Colham Manor Primary School

Aspire, Achieve, Thrive

Maths Policy

Updated: September 2025

Contents Page:

1. Vision

Our vision at Colham Manor Primary is to ensure our pupils thrive in maths through their confidence to explain and reason. Pupils can experience a sense of awe and wonder as they solve problems, discover different solutions and make links between different areas of mathematics. We want pupils, from EYFS to Year 6, to have a deep understanding of the subject through a concrete, pictorial and abstract approach. This ensures pupils fully understand what they are learning.

2. Intent

The 2014 National Curriculum for Maths aims to ensure that all pupils:

· Become fluent in the fundamentals of Mathematics

· Are able to reason mathematically

· Can solve problems by applying their Mathematics

At Colham Manor, these skills are embedded within Maths lessons using the White Rose Scheme from Nursery to Year 6. We are committed to ensuring that pupils are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We do this through assemblies and links through the foundation subjects.

We want all pupils to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically.

3. Implementation

The content and principles underpinning the 2014 Mathematics curriculum and the Maths curriculum at Colham Manor follows the Mastery approach, using the 'What Learning Looks like at Colham' Handbook:

- Teachers reinforce an expectation that all pupils are capable of achieving high standards in Mathematics.
- The large majority of pupil's progress through the curriculum content at the same pace; Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.
- If a pupil fails to grasp a concept or procedure, this is identified quickly and targeted through live marking or PiXL therapies.
- The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.
- Lesson design identifies the new mathematics that is to be taught, the key points, the difficult points and a carefully sequenced journey through the learning. In a typical lesson, pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion.
- Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts.
- Teachers use precise questioning in class to test conceptual and procedural knowledge and assess pupils regularly to identify those requiring intervention, so that all pupils keep up.
- Pupils' explanations and their proficiency in articulating mathematical reasoning, with the precise use of mathematical vocabulary, are supported through the use of stem sentences provided by the teacher.
- Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts.

- Teaching of daily arithmetic to ensure number knowledge becomes embedded and therefore can be applied effectively.

To ensure whole consistency and progression, the school uses the nationally recognised White Rose Maths scheme. The White Rose curriculum is a cumulative curriculum, so that once a topic is covered, it is met many times again in other contexts. For example, place value is revisited in addition and subtraction and multiplication and division. The curriculum is designed to have an emphasis on number, with a large proportion of time spent reinforcing number to build competency.

Lessons are planned to provide plenty of opportunities to build reasoning and problem-solving elements into the curriculum. When introduced to a new concept, pupils have the opportunity to use concrete objects and manipulatives to help them understand what they are doing. Alongside this, pupils are encouraged to use pictorial representations. These representations can then be used to help reason and solve problems. Both concrete and pictorial representations support pupils' understanding of abstract methods.

Mathematical topics are taught in blocks, to enable the achievement of 'mastery' over time. These teaching blocks are broken down into smaller steps, to help pupils understand concepts better. This approach means that pupils do not cover too many concepts at once which can lead to cognitive overload. Each lesson phase provides the means for pupils to achieve greater depth, with pupils who are quick to grasp new content, being offered rich and sophisticated problems, within the lesson as appropriate.

