Maths Parent Workshop

Holy Trinity
C of E Primary School

17th November 2022

Supporting your child's learning in Maths

If you have a question or comment, please jot it down on the slip of paper provided and place it into the box.

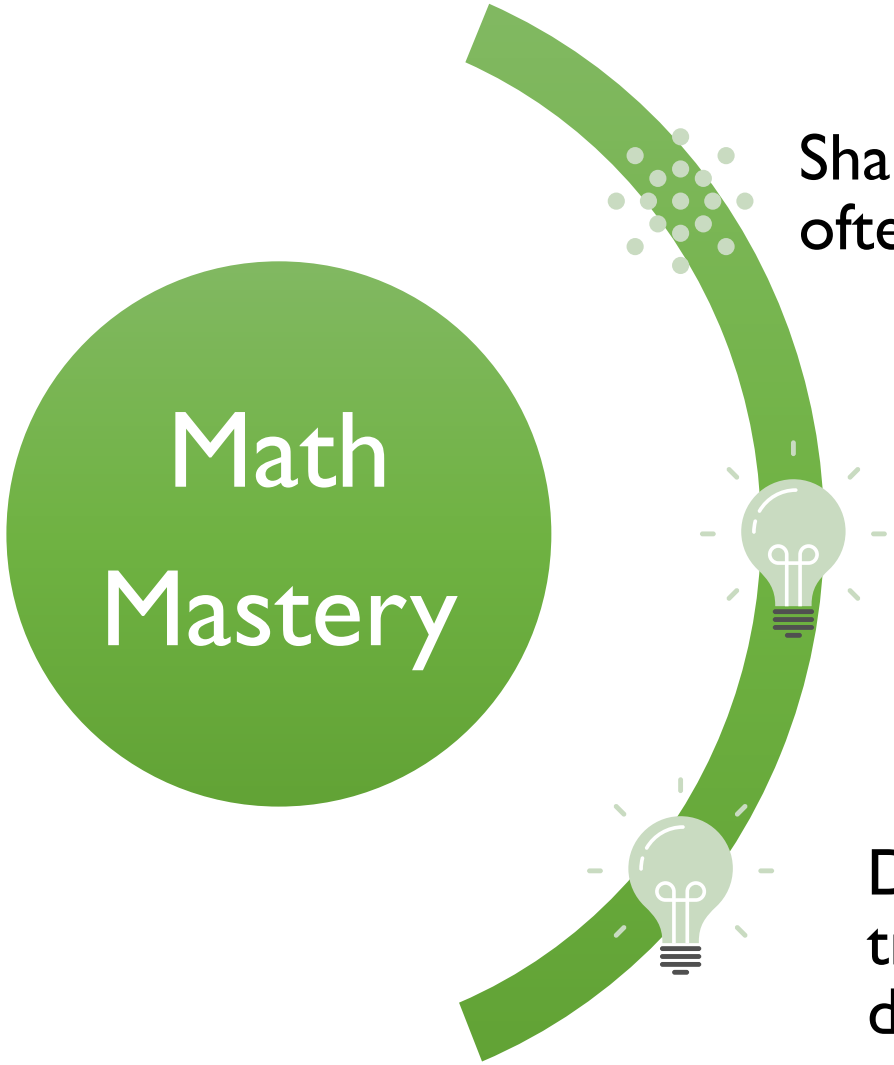
We will endeavour to answer as many questions as possible and the responses will be shared in a Friday bulletin.

Aims

- **NC & Maths Mastery**
- **Maths Mastery at HT**
- **Supporting learning and maths talk at home**

In line with the national curriculum 2014, the curriculum at Holy Trinity aims to ensure that all pupils:

- 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.

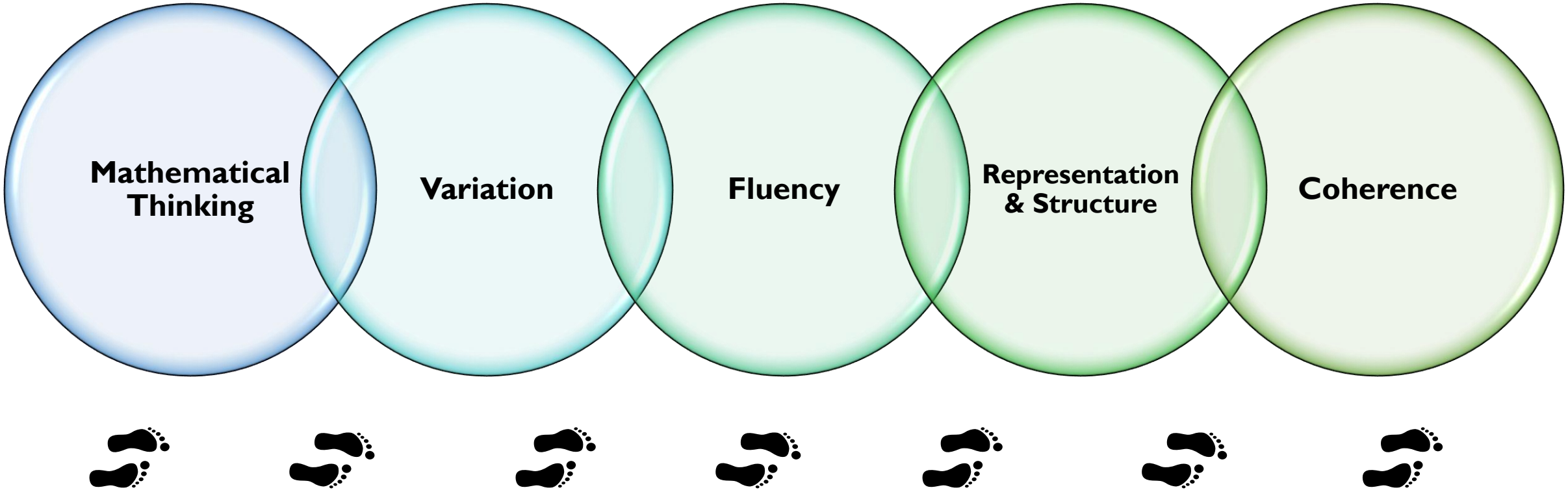


Shallow learning: surface, temporary, often lost

Deep learning: it sticks and can be recalled and used

Deepest learning: it can be transferred and applied in different contexts

5 Big Ideas



Small, connected steps to ensure concepts are made easier to grasp

"In mathematics, you know you've mastered something when you can apply it to a totally new problem in an unfamiliar situation."

