





# Maths Policy

**Contents:**

1	Curriculum Statement
2	Teaching and Learning
3	Assessment
4	Planning and Resources
5	Curriculum Organisation
6	EYFS
7	KS1 and KS2
8	Equal Opportunities
9	Inclusion
10	Role of the Subject Leader
11	Parents

# 1. Curriculum Statement

## Intent

We aim to develop a culture of deep understanding, confidence and competence in maths – a culture that produces strong, secure learning and real progress. Teaching implements a C.P.A. (concrete, pictorial, abstract) approach using White Rose planning units, inspired and informed by world-class research and global maths experts. We develop children's conceptual understanding enabling them to apply their skills to reason and problem-solve. Pre and post unit tasks are included at strategic points to gauge understanding and retention of key Maths concepts. By teaching for mastery, building confidence, resilience and a passion for maths, we endeavour to present the subject as an exciting adventure that everyone can enjoy, value and master!

## Implementation

Our mastery approach to the curriculum is designed to develop and embed children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y6.

### Teaching and Learning, Content and Sequence

- In school, we follow the national curriculum and use White Rose Maths as a guide to support teachers with their planning and assessment.
- The White Rose calculation policy is used within school to ensure a consistent approach to teaching the four operations over time. In addition to our 5 Maths lessons, we practice arithmetic daily (4-a-day) to embed strategies for effective calculation.
- At the start of each new topic, key vocabulary is introduced and revisited regularly to develop language acquisition, embedding as the topic progresses.
- Children are taught through clear modelling and have the opportunity to develop their knowledge and understanding of mathematical concepts. The mastery approach incorporates using objects, pictures, words and numbers to help children explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding at all levels.
- Children work on the objective at whatever entrance stage they are assessed as being at. Children can ACQUIRE the skill, APPLY the skill or DEEPEN the skill within the lesson.
- Children move through the different stages of their learning at their own pace.
- Children who have shown their understanding at a deep level within the unit, will have opportunities to apply these skills in a GREATER DEPTH activity, to develop reasoning skills further. This should be challenging and ensure that children are using more than just one skill to be able to answer the mathematical problems.
- Reasoning and problem solving are integral to the activities children are given to develop their mathematical thinking.
- Resources are readily available to assist demonstration of securing a conceptual understanding of the different skills appropriate for each year group.
- Children are encouraged to explore, apply and evaluate their mathematical approach during investigations to develop a deeper understanding when solving different problems / puzzles.
- A love of maths is encouraged throughout school via links with others subjects, applying an ever-growing range of skills with growing independence.

- Children with additional needs are included in whole class lessons and teachers provide scaffolding and relevant support as necessary. For those children who are working outside of the year group curriculum, individual learning activities are provided to ensure their progress.

### **Leadership, Assessment and Feedback**

- Assessment informs the teaching and learning sequence, and children work on the objectives they are assessed as being at, with fluid boosting available within a 'keep up not catch up' culture.
- Feedback is given on children's learning in line with our feedback policy. Formative assessment within every lesson helps teachers to identify the children who need more support to achieve the intended outcome and who are ready for greater stretch and challenge through planned questioning or additional activities.
- In order to support teacher judgments, children may be assessed using current and reliable tests in line with the national curriculum for maths. Gap analysis of any tests that the children complete is undertaken and fed into future planning.
- Summative assessments are completed three times per year.
- The maths leader has a clear role and overall responsibility for the progress of all children in maths throughout school. Working with the SLT and assessment lead, key data is analysed, and regular feedback is provided, to inform on progress and future actions.

