

Count to and across 100,
forwards and backwards
from any number.

Read and write
numbers to 100;
writing numbers to 20
in words and numerals.

Count in multiples of 2, 5
and 10.

Year 1 Maths Expectations

Tell the time to the
hour and half past the
hour.

Measure and begin to
record length, height,
weight, capacity and
time.

Find one more and one
less than any given
number.

Add and subtract one
and 2-digit numbers
within 20.

Know and use number
bonds to all numbers
within 20.



Mathematics at St Mark's



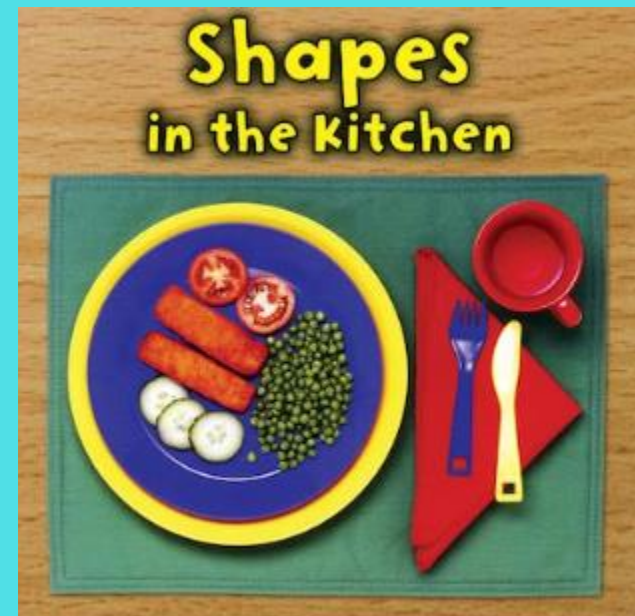
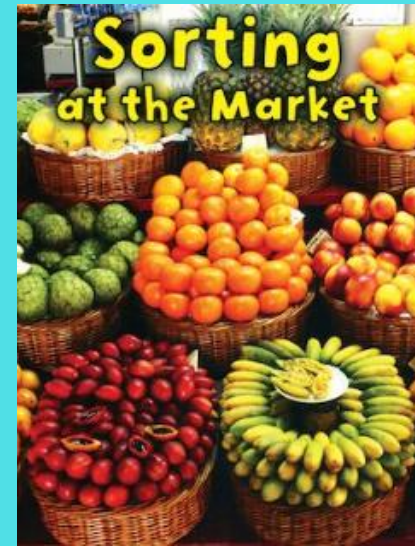
Memory is
the
residue of
thought.

Daniel Willingham

**Maths
is fun!**

Why is maths so important?

- It is vital to lay secure foundations in early mathematics.
- We want children to engage with all areas of mathematics.
- To give children the tools to help them to develop a better understanding of the mathematical world in which they live.



...recall important
number and concept
facts

...be fluent in number,
choosing the most efficient
ways to solve problems

...take risks and be
enthused by challenge

...enjoy their Maths
lessons

...feel like they can
succeed and make
progress

...have a deep and
broad understanding of
the curriculum



Our aims are for children to...

...be able to apply their
knowledge in both
Maths and other areas
of the curriculum

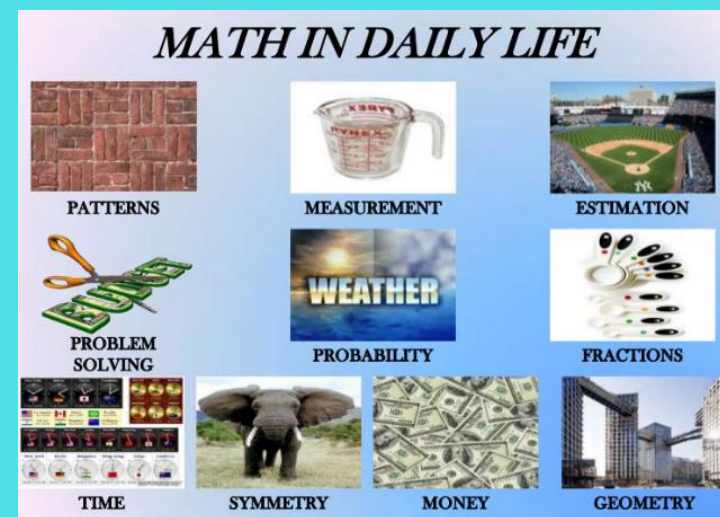
...be able to reason
Mathematically by
explaining and proving