Dr. Helen Drury, Director of Mathematics Mastery

What your children are being exposed to in their Maths Mastery lessons

EYFS

Fluency opportunities
Representing numbers/recognising amounts
Counting
Subitising
Reasoning opportunities
Problem solving opportunities

What your children are being exposed to in their Maths Mastery lessons

Key Stage 1 & 2

Mastering Number opportunities – subitising, number bonds, number sense (KS1)
Fluent in Five – Fluency opportunities to 'Interrupt the forgetting' (KS2)
Pair talk/class discussions/group activities
Stem sentences/Key vocabulary/generalisations/making connections
Recapping opportunities/addressing misconceptions/scaffolding
A range of representations/variation/high-order questioning/modelling & applying
Challenges/routine and non-routine problems/reasoning & problem solving tasks

CPA
Concrete-Pictorial-Abstract

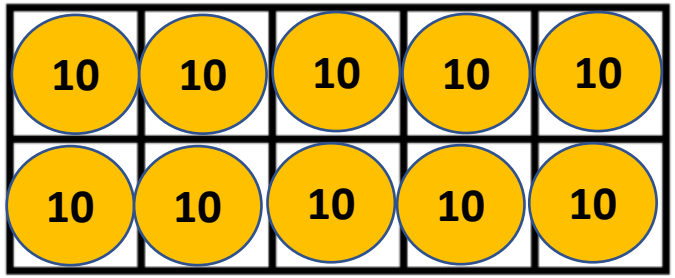
Discuss – 1 minute

True or False?

FALSE

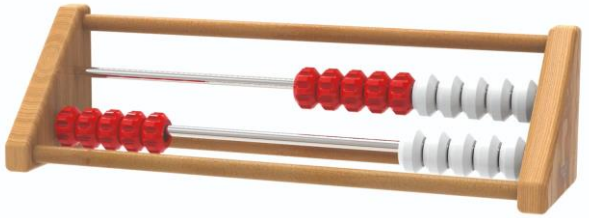
Concrete manipulatives are only useful to younger years when doing maths.

Tens frames

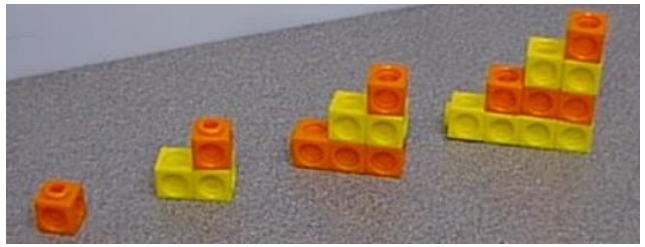


Bead strings

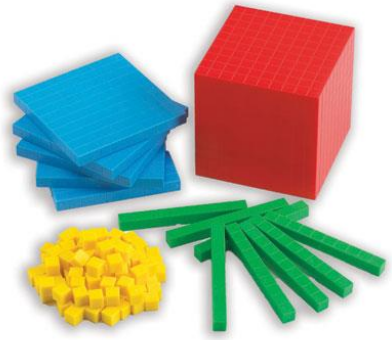
Rekenrek

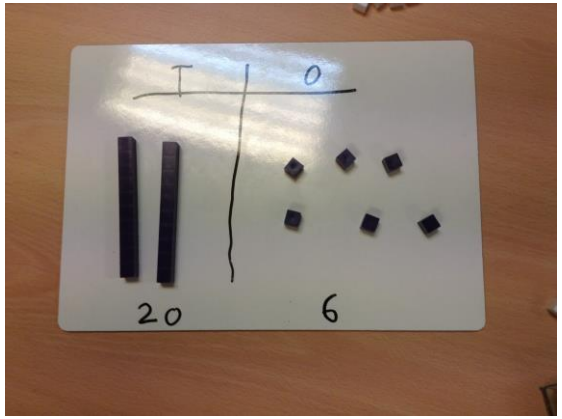


Multilink cubes



Base ten/dienes

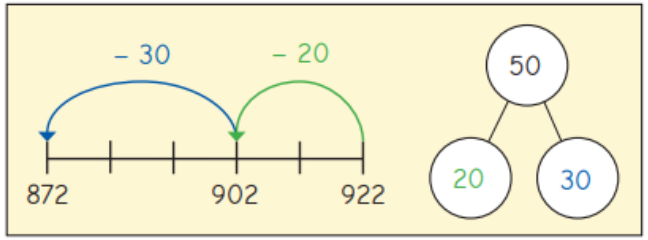




Cuisenaire rods

Number line

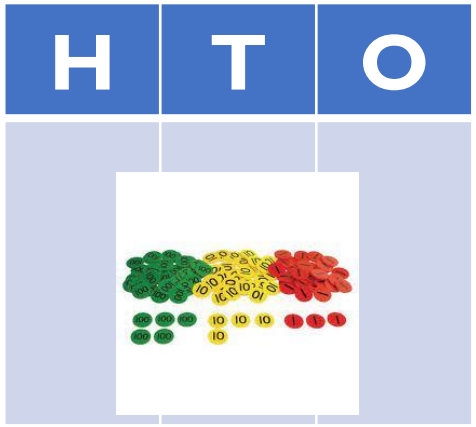
922-50



Gattengo charts

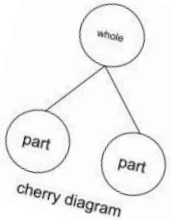
1,000,000	2,000,000	3,000,000	4,000,000	5,000,000	6,000,000	7,000,000	8,000,000	9,000,000
100,000	200,000	300,000	400,000	500,000	600,000	700,000	800,000	900,000
10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000
1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09

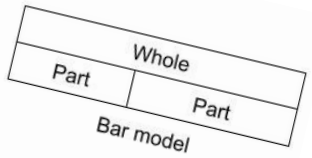
Place value charts

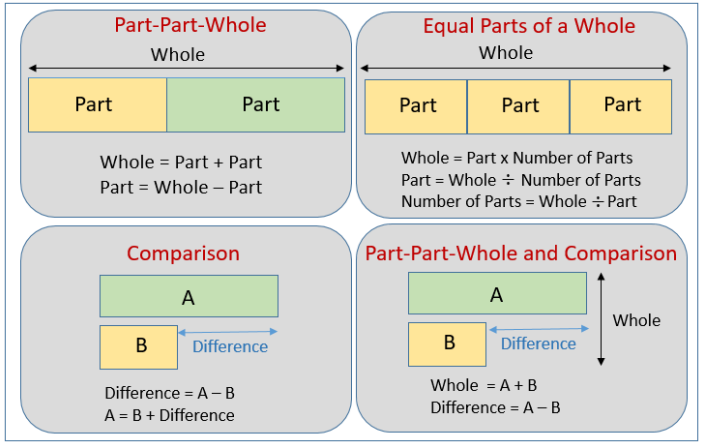


Millions			Thousands			Ones			-ths	
100s	10s	1s	100s	10s	1s	100s	10s	1s	$\frac{1}{10}$	$\frac{1}{100}$
								0	0	1
								0	1	
								1		
							1	0		
						1	0	0		
					1	0	0	0		
				1	0	0	0	0		
			1	0	0	0	0	0		
		1	0	0	0	0	0	0		
	1	0	0	0	0	0	0	0		

