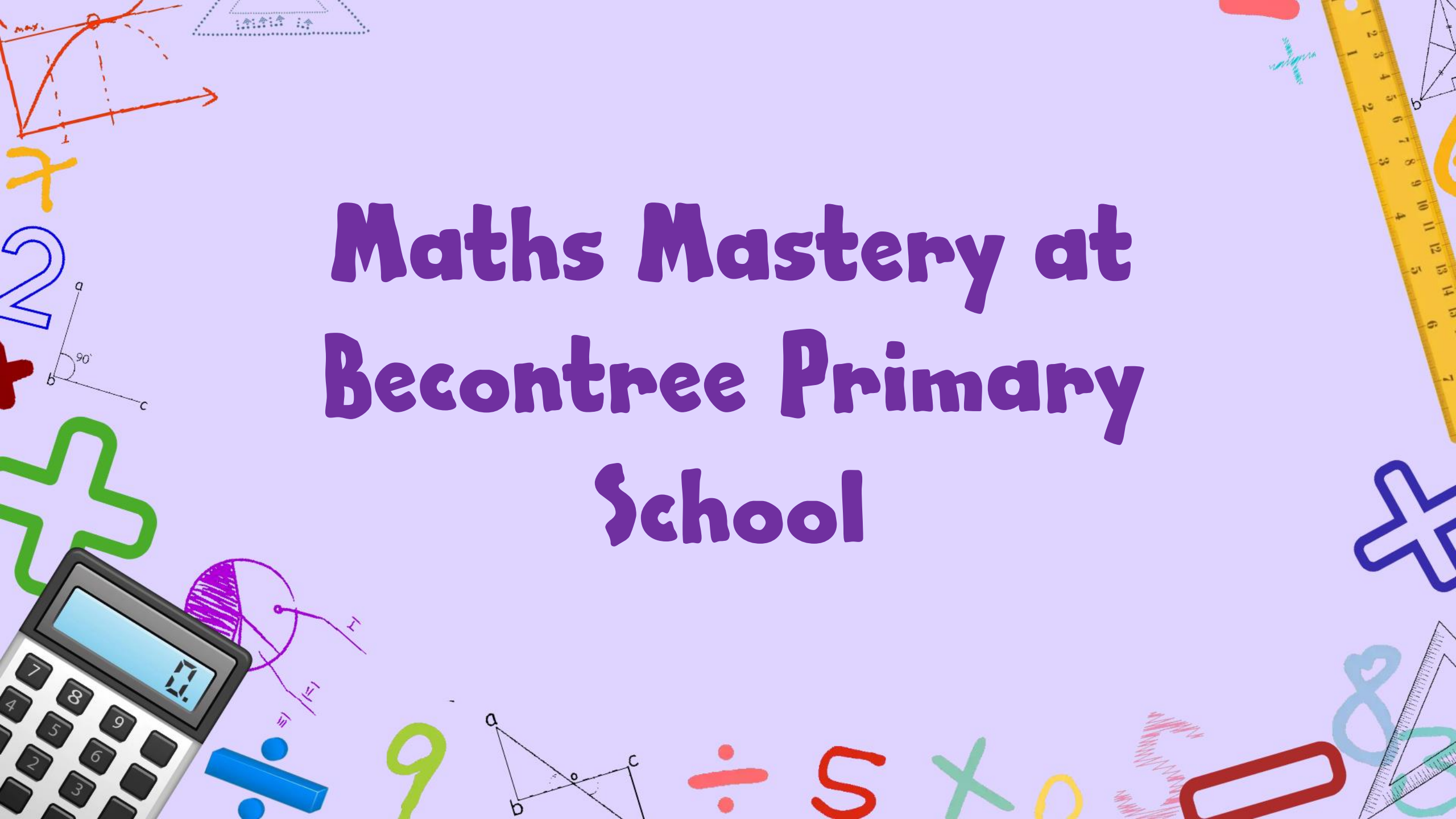


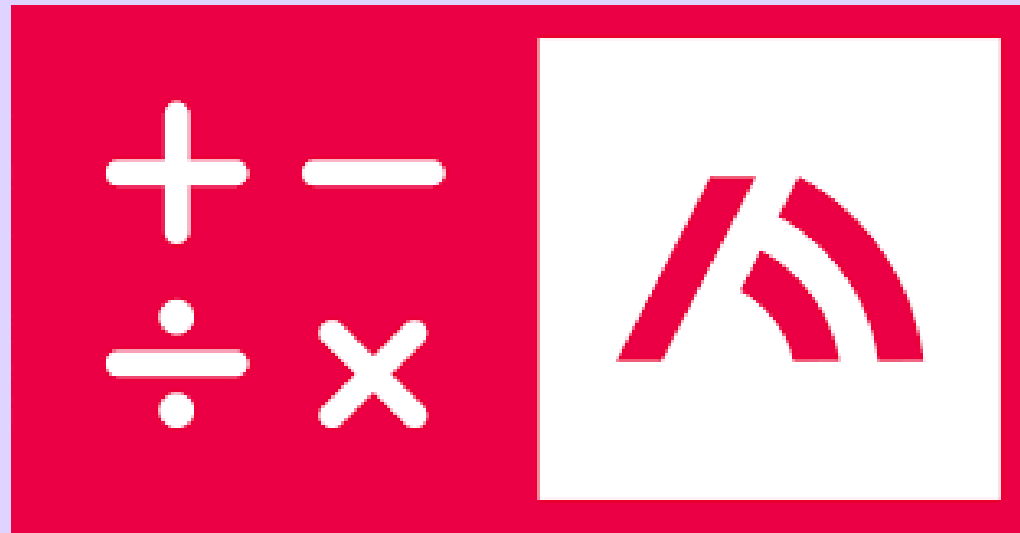
Maths Mastery at Becontree Primary School



Below are our key beliefs about when and how children learn best.
We believe children learn best when...

...they are taught by well-trained staff who are passionate about teaching and learning.	...they are valued and treated fairly and respectfully.	...they have a growth mindset.
...they are given the right level of support and challenge.	...they are interested and engaged.	...new learning makes links with and builds on prior learning.
...they understand the learning objectives and know what success looks like.	...they have opportunities to learn with and from others (collaborative learning).	...they receive regular and timely feedback (from both teachers and peers).
...they are given enough time to practise, consolidate and apply new learning.	...they are taught in a physical space that is conducive to and supports effective learning.	...there is a strong partnership between home and school.

To help deliver this, we have changed our maths curriculum and are now introducing a maths mastery approach.



