Carr Head Primary School

# Maths Policy

*'Aim High, Work Hard, Achieve Excellence'*

**Our vision is to provide a welcoming, caring and safe environment where everyone feels confident and valued. Where everyone is able, through support and high expectations, to achieve and succeed.**

## Curriculum Intent

### Vision for Maths

At Carr Head Primary School, we aim to empower our children with an 'I can do it' attitude towards maths. We encourage children to develop their knowledge and understanding of mathematics and aim for all children to enjoy and achieve in maths and become confident mathematicians.

### Aims of the Curriculum

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 have conceptual understanding and can recall and apply their knowledge rapidly and accurately to problems

• can **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**.

At Carr Head Primary School, we have adopted a mastery curriculum that rejects the idea that a large proportion of people 'just can't do maths' (NCETM 2016) and instead focuses on the idea that all pupils can achieve depth in their learning which can be accomplished by using key principles including:

- representation and structure (effective pedagogies for modelling, concrete-pictorial-abstract approaches, effective use of manipulatives and transition between them)
- coherence (curriculum design, progression of objectives, sequencing learning, small steps, contextualising learning between different areas of mathematics)
- mathematical thinking (effective questioning, identifying patterns and relationships, deep

understanding through reasoning and problem solving, supporting children to achieve deeper learning where appropriate)
- variation (progression through representations using conceptual variation, progression through questioning using procedural variation)
- fluency (efficiency, accuracy, flexibility, developing unconscious competence)

## Curriculum Organisation

**Statutory Requirements**:

Our maths curriculum meets the statutory requirements for the teaching and learning of Maths as set out in the National Curriculum in Maths (2013) and in the Maths section of the Statutory Framework for Early Years Foundation Stage (2024).

**EYFS**

Maths is one of four specific areas in the EYFS curriculum, which help strengthen and develop the three prime areas, and ignite children's curiosity and enthusiasm. It is through these specific areas that the prime areas of communication and language, physical development and personal, social and emotional development are strengthened and applied. Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that 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.

**NATIONAL CURRICULUM**

Mathematics is a core subject in the National Curriculum. We use the Mathematics Programmes of Study: Key stages 1 and 2 National Curriculum in England (2013) as the basis for implementing the statutory requirements of the programme of study for mathematics. In the National Curriculum, programmes of study for Maths are set out year-by-year throughout the primary phase.

## Curriculum Implementation

Throughout Carr Head teachers reinforce an expectation that all children can achieve high standards in mathematics.

- Most of the children 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 early intervention ensures the pupil is ready to move forward with the whole class in the next lesson.

- 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.

- 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 children regularly to identify those requiring intervention, so that all children keep up.

- 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.

**Planning**

The planning of the curriculum is organised in three phases:

- long term planning is demonstrated through the yearly overviews which show the organisation of the mathematics topics across the year for each year group, and the coverage and progression of knowledge, skills and understanding.

- medium term planning is demonstrated through the half termly overviews which reveal the progression of knowledge, skills and understanding within each topic, including where learning is revisited in Starters for year groups using the Red Rose Mastery Maths Scheme.

- short term planning is demonstrated through the teachers' lesson plans which explain how children will build on their existing understanding with the new learning specified as focused learning objectives for each given lesson.

At Carr Head Primary School, we use the Red Rose Mastery Maths Scheme to support our Maths planning and have selected this because it is sequenced coherently across and within year groups. Children revisit topics on a termly basis building on their prior learning and moving towards clear end of year expectations. The key components of place value and calculation are explicitly taught and learned in each term. These topics are interspersed with

other areas of the mathematics curriculum such as measurement including time and money, statistics and geometry. This allows children to apply their number knowledge in different contexts to build strong connections within mathematics and appreciate the subject's relevance to real life. It also supports children in transferring their learning to long term memory to unconsciously recall and apply it in different situations, including in different curriculum subjects.

Teachers using the Red Rose Mastery Maths Scheme are expected to annotate the Lesson Plans and/or Teaching Tool notes to personalise the lesson for the children in their class.