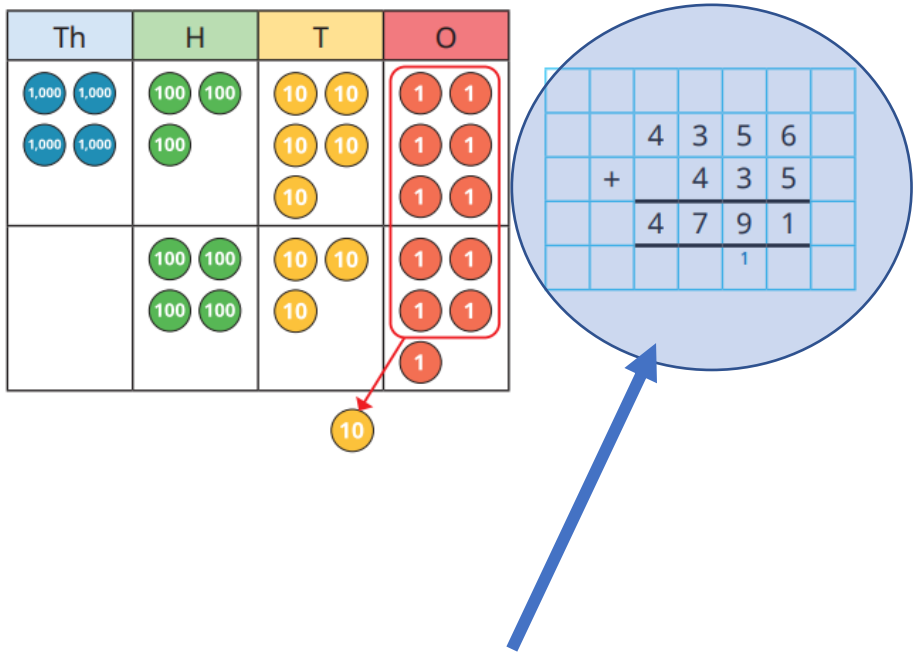
Part-whole models & Bar models







Concrete and pictorial to written methods



The column method is only introduced in Year 3. It is vital that children secure their understanding of place value before resorting to this abstract representation.

Conceptual instead of procedural

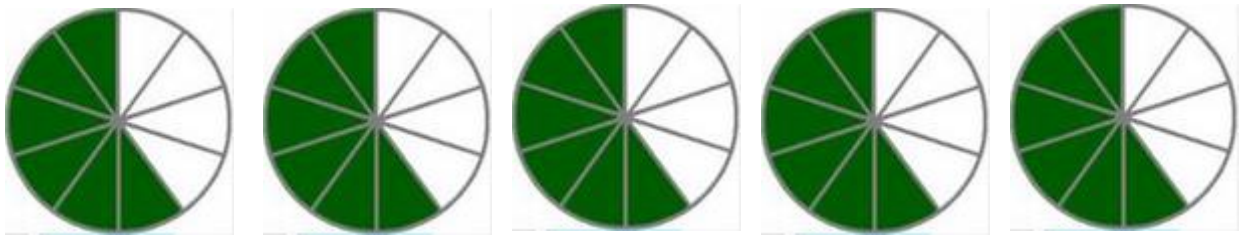
16,853 + 23,671 = 40,524

Use the addition to work out these calculations.

- 16,953 + 23,671
- 16,883 + 23,691
- 40,524 – 16,853
- 42,524 – 16,853
- 40,524 – 17,853
- 405,240 – 236,710

Compare methods with a partner.

Exposing children to variation



Allows for immediate application….

There are 3 packages of cheese.
Each package contains 6 individually wrapped pieces of cheese.

① How many pieces of cheese are there altogether?

② If you add one more package, by how many would the number of pieces of cheese increase?

Each gondola can hold 6 people.
How many people can ride in 4 gondolas altogether?

3 There are 6 children. We are going to give 7 candies to each child. How many candies do we need?

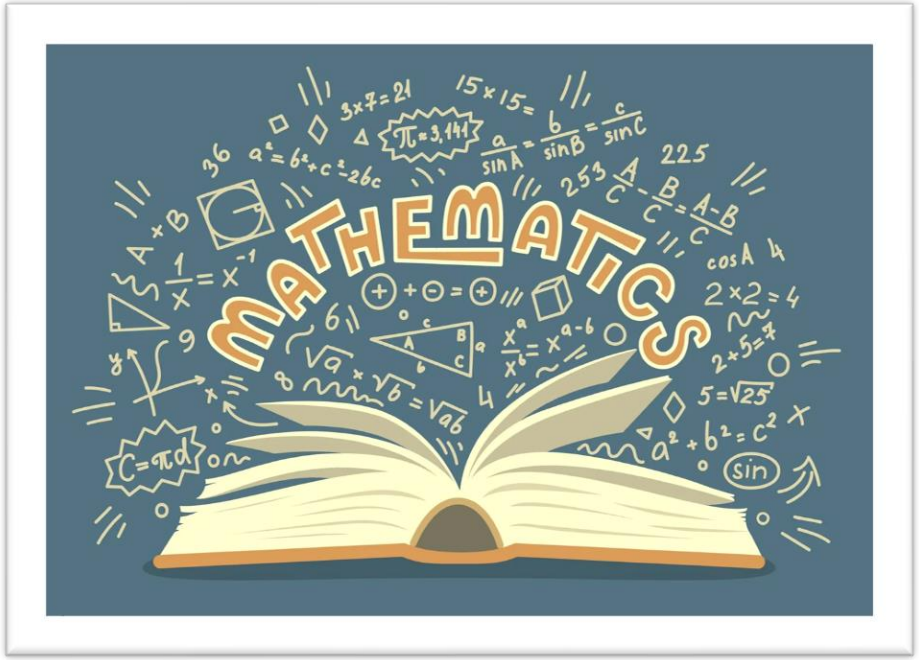
$6 \times 9 = 6 \times 8 +$ ☐

A piece of wood 30cm long is cut into 6 cm lengths. How many pieces can be cut?