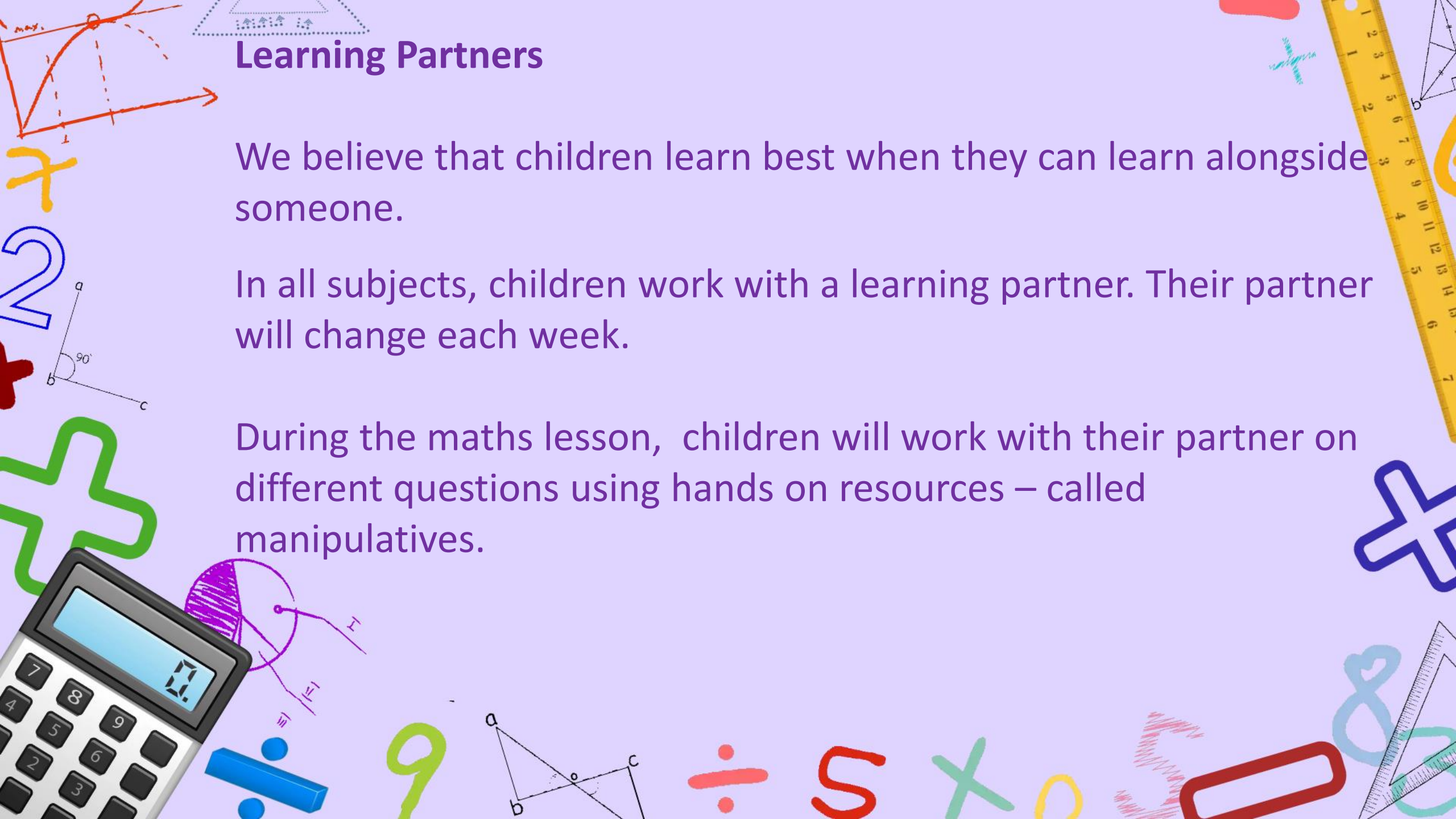
What is maths mastery ?

Maths mastery is a teaching and learning approach that aims for pupils to develop deep understanding of maths rather than being able to memorise key procedures or resort to rote learning.

Pupils are taught through whole-class interactive teaching, where the focus is on all pupils working together on the same lesson content at the same time. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.

“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.

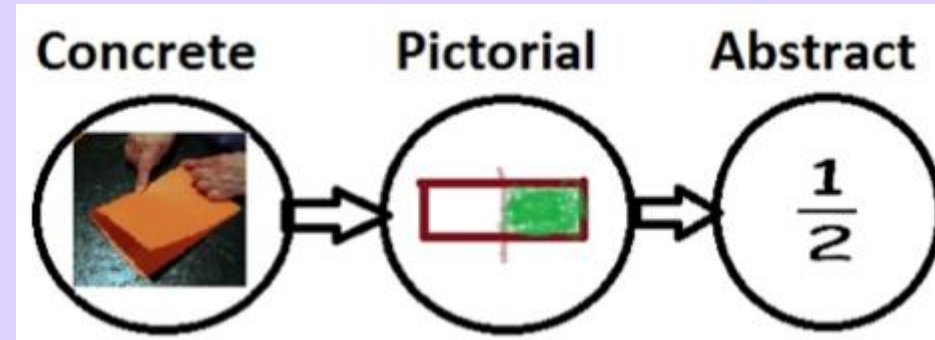
The background is a light purple color decorated with various mathematical symbols and tools. In the top left, there is a red coordinate plane with a curve and dashed lines. Below it is a yellow number '7'. To the left of the text is a blue number '2' and a right-angle symbol with vertices 'a', 'b', and 'c'. In the bottom left corner is a calculator showing '0.0' on its screen. To the right of the calculator is a blue number '9' and a blue 3D bar. At the bottom center is a geometric diagram of two intersecting triangles with vertices labeled 'a', 'b', and 'c'. To the right of this is a red division symbol, a red number '5', a green multiplication symbol, a yellow number '0', a red number '5', and a red rectangle. On the right side, there is a yellow ruler with numbers 1 through 15, a blue plus sign, and a blue number '8'.

Learning Partners

We believe that children learn best when they can learn alongside someone.

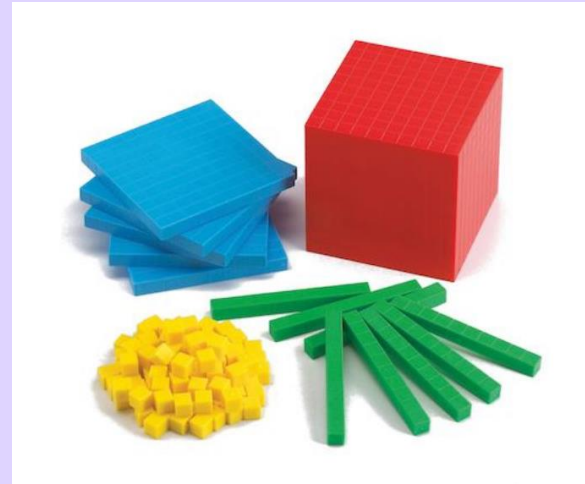
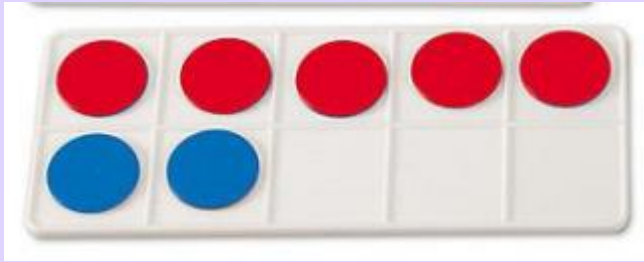
In all subjects, children work with a learning partner. Their partner will change each week.

During the maths lesson, children will work with their partner on different questions using hands on resources – called manipulatives.

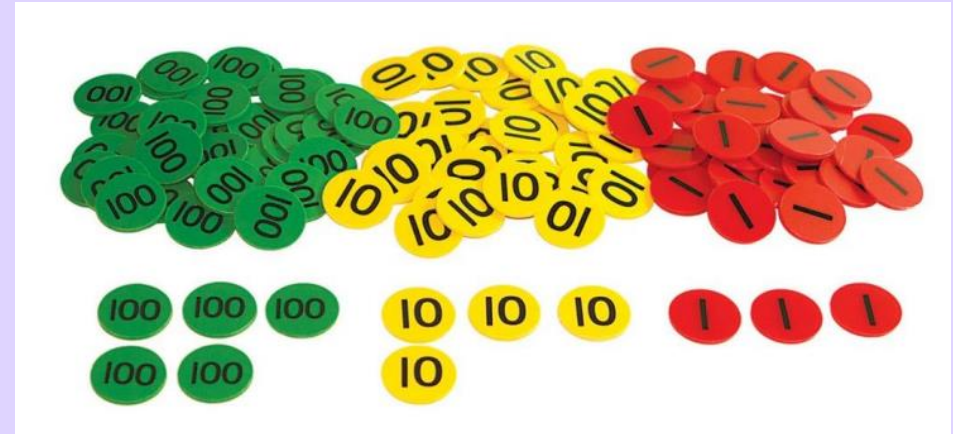


To master a concept, children need to manipulate **concrete** equipment and have drawn various relevant **pictorial** representations, so they can reason and explain the **abstract** mathematics they are performing already or later on.