...be able to make
connections and links
between different areas of
Maths

...have a secure
conceptual
understanding of ideas

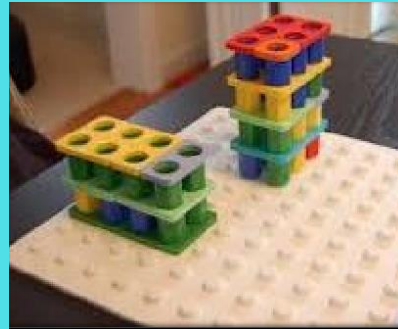
How we teach and support children's mathematical learning at St Mark's

- Daily whole class teaching of a concept to allow all children to master the learning.
- Practical exploration through a concrete, pictorial, abstract approach.
- Time for children to develop their fluency in a concept and practice.
- Spotting the maths around us.



Learning practically at school.

We use concrete resources and visual aids where possible to help children build a conceptual understanding in all areas of maths.



Linking the counting with structure



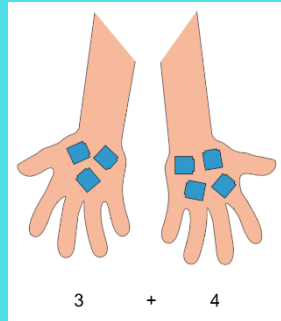
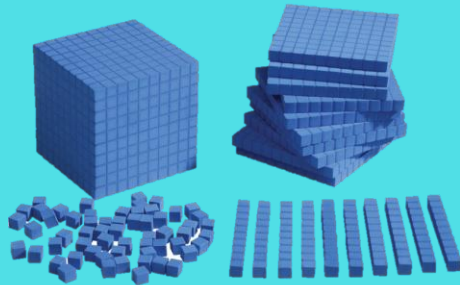
Multilink



Number lines



Bead String



Diennes



Sorting Objects



Counters

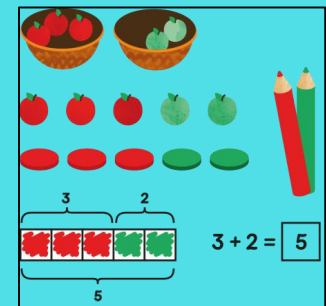
$$1232 + 3114$$

TH	H	T	O
1000	100 100	10 10 10	1 1
1000 1000 1000	100	10	1 1 1 1

There are 7 apples so the whole is 7.
4 apples are red so the red apples represent $\frac{4}{7}$.
3 apples are green so the green apples represent $\frac{3}{7}$.



Red Apple	Red Apple	Green Apple		
Red Apple	Red Apple	Green Apple	Green Apple	



For example...

Let's make a number 1-10 using any of the concrete apparatus on the table.

Matching the digit cards to the resources connects the abstract and concrete.



