

*Learn with  
us workshop*

*Maths in Year 2 at  
Harborne Primary School*



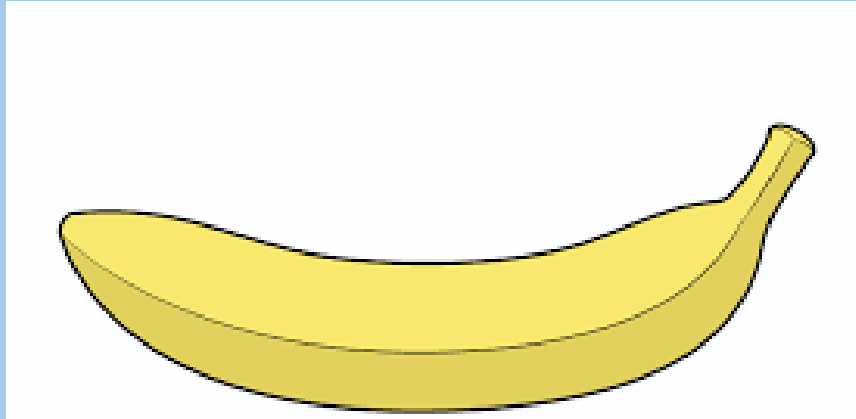
# Year 2 Maths at HPS

*We didn't do it like that when I was at school!*

What is the CPA approach and why do we use it?



*Concrete*

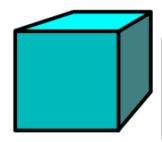


*Pictorial*

*Banana*

*Abstract*

# What is the CPA approach and why do we use it?



123

## 1. Concrete

- **What it is:** use physical, tangible objects to represent and manipulate mathematical concepts.
- **Example:** children may physically share objects

## 2. Pictorial

- **What it is:** Students move to visual representations, such as drawings, diagrams, or number lines.
- **Example:** Instead of using counters, the child would draw dots in a circle to show the objects

## 3. Abstract

**What it is:** Students use symbols, numbers, and equations to solve problems without the need for objects or pictures.

**Example:** At this stage, the child would use the division symbol to write and solve the calculation  $8 \div 4 = 2$ .

# Ready to progress – what does that look like for your child?

Year 1 conceptual prerequisites	Year 2 ready-to-progress criteria	Future applications
<p>Know that 10 ones are equivalent to 1 ten.</p> <p>Know that multiples of 10 are made up from a number of tens, for example, 50 is 5 tens.</p>	<p><b>2NPV-1</b> Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning.</p>	<p>Compare and order numbers.</p> <p>Add and subtract using mental and formal written methods.</p>
<p>Place the numbers 1 to 9 on a marked, but unlabelled, 0 to 10 number line.</p> <p>Estimate the position of the numbers 1 to 9 on an unmarked 0 to 10 number line.</p> <p>Count forwards and backwards to and from 100.</p>	<p><b>2NPV-2</b> Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.</p>	<p>Compare and order numbers.</p> <p>Round whole numbers.</p> <p>Subtract ones from a multiple of 10, for example: <math>30 - 3 = 27</math></p>
<p>Develop fluency in addition and subtraction facts within 10.</p>	<p><b>2NF-1</b> Secure fluency in addition and subtraction facts within 10, through continued practice.</p>	<p>All future additive calculation.</p> <p>Add within a column during columnar addition when the column sums to less than 10 (no regrouping).</p> <p>Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging).</p>

Year 1 conceptual prerequisites	Year 2 ready-to-progress criteria	Future applications
<p>Learn and use number bonds to 10, for example: <math>8 + ? = 10</math></p> <p>Partition numbers within 10, for example: <math>5 = 2 + 3</math></p>	<p><b>2AS-1</b> Add and subtract across 10, for example: <math>8 + 5 = 13</math> <math>13 - 5 = 8</math></p>	<p>Add and subtract within 100: add and subtract any 2 two-digit numbers, where the ones sum to 10 or more, for example: <math>26 + 37 = 63</math></p> <p>Use knowledge of unitising to add and subtract across other boundaries, for example: <math>1.3 - 0.5 = 0.8</math></p> <p>Add within a column during columnar addition when the column sums to more than 10 (regrouping), for example, for: <math>126 + 148</math></p> <p>Subtract within a column during columnar subtraction when the minuend of the column is smaller than the subtrahend (exchanging), for example, for: <math>453 - 124</math></p>
<p>Solve missing addend problems within 10, for example: <math>4 + \square = 10</math></p>	<p><b>2AS-2</b> Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?".</p>	<p>Solve contextual subtraction problems for all three subtraction structures (reduction, partitioning and difference) and combining with other operations.</p>
<p>Add and subtract within 10, for example: <math>6 + 3 = 9</math> <math>6 - 2 = 4</math></p> <p>Know that a multiple of 10 is made up from a number of tens, for example, 50 is 5 tens.</p>	<p><b>2AS-3</b> Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.</p>	<p>Add and subtract using mental and formal written methods.</p>