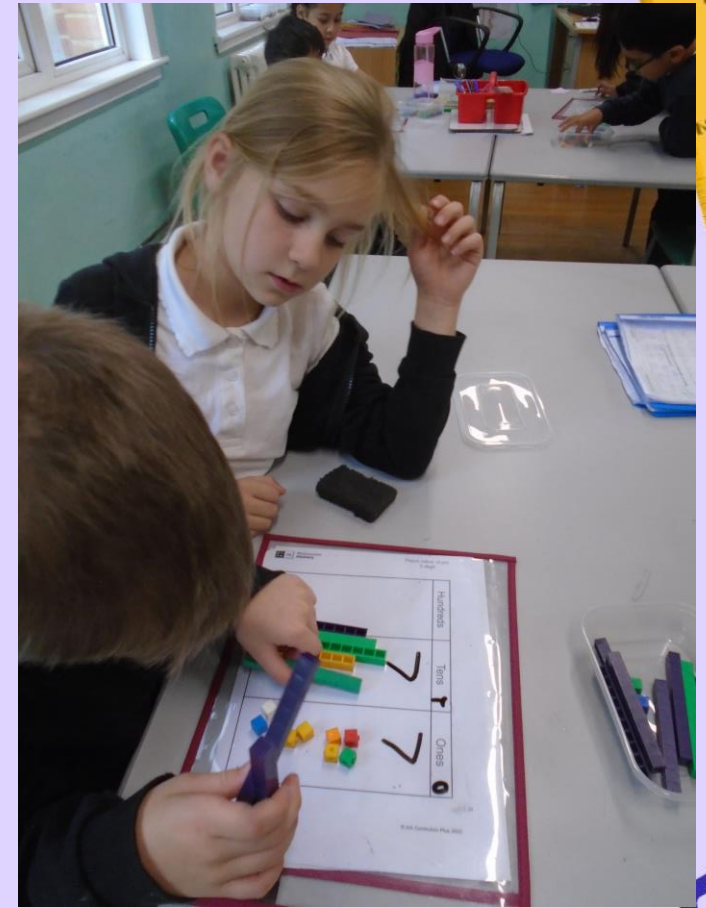
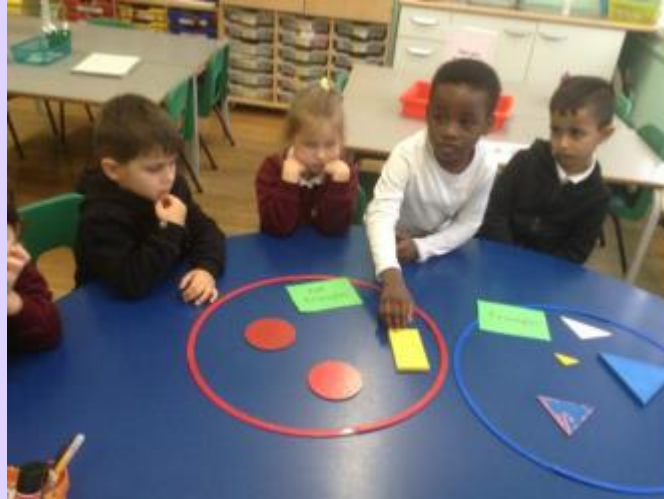
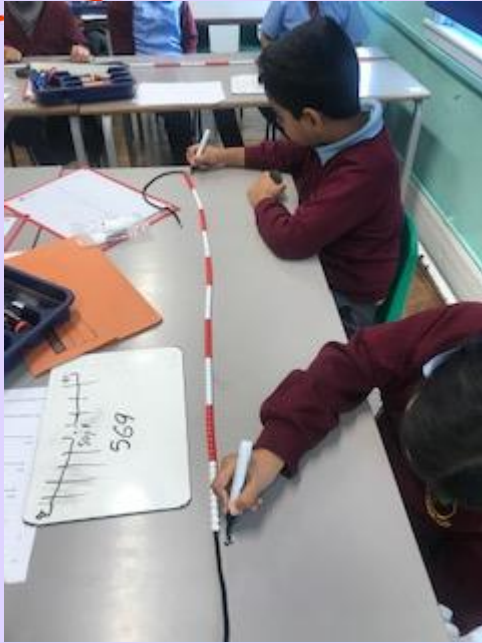
Concrete



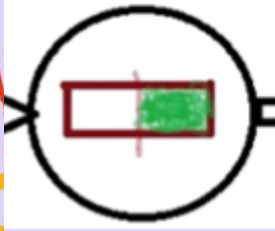
Manipulatives your child
will use.



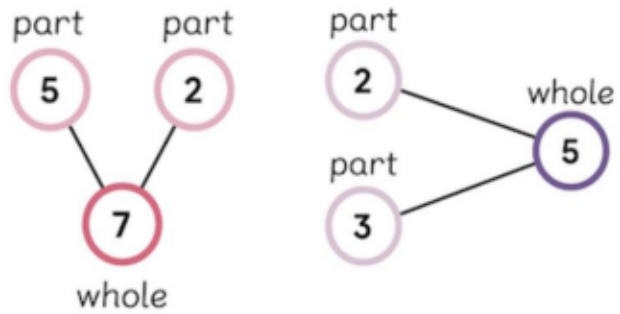
Examples



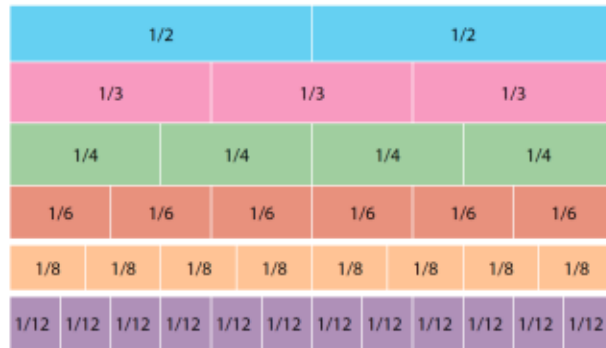
Pictorial



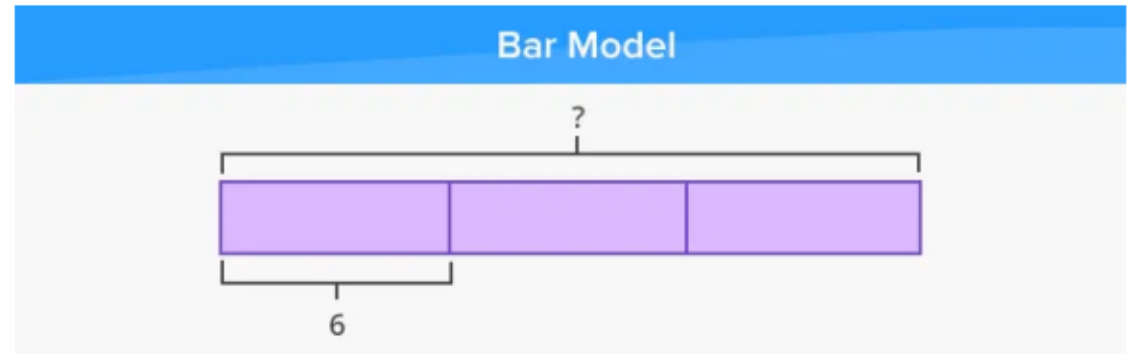
Moving on to pictorial representations .



