



BIRCH COPSE PRIMARY SCHOOL
MATHEMATICS POLICY

Introduction

This policy should be read in conjunction with the School's Teaching and Learning Policy statement which deals with matters common to all subjects. Mathematics will be taught in accordance with the National Curriculum Programmes of Study.

INTENT

Learning is at the very heart of what we do at Birch Copse and our curriculum is a crucial aspect of this. We provide an **outstanding curriculum**, which is **challenging, progressive** and **inspiring**, allowing our children to achieve their full potential by maximising their learning so that they know more, remember more and understand more. Our Maths curriculum uses a mastery approach, where the curriculum is carefully sequenced and designed in small steps of learning which children progress through, broadly at the same pace. This enables all children to gain the functional skills they will need in their lives and promotes enjoyment and success for all.

We aim:

To follow a Mastery approach to Mathematics teaching, incorporating conceptual understanding, fluency and automatic recall of facts, making connections and spotting patterns, as well as the ability to reason, problem solve and follow a line of enquiry.

- Conceptual understanding
Our curriculum develops a deep and thorough understanding of mathematical concepts. This involves breaking down complex ideas into smaller, more manageable parts, allowing pupils to develop a multi-faceted understanding of how they relate to each other. By focusing on developing a strong conceptual understanding of mathematics, our pupils are better able to apply mathematical principles to real-life situations, as well as solving more complex mathematical problems.
- Fluency and automatic recall of facts
Pupils are taught and have the opportunity to practice basic mathematical operations such as addition, subtraction, multiplication and division until they become second nature. In Reception and Key Stage One, children develop a strong and confident understanding of number which is then built on in Key Stage Two. By achieving fluency in basic skills, such as mental arithmetic and times tables, pupils are able to build upon and apply their knowledge to more complex mathematical problems.
- Making connections and spotting patterns
Maths is all about finding relationships between different objects or ideas and the ability to recognise patterns and connections is crucial for this. Our curriculum allows our pupils to become confident and competent problem solvers by giving all pupils ample opportunity to explore mathematical concepts through variation.
- Being able to reason, problem solve and follow a line of enquiry
At Birch Copse pupils learn to reason, problem solve and follow a line of enquiry. This involves teaching pupils to think critically about mathematical problems and to develop logical reasoning skills. By developing these skills, pupils will be better equipped to solve complex problems and to apply mathematical principles to real-world situations.

To have the functional skills for life beyond primary school.

Developing mathematical skills is critical for success in life beyond primary school. Possessing these skills will help pupils navigate various practical situations and make informed decisions in different aspects of their lives.

IMPLEMENTATION

We believe that all children are able to succeed mathematically, and that one of our primary tasks as maths teachers is to find ways of presenting, scaffolding, and teaching concepts in such a way that everyone will achieve.

High standards in teaching and learning are produced by:

- Reflective staff with excellent subject knowledge who evaluate their teaching and the curriculum regularly against evidence-informed practices and are open to feedback and change;
- Applying Rosenshine's principles for retaining and building on knowledge.
- High levels of challenge;
- Developing children's vocabulary and high standards of oracy in maths.
- Stimulating classroom environments which provide support and encourage independence.

High standards in Maths are produced by:

- Following a Mastery approach with high expectation for all pupils (keep up not catch up);
- High quality daily Maths lessons which ensure pupils are competent in fluency, problem solving and reasoning;
- Daily retrieval practice, using thoughtfully structured flashbacks in every maths lesson across the school.

At Birch Copse Primary School, we have adopted a Mastery approach to Maths. We follow the White Rose maths curriculum and long-term plan, using additional lesson resources at the teacher's discretion and according to the needs of the class. Teaching maths involves employing a range of mastery approaches that help students to develop a deep and secure knowledge and understanding of mathematics at each stage of their learning. By the end of every school year, children will have acquired mastery of the mathematical facts and concepts they've been exposed to, equipping them to move on confidently and securely to more advanced material.

Mastery teaching ensures high expectations for all pupils, and use of the concrete-pictorial-abstract approach. This approach develops children's understanding from Concrete (handling objects, resources, manipulatives), on to Pictorial (visual images and representations), and then Abstract (symbolic stage with more formal strategies).



Planning and Organisation

Planning

Teachers follow the White Rose long term plan and adapt the accompanying lesson plans and resources according to the needs of the class. Teachers are encouraged to use professional discretion when deciding on how long is needed on particular curriculum area whilst ensuring all objectives are covered by the end of the academic year.

There will be an opportunity for reasoning and problem solving for all pupils in every lesson. Teachers follow the school's Calculation Policy and consider which pupils would benefit from a Concrete, Pictorial, or Abstract approach in each lesson, either through instruction for all pupils, or as a scaffold or support for some.