The school uses a variety of teaching styles to cater for the different learning styles of pupils in mathematics lessons. Our principle aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole-class and small group teaching. During these lessons, we encourage children to ask as well as answer mathematical questions. They can use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. Children use IT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods.

Although the programmes of study of the National Curriculum (2013) are organised into distinct domains, we believe as the National Curriculum states 'that pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasing sophisticated problems' (DFE, 2013:3) With this at the forefront of our teaching, we ensure that using and applying is integrated into planning and teaching.

As well as the discrete maths lesson, there are opportunities for children to rehearse mathematical knowledge and understanding at other times of the day (during registration or at the end of the day/start of the day).

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

A typical lesson in Years 1 to 6 following the Red Rose Mastery Maths Scheme would involve:
• a starter activity to allow children to revisit, practise and refine previously learned content to support long term memory retention as well as developing children's mathematical fluency.

• an initial problem in which children are introduced to the learning through a context. The children discuss how their existing knowledge can be applied to the context. Ideas and approaches are shared where misconceptions are identified and addressed, and effective approaches are shared and learned by the whole class.

• guided learning that is interactive using effective questioning that leads children to identify for themselves how to be successful with the learning. This is supported using both conceptual and procedural variation and short tasks for the children to complete before moving on to the next step in learning

• an independent learning task for the children to apply the learning from the guided parts. This task includes questions that build children's understanding and fluency and will also involve different elements of reasoning and solving problems.

• a deeper learning task is included to allow some children to take their understanding to even greater depth than what would be expected. These tasks are often in the form of more complex reasoning or non-routine problem-solving questions.

• throughout the lesson, children's thinking is supported and extended through the deliberate use of questioning by the adults.

**Cross-curricular learning**

The mathematics curriculum is enriched at Carr Head Primary School through cross-curricular experiences, for example, in Science with use of graphs and handling data, Design Technology with cooking, weighing and measuring, PSHE / Enterprise in buying resources to make products and selling the products to make a profit, and EYFS outdoor provision, e.g. balancing scales with sand, hopscotch, 3-D construction, patterns, counting, songs.

**Equal Opportunities**

At Carr Head Primary School, we have high expectations for every child, whatever their background, ability or circumstances. We know that children learn best when they are healthy, safe and engaged. To engage all children, cultural diversity is celebrated. We value what each individual child brings to our school.

**Inclusion**

The needs of all children are considered carefully when planning and teaching mathematics at Carr Head Primary School. We want children to reach their full potential. Where necessary, teachers identify which children are not making progress and take steps to improve their progress and attainment in maths, usually in liaison with the SENDco.

**SEND**

We recognise that there are children of widely different mathematical abilities in all classes, and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the child. We achieve this in a variety of ways by:

Scaffolding (temporary support that is removed when it is no longer required)

- Use of concrete and visual apparatus
- Support could be visual, verbal, or written.
- Partially completed examples, knowledge organisers,

- Support with getting equipment needed

Explicit instruction (teacher demonstration followed by guided practice and independent practice)

- Worked examples with the teacher modelling and thinking out loud to teach children
- Using visual aids and concrete examples promoting discussion and links in learning.

Cognitive and Metacognition Strategies

- Cognitive strategies - memorisation techniques or subject specific strategies
- Metacognition strategies (help pupils plan, monitor and evaluate their learning)
- Chunking the task through provision of checklists, instructions on a whiteboard or providing one question at a time.
- Prompt sheets

Flexible Grouping (pupils are allocated to smaller groups based on the individual needs)

- For collaborative learning, for example to read and analyse source texts, complete graphic organisers, independently carry out a skill, remember a fact, or understand a concept.
- Pre-teaching key vocabulary

Use technology (assist teacher modelling or used to give feedback)

- Use a visualizer to model worked examples.
- Online quizzes to check understanding

**Use of intervention**

The expectation is that all children will move through the content of our curriculum (in all Key Stages) at broadly the same pace. We maintain high expectations of all children and provide support and challenge as appropriate throughout all lessons and sequences of learning. Where children are at risk of falling behind, they are identified quickly. They work in either small groups or one-to-one both within class and in interventions. Decisions about when to progress will be based on the security of pupil's understanding and readiness to progress on to the next stage.