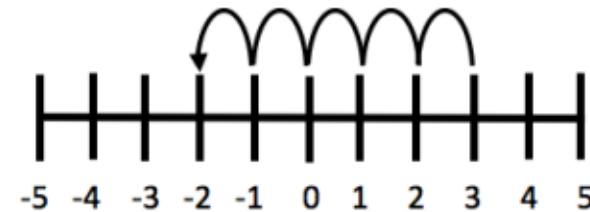
Part-whole model



Fraction wall



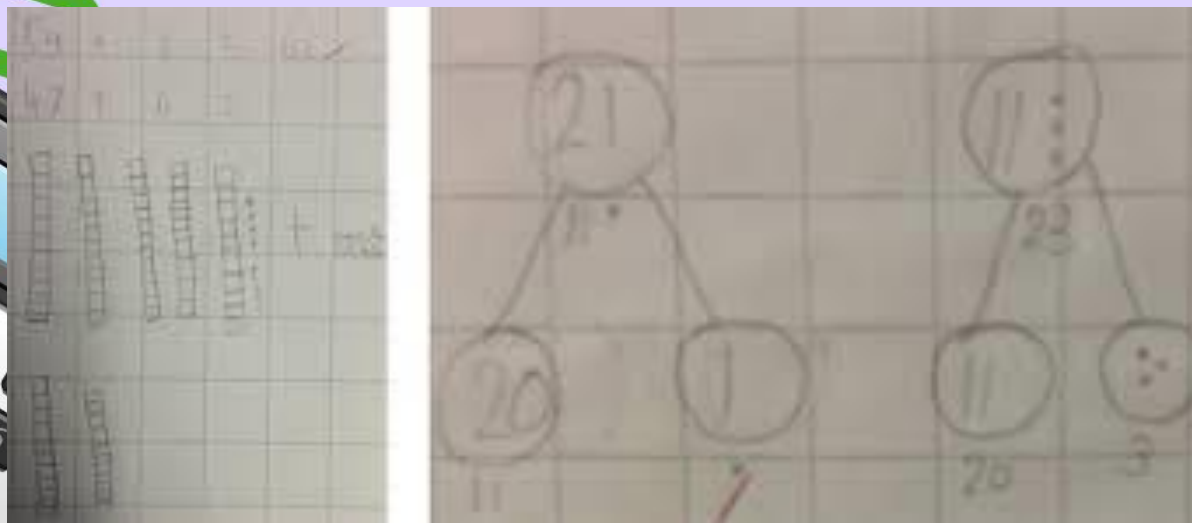
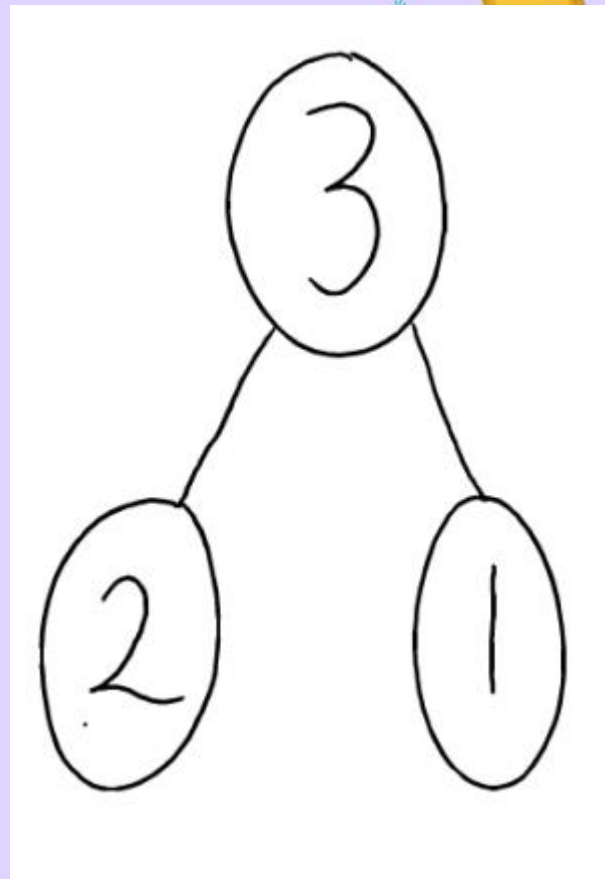
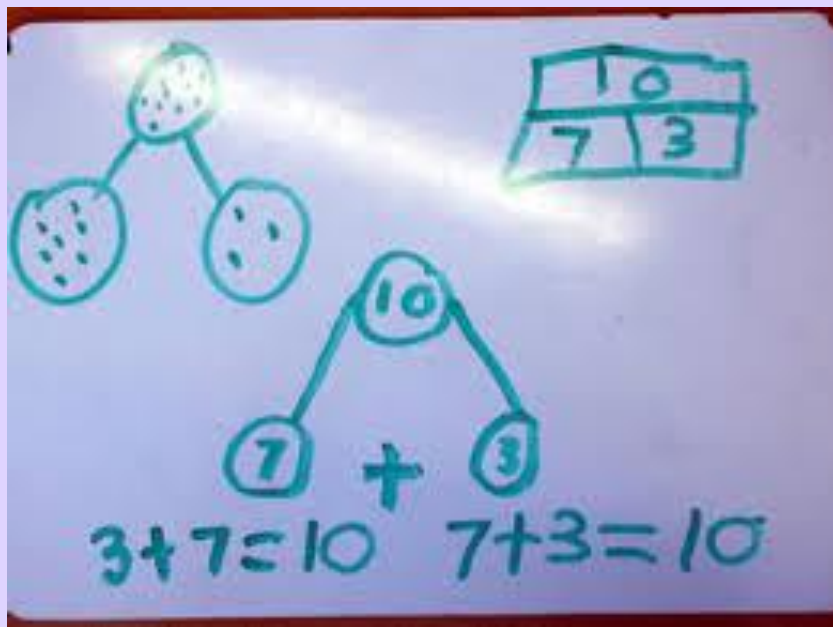
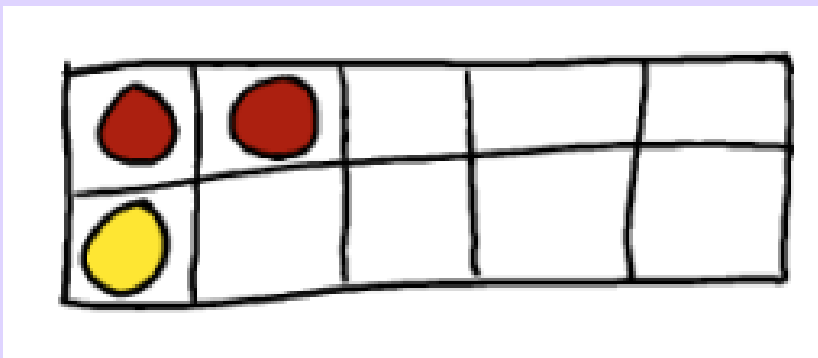
Question: What is $3 - 5$?



Answer = -2

Number line

Examples



C + P + Abstract

CONCRETE

PICTORIAL

ABSTRACT

concrete

Representational

Abstract

4 + 5 = 9

Short division using place value counters to group.
615 ÷ 5

100s	10s	1s
6	1	5

Represent the place value counters pictorially.