Learning Journey

Multiplication Timetable Check in Year 4

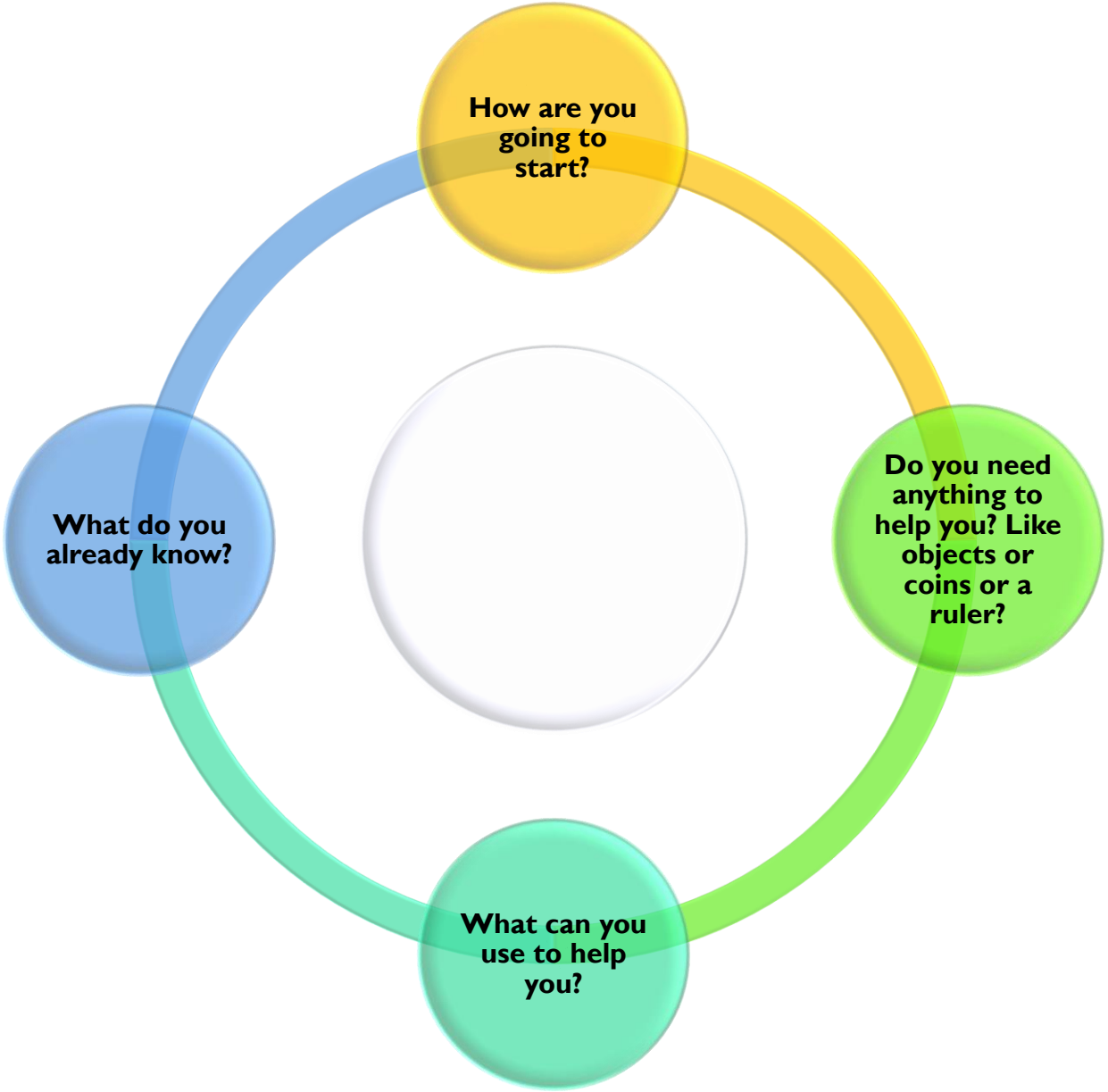
Supporting your child at home



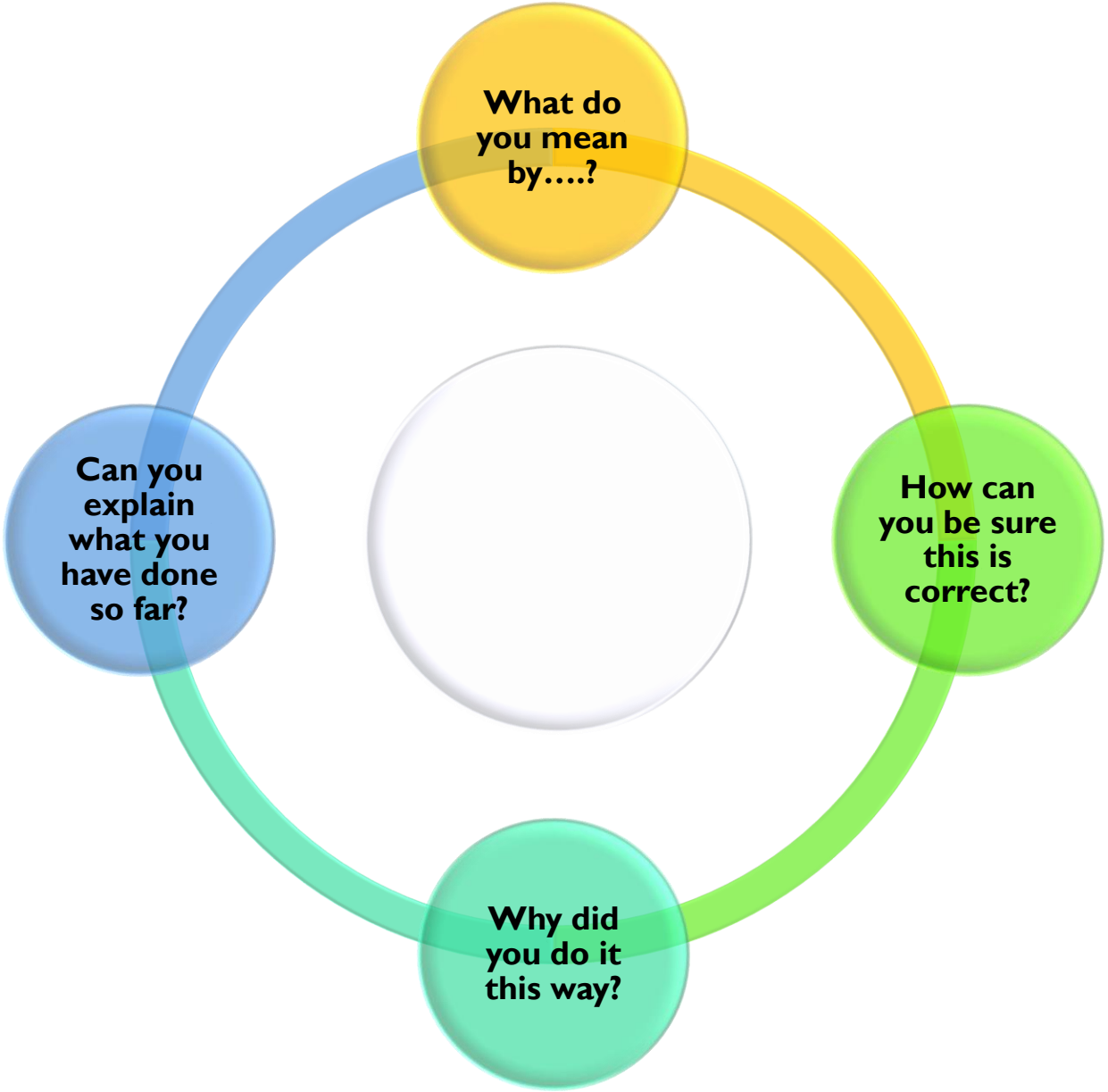
Question prompts

Question prompts can be useful when talking to your child about maths.

When your child is starting some work