Multilink



Diennes



Sorting Objects



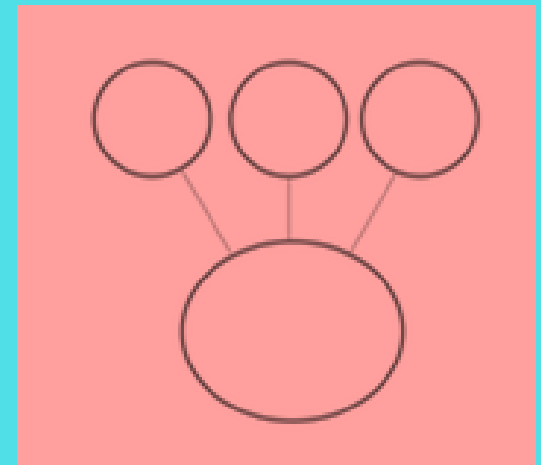
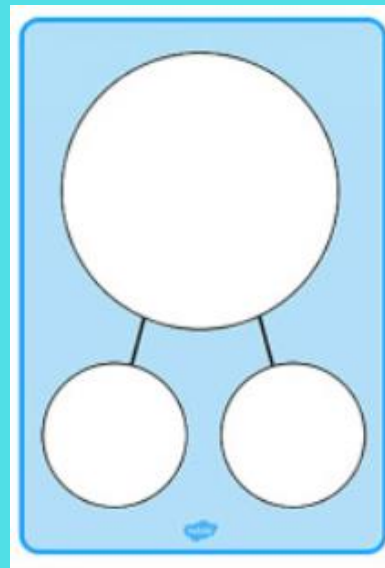
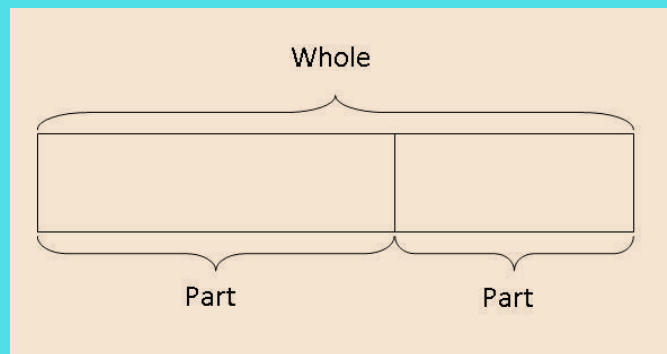
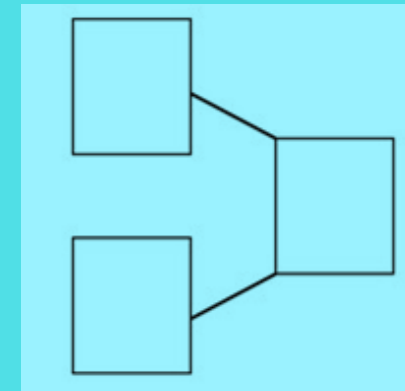
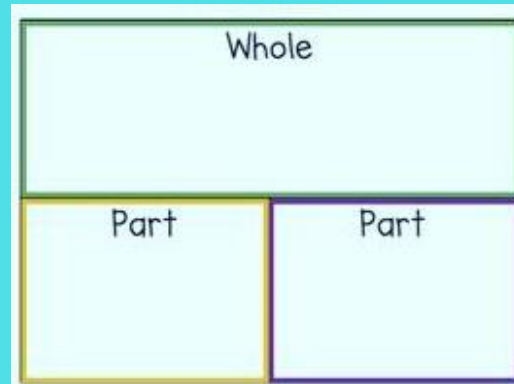
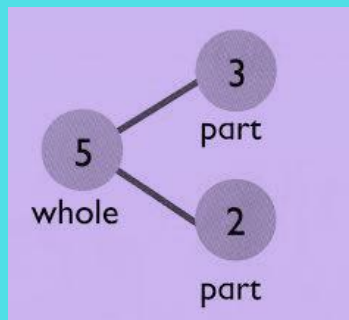
Counters



Part-Part Whole Model

The part-part whole model can be used to help represent the number.

Diagrams can help children to understand and visualise the structure of numbers and number sentences.