In some circumstances, children may follow a separate curriculum based on individual needs that would be detailed in their Individual Education Plans or EHCPs. In most cases, this curriculum would still mirror the coherent and progressive sequences of learning for the other children in a different year group. The intention of any intervention is to enable the children to catch up with their peers by filling gaps and building fluency in essential foundational knowledge.

**Use of further challenge (deeper learning)**

As part of the mastery curriculum, all children have access to the deeper learning where needed. This is key so that all children can progress as far as possible through each maths lesson.

**Formative Assessment (Responsive Teaching)**

Teachers simultaneously assess learning whilst modelling techniques and strategies. Discussions between pupil and teacher and pupil to pupil is encouraged to deepen understanding and identify and address misconceptions or gaps in learning. This cyclical feedback allows teachers to adapt learning in real time, rather than after the fact. For example, discussion around measurement may uncover a need to address conversions. Therefore, targeted and specific revision can be done on the spot, as necessary**.**

Effective formative assessment allows teachers to ensure that any new learning builds on children's existing knowledge and understanding. Teachers use assessment to make decisions about what children need (support, extension, next steps) and act quickly to fill gaps in knowledge and understanding so that all children are given the best chance of securing learning over time. All assessment decisions made are done so within our aspirational value of ambition for all children to reach their full potential.

**Professional Development of Staff and Use of Resources**

All staff using the Red Rose Mastery Maths Scheme have had training on the scheme and understand the principles of teaching for mastery and how to apply the scheme appropriately with their class. In all classes the mathematics learning is reliant on practical and visual approaches, and the links between these and the abstract representations. At Carr Head Primary School, we are committed to ensuring all our staff are equipped and supported to deliver consistent high quality learning experiences for our children.

**Parental Involvement**

We aim to involve parents as much as possible in school life, and in the development of children's skills, knowledge and understanding in maths. In EYFS, parents have access to 'Tapestry' and through this they are able to access their child's learning.

At the start of each school year, parents are invited to meet their child's new class teacher and find out about expectations in maths for the academic year. They are provided with information about the content of the maths curriculum, how it will be taught in school and what they can do to support their child. Regular practice of recall of number facts and times tables is encouraged. Information about the curriculum is also provided on the school website.

There are parent's meetings twice a year in which the child's progress is discussed with the class teacher. Additionally, parents receive a full school report annually, detailing their child's achievements in maths alongside other core curriculum subjects. The results of statutory assessments are reported to parents in accordance with government legislation.

## Curriculum Impact

**Monitoring of the implementation**

The subject leader and SLT continuously monitor by observing teaching, work scrutiny, pupil interviews and walk-throughs. Both the subject leader and SLT work together to ensure continuity of approach through each key stage.

**Summative Assessment**

Children are assessed at the end of each term using teacher assessment supported by an arithmetic and a reasoning test. This allows teachers to check children's progress towards meeting the end of year expectations and organise further support where this is necessary.

At the end of each half term, there are 'Learning Checks' that consist of a range of questions based on what the children have learned in that half term. These allow teachers to assess the children's understanding away from the point of teaching and to see how well the learning has been stored in the long-term memory.

1. Half Termly Learning Checks: Every half term, teachers use a learning check assesses children's attainment and progress, checking how much of the new learning has been retained. This is used to inform the next steps and identify children who are at risk of falling behind.

2. Summative Assessments: Children's learning is assessed summatively at three main points in the year at the end of the Autumn, Spring and Summer terms. This data is reported on the assessment tracker and discussed during termly Pupil Progress Meetings.

We track pupils using a pupil tracker, recording whether they are:

- Not working at the Expected Standard
- At the Expected Standard
- Above the Expected Standard

**Monitoring of impact (including role of governors)**

Data outcomes are shared with Governors on a termly and annual basis. Data is used to analyse progress against national and local outcomes as well as to evaluate the development of the subject in school.

The impact of teaching and learning in maths is monitored on an on-going basis in terms of data and annually in terms of Subject Spotlights (School's Monitoring Cycle). The subject leader reports annually to Governors on subject development of the subject.

This policy is reviewed annually. The next review is due in January 2027.