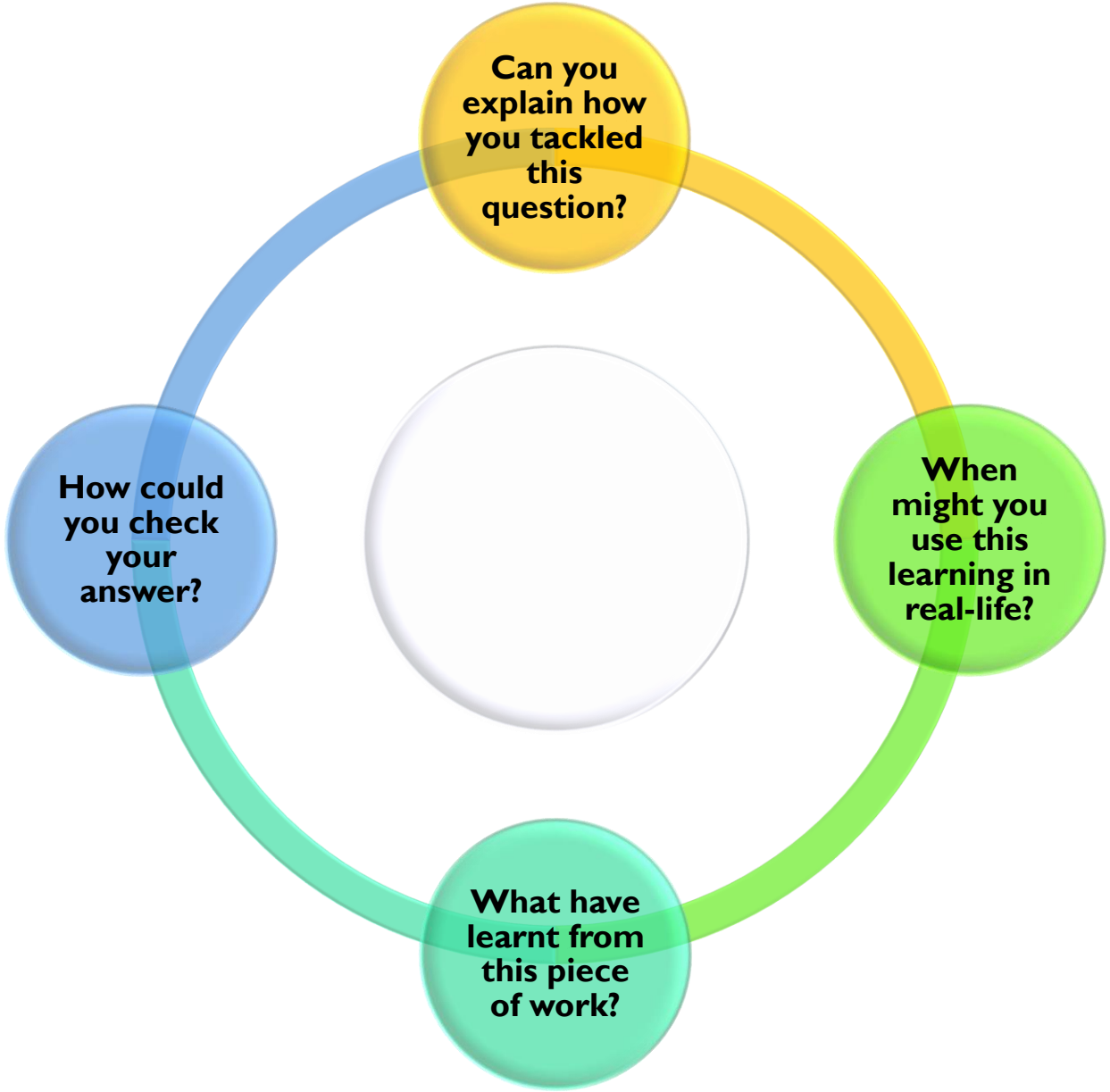
When your child is doing some work



If you child is starting to get stuck

Remember that being 'stuck' is part of learning

After the work

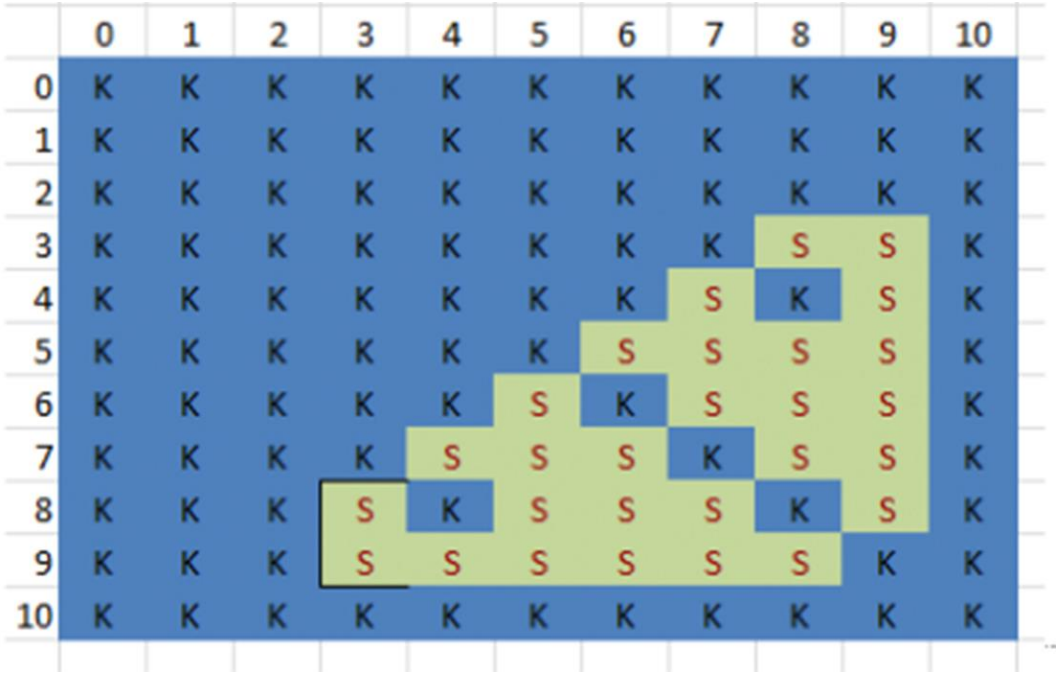


Addition facts to and within 10

End of Year 2 (not yet fluent)