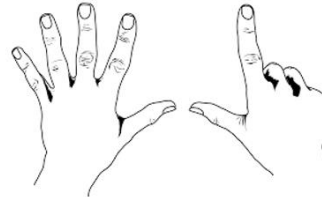
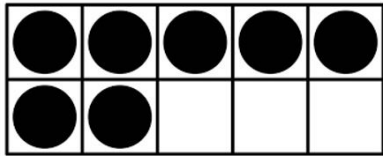
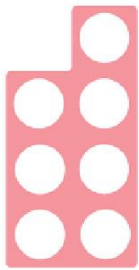
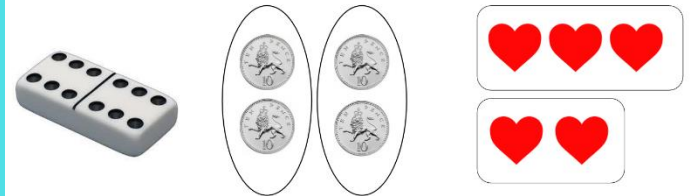


Varied fluency and variation

The children show their understanding of a concept by representing in different ways.

Variation: Showing different representations provides learners with opportunities for deeper understanding.

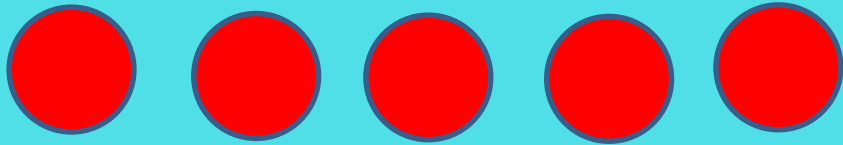
These are all doubles. True or false?
Convince me.



11	Nearest 10	
12	Nearest 10	
13	Nearest 10	
14	Nearest 10	
15	Nearest 10	
16	Nearest 10	

The importance of vocabulary: reasoning and explaining.

- Stem Sentences

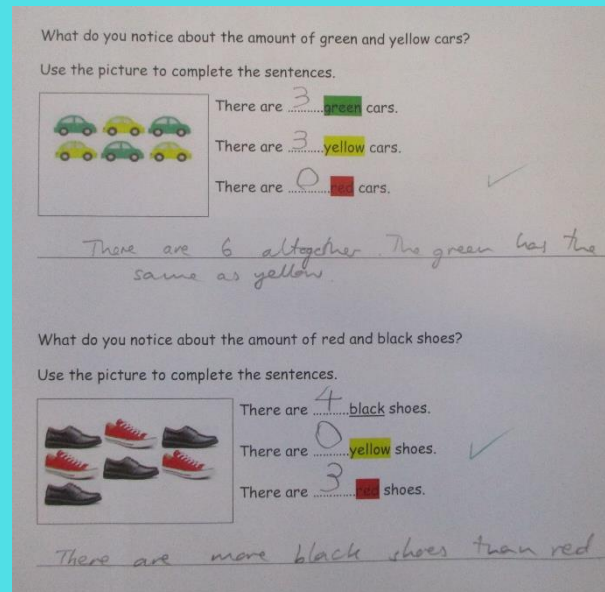
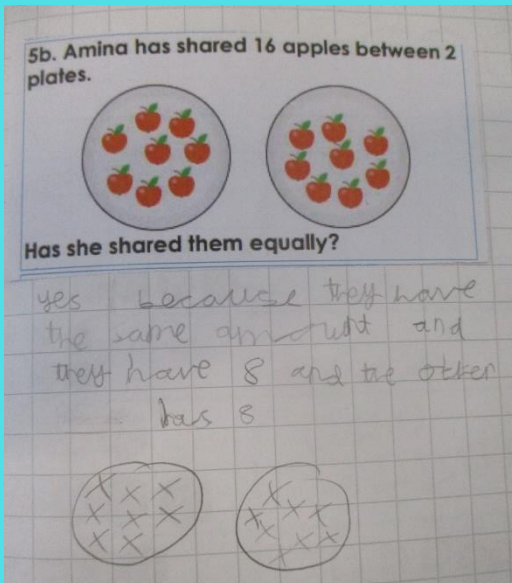


What could the five counters represent?

