



**Temple Sowerby CE Primary School**

# **MATHS POLICY**

**2022/2024**

<b>Approved by</b>	
<b>Name:</b>	Mr K Laithwaite - Headteacher
<b>Signed:</b>	
<b>Date:</b>	16 <sup>th</sup> October 2022
<b>Review date:</b>	15 <sup>th</sup> October 2024
<b>Subject Leaders:</b>	Mr K Laithwaite

## ***Living for learning; learning for life.***

### **Our Vision**

*At Temple Sowerby CE Primary School, our vision for the school community is rooted in a deep respect for our human, social, and cultural values, expressed in a caring Christian ethos. We aim to provide high academic standards and a wide range of experiences and opportunities. In doing so, we encourage all children to flourish by giving them the skills they need to become good citizens and to discover life in all its fullness (John 10:10).*

### **Policy Statement**

This policy reflects the school's aims and objectives in relation to the teaching and learning of maths. It sets out a framework within which teaching and non-teaching staff can operate. It gives guidance on planning, teaching and assessment. The policy should be read in conjunction with the Early Years Foundation Stage framework and the National Curriculum. These set out the rationale for teaching the Maths Curriculum and specify the skills that will be developed for the majority of pupils in each year group.

# Intent

## Purpose of Study

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways.

Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

The National Curriculum for mathematics describes in detail what pupils must learn in each year group and ensures continuity and progression and high expectations for attainment in mathematics.

It is vital that a positive attitude towards mathematics is encouraged amongst all of our pupils in order to foster confidence and achievement in a skill that is essential in our society. At Temple Sowerby CE Primary School, we use the National Curriculum for Mathematics (2014) as the basis of our mathematics programme. We are committed to ensuring that all pupils understand the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education.

## Aims

The national curriculum for mathematics aims to ensure that all pupils:

- **become fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- **can solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

## Our Vision for the Teaching of Maths at Temple Sowerby CE Primary School

At Temple Sowerby CE Primary School, the teaching of maths is geared towards developing each child's knowledge and understanding of maths. We aim to promote enjoyment and achievement in the subject and to empower children to become confident mathematicians.

We believe that ability within mathematics is not fixed and seek to develop a 'Can Do' attitude. As such, we endeavour to not only develop the mathematics skills and understanding required for later life, but also to foster an enthusiasm and fascination about maths itself. We aim to increase pupil confidence in maths so they are able to express themselves and their ideas using the language of maths with assurance. We want the children to see mathematics as being relevant to their world and applicable to everyday life as well as being something that they will need as they move on through their school life and ultimately to the world of employment.

At Temple Sowerby CE Primary School, we teach maths in a way that:

- creates a lively, exciting and stimulating environment in which the children can learn
- promotes the concept that acquiring maths knowledge and skills provides the foundation for understanding the world around the children
- develops mental strategies
- encourages children to use mathematical vocabulary to reason and explain

- allows time for partner talk in order to stimulate and develop a curiosity for maths
- challenges children to stretch themselves and take risks in their learning
- creates a sense of awe and wonder surrounding maths
- ensures children in Key Stage 1 are secure in their understanding of number and number relationships
- delivers maths in line with new National Curriculum guidelines

## Implementation

To ensure full coverage of National Curriculum objectives, all teachers use the Schemes of Learning from White Rose Maths long term planning from Year 1 to 6. This ensures continuity and progression in the teaching of mathematics, breaks down blocks of work into carefully sequenced 'small steps' and builds on pupils' prior knowledge to develop new skills and to move onto more complex tasks. It also provides a range of different visual representations to help children, emphasises the use of mathematical language and promotes fluency and creativity. Opportunities for consolidation of prior learning are also built into the long term planning in each year.

However, there is no expectation that teachers precisely follow the White Rose schemes of learning; we use a variety of curriculum resources to enrich and supplement our teaching (including Nrich, Focus Education and online tools such as Times Tables Rock Stars and Numbots) and ensure that teaching includes elements of investigation, real-life problem solving and fluency. Teachers plan and deliver lessons that suit the individual learning styles of the children within the group. They use their professional judgement and use of formative assessment to ensure a flexible approach is adopted to teach at a pace to meet children's learning needs.