	0	1	2	3	4	5	6	7	8	9	10
0	K	K	K	K	K	K	K	K	K	K	K
1	K	K	K	K	K	K	K	K	K	K	K
2	K	K	K	K	K	K	K	K	K	K	K
3	K	K	K	K	S	K	K	C	C	C	K
4	K	K	K	S	K	K	K	C	K	S	K
5	K	K	K	K	S	K	S	S	C	S	K
6	K	K	K	K	K	K	K	C	C	C	K
7	K	K	K	K	C	S	C	K	C	C	K
8	K	K	K	C	K	C	C	C	K	C	K
9	K	K	K	K	S	C	C	S	C	K	K
10	K	K	K	K	K	K	K	K	K	K	K

End of Year 3 (fluent – moved away from counting)



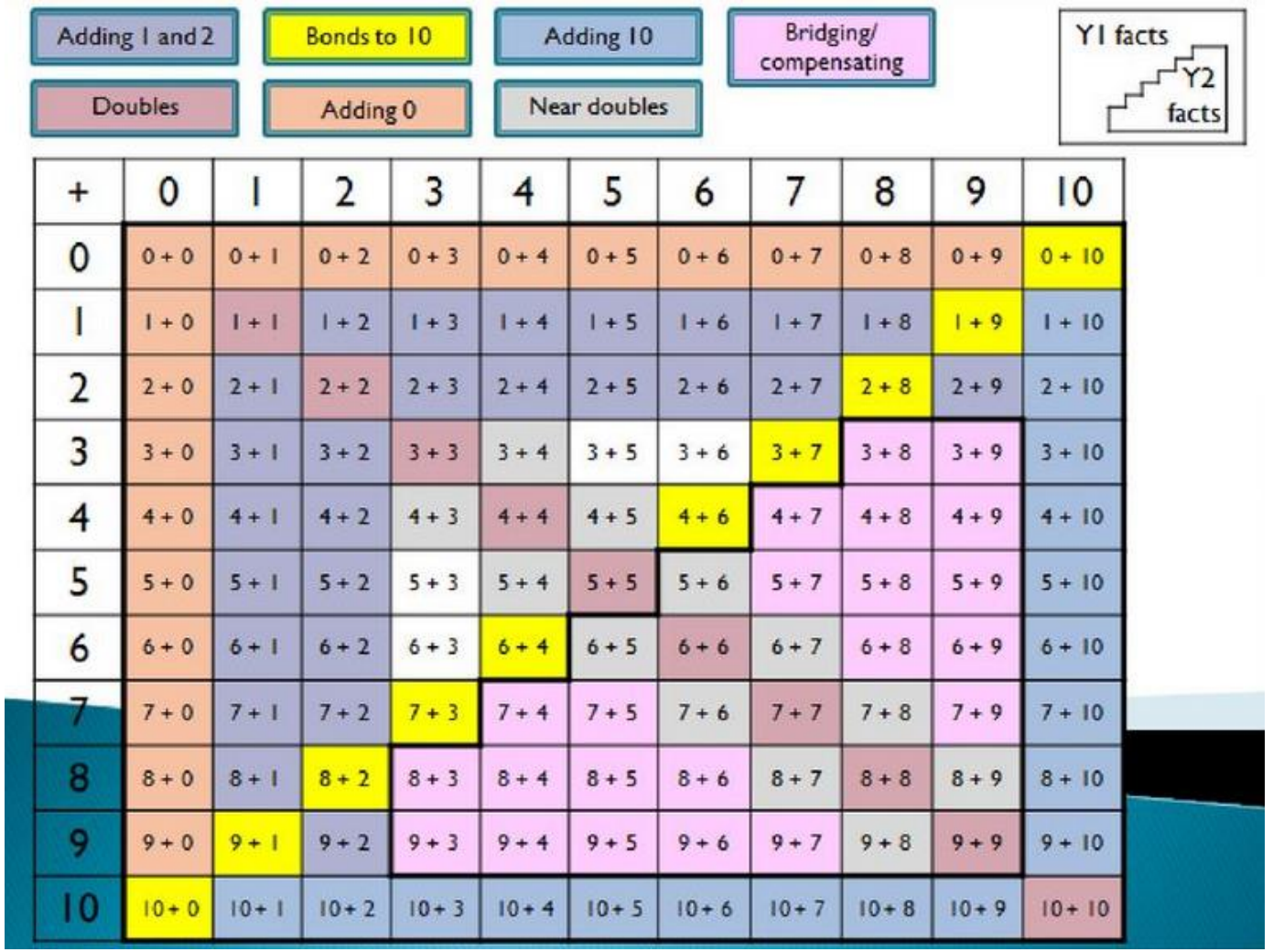
	0	1	2	3	4	5	6	7	8	9	10
0	K	K	K	K	K	K	K	K	K	K	K
1	K	K	K	K	K	K	K	K	K	K	K
2	K	K	K	K	K	K	K	K	K	K	K
3	K	K	K	K	K	K	K	K	S	S	K
4	K	K	K	K	K	K	K	S	K	S	K
5	K	K	K	K	K	K	S	S	S	S	K
6	K	K	K	K	K	S	K	S	S	S	K
7	K	K	K	K	S	S	S	K	S	S	K
8	K	K	K	S	K	S	S	S	K	S	K
9	K	K	K	S	S	S	S	S	S	K	K
10	K	K	K	K	K	K	K	K	K	K	K