It's important for pupils in maths lessons to give answers to questions using full sentences-- not just one-word answers. Watch this 2 minute video to find out why.



<https://www.ncetm.org.uk/resources/49824>

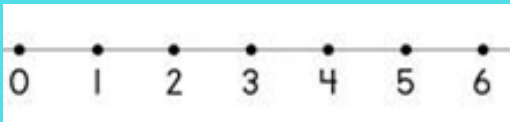


Not all Maths is just wrong or right. In order to show a deep understanding about a concept, children need to be able to explain their thinking using Mathematical vocabulary

Numbers - calculating



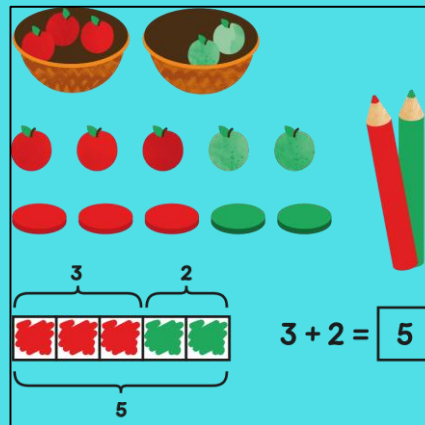
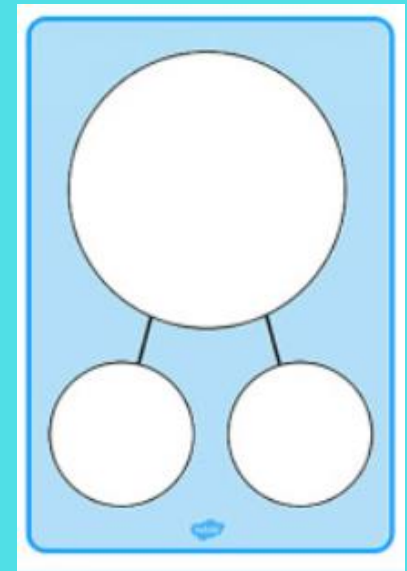
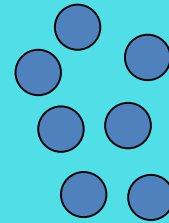
The children use a variety of resources to solve addition and subtraction problems.



There are 7 apples so the whole is 7.
4 apples are red so the red apples represent $\frac{4}{7}$.
3 apples are green so the red apples represent $\frac{3}{7}$.



🍎	🍎	🍏		
🍎	🍎	🍏	🍏	



For example ...

I can add tens

$$55 + 20 = 75 \quad \checkmark$$

Tens	Ones
	...
70	5

+10 +10

55 65 75

$$24 + 30 = 54 \quad \checkmark$$


Tens	Ones
	...
50	4

+10 +10 +10

24 34 44 54




Tom has 24 conkers.
He collects 9 more conkers.



How many conkers does he have altogether?

$$24 + 9 = 33 \quad \checkmark$$


Sam has 26 Pokemon cards.
He collects 5 more cards.



How many cards does he have altogether?

$$26 + 5 = 31 \quad \checkmark$$

Kate has 25 Squishies.
She collects 7 more Squishies.



How many squishes does she have altogether?

$$25 + 7 = 32 \quad \checkmark$$

Children will practise the procedure before applying it to problems, allowing them to deepen their understanding.

Fluency and Deeper Thinking

In order to embed skills and understanding, children will solve more complex problems which will deepen their understanding of a concept using language.

Alex is counting.



9, 8, 7, 6, 5

How do you know that Alex is counting backwards?