100s

10s

1s

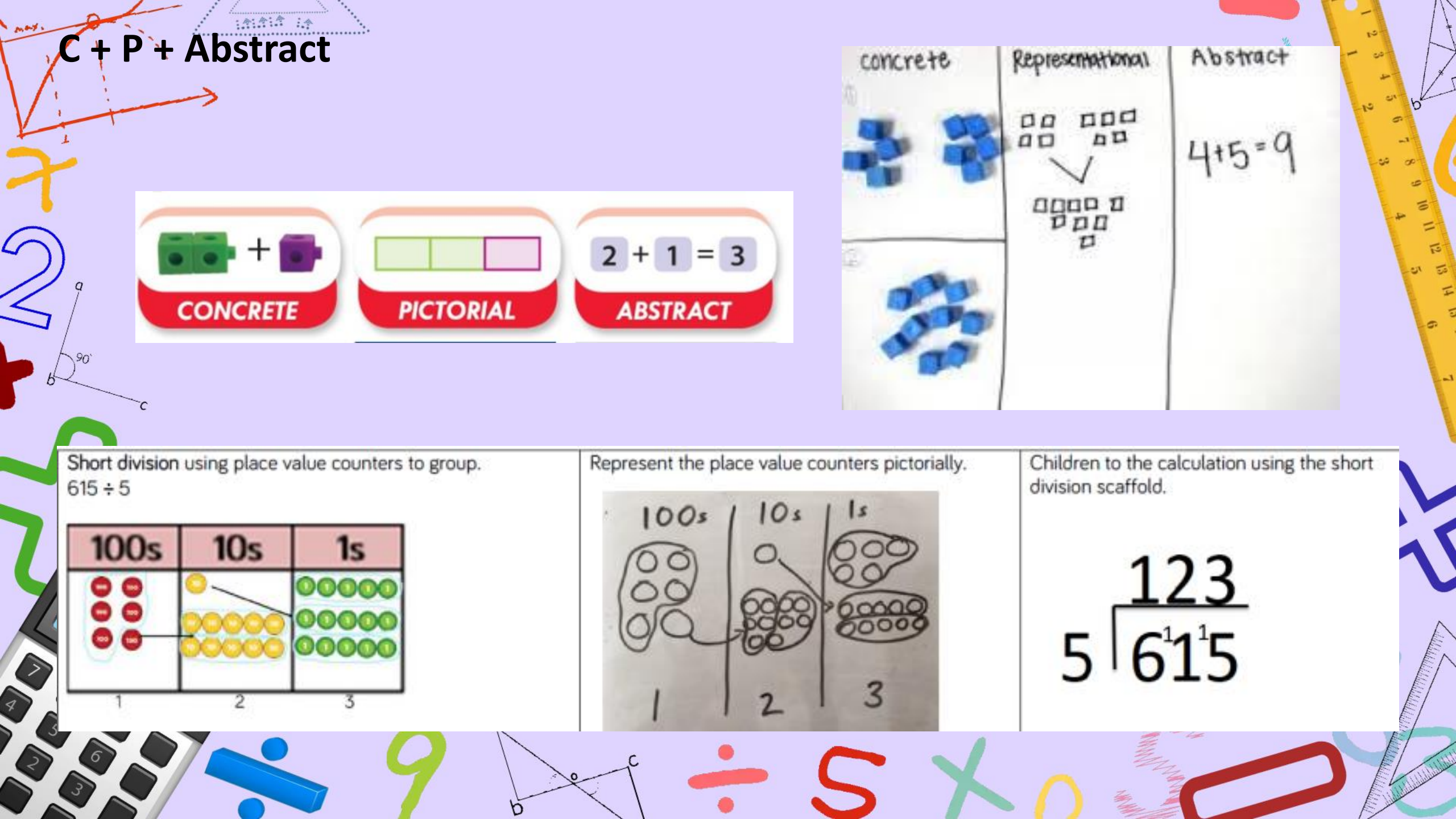
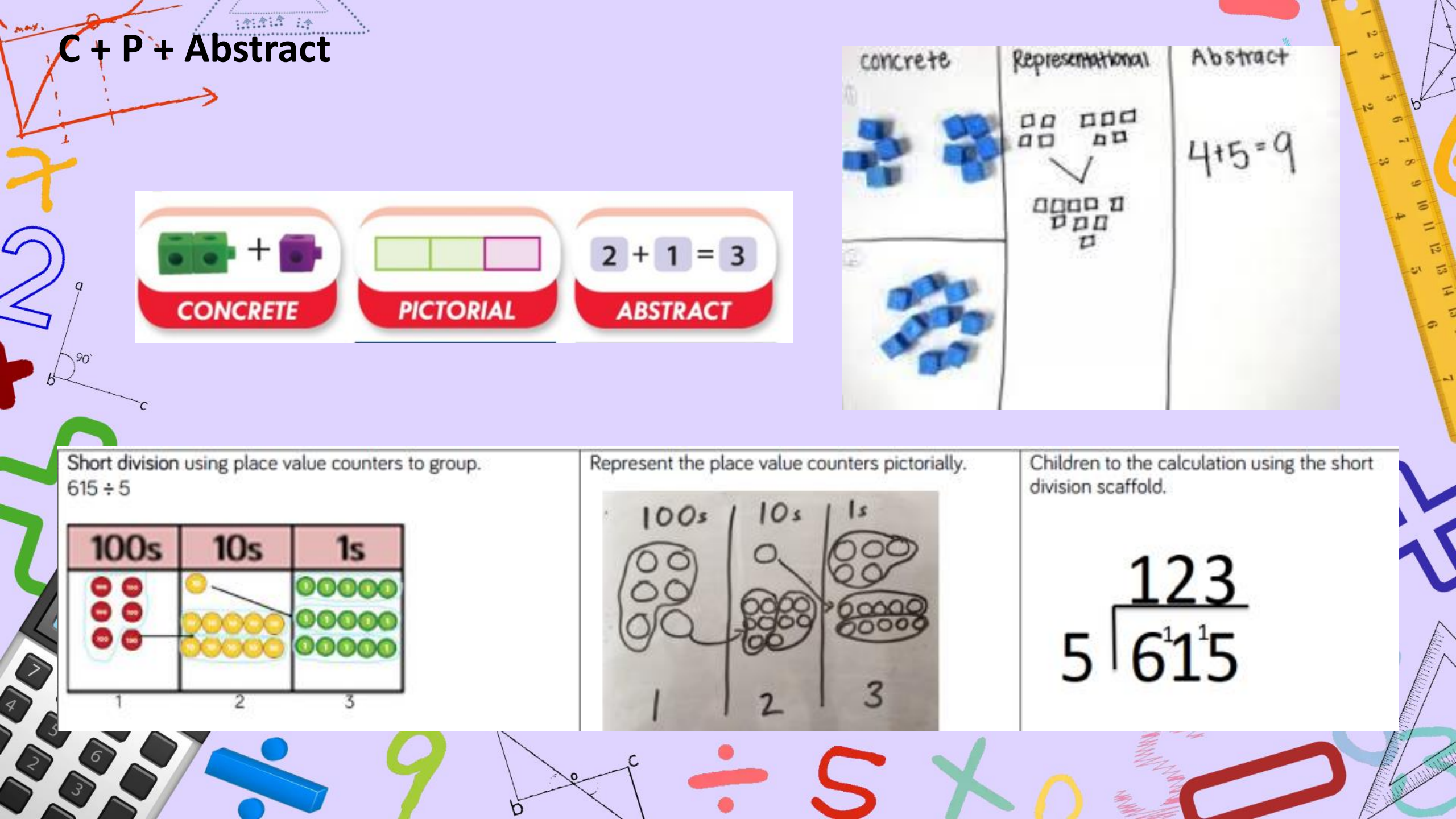
1

2

3

Children to the calculation using the short division scaffold.

$$\begin{array}{r}
 123 \\
 5 \overline{) 615} \\
 \underline{5} \\
 11 \\
 \underline{10} \\
 15 \\
 \underline{15} \\
 0
 \end{array}$$



C + P + Abstract

The diagram illustrates the progression of mathematical understanding through three stages:

- CONCRETE:** Represented by two blocks (one green, one purple) and a plus sign.
- PICTORIAL:** Represented by a bar model divided into three sections (two green, one pink).
- ABSTRACT:** Represented by the equation $2 + 1 = 3$.

The handwritten diagram shows the progression of mathematical understanding through three stages:

- concrete:** Represented by two groups of blue blocks (one group of 4, one group of 5).
- Representational:** Represented by a diagram showing two groups of squares (one group of 4, one group of 5) being combined into a single group of 9 squares.
- Abstract:** Represented by the equation $4 + 5 = 9$.

Short division using place value counters to group.
 $615 \div 5$

The diagram shows place value counters for the number 615, organized into three columns: 100s, 10s, and 1s.

- 100s:** 6 red counters.
- 10s:** 1 yellow counter.
- 1s:** 5 green counters.

The counters are grouped into 5 equal groups, representing the short division process.

Represent the place value counters pictorially.

The diagram shows place value counters for the number 615, organized into three columns: 100s, 10s, and 1s.

- 100s:** 6 red counters.
- 10s:** 1 yellow counter.
- 1s:** 5 green counters.

The counters are grouped into 5 equal groups, representing the short division process.

Children to the calculation using the short division scaffold.

$$\begin{array}{r} 123 \\ 5 \overline{) 615} \\ \underline{5 } \\ 11 \\ \underline{10 } \\ 15 \\ \underline{15} \\ 0 \end{array}$$

C + P + Abstract

CONCRETE

PICTORIAL

ABSTRACT

concrete

Representational

Abstract

4 + 5 = 9

Short division using place value counters to group.
615 ÷ 5

100s	10s	1s
6	1	5

Represent the place value counters pictorially.

