



# What does Maths look like at Hambrook?

## Intent

At Hambrook, we are invested in establishing a maths curriculum that will create enthusiastic, creative and articulate mathematicians. Through varied and inspiring lessons and activities, we aim to develop the children's mental calculation, fluency and ability to problem solve as well as support their ability to be reflective and resilient. Maths is important in everyday life and, with this in mind, the purpose of Maths at Hambrook Primary School is to develop skills that can easily be transferrable across the curriculum and encourage people to think logically, reason and work systematically.

We aim for all pupils to achieve the following outcomes.

- Become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- Be able to solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios.
- Reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.
- Have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately to be successful in mathematics.

## Implementation

For every unit of mathematics, we use the **TRY IT**, **USE IT** and **PROVE IT** approach to ensure all children are being challenged in their learning. Teachers will use their **TRY IT** activities to allow the children the opportunity to practise the objective taught. This is then followed by a **USE IT** activity in which the children apply the objective to a problem. Within the teaching of the objective, children are also exposed to **PROVE IT** activities where they reason or talk through misconceptions that occur.

# TRY IT - Fluency

Children will use concrete, pictorial or abstract resources to practise the fluency of a skill.

# USE IT – Problem Solving






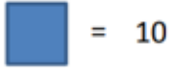
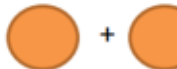
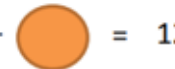




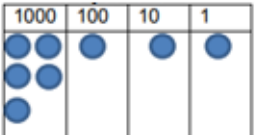
Children will apply the skill taught in a problem solving context.

# PROVE IT – Reasoning activities

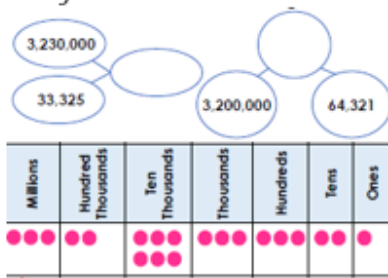
Children will be able to explain and communicate how they reached an answer or explain where a misconception has occurred.

Here are some examples of the type of questions we provide children within their lessons.

### Examples of these types of Questions

TRY IT- Fluency	USE IT- Problem solving	PROVE IT- Reasoning
<p><b>*Practising the skill</b></p> <p>E.g using rods and diennes, base 10 counters, using beadstrings, using the abstract calculation, seeing the calculation in words etc.</p> <p><u>Example Questions for ordering numbers across year groups</u></p> <p><b>Y1- Tick the smallest numicom</b></p>  <p>Use the &lt; &gt; = to make the correct</p> <p><input type="checkbox"/> &gt; <input type="checkbox"/> statements</p> <p><input type="checkbox"/> &lt; <input type="checkbox"/> 7</p> <p><input type="checkbox"/> &lt; <input type="checkbox"/> 4</p> <p>Circle the smallest number.</p> <p><b>ten      9      six</b></p> <p><b>Y4- Record the value of the numbers in the chart and order them in ascending order</b></p>  <p>Match each number to a letter on the number line.</p>  <p><b>Y3-</b> Using the digit cards in the multiplication below how close can you get to 100?</p> 	<p><b>*Missing numbers</b></p> <p><b>Y1- Find the total</b></p> <p> +  = 10</p> <p> +  = 12</p> <p> +  =</p> <p><b>Y5- Can you fill in the missing digits using the clues below?</b></p>  <p>The four digits being multiplied by 6 are consecutive numbers but not in the right order. The first and the final digit of the answer are the same number. The 2nd and 3rd digit of the answer add up to the 1st digit of the answer.</p> <p><b>Y3-</b> Using the digit cards in the multiplication below how close can you get to 100?</p>  <p><b>*Worded problems</b></p>	<p><b>*Misconceptions</b></p> <p><b>Y3- Hassan is calculating 32 x 5. He writes his answer 15010. Can you work out Hassan's mistake and write an explanation of how he could do it correctly?</b></p> <p><b>Y4- Amelia says 'The number in the place value grid is the largest number you can make with 8 counters.' Do you agree? Prove your answer.</b></p>  <p><b>*Listing all possibilities</b></p> <p><b>EYFS- How many ways can you make 5 pence? How do you know you have them all?</b></p> <p><b>Y3- How many different combinations of numbers can you find that would fit in the empty boxes?</b></p> <p>5 x <input type="text"/> = 10 x <input type="text"/></p> <p><b>Y1- Fill in the boxes:</b></p> <p><input type="text"/> is 1 less than <input type="text"/></p> <p><input type="text"/> is 1 more than <input type="text"/></p> <p><b>*Always / Sometimes / Never questions</b></p>

**Y6** Write the numbers in numerals and then order them from the largest



Sophie has a budget of £6.5 million to buy a mansion. Arrange the mansions below in ascending order and then work out which mansions are within Sophie's budget.

- A. Six hundred and seventy thousand, two hundred and fifty pounds
- B. Three million, two hundred and twenty thousand and nine pounds
- C. \$4,999,999
- D. Five million, three hundred thousand, two hundred and ten pounds
- E. £8,567,100
- F. Two hundred and seventy thousand and fifty pounds

**\*Worded problems**

**Y2** Take five coins: 1p, 2p, 5p, 10p, 20p. Put them in a row using these clues. The total of the first three coins is 27p. The total of the last three coins is 31p. The last coin is double the value of the first coin.

**Y4** Claire thinks of a 4 digit number. The digits add up to 12. The difference between the first and fourth digit is 5. What could Claire's number be?

**Y4** If the number on the number line is 1788, what could the start and end numbers be?



**\*Inverse**

**Y2** I think of a number. I take away 7 and add 2. My answer is 15. What is my number?

**\*What is the same and what is different?**

**Y2** Complete the tally chart. Compare the tally chart with the pictogram below. What's the same and what's different?

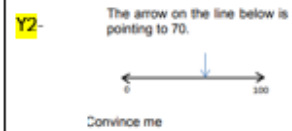
**\*Always / Sometimes / Never questions**

**Y5** Always, Sometimes, Never. A square number has an even number of factors.

**Y3** Always, sometimes, never A two digit number multiplied by a one digit number makes a two digit answer.

**\*Looking for patterns/ Convince me**

**Y4** Convince me that the number 14 will be in this sequence if it is continued. 49, 42, 35, 28



**Y2** Continue the pattern  $90 = 100 - 10$   $80 = 100 - 20$

**\*Explaining the strategy you have used and why**

**Y2** Sid says 'In a subtraction, you always start with the biggest number and take away from that.' Do you agree? Explain your answer.