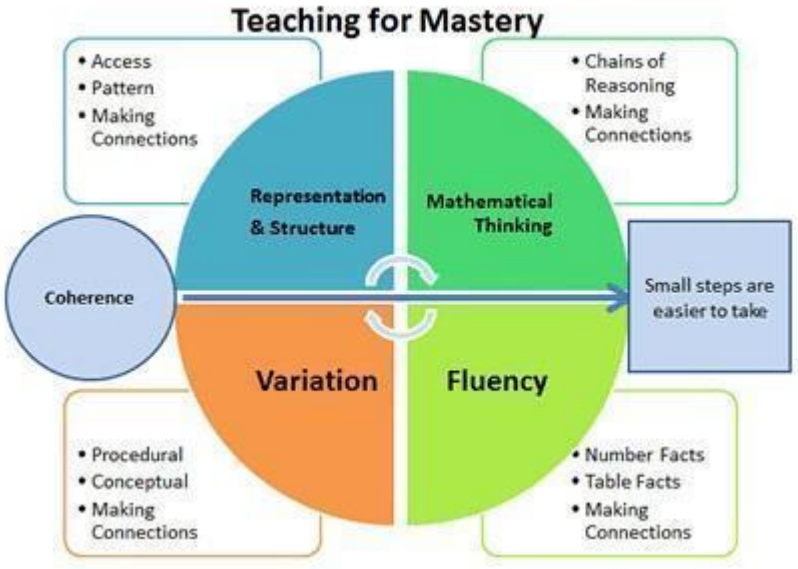
4. Impact

Colham Manor is devoted to supporting the pupils in developing their collaborative and independent skills, as well as empathy and the need to recognise the achievement of others. Students can underperform in Mathematics because they think they cannot do it or are not naturally good at it. The school's use of White Rose Maths addresses these preconceptions by ensuring that all pupils experience challenge and success in Mathematics by developing a growth mindset.

Regular and ongoing assessment informs teaching, as well as intervention, to assist and enable the success of each child. These factors ensure that we are able to maintain high standards, with our 'keep up not catch up' approach.

5. Teaching and Learning

Effective teaching for mastery is underpinned by five big ideas, first published by the National Centre for Excellence (NCETM) in mathematics in 2017 -



Coherence

Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all pupils and leading to a generalisation of the notion and the ability to apply the idea to a range of contexts.

Representation and Structure

Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation.

Mathematical Thinking

If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others.

Fluency

Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.

Variation

Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

Maths is taught daily. A typical maths lesson lasts approximately 1 hour and begins with 15 minutes of Arithmetic, to help improve fluency across the school.

The learning intention for the lesson is shared with the pupils and they revisit key concepts from previous lessons to support the key learning of the lesson. Pupils then solve contextual problems as a class, with the teacher exposing the structure of the mathematical concept. In this part of the lesson, teachers use careful questions to draw out pupils' discussions and their reasoning and the pupils learn from misconceptions through whole class reasoning. To support this, the teacher will often use a stem sentence to scaffold pupils' articulation of mathematical ideas and reasoning, and/or a generalisation that supports application of the concept. The variation in this part of the lesson enables a deeper understanding of the concept and may include the use of related concrete resources, as well as representations of the problem to provide a secure base of understanding. The teacher shall record learning onto a flipchart so that there is a record to support and aid the learners – This is to be shared onto the Working Wall, after the lesson.

Pupils will then complete the assigned task, this may be practical or bookwork based. The teacher will review responses and then share answers and strategies, addressing any misconceptions, before pupils continue with their practice. This practice uses conceptual and procedural variation to build fluency and develop greater understanding of underlying mathematical concepts.

Where appropriate and depending on the topic, pupils will continue to have access to concrete resources which they can use to complete the task. Some pupils might be supported through additional scaffolding provided by the teacher. This may include provided models of the calculation method that the pupils will need to use, or copies of the worded question, with key aspects and vocabulary highlighted.

Pupils who complete this are provided with 'Reasoning and problem solving' tasks from the White Rose planning.

Winning With Numbers:

In addition to the daily math lessons, children are exposed to Winning With Numbers (WWN). Winning With Numbers identifies 300 pieces of number knowledge and puts them into a straight-line sequence of learning…it's like phonics for maths! The programme has 300 parts and comes with a comprehensive suite of teaching and learning resources, training for staff and support for parents. Resources can be used in class and at home and include:

1. 300 Sequential Teaching Videos
2. 1200 Explicit Instruction Teaching Videos
3. 10s of Thousands of Online Practice & Retrieval Questions
4. Online Learner Feedback & Support & Tracking for Staff
5. 300 Integrated Professional Development Videos

WWN is taught daily, for 20 minutes, from Nursery to Year 6. Children are exposed to strategies that support their fluency and knowledge of numbers.