100s

10s

1s

1

2

3

Children to the calculation using the short division scaffold.

$$\begin{array}{r}
 123 \\
 5 \overline{) 615} \\
 \underline{5} \\
 11 \\
 \underline{10} \\
 15 \\
 \underline{15} \\
 0
 \end{array}$$

C + P + Abstract

The diagram illustrates the progression from concrete to abstract for the addition $2 + 1 = 3$:

- Concrete:** Two green blocks and one purple block.
- Pictorial:** A bar model with two green sections and one pink section.
- Abstract:** The equation $2 + 1 = 3$ with numbers in boxes.

The handwritten diagram illustrates the progression from concrete to abstract for the addition $4 + 5 = 9$:

- Concrete:** Two groups of four blue cubes and one group of five blue cubes.
- Representational:** A diagram showing two groups of four squares and one group of five squares, with a checkmark indicating the total is nine.
- Abstract:** The equation $4 + 5 = 9$.

Short division using place value counters to group.
 $615 \div 5$

The diagram shows place value counters for $615 \div 5$:

- 100s:** Six red counters.
- 10s:** One yellow counter.
- 1s:** Five green counters.

The counters are grouped into five equal groups, with the quotient 123 written below.

Represent the place value counters pictorially.

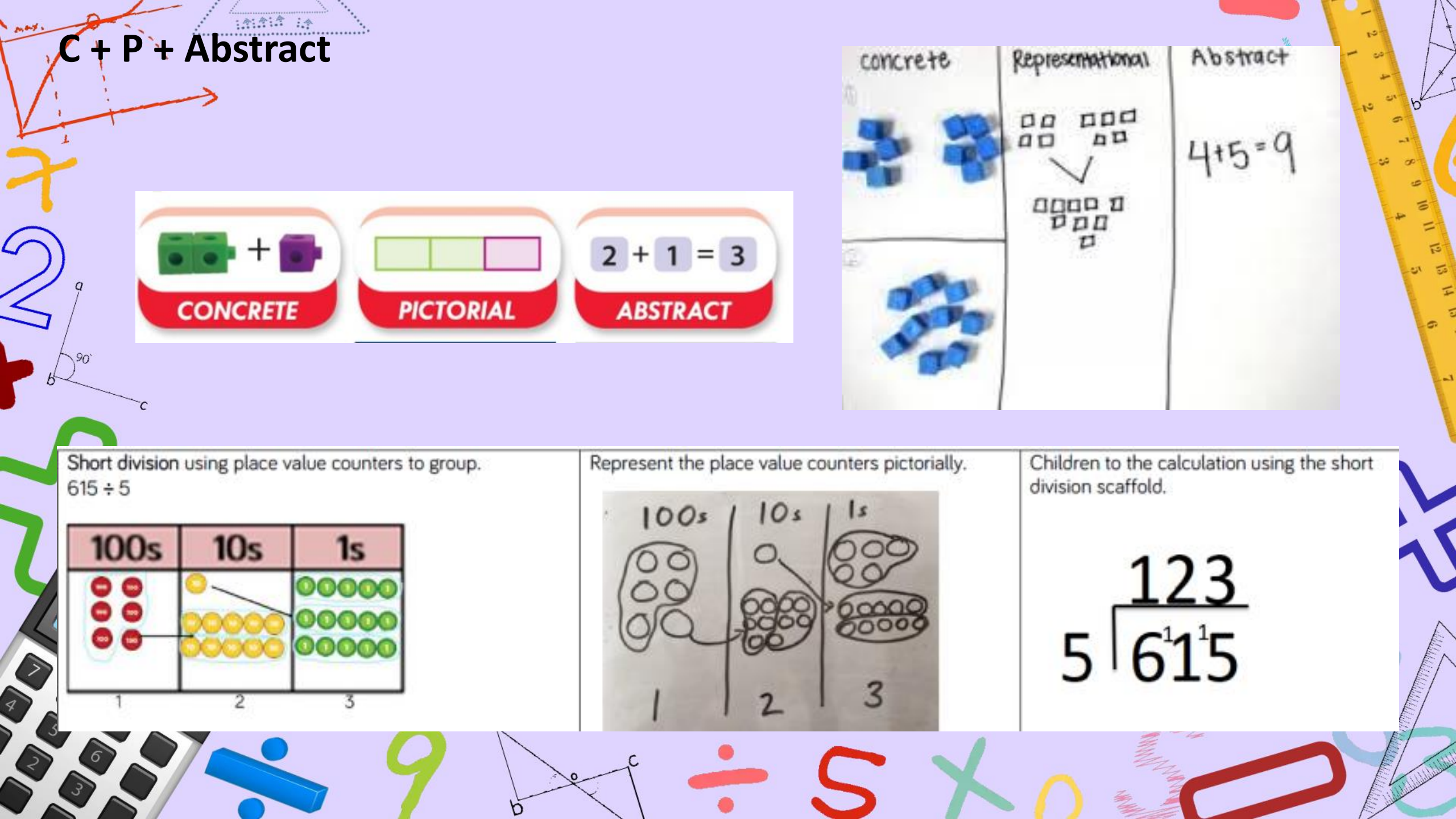
The pictorial representation shows the place value counters for $615 \div 5$ grouped into five equal groups:

- 100s:** One group of six red counters.
- 10s:** One group of one yellow counter.
- 1s:** One group of five green counters.

The groups are labeled 1, 2, and 3, corresponding to the quotient 123.

Children to the calculation using the short division scaffold.

$$\begin{array}{r} 123 \\ 5 \overline{) 615} \\ \underline{5} \\ 11 \\ \underline{10} \\ 15 \\ \underline{15} \\ 0 \end{array}$$



C + P + Abstract

The diagram illustrates the progression from concrete to abstract for the equation $2 + 1 = 3$.

- Concrete:** Two green blocks and one purple block.
- Pictorial:** A bar model with two green sections and one pink section.
- Abstract:** The equation $2 + 1 = 3$ with numbers in boxes.

The diagram illustrates the progression from concrete to abstract for the equation $4 + 5 = 9$.

- Concrete:** Two groups of blue blocks, one with 4 blocks and one with 5 blocks.
- Representational:** A diagram showing 4 small squares and 5 small squares being combined into a single group of 9 small squares.
- Abstract:** The equation $4 + 5 = 9$ written in a box.

Short division using place value counters to group.
 $615 \div 5$

The diagram shows place value counters for the number 615, organized into three columns: 100s, 10s, and 1s.

- 100s:** 6 red counters.
- 10s:** 1 yellow counter.
- 1s:** 5 green counters.

The counters are grouped into 5 equal groups, representing the short division process.

Represent the place value counters pictorially.

The diagram shows a pictorial representation of the place value counters for 615, organized into three columns: 100s, 10s, and 1s.

- 100s:** 6 red circles.
- 10s:** 1 yellow circle.
- 1s:** 5 green circles.

The counters are grouped into 5 equal groups, representing the short division process.

Children to the calculation using the short division scaffold.

$$\begin{array}{r} 123 \\ 5 \overline{) 615} \\ \underline{5 } \\ 11 \\ \underline{10 } \\ 15 \\ \underline{15} \\ 0 \end{array}$$

C + P + Abstract

The diagram illustrates the progression from concrete to abstract for the equation $2 + 1 = 3$.

- Concrete:** Two green blocks and one purple block.
- Pictorial:** A bar model with two green sections and one pink section.
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The diagram illustrates the progression from concrete to abstract for the equation $4 + 5 = 9$.

- Concrete:** Two groups of blue blocks, one with 4 blocks and one with 5 blocks.
- Representational:** A diagram showing 4 small squares and 5 small squares being combined into a single group of 9 small squares.
- Abstract:** The equation $4 + 5 = 9$ written in a box.

Short division using place value counters to group.
 $615 \div 5$

100s	10s	1s
6	1	5

The chart shows 6 hundreds, 1 ten, and 5 ones. The tens and ones are grouped to show the division process.