The curriculum is delivered by class teachers and children are taught in a variety of groupings (whole class, groups, pairs, one to one) relevant to the task in hand. Work is differentiated in order to make it accessible and challenging and, where appropriate, groups/individual children are supported by Learning Support Assistants.

### Early Years Foundation Stage

The children in EYFS take part in daily maths lessons providing frequent and varied opportunities to build and apply their number and mathematical knowledge. These lessons are planned to ensure coverage of the 'Development Matters' objectives. Throughout the year children develop a strong grounding in number which is essential to develop the necessary building blocks to excel mathematically. Through practical lessons the children develop understanding – such as using manipulatives, including small pebbles and tens frames for organising counting – this ensures the children are familiar with models and manipulatives used in White Rose Maths, such as part whole and tens frames. Children develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, children will have opportunities to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. The lessons are planned so children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

As a standalone part of the maths teaching in the Early Years, the children also follow the NCETM 'Mastering Number' programme. This programme is planned with small steps to secure firm foundations in the development of good number sense for all children in Reception and KS1. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. We provide a daily teaching session for all children of 10 minutes, in addition to their normal maths lesson. The children will learn to clearly communicate their mathematical ideas, build firm mathematical foundations, develop fluency in calculation and number sense for all children, using appropriate manipulatives to support the teaching of mathematical structures. The children will continue this programme throughout Year One, providing a strong link between teaching in EYFS and KS1.

Through these two approaches to maths teaching in the Early Years we believe children will enter Key Stage One as confident mathematicians ready to access the National Curriculum.

### **Calculation Policy**

Our Calculation Policy details methods used to ensure progression in addition, subtraction, multiplication and division. It is based on the White Rose Maths scheme of work and places emphasis on developing an understanding of calculation methods, using concrete, pictorial and abstract approaches. This is outlined in Appendix 1.

## **Impact**

By the end of EYFS, pupils will have had the opportunity to develop a deep understanding of number to 10, including the composition of each number. They will be supported to recognise quantities without counting (up to 5) and will recall some number bonds to 10, including double facts. They will be able to verbally count beyond 20 and compare quantities up to 10 in different contexts. They will recognise when one quantity is greater than, less than or the same as the other quantity and explore and represent patterns within numbers up to 10.

By the end of Key Stage 1, pupils will have been given the opportunity to develop their number, calculation, measure and shape skills. This will have been achieved by focusing on the use of concrete examples to illustrate and explain concepts. They will also have had the opportunity to develop their fluency in mental arithmetic to help prepare them for the next stage in their education.

By the end of Key Stage 2 we want children to be able to use mathematical skills fluently to explore the full range of concepts which the curriculum delivers. They will have progressed from the concrete to be able to apply their skills in abstract, without the need for physical materials to enable them to calculate. We want them to be able to apply these skills across the curriculum planning, approaching problems and unfamiliar situations with confidence. We want children to meet the expected national standard but for those children not meeting the standard by the end of Key Stage 1 we want pupils to have made more than expected progress towards the expected standard at Key Stage 2.

### **Assessment**

A range of assessments are used to track the progress of children in Maths across the year and termly progress meetings and pupil tracking systems allow teaching staff to identify children who may benefit from additional support. This could be in the form of individual support or intervention programmes.

### **Marking**

Marking is part of the assessment process. Please refer to the Marking Policy.

### **Homework**

Children in both Key Stages practise mental arithmetic each morning before school (times tables, number bonds, addition and subtraction fact, etc). These are tested on a weekly basis and children are encouraged to practise at home. Additional maths homework is set from Year 2 upwards, increasing in frequency as children progress. In Class 3, maths homework is set weekly. Homework is only used to consolidate what has already been covered in class and to enable parents to engage in pupils' learning; it should therefore be accessible to all learners.