### **Impact**

- Children demonstrate a quick recall of facts and procedures. This includes the recollection of the times table.
- Children show confidence in believing that they will achieve.
- Each child achieves objectives (expected standard) for the year group.
- The flexibility and fluidity to move between different contexts and representations of maths.
- The chance to develop the ability to recognise relationships and make connections in maths lessons.
- Mathematical concepts or skills are mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.
- Children show a high level of pride in the presentation and understanding of the work

## **2. Teaching and Learning**

A typical Maths lesson at St Peters last approximately 1 hour. Maths is taught daily during the morning. Children begin with a Flashback 4 activity to aid retention and a short 'Get Ready' activity which supports fluency in and recall of number facts. Following this, the main lesson begins with a 'Let's learn' section that ensures that mathematical ideas are introduced in a logical way to support conceptual understanding. In KS1, these problems are almost always presented with objects (concrete manipulatives) for children to use. Children may also use manipulatives in KS2. Teachers use careful questions to draw out children's discussions and reasoning and the children learn from misconceptions through whole class reasoning. Often, mini-whiteboards and equipment are used to aid understanding.

The class then progresses to the 'Your Turn' part of the lesson, which is designed to be completed independently, usually in individual Maths books. This practice uses conceptual and procedural variation to build fluency and develop greater understanding of underlying mathematical concepts. A challenge question and links to other areas of Maths encourages children to take their understanding to a greater level of depth. Children who complete this are provided with further 'rich and sophisticated' problems from the White Rose Maths Small Steps guidance or NCETM problem solving activities, which they complete in their own maths book.

The final part of the sequence is a 'reflect' task. This is an opportunity for children to review, reason and reflect on learning and enables the teacher to gauge their depth of understanding.

## **3. Assessment**

### **3.1 Assessment for Learning:**

Children receive effective feedback through teacher assessment, both orally and through written feedback, and AfL is integral to the design of each lesson;

- The structure of the teaching sequence ensures that children know how to be successful in their independent work. Guided practice provides further preparation for children to be able to apply the skills, knowledge and strategies taught during the exploration phase of each lesson. Common misconceptions are addressed within the teaching sequence and key understanding within each 'small step' is reviewed and checked by the teacher and the children before progression to further depth.
- At the end of the lesson, the children review their work and self and peer assessment are used consistently as outlined by the school's 'Presentation, Marking and Feedback Policy'.
- Reviewing of the children's work to inform where consolidation might be required for intervention. Opportunities for additional practice and correction are provided by the teacher, as appropriate, during marking, with a focus on promoting and achieving a growth mindset within the subject. D.I.R.T. (directed independent reflective tasks) are provided frequently, and the Flashback 4 will ensure retention of knowledge and key skills.

### **3.2 Formative Assessment:**

Short term assessment is a feature of each lesson. Observations and careful questioning enable teachers to adjust lessons and brief other adults in the class if necessary. The lesson structure of White Rose Maths is designed to support this process and the reflect task at the end of each lesson also allows for misconceptions to be addressed.

At the end of each blocked unit of work, the children also complete the carefully aligned White Rose Maths 'End of Unit Assessment'. The outcome of this is used by the teacher to ensure that any identified gaps in understanding can be addressed before the next unit is taught. This also informs dialogue with parents and carers during open evenings, as well as the judgements made at the end of the term as to the extent that each child has demonstrated mastery of each 'fundamental' objective.

### **3.3 Summative Assessment:**

Teachers administer a termly arithmetic paper and reasoning and problem-solving paper which specifically links to the coverage for that term. The results of these papers are used to identify children's ongoing target areas, which are communicated to the children, as well as to parents and carers at Parents Evening. They are also used alongside the end of unit assessments and outcomes of work, to inform the whole school tracking of attainment and progress for each child in line with each 'fundamental' objective.

Assessment data in maths is reviewed throughout the year to inform interventions and to also ensure that provision remains well-informed to enable optimum progress and achievement. End of year data is used to measure the extent to which attainment gaps for individuals and identified groups of learners are being closed. This data is used to inform whole school and subject development priorities for the next school year.

## **4. Planning and Resources**

The use of Mathematics resources is integral to the concrete – pictorial – abstract approach and thus planned into teaching and learning. The school has a wide variety of good quality equipment and resources, both tangible and ICT based, to support our learning and teaching.