6. Assessment for Learning (AFL):

Pupils 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 pupils know how to be successful in their independent work. A daily fluency activity supports pupils' recall of key number facts, which frees working memory. Teachers will make informed choices as to when they should progress to new content according to the degree of fluency that pupils are able to demonstrate.
- The 'key learning' task provides the means for the teacher to assess, review and revisit previous related content, so that all pupils are well prepared for new content.
- This part of the lesson is when a new mathematical concept is introduced and the guided practice aspect of this part of the lessons means that pupils are well prepared to be able to apply the skills, knowledge and strategies taught they have learnt for their task.
- Common misconceptions are identified and addressed within the teaching sequence and key understanding within each 'small step' is reviewed and checked by the teacher and the pupils before progression to further depth.
- The final phase of the lesson is a challenge. Teachers use the pupils' responses as a means to assess the depth of their understanding.
- At the end of the lesson, the pupils review their work and self and peer assessment are used consistently as outlined by the school's 'Presentation, Marking and Feedback Policy'.
- 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 approach in the subject.

7. <u>Formative Assessment:</u>

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 a White Rose Maths lesson is designed to support this process and at the end of each lesson also allows for misconceptions to be addressed.

At the end of each blocked unit of work, the pupils 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. PiXL therapies are used to fill these gaps.

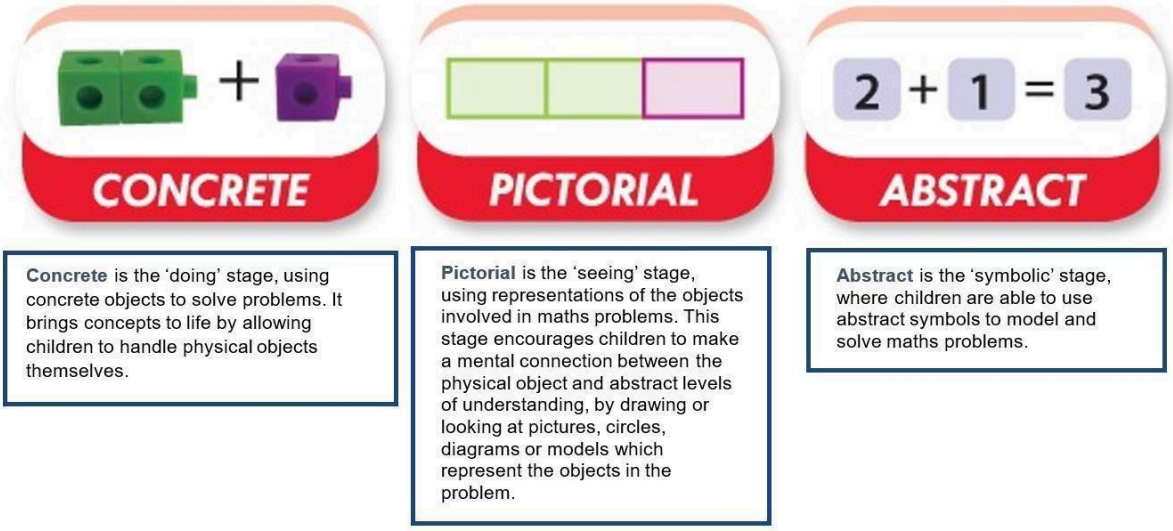
8. <u>Summative Assessment:</u>

Teachers administer a termly arithmetic paper and reasoning and problem-solving paper which specifically links to the coverage for that term. In Years 2 and 6, these are half termly assessments.The results of these papers are used to identify pupils's ongoing target areas, which are communicated to staff via the Assessment Leads through Question Level Analysis (QLA) meetings . They are also used alongside the end of unit assessments and outcomes of work, to inform the whole school tracking of attainment and progress of each child on PiXL and Insight.

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.

9. Planning and Resources

The use of manipulatives objects is an integral part of the White Rose Maths scheme which incorporates the concrete – pictorial – abstract pedagogy:



Each classroom has its own supply of mathematical equipment, as well as a stocked Maths cupboard.

https://whiterosemaths.com/resources/primary-resources/primary-sols/
Teachers also have access to the White Rose Maths Interactive Teaching Resources for the purpose of modelling strategies and demonstrating the use of concrete resources.

The school subscribes to the White Rose Maths Premium Resource Centre. This provides access to visual resources (including lesson slides that teachers can adapt), as well as small steps planning guidance and reasoning and problem-solving questions that accompany each small step, to inform and use in lessons.