K - Known

S - Strategy

C - Counting

Addition facts which bridge 10



+	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0	0 + 1	0 + 2	0 + 3	0 + 4	0 + 5	0 + 6	0 + 7	0 + 8	0 + 9	0 + 10
1	1 + 0	1 + 1	1 + 2	1 + 3	1 + 4	1 + 5	1 + 6	1 + 7	1 + 8	1 + 9	1 + 10
2	2 + 0	2 + 1	2 + 2	2 + 3	2 + 4	2 + 5	2 + 6	2 + 7	2 + 8	2 + 9	2 + 10
3	3 + 0	3 + 1	3 + 2	3 + 3	3 + 4	3 + 5	3 + 6	3 + 7	3 + 8	3 + 9	3 + 10
4	4 + 0	4 + 1	4 + 2	4 + 3	4 + 4	4 + 5	4 + 6	4 + 7	4 + 8	4 + 9	4 + 10
5	5 + 0	5 + 1	5 + 2	5 + 3	5 + 4	5 + 5	5 + 6	5 + 7	5 + 8	5 + 9	5 + 10
6	6 + 0	6 + 1	6 + 2	6 + 3	6 + 4	6 + 5	6 + 6	6 + 7	6 + 8	6 + 9	6 + 10
7	7 + 0	7 + 1	7 + 2	7 + 3	7 + 4	7 + 5	7 + 6	7 + 7	7 + 8	7 + 9	7 + 10
8	8 + 0	8 + 1	8 + 2	8 + 3	8 + 4	8 + 5	8 + 6	8 + 7	8 + 8	8 + 9	8 + 10
9	9 + 0	9 + 1	9 + 2	9 + 3	9 + 4	9 + 5	9 + 6	9 + 7	9 + 8	9 + 9	9 + 10
10	10 + 0	10 + 1	10 + 2	10 + 3	10 + 4	10 + 5	10 + 6	10 + 7	10 + 8	10 + 9	10 + 10

Efficiency in calculation requires having a variety of mental strategies

"magic 10"

$9 + 6 = 9 + 1 + 5 = 10 + 5 = 15$

Activity

What do you notice?

What's the same? What's different?

10 – 7 = 3
12 – 9 = …
14 – 11 = …
16 – … = 3
18 – … = 3
… – 17 = 3

121,372 – 10,998 =
121,373 – 10,999 =
121,374 – 11,000 =
121,375 – 11,001 =

Spotting patterns and making connections develops the children's conceptual knowledge.

We have learnt that if we increase the minuend and subtrahend by the same amount, the difference is always the same.

addend + addend = sum

minuend – subtrahend = difference

Children often resort to column addition or subtraction to solve these number sentences.

1999 + 1999 =

$$\begin{array}{r} 1999 \\ +\ 1999 \\ \hline 3998 \end{array}$$

700 - 348=

$$\begin{array}{r} {}^{6}\cancel{7}{}^{19}\cancel{0}{}^{1}0 \\ -\ 348 \\ \hline 352 \end{array}$$

But is this the most efficient way?

NO

Encouraging children to use their conceptual understanding will develop their mathematical thinking.

If I know 2000 + 2000 = 4000, then 4000 – 2 = 3998 **The amount I increase by addends by will need to be subtracted from the sum.

699 – 347 = can be done mentally

Stem sentences

If I know ……, then I know …….

I know ……, so ……

8000 – 2000 =

8 – 2 = 6
so 8 thousands – 2 thousands = 6 thousands

I know that if I minus (or add) a multiple of a thousand, the ones, tens and hundreds always stay the same.

Table activity

Number bond to and within 10

Hinge question

Assessing understanding

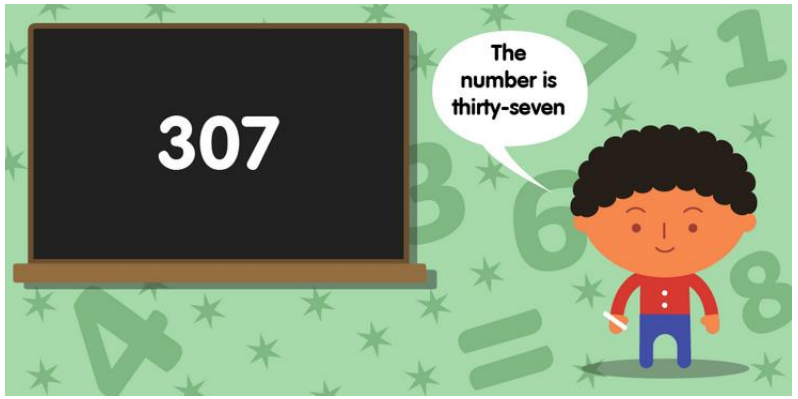
There are ….. tens in one hundred

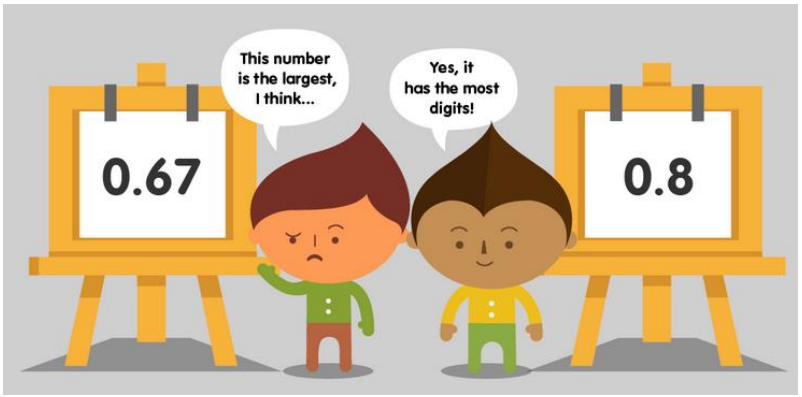
A) 100
B) 1
C) 10
D) 1000

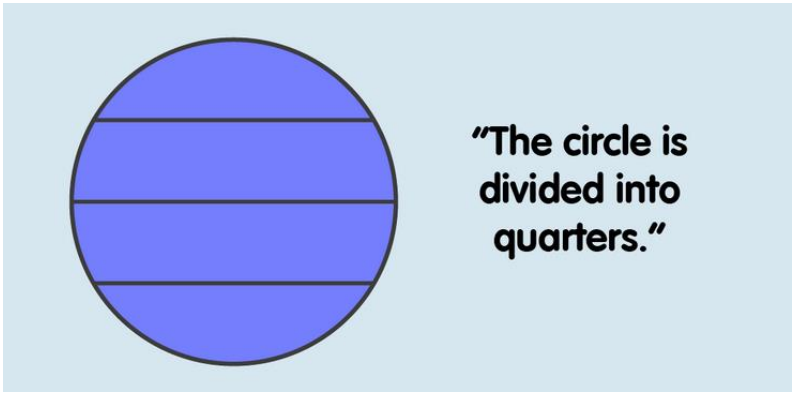
1,298 – 9 =

A) 1307
B) 1208
C) 1289
D) 1288

Spotting the mistake







Explain the mistake?