These resources are used by our teachers and children in a number of ways including:

- Demonstrating or modelling an idea, an operation or method of calculation. Resources for this purpose would include: a number line; place value cards; dienes; place value counters and grids; money or coins; measuring equipment for capacity, mass and length; bead strings; the interactive whiteboards and related software; 3D shapes and/or nets; Numicon and related resources and software; multilink cubes; clocks; protractors; calculators; dice; number and fractions' fans; individual whiteboards and pens; and 2D shapes and pattern blocks, amongst other things.
- Enabling children to use a calculation strategy or method that they couldn't do without help, by using any of the above or other resources, as required.

Standard resources, such as number lines, multi-link cubes, dienes, hundred squares and counters are located within individual classrooms.

Further resources (often larger items shared by the whole school) are also available as part of a central Maths Area supply.

An interactive teaching tool for the purpose of modelling strategies is available to all teachers as part of the [White Maths scheme](#). Resources to support teachers' own professional development and understanding of new approaches as part of a mastery approach are available on the [NCETM platform](#). As well as overviews of learning, these include short videos which demonstrate new methods to ensure accuracy.

## 5. Curriculum Organisation

The school has implemented a blocked curriculum approach to the teaching of Mathematics. This ensures that children are able to focus for longer on each specific area of Maths and develop a more secure understanding over time. This approach is also designed to enable children to progress to a greater depth of understanding.

Subsequent blocks continue to consolidate previous learning so that the children continually practise key skills and are able to recognise how different aspects of Maths are linked. For example, when children have completed a block which has enabled them to master the multiplication of two-digit numbers, a subsequent block on area and shape might provide opportunities to use this understanding when calculating the area of shapes with 2-digit length and width dimensions.

## 6. EYFS

Children in Nursery have a short daily Maths teaching session, during which time they begin to develop their understanding of simple mathematical concepts such as counting to 20, maintaining 1 to 1 correspondence, simple addition and subtraction facts, to recognise and describe simple 2d and 3d shapes. Children are taught these concepts using physical resources, pictorial resources, songs, games and role-play. There is no focus activity linked to these sessions.

In Reception, children have a three-part lesson from Autumn 1. This consists of:

1. Whole class oral and mental starter - 5 minutes
2. Whole class main teaching - 10 minutes
3. Focus activity for different groups of children throughout the week.

Throughout the week a child will work with an adult - either a teacher or a supporting adult - on a maths task to consolidate the week's learning and ensure children can independently show their knowledge. This activity is completed in 10 - 15 minutes.

This structure to the lesson enables teachers to secure a good balance between whole class work, group teaching and individual practice. It also enables teachers to establish regular routines thereby maximising teaching time. It supports assessment on a daily basis, as well as individual feedback to children, ensuring that children receive immediate intervention as required during the supported focus activity.

In Reception, the independent challenge at the Maths table links to the focus for the week. For example, if the focus for the week is addition, then activities on the Maths table will link to this. In addition to these planned independent activities, children also have the opportunity to self-select Maths resources to consolidate their learning during child-initiated activities. We recognise the importance of play-based learning and therefore encourage children to develop their understanding during their play. Such opportunities are provided in both the inside and outside environment.

Regular observations and assessments help to ensure that children that need additional intervention to consolidate their mathematical understanding are identified and supported by appropriate interventions.

## **7. KS1 and KS2**

Through Years 1 to 6 we use a coherent programme of high-quality materials and exercises, which are structured with great care to build deep conceptual knowledge alongside developing procedural fluency.

Our KS1 and KS2 teachers use the White Rose Maths scheme and resources with outcomes aligned with the 2014 National Curriculum.

Lessons in both key stages follow the same sequence. In KS1, the teacher might use 'mini-plenaries' to explain each question during the children's completion of the practice book and also to check children's understanding before they complete the next question. This ensures that all children are able to complete the task with confidence.

## **8. Equal Opportunities**

The school is committed to ensuring the active participation and progress of all children in their learning.