Represent the place value counters pictorially.

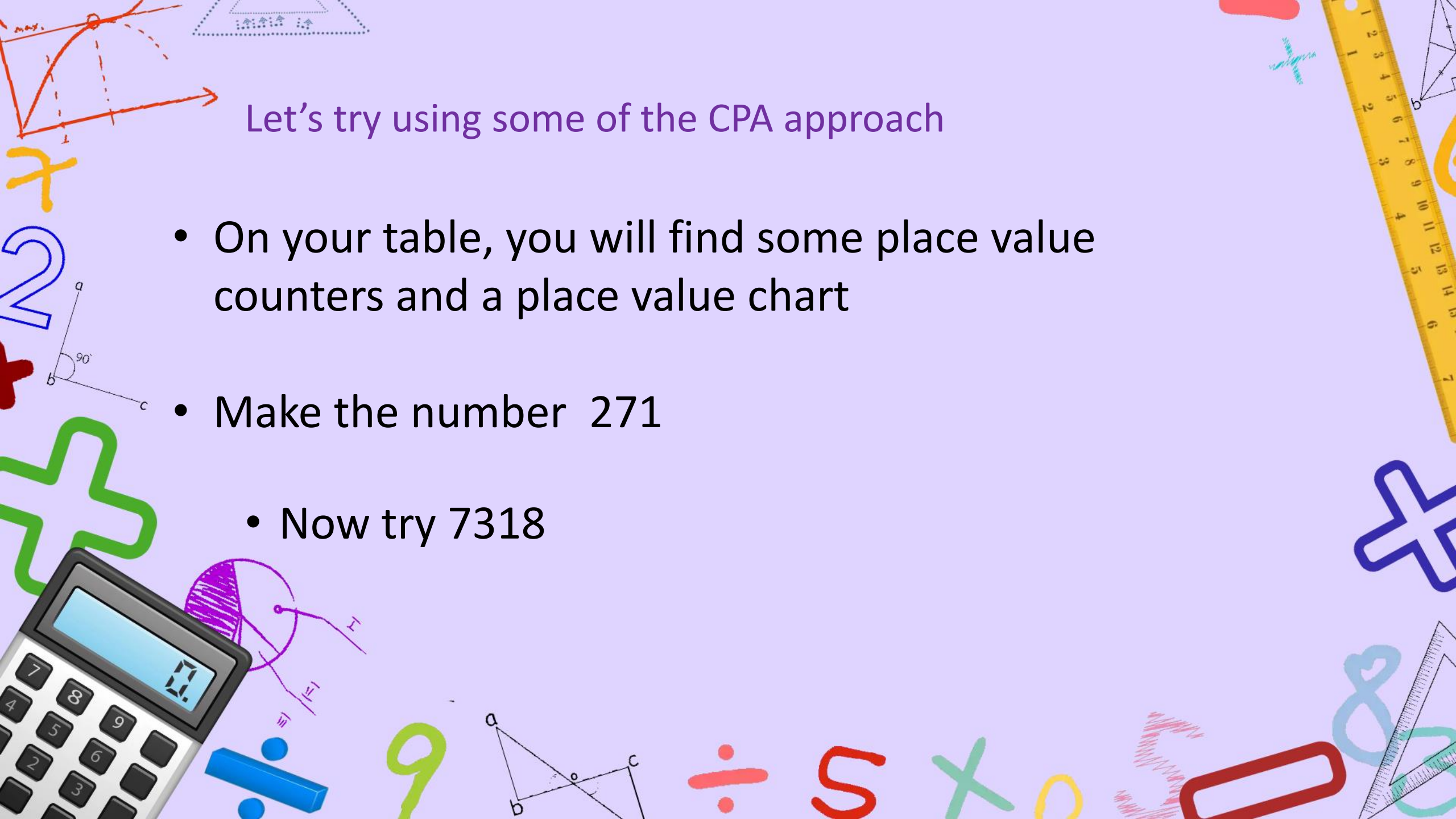
The diagram shows the place value counters for 615 divided by 5, represented pictorially.

- 100s:** 6 hundreds (represented by 6 circles).
- 10s:** 1 ten (represented by 10 small circles).
- 1s:** 5 ones (represented by 5 small circles).

The counters are grouped to show the division process.

Children to the calculation using the short division scaffold.

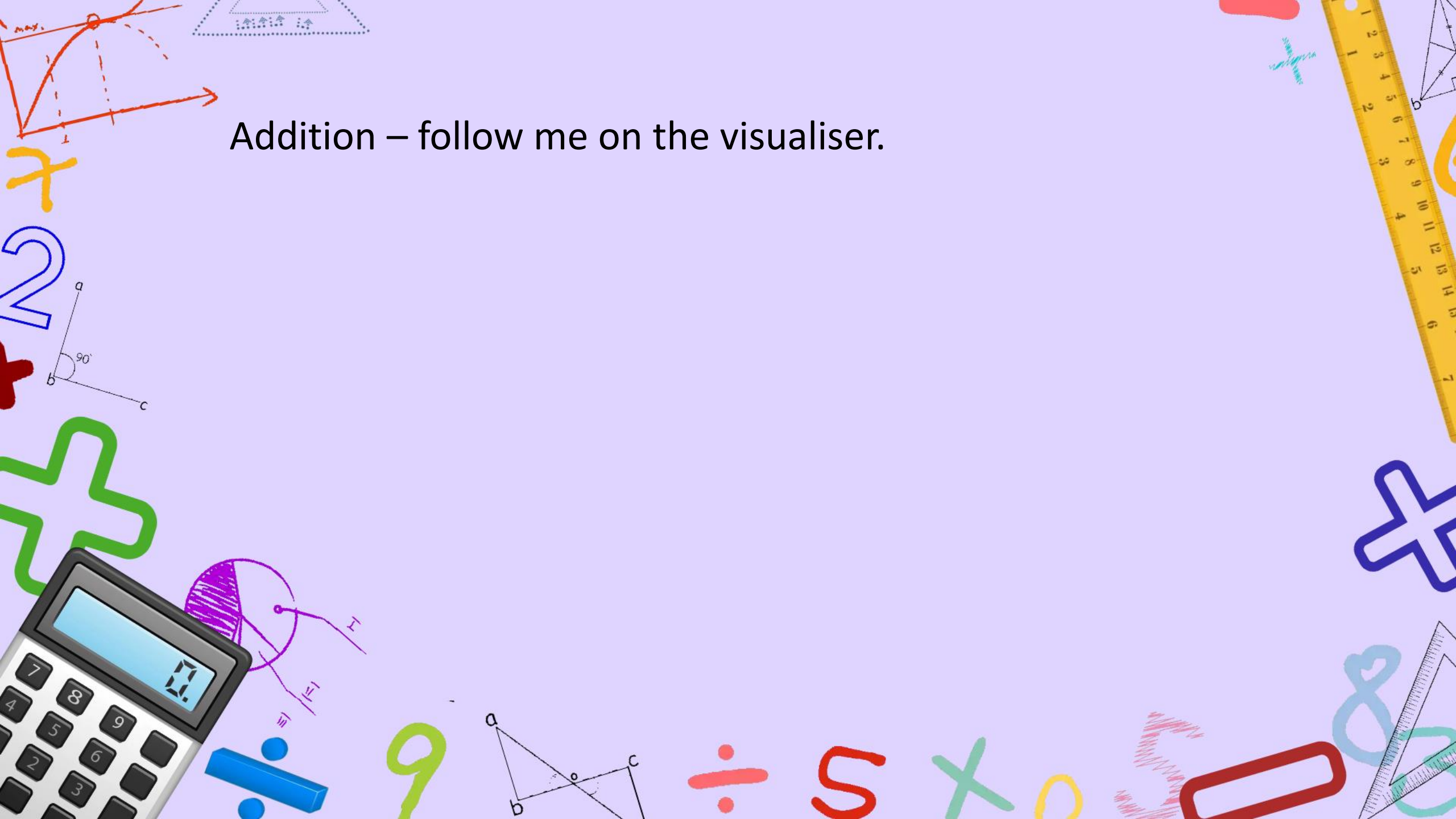
$$\begin{array}{r} 123 \\ 5 \overline{) 615} \\ \underline{5} \\ 11 \\ \underline{10} \\ 15 \\ \underline{15} \\ 0 \end{array}$$

The background is a light purple gradient decorated with various mathematical symbols and diagrams. In the top left, there is a red coordinate plane with a curve and dashed lines. Below it is a yellow number '7'. To the left of the main text is a blue number '2' and a diagram of a right angle labeled '90°'. In the top right, there is a yellow ruler and a green plus sign. Below the ruler is a blue plus sign. In the bottom left, there is a calculator showing '0.0' on its screen, a blue number '9', and a diagram of a triangle with vertices labeled 'a', 'b', and 'c'. In the bottom right, there is a red number '5', a green number '8', a red number '0', and a diagram of a right triangle. The text 'Let's try using some of the CPA approach' is written in purple in the upper middle section.