What could the misconception be?

Always, Sometimes, Never true

When you add two even numbers together the answer is even	When you add two odd numbers together the answer is odd	If you add an even number to an odd number the answer is even
When you multiply by an odd number the answer is odd	When you multiply by an even number the answer is even	Doubling a number results in an even number
When you multiply a number by itself the answer is even	The sum of four even numbers is divisible by four	Adding three consecutive numbers results in an even number

Prove it!

Examples and non-examples

why is it and why it's not

Why is it a triangle? Why isn't it a triangle
What do you know about a triangle?

Questioning & Reasoning – deepens thinking and understanding.

Making Maths fun

Explore

Choose a start number from the list below:
258, 310, 648, 686, 295, 382, 372, 701, 696, 718, 284, 728

Take turns to roll a dice. On your go:

Roll a 1: add or subtract 1 from your number
Roll a 2: add or subtract 10 from your number
Roll a 3: add or subtract 10 from your number
Roll a 4: round your number to the nearest 10
Roll a 5: round your number to the nearest 100
Roll a 6: free choice from the options above

The first player to get to 500 wins!

True or false

$12{,}345 - 6{,}789 = 5{,}556$

so

$5{,}556 + 6{,}789 = 12{,}345$

True

The inverse of subtraction is addition.

12,345	
5,556	6,789

Choosing an efficient strategy
Written or mental strategy?

183 + 117 = **597 + 126 =** **370 + 280 =**

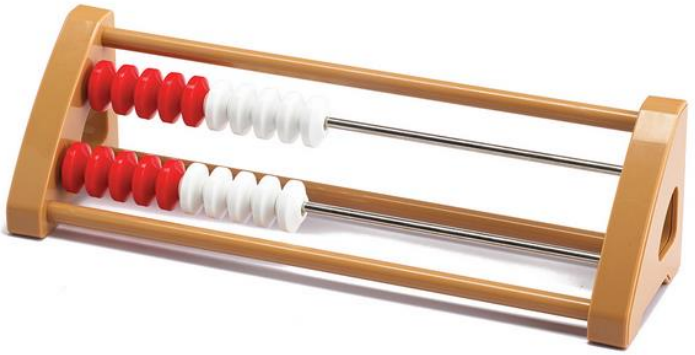
628 + 371 = **4050 + 602 =**

I answered ..... mentally by …..

There are more steps to answer …. because….

Top Tips to Support Your Child's Maths Learning

- Be positive about maths, even if you don't feel confident yourself.
- Talk and listen to your child about their work in maths.
- It will help your child if they explain their work to you. In class we also ask them to explain their thinking.
- Help your child to practise their number facts. This will build up their confidence. If they find it hard at first, stick to two or three facts to make sure they are secure before moving on.



Go slow to go fast

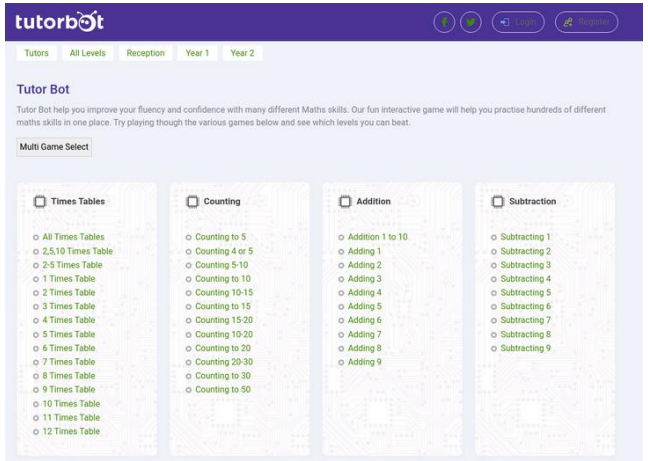
Pace not race

Online Maths programmes

Year 2 - 6

MyMaths

Year 1 - 6



Tutorbot

Maths Website page

Holy Trinity C of E Primary School

Select Language | LOGIN

SEARCH...

HOME | OUR SCHOOL | PARENTS | TEACHING & LEARNING | ADMISSIONS | COMMUNITY | CONTACT

The Curriculum

- Curriculum Intent
- Mathematics
- English
- Science
- Computing

Mathematics

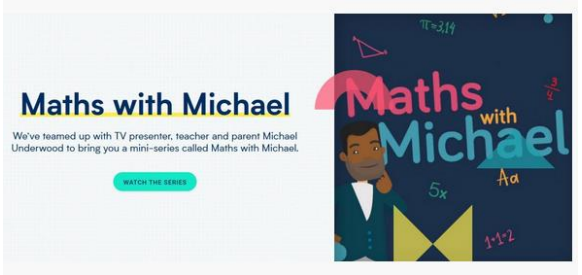
Intent

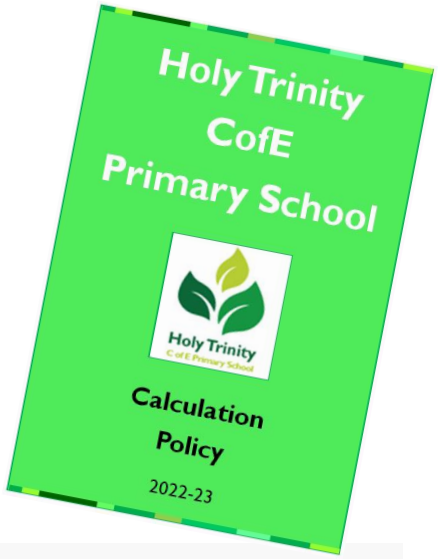
At Holy Trinity we fully embrace the concept of 'maths mastery' and teach a rich, balanced and progressive maths curriculum allowing all children to have opportunities to reason, problem solve and develop fluent conceptual understanding in each area.

Impact

Holy Trinity Pupils will leave Year 6 prepared for the next stage in their lives with:

- The ability to demonstrate a quick recall of facts and procedures
- The flexibility and fluidity to move between





Core Year Group Knowledge and Understanding:

The series of videos below accompanies the Department of Educations's (DfE) Key Stage 1 and 2 maths guidance. The videos focus on each year and summarises the core knowledge and understanding that pupils require by the end of the year in order that they are ready to progress to the next year.

A really useful tool for parents and teachers.

- Year 1 mathematics guidance link
- Year 2 mathematics guidance link
- Year 3 mathematics guidance link
- Year 4 mathematic guidance link
- Year 5 mathematic guidance link
- Year 6 mathematic guidance link

If you have a question or comment, please write it down on the slip of paper provided and place it into the box.

We will endeavour to answer as many questions as possible and the responses will be shared in a Friday bulletin.

Thank you for your continued support