Year 1 conceptual prerequisites	Year 2 ready-to-progress criteria	Future applications
<p>Add and subtract within 10. Know that a multiple of 10 is made up from a number of tens, for example, 50 is 5 tens.</p>	<p><b>2AS-4</b> Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.</p>	<p>Add and subtract numbers greater than 100, recognising unitising, for example: <math>32 \text{ ones} + 23 \text{ ones} = 55 \text{ ones}</math> so <math>32 \text{ tens} + 23 \text{ tens} = 55 \text{ tens}</math> <math>320 + 230 = 550</math></p>
<p>Count in multiples of 2, 5 and 10.</p>	<p><b>2MD-1</b> Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.</p>	<p>Use multiplication to represent repeated addition contexts for other group sizes.</p> <p>Memorise multiplication tables.</p>
<p>Count in multiples of 2, 5 and 10 to find how many groups of 2, 5 or 10 there are in a particular quantity, set in everyday contexts.</p>	<p><b>2MD-2</b> Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).</p>	<p>Division with other divisors.</p>
<p>Recognise common 2D and 3D shapes presented in different orientations.</p>	<p><b>2G-1</b> Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.</p>	<p>Identify similar shapes.</p> <p>Describe and compare angles.</p> <p>Draw polygons by joining marked points</p> <p>Identify parallel and perpendicular sides.</p> <p>Identify regular polygons</p> <p>Find the perimeter of regular and irregular polygons.</p> <p>Compare areas and calculate the area of rectangles (including squares) using standard units.</p> <p>Compare areas and calculate the area of rectangles (including squares) using standard units.</p>

Ready to progress statements are unique to each year group.

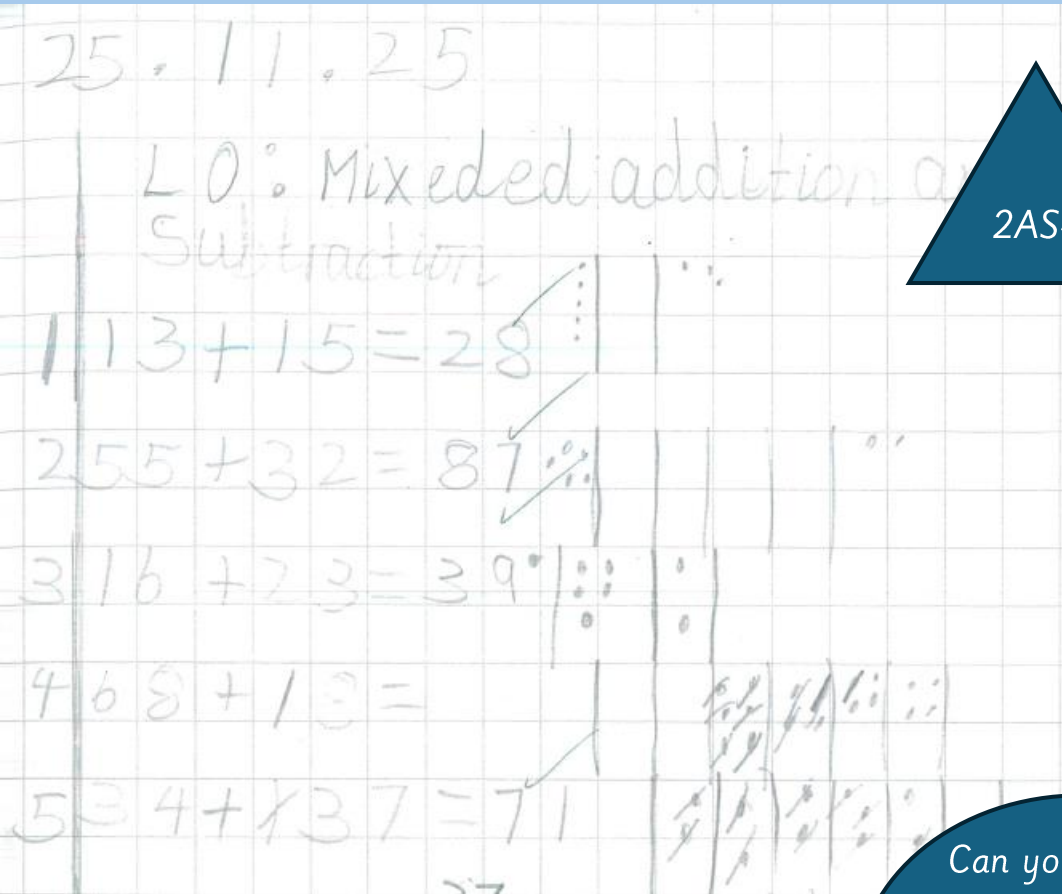
# What are the key aspects of maths for my child?

