Carr Head Primary School

MATHS POLICY

Prepare the children of today to flourish in the world of tomorrow through nurturing mind, body and soul.

Maths Policy.

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Maths National Curriculum 2013 (DfE)

At Carr Head Primary School, we aim to empower our children with an 'I can do it' attitude towards maths, embracing our work on growth mindset. 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.

INTENT:

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 are able to 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**.

The children at Carr Head will be:

- taught well and be given the opportunity to learn in ways that maximise the chances of success
- set appropriate learning challenges

STATUTORY REQUIREMENTS:

Statutory requirements for the teaching and learning of Maths are set out in the National Curriculum in Maths (2013) and in the Maths section of the Statutory Framework for Early Years Foundation Stage (2021).

EYFS:

We give all the children many opportunities to develop their understanding of mathematics. We aim to do this through varied activities that allow them to use, enjoy, explore, practise and talk confidently about mathematics.

NATIONAL CURRICULUM:

Mathematics is a core subject in the National Curriculum, and we use the Mathematics Programmes of Study: key stages 1 and 2 National Curriculum in England (2013) and the Mathematics Planning National Curriculum documentation – Lancashire County Council (2014) 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. 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.

IMPLEMENTATION:

Teachers reinforce an expectation that all children are capable of achieving high standards in mathematics.

- The large majority of 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.

SUBJECT ORGANISATION:

EYFS:

The programme of study for the Foundation stage is set out in the EYFS Framework 2014. Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shape, spaces and measures.

KEY STAGE 1 and 2:

Curriculum planning in mathematics is carried out in line with the structures and recommendations outlined in the LCC medium term planning documentation. Although the school does not have a specific maths scheme, staff will refer to White Rose Maths if they feel it will add to the curriculum being planned. Weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught, key questions that will be asked and how learning will be assessed.

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 have the opportunity to 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.

In all classes, there are children of differing mathematical ability. Suitable learning opportunities are provided for all abilities. Children are often given the opportunity to select their own level of work so allowing them to challenge themselves. Teachers will closely monitor this. Other strategies used to provide for the range of abilities include paired and group work and allocation of support.

Teaching assistants are deployed to provide appropriate support to individuals and / or to groups of pupils. Teaching assistants within Carr Head Primary are viewed as an important 'asset' to the school and, as such, are appropriately involved in the planning and delivery of the mathematics curriculum. Their knowledge, skills and understanding are updated regularly through involvement in school-based and LA led Inset where appropriate.

CROSS-CURRICULAR OPPORTUNITIES:

At Carr Head, we aim to provide creative learning opportunities and outcomes for mathematics across other subjects.

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of comprehension, writing, speaking and listening.

Computing

The effective use of IT can enhance the teaching and learning of mathematics when used appropriately. When considering its use, we consider the following points:

- IT should enhance good mathematics teaching. It should be used in lessons only if it supports good practice in teaching mathematics;

- Any decision about using IT in a particular lesson or sequence of lessons must be directly related to the teaching and learning objectives for those lessons;

- IT should be used if the teacher and/or the children can achieve something more effectively with it than without it;

Science

Almost every scientific investigation or experiment is likely to require one or more of the mathematical skills of classifying, counting, measuring, calculating, estimating and recording in tables and graphs. In science pupils will for example order numbers, including decimals, calculate simple means and percentages, use negative numbers when taking temperatures, decide whether it is more appropriate to use a line graph or bar chart, and plot, interpret and predict from graphs.

Art, Design and Technology

Measurements are often needed in art and design and technology. Many patterns and constructions are based on spatial ideas and properties of shapes, including symmetry. Designs may need enlarging or reducing, introducing ideas of multiplication and ratio. When food is prepared, a great deal of measurement occurs, including working out times and calculating cost; this may not be straightforward if only part of a packet of ingredients has been used.

History, Geography and Religious Education

In history and geography, children will collect data by counting and measuring and make use of measurements of many kinds. The study of maps includes the use of co-ordinates and ideas of angle, direction, position, scale and ratio. The pattern of the days of the week, the calendar and recurring annual festivals all have a mathematical basis. For older children historical ideas require understanding of the passage of time, which can be illustrated on a time line, similar to the number line that they already know. Knowledge of Roman Numerals is part of the new Maths curriculum and this is best covered during history lessons.

Physical Education and Music

Athletic activities require measurement of height, distance and time, while ideas of counting, time, symmetry, movement, position and direction are used extensively in music, dance, gymnastics and ball games.

Personal, Social and Health Education (PSHE) and Citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. Work within the PSHE curriculum also allows the children to develop their ability to give clear explanations on a range of topics. This skill is transferable to a Maths lesson when they need to explain a method or strategy to one of their peers.

INCLUSION IN MATHS

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. More-able and talented children are identified and suitable learning challenges are provided.

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. In order to engage all children, cultural diversity is celebrated. Our mathematics curriculum includes resources which represent a variety of cultures and backgrounds. We value what each individual child brings to our school.

ROLE OF THE SUBJECT LEADER:

Our subject leader for mathematics is Mrs Woodhouse. The subject leader is responsible for maintaining/improving the standards of teaching and learning in maths by:

- Monitoring and evaluating maths; pupil progress, planning, marking & feedback, curriculum coverage, teaching, role of teaching assistants, maths provision.
- Taking the lead in policy development
- Auditing and supporting colleagues in CPD
- Purchasing/organising resources
- Keeping up to date with developments in maths

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.

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.

IMPACT:

Teachers use daily formative assessment to decide on the next steps needed to be taken.

Summative assessments are used to see where children are at in terms of their learning at any given point in time.

The school supports teacher assessment through the use of the Key Learning Indicators of Performance (KLIPs) materials. KLIPs provide clear criteria against which judgements can be made the progress of children through each academic year.

Assessment in our school also includes:

- Making daily assessments and responding appropriately to pupils during 'day-to-day' teaching. These 'immediate' responses are mainly verbal and are not normally recorded;
- Assessment of 'prior learning' at the beginning of each unit of work to guide our planning and teaching;
- Assessment at the end of each unit, using same material as assessment of prior learning. This allows the teacher to see which gaps in learning have been filled and which require further work.
- Adjusting planning and teaching within units in response to pupils' performance;

At the end of each term, staff will assess the children in their class against age-related expectations using the KLIPs sheets for the appropriate year group. Children will be assessed as below, on track or greater depth, at the end of each term. To inform their judgements, staff will use a range of evidence that might include formal assessments and observations made during independent and guided group work. These judgements will be monitored by both the subject leader and the SLT. Appropriate intervention programmes will be administered for those children who are not working at age-related expectations.

Year 2 and Year 6 will take statutory assessments in mathematics.

Year 4 will complete the multiplication tables check.

Please refer to the school's assessment policy for more information.

Marking and Feedback.
Feedback in Maths is given in accordance with the school's Feedback policy.

Policy updated: Spring 2022

Review Date: Spring 2023 (or earlier if legislation changes)