The subject leader attends regular training through the West London Maths Hub. This informs the school's use of nationally available resources, including the NCETM's Ready to progress exemplification materials:

https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/

Teachers are encouraged to use the school playgrounds as an outdoor classroom when possible, for example, when teaching length, area or perimeter.

10. Organisation

The school has implemented a blocked curriculum approach to the teaching of Mathematics. This ensures that pupils 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 pupils to progress to a greater depth of understanding.

Subsequent blocks continue to consolidate previous learning so that the pupils continually practise key skills and are able to recognise how different aspects of Maths are linked. For example, when pupils 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.

11. EYFS

Nursery use the Development Matters Framework and the White Rose Scheme to design their lessons. There are two key areas of early mathematics learning, which collectively provide a platform for everything pupils will encounter as they progress through their maths learning at primary school, and beyond:

- Numerical patterns
- Number

Pupils in EYFS are taught Maths on these days:
Nursery - twice a week on Tuesdays and Thursdays, with daily Maths provision.
Reception: Monday, Tuesday, Wednesday and Thursday.

Pupils are taught these concepts using physical resources, pictorial resources, songs, games and role-play. There is no focus activity linked to these sessions.

In both Nursery and Reception, the independent activities at the Maths table link to the focus for the week. For example, if the focus for the week is addition, then activities on the Maths will often link to this. In addition to these planned independent activities, pupils 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 pupils to develop their understanding during their play. Such opportunities are provided in both the inside and outside environment.

For further information, refer to the EYFS Policy.

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

12. 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 White Rose Maths to create slides to deliver their teaching. Pupils respond to tasks, problem solving and reasoning questions in their maths book or whiteboards.

Medium Term planning is created to ensure full coverage of the Maths National Curriculum as well as to make sure all the small steps within White Rose are covered. These plans are bespoke to each year group, with planned PiXL therapies to meet the needs of the year group.

Short term planning is completed on a weekly basis. Teachers also plan, modify and source activities and additional tasks which offer support and scaffolding where appropriate, and provide further challenge for pupils who are able to progress further in their learning.

Lessons in both key stages follow the same sequence (see section 2: Teaching and Learning). Teacher's might use 'mini-plenaries' to explain each question during the pupils' completion of the task and also to check understanding before they progress to the challenge. This ensures that all pupils are able to complete the task with confidence.

The White Rose Maths progression document, provides an overview of how the scheme covers the statutory requirements of the 2014 National Curriculum (p3-25). It also shows how concepts build over time and how the teaching blocks are sequenced in each year group National curriculum and 'Ready to progress' mapping document).

13. Equal Opportunities

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

All pupils 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.

Inclusion

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

'Pupils 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 pupils 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. Pupils' difficulties and misconceptions are identified through immediate formative assessment and addressed with 'Keep up not catch up' Learning at Colham.

A range of inclusion strategies, disseminated by the SENDCO, are embedded in practice and teachers are aware of the special educational needs of the pupils in their Maths class, as well as those who have English as an additional language.

The SENd pupils are carefully planned for using the appropriate Year group from White Rose.

Although the expectation is that the majority of pupils 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 pupils'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. Specific arrangements for the provision of SENd will be communicated to parents and carers during parents evenings.

14. Role of the Subject Leader

- The subject leader will raise the profile of Maths at Colham Manor Primary School through best practice. They will model lessons, as appropriate to new staff and peers to support continued professional development. They will ensure the high quality of Maths displays around the school and monitor working walls. 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 exercise 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 pupils' 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.
- Through ongoing involvement in the DfE funded Maths Hubs programme, the subject leader will keep up to date on current developments in Maths education and disseminate information to colleagues. They will also contribute directly to the Maths Hubs programme, as a mastery specialist and support staff in demonstrating best practice to visitors from other schools as part of the school's work as a recognised centre for excellence in the teaching of mastery.
- 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 Maths Subject Leader will disseminate the school's practice to other schools within a local network. They will also work with teachers to provide a model of outstanding practice

15. 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.
- Pupils are given Maths homework at least once a week from Reception to Year 6. Activities are to be set and accessed via the Google Classroom/Seesaw.
- Timestables Rockstars is another assigned home learning activity, for parents to support at home.
- Parents 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 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.
- 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.

Date of Policy: **Sep 2025**
Policy Review Date: **JULY 2026**