- **Number and Place Value (NPV)** – develop recognition of the value of digits within a 2 digit number and compare these
- **Number Fluency (NF)** – increase confidence in number facts and families and begin to use these related facts in broader contexts
- **Addition and Subtraction (AS)** – adding and subtracting using a range of strategies including partitioning, crossing tens, counting on and finding the difference
- **Multiplication and division (MD)** - using counting in 2, 5 and 10 to recognise that numbers can be grouped, shared and that multiplication is just repeated addition
- **Geometry (G)**– comparing, organising and discussing 2D and 3D shapes using technical vocabulary

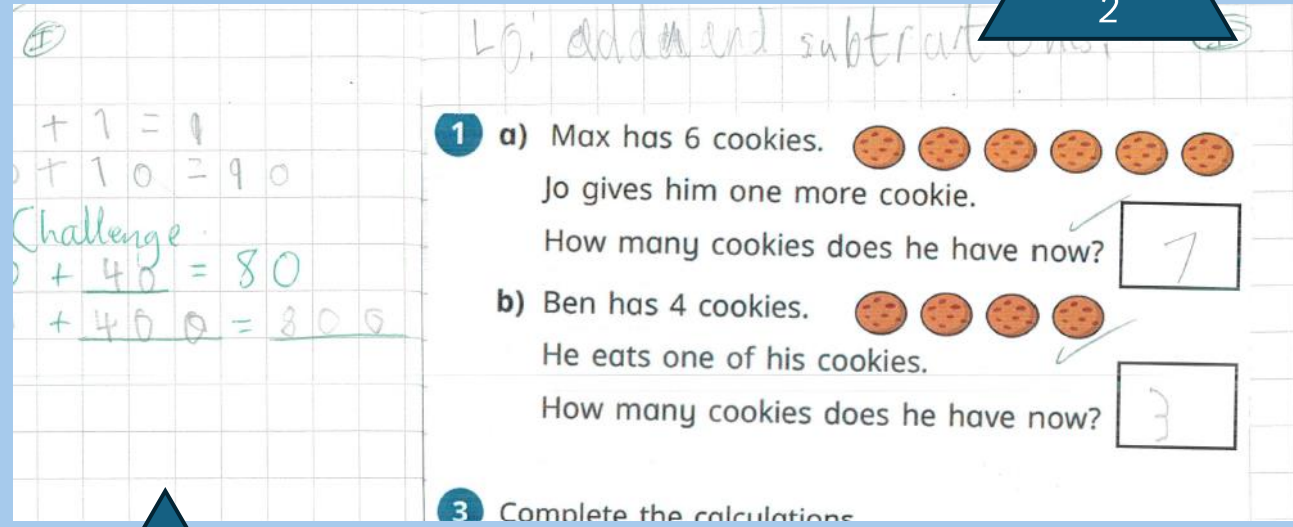
New learning  
area in year  
2

# What does work look like in your child's year group?

2AS-2

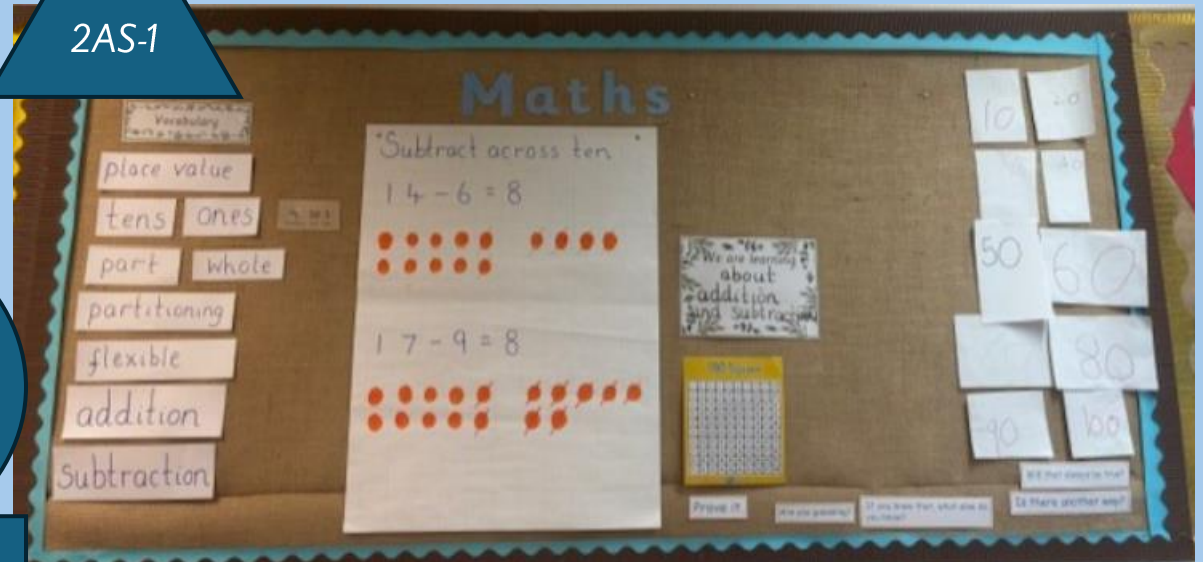


2AS-1



2AS-1

Can you see how your child's teacher has used the CPA approach?



# How can I help my child at home?



- Numbots – a programme for developing number bond fluency
- PurpleMash homework
- Both of these logins can be found in your child's reading diary – please alert your child's class teacher if they are not in there
- Apply any of the games or strategies learnt here today
- Make maths fun – could you measure in the kitchen using scales?
- Read the time with your children – use digital and analogue clocks
- Spot maths in the wider world i.e. shape hunts, number hunts, bus times

