

Speen CE School

Mathematics policy



***Our vision is to be a happy, vibrant and caring school with deep roots in the Christian faith, so all grow and flourish (spiritually, academically, socially and emotionally).
May our roots go down deep into the soil of God's love and make us strong Ephesians 3 v 17***

Intent: for all our pupils to have the **courage** to 'have a go' in Maths and not be phased by word problems. Our curriculum fosters curiosity, enquiry and enjoyment by deploying a 'hands on' approach in lessons. Speen School's mastery programme teaches maths concepts using concrete, visual and abstract strategies in small, clearly sequenced steps.

This involves

- Being fluent in their number bonds;
- Regularly revising knowledge and skills;
- Being able to tackle questions using a variety of methods;
- Being able to explain how they have calculated their answers;

Implementation: Based on the national curriculum and using the Power Maths mastery scheme of work, the children will be taught a variety of methods to solve a problem and given the language and skills to interpret a question and answer it. There will be regular practice of number facts to develop the children's mathematical fluency (RMEasiMaths supports regular practice). The teaching will be done in small incremental steps to ensure the children develop a good level of understanding.

Impact: Children will leave Speen school

- able to explain their working and understanding.
- having the skills to spot patterns that will help them in their understanding and skills, which they can use when tackling something new.
- having a good knowledge and skill base so that they can progress when they go on to their new schools.

Rationale:

The Maths curriculum will

- be inclusive for all pupils in the school and enable them to achieve their full potential.
- Develop the children's knowledge and understanding of mathematical concepts, using a mastery approach.
- Give them opportunities to practise and apply their skills across the school curriculum.
- Provide the children with the knowledge and skills they need in the wider world.

Aims:

- The children learn new concepts in small steps.
- Follow a concrete – physical – abstract path when learning
- Use reasoning
- Have an efficient and quick recall of number facts
- Experience variation through spotting patterns and exploring different methods for the same concept
- Apply their knowledge and skills when problem solving.

Teaching:

- In each lesson the children will explore, have class teaching, practise skills and concepts, and work independently, with the opportunity to work at greater depth.
- They will have equipment readily available to help them to visualise a problem and calculate it.
- The children will have the chance to practise their mathematical fluency each day.
- They are expected to record their work in number sentences and to explain their reasoning.
- The children will have journals in Key Stage 1 to record work undertaken in class teaching which they can then refer to when doing independent work. These journals will also contain the end of unit assessments.

Assessment:

- Teachers will check the children's work daily, so that any child needing extra help can receive it before the next lesson.
- Children are assessed at the end of each unit of study to check that they have a good understanding of the concepts that have been taught, also to gauge the children's own confidence in what they have been taught.
- There is an assessment undertaken at the end of each term, to check on their learning of the concepts and skills taught that term.
- Half termly there is teacher assessment of the progress of each child's learning based on the school's internal assessment system.

Display and Resources:

- A variety of manipulatives will be available for all children on their tables.
- Other resources will be easily available for children to use.
- There will be posters and information on the walls to help the children with their learning or to act as reminders.

By the end of the **Early Years Foundation Stage** it is expected that children will be able to:

- Have a deep understanding of number to 10, including composition of each number
- Subitise up to 5
- Automatically recall number bonds up to 5 and some to 10, including double facts
- Verbally count beyond 20, recognizing the pattern of the counting system
- Compare quantities up to 10 in different contexts, recognizing when one quantity is greater than, less than or the same as the other quantity
- Explore and repeat patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly

By the end of **Year 1** children will learn to:

- Identify and represent numbers using concrete objects and pictorial representations including the number line and use the language of = < >
- Read and write numbers from 1 – 20 in digits and words
- Know odd and even numbers to 20
- Count in 2s, 5s and 10s
- Given a number can identify one more and one less
- Count to and across 100, forwards and backwards, from any given number
- Represent and use number bonds and related subtraction facts to 20
- Add and subtract one and two digit numbers to 20
- Double numbers to 10
- Solve one step problems involving multiplication and division by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher
- Recognise, find and name a half as one of two equal parts of an object, shape or quantity
- Recognise 2D shapes in different orientations
- Recognise and name common 3-D shapes
- Describe position, direction and movements, including half, quarter and $\frac{3}{4}$ turns (in a clockwise direction)
- Measure and begin to record lengths and heights
- Measure and begin to record mass and weights
- Measure and begin to record capacity and volume
- Recognise and know the value of different denominations of coins and notes
- Tell the time to the hour and half past and draw the hands on a clock face to show these times
- Sequence events in chronological order using language like before, after, next, first.
- Recognise and use language relating to dates including days of the week and months of the year
- Solve comparison, sum and difference problems using information presented in bar charts, pictograms and other graphs

By the end of **Year 2** children will learn to:

- The pupil can partition two-digit numbers into different combinations of tens and ones. This may include using apparatus (e.g. 23 is the same as 2 tens and 3 ones which is the same as 1 ten and 13 ones).
- The pupil can add 2 two-digit numbers within 100 (e.g. $48 + 35$) and can demonstrate their method using concrete apparatus or pictorial representations.
- The pupil can use estimation to check that their answers to a calculation are reasonable (e.g. knowing that $48 + 35$ will be less than 100).

- The pupil can subtract mentally a two-digit number from another two-digit number when there is no regrouping required (e.g. $74 - 33$).
- The pupil can recognise the inverse relationships between addition and subtraction and use this to check calculations and work out missing number problems (e.g. $\Delta - 14 = 28$).
- The pupil can recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables to solve simple problems, demonstrating an understanding of commutativity as necessary (e.g. knowing they can make 7 groups of 5 from 35 blocks and writing $35 \div 5 = 7$; sharing 40 cherries between 10 people and writing $40 \div 10 = 4$; stating the total value of six 5p coins).
- The pupil can identify $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$ and knows that all parts must be equal parts of the whole.
- The pupil can use different coins to make the same amount (e.g. pupil uses coins to make 50p in different ways; pupil can work out how many £2 coins are needed to exchange for a £20 note).
- The pupil can read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are given (e.g. pupil reads the temperature on a thermometer or measures capacities using a measuring jug).
- The pupil can read the time on the clock to the nearest 15 minutes.
- The pupil can describe properties of 2-D and 3-D shapes (e.g. the pupil describes a triangle: it has 3 sides, 3 vertices and 1 line of symmetry; the pupil describes a pyramid: it has 8 edges, 5 faces, 4 of which are triangles and one is a square).