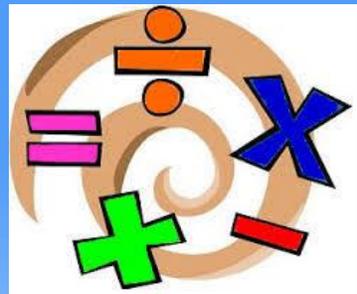


<https://play.ttrockstars.com/auth/school/student/21815>

Test your children on their times tables to develop fluency and speed.

Ensure they go on TT Rockstars 2-3 times a week.

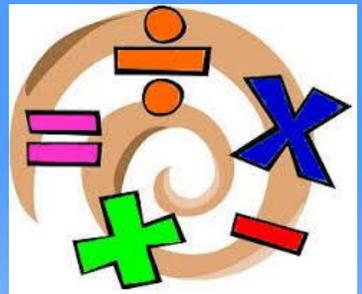
A display is the corridor celebrating chilserns





<https://play.ttrockstars.com/auth/school/student/21815>

There is a display in the corridor celebrating children's successes.



# Photos from the morning

I'd like to thank everyone that came. Hopefully the cake was a great incentive! If you have any further questions please come and see me.