### **The Role of the Subject Leader**

The role of the Maths Subject Leader includes the ordering, costing and allocation of resources to support the teaching of Maths. A review of resources is carried out periodically which leads to a prioritised list of

requirements. This is funded within the school's budget plan for the financial year and additional non-contact time is provided for the subject leaders where necessary.

### **Reporting to Parents/Carers**

Parents receive regular feedback as to their children's progress in Maths. Parents' evenings take place twice each year, providing the opportunity to meet with teachers to see what children have been learning and to discuss their progress and targets. Parents also receive an annual written report at the end of the school year.

### **Monitoring and Evaluation**

In order to monitor standards and progress, the teachers and headteacher meet termly to discuss progress in maths. The Maths Leader monitors the subject through analysis of tracking data, lesson observations and scrutiny of work. Steps are taken to provide additional support where appropriate for children with SEND. The SENCO and Maths Leader meet regularly to discuss identified pupils.

### **Monitoring/Review**

This policy will be reviewed every two years.

# Calculation policy: Guidance

	EYFS/Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition	<p>Combining two parts to make a whole: part whole model.</p> <p>Starting at the bigger number and counting on- using cubes.</p> <p>Regrouping to make 10 using ten frame.</p>	<p>Adding three single digits.</p> <p>Use of base 10 to combine two numbers.</p>	<p>Column method- regrouping.</p> <p>Using place value counters (up to 3 digits).</p>	<p>Column method- regrouping.</p> <p>(up to 4 digits)</p>	<p>Column method- regrouping.</p> <p>Use of place value counters for adding decimals.</p>	<p>Column method- regrouping.</p> <p>Abstract methods.</p> <p>Place value counters to be used for adding decimal numbers.</p>
Subtraction	<p>Taking away ones</p> <p>Counting back</p> <p>Find the difference</p> <p>Part whole model</p> <p>Make 10 using the ten frame</p>	<p>Counting back</p> <p>Find the difference</p> <p>Part whole model</p> <p>Make 10</p> <p>Use of base 10</p>	<p>Column method with regrouping.</p> <p>(up to 3 digits using place value counters)</p>	<p>Column method with regrouping.</p> <p>(up to 4 digits)</p>	<p>Column method with regrouping.</p> <p>Abstract for whole numbers.</p> <p>Start with place value counters for decimals- with the same amount of decimal places.</p>	<p>Column method with regrouping.</p> <p>Abstract methods.</p> <p>Place value counters for decimals- with different amounts of decimal places.</p>

<p style="text-align: center;"><b>Multiplication</b></p>	<p>Recognising and making equal groups. Doubling Counting in multiples Use cubes, Numicon and other objects in the classroom</p>	<p>Arrays- showing commutative multiplication</p>	<p>Arrays 2d x 1d using base 10</p>	<p>Column multiplication- introduced with place value counters. (2 and 3 digit multiplied by 1 digit)</p>	<p>Column multiplication Abstract only but might need a repeat of year 4 first (up to 4 digit numbers multiplied by 1 or 2 digits)</p>	<p>Column multiplication Abstract methods (multi-digit up to 4 digits by a 2 digit number)</p>
<p style="text-align: center;"><b>Division</b></p>	<p>Sharing objects into groups Division as grouping e.g. I have 12 sweets and put them in groups of 3, how many groups? Use cubes and draw round 3 cubes at a time.</p>	<p>Division as grouping Division within arrays- linking to multiplication Repeated subtraction</p>	<p>Division with a remainder- using lollipop sticks, times tables facts and repeated subtraction. 2d divided by 1d using base 10 or place value counters</p>	<p>Division with a remainder Short division (up to 3 digits by 1 digit- concrete and pictorial)</p>	<p>Short division (up to 4 digits by a 1 digit number including remainders)</p>	<p>Short division Long division with place value counters (up to 4 digits by a 2 digit number) Children should exchange into the tenths and hundredths column too</p>