Teachers plan for the introduction of specific mathematical vocabulary. Teachers keep a record of curriculum coverage and ensure that all objectives are covered. Differentiation is provided with targeted, positive support to help those who have difficulties with mathematics, as well as those who are higher achievers. In line with the aims of the NC2014, differentiation has now moved to focus on all children achieving the same learning outcome and the differentiation is the way that different groups of children are supported to achieve this.

Pupils' Mathematical Experience

A range and balance of experience will be provided for each pupil.

Opportunities should be given to pupils to:

- make sure that significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning.
- reason and solve problems in every mathematical concept, including through the use of open-ended tasks.
- develop and apply alternative maths strategies
- develop cross-subject links and themes within all areas of the maths curriculum.
- each lesson to provide opportunities for consolidation, practice and reinforcement of knowledge and skills
- use a range of opportunities for practical work
- select and deploy a variety of ways to present their work in both oral and written form, including mental maths processes
- develop social skills such as co-operation, decision-making and negotiating
- select the most appropriate materials to carry out set tasks
- use of manipulatives to help achieve their learning objective and experiment with different mathematical concepts.

Pupils will experience a variety of teaching styles, techniques and pupil interaction, such as exposition by the teacher; group work; discussion between teacher and pupil and between pupils themselves.

Homework

Different year groups provide homework based on the curriculum expectations of the year group and the needs of the children. This could be; reinforcement of number bonds, 'Times Table Rock Stars', arithmetic work or a topic of maths recently covered in class.

Inclusion

Every pupil will be given equal opportunity to follow the National Curriculum or Foundation Stage Curriculum irrespective of their ethnic or linguistic background, gender, disability or religious beliefs. Children with Special Educational Needs will have full access to the Mathematics curriculum. Those identified as Higher Potential Learners in Mathematics will be given opportunities to develop their skills.

IMPACT

Assessment, Record Keeping and Marking

Assessment, record keeping and marking will be carried out according to the school's policies. Assessment for Learning is fundamental to raising standards and enabling children to reach their potential. Assessment in Mathematics takes place daily using a range of strategies such as marking and feedback of work and verbal discussions with children.

At the end of the term an assessment is also completed which reviews the whole term's objectives. Teachers use assessment information to inform their future planning. The White Rose end of term assessments are used for this, with the exception of FS and Year 6. Foundation Stage assess against their own milestones, which were created using both the Early Years Curriculum and White Rose Scheme of Work, using teacher judgement and observations. For end of Term assessment in Year 6, previous years SAT's papers are used to inform judgement. The results of all of these are reported to parents across the school at the end of each term.

Monitoring and Improving

The monitoring of Mathematics will take the form of classroom observations, monitoring of planning, work sampling, learning walks and observations and data analysis. The subject leader is responsible for the monitoring of Mathematics. Evaluation of monitoring will take the form of a report to be shared with teaching staff and governors.

Spiritual, moral, social and cultural development

At Birch Copse Primary school, we recognise that social, moral, spiritual and cultural development (SMSC) is central to the education of all pupils and permeates the whole curriculum and ethos of the school. In Mathematics examples of SMSC development include:

Social

- Children encouraged to work together not only to complete problem solving but also to support in each other's learning.
- Reasoning opportunities are given in order for children to develop their speaking and listening skills.
- Children are encouraged to build upon the reasoning and justification from their peers in a respectful and thought-provoking manner.

Moral

- Children are provided with opportunities to use their maths skills in real life contexts, applying and exploring the skills required in solving various problems.

Spiritual

- Children are given opportunities to develop deep thinking and an ability to question the way in which the world works promotes the spiritual growth of students

Cultural

- Mathematics is a universal language with a myriad of cultural inputs throughout the ages.
- Links to numbers, how they work and numerical patterns – including Roman Numerals.

Other Policies and Documents

Please also refer to the following policies and documents:

School based:

Curriculum policy, Assessment, Recording and Reporting policy, Higher Potential Learner policy, Special Education Needs policy, Marking and Feedback policy, Homework policy

Other:

National Curriculum, Primary Framework for Mathematics

White Rose Schemes of Learning

Role of the Mathematics Subject Leader

The role of the subject leader at Birch Copse is defined in detail in our Subject Leadership Policy. We designate the Subject Leader's role under three broad headings:

Intent	Implementation	Impact
<ul style="list-style-type: none">• Curriculum oversight<ul style="list-style-type: none">○ Policy○ Curriculum documentation• Subject Development plan• Resources management	<ul style="list-style-type: none">• Subject knowledge and pedagogy<ul style="list-style-type: none">○ Own○ CPD for staff• Overseeing assessment<ul style="list-style-type: none">○ Subject moderation file• Promoting the subject	<ul style="list-style-type: none">• Monitoring• Evaluating<ul style="list-style-type: none">○ Subject analysis

Responsible officers

Mathematics Subject Leaders: Hollie Davis and Katie Ellis

Date of last review: **October 2023**

Date of next review: **October 2024**