All children will be given equal opportunities to achieve their best possible standard, whatever their current attainment and irrespective of gender, ethnic, social or cultural background, home language or any other aspect that could affect their participation or the progress of which they are capable.

## **9. Inclusion**

Taking a mastery approach, differentiation occurs in the support and intervention provided to different children, not in the topics taught, particularly at earlier stages. The National Curriculum states:

'Children who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.'

There is little differentiation in the content taught but the questioning and scaffolding individual children receive in class as they work through problems will differ, with higher attainers challenged through more demanding problems, which deepen their knowledge of the same content before acceleration onto new content. Children's difficulties and misconceptions are identified through immediate formative assessment and addressed with rapid intervention – commonly through individual or small group support later the same day.

A range of inclusion strategies, as listed on the school's inclusion planning key, are embedded in practice and teachers are aware of the special educational needs of the children in their Maths class, as well as those who have English as an additional language. Although the expectation is that the majority of children will move through the programmes of study at broadly the same pace, the 2014 National Curriculum states:

'Decisions about when to progress should always be based on the security of children's understanding and their readiness to progress to the next stage.'

If a child's needs are best met by following an alternative plan, including coverage of the content from a previous year, this will be overseen by the SENDCo, in collaboration with the class teacher and with the knowledge of the SLT. Specific arrangements for the provision of children with SEND will be communicated to parents and carers during SEND reviews.

## **10. Role of the Subject Leader**

- The subject leader will raise the profile of Maths at St. Peter's C. E. Primary through best practice. They will model lessons, as appropriate to new staff, ECTs and peers to support continued professional development. They will ensure the high quality of Maths displays and working walls around the school, present certificates of achievement during end of term assemblies and involve the school in 'celebrations' of Maths, including participation in events such as 'World Maths Day'. The subject leader will support staff in providing opportunities for learning outside the classroom in Maths and will identify and organise opportunities which enable this, as appropriate.
- The subject leader will monitor progression and continuity of Maths throughout the school through lesson observations and regular monitoring of outcomes of work in Maths books.
- The subject leader will ensure that all staff have access to year group plans and the relevant resources which accompany them.
- The subject leader will monitor children's progress through the analysis of whole school data. They will use this data to inform the subject development plan which will detail how standards in the subject are to be maintained and developed further.
- The subject leader will, on a regular basis, organise, audit and purchase central and class-based Maths resources.
- The subject leader will keep up to date on current developments in Maths education and disseminate information to colleagues.
- The subject leader will extend relationships and make contacts beyond the school.
- The subject leader will develop opportunities for parents/carers to become more involved in Maths education.
- The subject leader will ensure that all staff have access to professional development including observations of outstanding practice in the subject.

- The subject leader will attend Maths Hub meetings and develop teaching for mastery in school.

## **11. Parents**

- The school recognises that parents and carers have a valuable role to play in supporting their child's mathematical learning. An overview of the Maths curriculum is available on the school's website, as well as guidance in the progression in calculation methods used by the school. Paper copies of these documents are also available on request and the curriculum letter, sent home by each year group, also outlines the Maths topics to be covered.
- Activities which link to each Maths topic are suggested for parents and carers to try at home with their child in Reception.
- Children are given regular Maths homework at least once a week from Year 1 to Year 6 relating to their in class work in addition to learning number facts and multiplication facts by rote.
- Parents and carers are informed of their child's progress at Parents Evenings and this is also communicated in written school reports.
- Parents and carers are encouraged to speak to their child's Maths teacher at any point during the year, either informally or by making a specific appointment. Information about their child's standards, achievements and future targets in Maths is shared during parent/carer meetings, as well as ways that parents/carers may be able to assist with their child's learning.
- Time tables rockstars in Key Stage 2 and 1 minute Maths in Key Stage 1 are used at home.
- The school also provides a number of opportunities for parents/carers to learn about what their child is learning and the way their child is being taught through parent workshops.