

Year 2 – Becoming an ‘exceeding Mathematician’

We have put together the following guide to help our parents and carers support their children at home with Maths and help them become an ‘exceeding Mathematician’! An ‘exceeding Mathematician’ is a child that has mastered the content of their year group curriculum beyond that of the ‘expected’ standard. When assessing children in school, we have found that often children master the procedures and are fluent, but find applying the concepts more difficult.

A child working at ‘exceeding’ will be able to:

- access maths problems presented in a wide range of different, complex ways;
- be able to justify and prove their mathematical thinking when reasoning;
- Ask their own mathematical questions and follow their own lines of enquiry when exploring an open-ended maths problem.

One of the most important ways children can be supported is to encourage their reasoning about maths – can they explain why they think they have found the answer? Can they prove something is true or false? Can they say how things are similar/ different? Reasoning includes being able to explain verbally or in written form, using the correct mathematical vocabulary.

If a child is working at an ‘exceeding’ level in Maths they need to be able to complete most of the ‘exceeding’ statement this list and the ‘expected’ statements will be embedded. If you have any concerns about your child’s maths learning please book an appointment with their class teacher to discuss their maths level further.

Exceeding statements	How I can help at home...
<p>Number and Place Value: Demonstrate fluency and reasoning in counting forwards and backwards in steps of 2, 5 and 10 including from different starting points and using numbers beyond 100. Consistently use less than (<), equals (=) and greater than (>) signs correctly when comparing numbers and expressions. Identify and represent numbers using different representations including more complex number lines. Demonstrate reasoning about place value and number facts to solve more complex problems.</p>	<p>Play counting games, starting from different numbers, ensuring that they count forwards and backwards. Including counting in 2s, 5s and 10s. Encourage them to use the correct language and explain their reasoning, e.g. What does each number always end in when I count in 5s? Why? What happens if I start from 3 and count in 5s? Compare amounts e.g. when shopping – compare packets of biscuits – which is greater than/ less than in terms of price or quantity? Encourage them to explain how they know.</p>
<p>Addition and Subtraction: Recall and use addition and subtraction facts to 20 fluently; derive and use related facts to 100 and beyond. Add and subtract numbers mentally using appropriate strategies, including: 2 2-digit numbers, adding /subtracting several single-digit numbers. Add and subtract numbers using objects, pictorial representations and the written columnar method including: adding several 2-digit numbers, subtracting 2-digit numbers, adding a 2-digit number to a 3-digit number, adding 3-digit numbers. Solve missing number problems involving a wider range of numbers. Use addition and subtraction facts to solve more complex problems, such as 3 step problems.</p>	<p>Practice rapid recall of number bonds to 20. Practice adding and subtracting numbers. Encourage them to use physical objects when completing addition and subtractions problems. Encourage them to draw their methods and talk about how they know they have the right answer.</p>
<p>Multiplication and Division: Rapidly recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables and write mathematical statements using the multiplication (×), division (÷) and equals (=) signs.</p>	<p>Practice counting in 2s, 3s, 5s and 10s. Encourage them to use physical objects when completing multiplication and division problems. Encourage them to draw their methods and talk about how they know they have the right answer.</p>

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<p>Count in 3s to solve multiplication and division problems for the 3 multiplication table. Solve more complex problems involving multiplication and division in a range of contexts including measures. Make connections between place value and multiplication/division by 10 and use known multiplication and division facts to derive others</p>	<p>Try examples of multiplying and dividing by 10 – discuss what happens to each digit – they move left or right, using zero as a place holder.</p>
<p>Fractions: Express more complex problems using fraction notation and solve them.</p>	<p>Discuss halves, thirds and quarters related to everyday situations e.g. eating dinners/ snacks – if you have eaten a quarter of your snack how much do you have left? If I have 6 sweets and give away half, how many have given away/ got left?</p>
<p>Measures: Find all possible combinations of coins to equal a given amount or how to pay a given amount using the fewest possible number of coins. Know that there are 60 minutes in an hour and 24 hours in a day and use these facts to solve problems. Tell and write the time to 5 minutes and draw hands on a clock face to show these times. Solve more complex problems involving, money and other measures, including time. Reason about multiplicative relationships between specific measured quantities, drawing on knowledge of 2, 5 and 10 tables and knowledge of fractions.</p>	<p>Play games with money – how many ways can you make 20p, 50p etc. Encourage them to pay for things with money in shops – how much do you need to give? What change will you get? (Hopefully shop assistants will play along with this!) Discuss time in relation to the daily routine and time intervals – how long is your favourite TV programme etc. Encourage them to explain how they know.</p>
<p>Properties of Shapes: Compare and sort common 2-D and 3-D shapes and common objects, using more than 1 criterion, identifying and describing their properties. Reason about and solve more complex problems involving shapes and their properties.</p>	<p>Talk about objects at home and what shapes they are – encourage them to explain how they know using correct vocabulary (a list is available if needed). Encourage them to explain what is the same/ different about shapes. 2-D shapes - rectangles (including squares), circles and triangles 3-D shapes - for example, cuboids (including cubes), pyramids and spheres.</p>
<p>Position and Movement: Order and arrange combinations of mathematical objects in more complex patterns and sequences. Solve more complex problems involving position and direction.</p>	<p>Play games involving arranging objects in patterns and sequences. Get them to move in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).</p>
<p>Statistics: Interpret and construct pictograms (where the symbols show many to one correspondence), block diagrams (where the scale is divided into 2s or 5s) and more complex tables. Use more complex charts to ask and answer questions by reading from the chart the number of objects in each category, sorting the categories by quantity, totalling and comparing categorical data.</p>	<p>Look at tables on food labels and discuss them. Ask comparison questions such as, how many grams of salt are there compared to carbohydrate etc. Encourage them to explain how they know.</p>

Please do not feel compelled to complete all the suggestions all the time. Any support, however small, will help your child to make progress.