Let's try using some of the CPA approach

- On your table, you will find some place value counters and a place value chart
- Make the number 271
- Now try 7318

Addition – follow me on the visualiser.



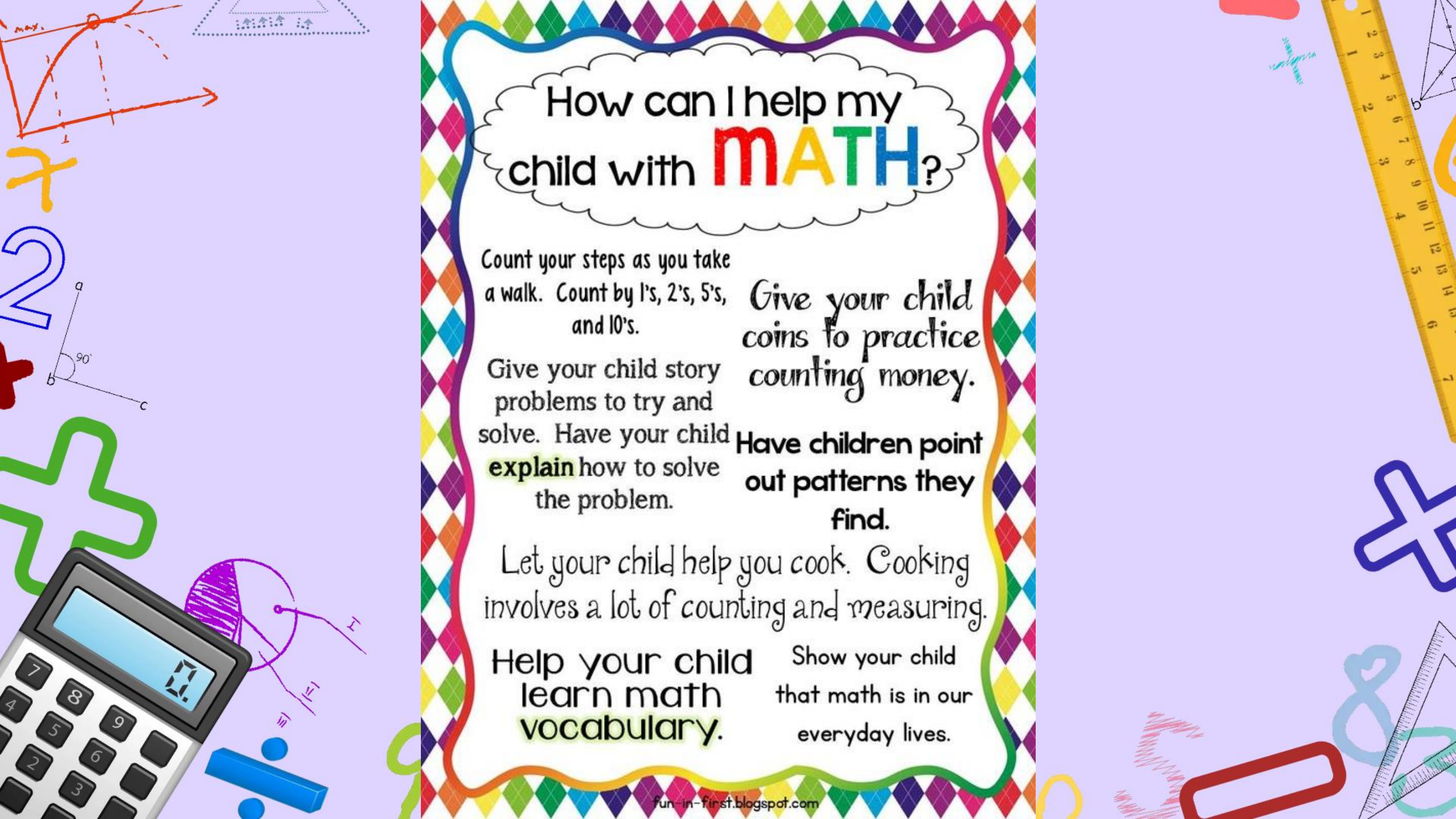
How you can help your child at home ?

Hundreds	Tens	Ones
	3	5
		

Straws can be used as a manipulative to work on place value, addition and subtraction.



Conkers, apples, stones, buttons, pasta can all be used as counters.



How can I help my child with **MATH**?

Count your steps as you take a walk. Count by 1's, 2's, 5's, and 10's.

Give your child story problems to try and solve. Have your child **explain** how to solve the problem.

Give your child coins to practice counting money.

Have children point out patterns they find.

Let your child help you cook. Cooking involves a lot of counting and measuring.

Help your child learn math **vocabulary**.

Show your child that math is in our everyday lives.

Maths

Home >> What We Do >> Curriculum >> Maths



Maths strategy statement .pdf



Ark Maths Mastery Curriculum map all year groups.pdf



Progression in Calculations.pdf

<https://www.becontreeprimaryschool.com/maths/>

Reception Curriculum Map

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11
Autumn	Early mathematical experiences		Pattern and early number		Numbers within 6		Addition and subtraction within 6		Measures	Shape and sorting	Calendar and time
	- Classifying objects based on one attribute - Matching equal and unequal sets - Comparing objects and sets - Ordering objects and sets		- Recognise, describe, copy and extend colour and size patterns - Count and represent the numbers 1 to 3 - Estimate and check by counting		- Count up to six objects. - One more or one fewer - Order numbers 1 – 6 - Conservation of numbers within six		- Explore zero - Explore addition and subtraction		Estimate, order, compare, discuss and explore capacity, weight and lengths	- Describe, and sort 3-D shapes - Describe position accurately	- Days of the week, seasons - Sequence daily events
Spring	Numbers within 10		Addition and subtraction within 10		Numbers within 15		Grouping and sharing		Numbers within 20	Doubling and halving	
	- Count up to ten objects - Represent, order and explore numbers to ten - One more or fewer, one greater or less		Explore addition as counting on and subtraction as taking away		- Count up to 15 objects and recognise different representations - Order and explore numbers to 15 - One more or fewer		- Counting and sharing in equal groups - Grouping into fives and tens - Relationship between grouping and sharing		- Count up to 10 objects - Represent, order and explore numbers to 15 - One more or fewer	- Doubling and halving - Relationship between	
Summer	Shape and pattern		Addition and subtraction within 20		Money		Measures		Depth of numbers within 20		Numbers beyond 20
	- Describe and sort 2-D and 3-D shapes - Recognise, complete and create patterns		- Commutativity - Explore addition and subtraction - Compare two amounts - Relationship between doubling and halving		- Coin recognition and values - Combinations to total 20p - Change from 10p		- Describe capacities - Compare volumes - Compare weights - Estimate, compare and order lengths		- Explore numbers and strategies - Recognise and extend patterns - Apply number, shape and measures knowledge - Count forwards and backwards		- One more one less - Estimate and count - Grouping and sharing

Maths Home Learning Support

Home >> Key Information >> Supporting Learning at Home >> Maths Home Learning Support

<https://www.becontreeprimaryschool.com/maths-home-learning-support/>

Any questions ?