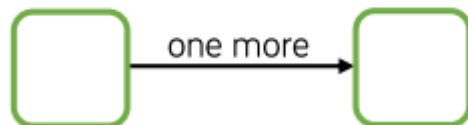
Tom says he has 61
Is he correct?
Explain your reasoning



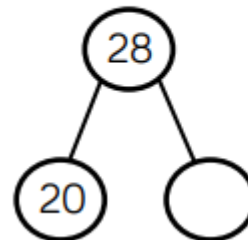
How many different numbers can go in the box?

$$13 < \square < 20$$

Using number cards 0 to 10, how many different ways can you complete the boxes below?



Complete the part-whole model and write four number sentences to match.

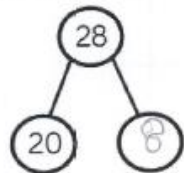


_____	+	_____	=	_____
_____	+	_____	=	_____
_____	=	_____	+	_____
_____	=	_____	+	_____

For example...

I can partition 2 digit numbers

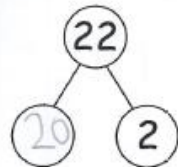
Complete the part-whole model and write four number sentences to match.



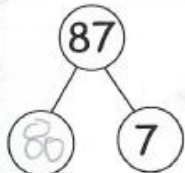
$$\begin{array}{r} 20 \\ 8 \\ \hline 28 \end{array} + \begin{array}{r} 8 \\ 20 \\ \hline 28 \end{array} = \begin{array}{r} 28 \\ 28 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 28 \\ 28 \\ \hline 28 \end{array} = \begin{array}{r} 8 \\ 20 \\ \hline 28 \end{array} + \begin{array}{r} 20 \\ 8 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 28 \\ 28 \\ \hline 28 \end{array} = \begin{array}{r} 20 \\ 28 \\ \hline 28 \end{array} + \begin{array}{r} 8 \\ 8 \\ \hline 8 \end{array} \checkmark$$

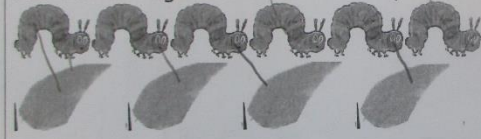


$$\begin{array}{r} 20 + 2 = 22 \checkmark \\ 2 + 20 = 22 \checkmark \\ 22 = 20 + 2 \checkmark \\ 22 = 2 + 20 \checkmark \end{array}$$



$$\begin{array}{r} 80 + 7 = 87 \checkmark \\ 7 + 80 = 87 \checkmark \\ 87 = 80 + 7 \checkmark \\ 87 = 7 + 80 \checkmark \end{array}$$

Are there enough leaves for the caterpillars?



No. I need
TWO MORE LEAVES



Can the family all travel in a 6 seater car?
Explain how you know.

yes. There
are five people
and the car
has six
seats.

Number Facts/Times Tables/ Multiplication Recall

National Curriculum - Statutory Guidance for multiplication and division tables

Year 2

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.

Year 3

Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.

Year 4

Recall multiplication and division facts for multiplication tables up to 12×12 .

2x÷	3x÷	4x÷	5x÷	6x÷	7x÷	8x÷	9x÷	10x÷	11x÷	12x÷
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Learning their number facts and times tables is fundamental for solving more complex number problems as this knowledge is required for most areas of Mathematics





Any questions?

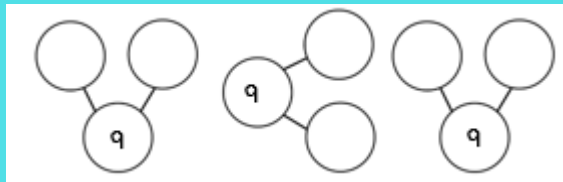
Thank you for listening.



Join us back in the classrooms

I can partition numbers up to 10 in different ways.

- Resources will be out on tables – encourage your children to explain how they use them
- Encourage the use of stem sentences and language.
- Feel free to question their understanding – how do you know? Can you explain that to me?
- Please help your child to complete the learning but try not to do it for them – use resources and questions to support them.



How many ways can you make 10 using
Draw your ideas here.



True or false. There are only 4 ways to make the number 4. Draw the part-whole model to explain your answer.

