



Mathematics Policy

Reviewed:	November 2017	Revised by:	Cara Cleaves
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Our vision for the teaching of mathematics

We aim to inspire all of our pupils, irrespective of their ability, to reach their full academic potential in all subjects. We recognise that mathematics is a critical area of skill and knowledge that impacts on the quality and value of the lives we lead. Therefore, our objectives in the teaching of the maths curriculum include:

- *To promote enjoyment of learning through practical activity, exploration and discussion;
- *To develop confidence and competence with numbers and the number system;
- *To develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- *To develop a practical understanding of the ways in which information is gathered and presented;
- *To explore features of shape and space, and developing measuring skills in a range of contexts;
- *To help children understand the importance of mathematics in everyday life.

"Good mathematics teaching is lively, engaging and involves a carefully planned blend of approaches that direct children's learning....the pitch and pace of the work is sensitive to the rate at which children learn while ensuring expectations are kept high and progress is made by all children"
(The Primary National Strategy)

Aims

We aim to provide a Mathematics curriculum that:

- *Develops different mathematical strategies enabling children to overcome problems.
- *Enables a deeper understanding of the mathematics children are learning.
- *For our children to use and understand mathematical language and recognise its importance as a language for communication and thinking.
- *Encourages children to speak about and describe in their own words the concepts, ideas and techniques they are learning.
- *Allows children to represent their learning in a variety of ways (e.g. mentally, using concrete materials, pictures or symbols).
- *Provides a stimulating, appropriately resourced environment which allows children to explore, sort, compare, count, calculate and describe.
- *Provides effective learning opportunities for all pupils by setting suitable learning challenges, responding to pupils diverse learning needs and overcoming potential barriers to learning and assessment for individual and groups of children.
- *Enables children to recognise mathematics in a variety of situations and contexts in their everyday lives.

Organisation of the teaching and learning

Foundation Stage

In the Foundation Stage (FS), Problem Solving, Reasoning and Numeracy is planned through adult supported teaching and learning. Daily opportunities to informally develop mathematical understanding through child-initiated activities and routines are acted upon.

In Reception we use the Development Matters curriculum document, which is specifically designed for the Early Years. We teach Maths daily through many different learning opportunities. Each session starts with a number problem, warm up 'Have a go' activity or counting activity, followed by a whole class activity. Maths is taught in small ability groups to ensure every child is challenged and can make good progress. The Maths is always very practical and every child is actively engaged throughout the activity. Children within a group will sometimes work individually or in a pair. If a child has achieved the objective within a group, they would move up into the next group. We believe Maths is not a

stand-alone subject; we encourage the children to use Mathematical concepts throughout their playful learning, for example: in the role play they will use money; in the construction area they are encouraged to use 3d shape names; in the sand the children might be comparing weights of objects. Maths is also taught outside using natural objects, which is particularly useful for problem solving, eg, how many triangles can you make from 9 sticks? Children's work is recorded in their own 'learning journey' on Tapestry and in their 'Dazzle Books'. The children are assessed weekly and half termly and data logged on Pupil Asset.

Key Stage 1 and 2

Mathematics lessons will be planned and taught in accordance with the National Curriculum 2014.

The time allocation for mathematics teaching is an hour each day which includes arithmetic, problem solving and application of skills. The children also participate in voluntary Early Morning Maths Sessions, 8.45am-9.00am, which gives all pupils the chance to consolidate vital arithmetic skills and facts such as number bonds and times tables. Mathematics teaching is included in cross curricular teaching in addition to the daily discrete taught session.

In years 1-6, the long term plan is taken from the White Rose maths hub overviews and their lesson overviews are used to inform medium term plans. The long term plan is used as a guidance tool in order to pace out coverage of the curriculum throughout the year. Teachers are encouraged to use professional discretion when deciding on how long is needed on each particular curriculum area whilst ensuring all objectives are covered by the end of the academic year.

Short term planning is recorded each week on standard planning sheets. The short term plan outlines the teaching sequence, taking account of where pupils are in their learning, where they need to go and how they are going to get there. These plans outline the topic area/focus with specific learning objectives to be taught that week.

Years 1-6 start each session with an assessment question to ascertain children's knowledge and confidence – 'Have a go'. From this, the children can identify if they are entering the Maths learning as a: Getting Going, Ready to Rock or Jet Setter. Different challenges and activities are planned to match these levels and the children choose the level of entry to the learning with guidance and support where needed. The class teacher and teaching assistant will support different ability groups during the lesson to develop understanding of the skill or concept being taught and practised.

Children complete activities at the level selected and are then encouraged to self-mark in order that they may assess their understanding and mastery of the set skill or concept. If they have mastered that level, they are encouraged to progress to the next level with support where needed.

At a later point in the lesson, and in order to develop their problem solving and reasoning skills, children complete 'chilli challenges', which provide the opportunity to apply their maths in a different or more challenging context. Resources are accessible for all pupils to support them with their learning.

Each lesson is planned with an emphasis on high quality, direct and interactive teaching and learning. Children are expected to play an active part, by answering questions with talk partners, contributing to discussions and explaining and demonstrating their methods. Their learning is promoted through the use of hands-on resources and, where possible, setting a meaningful context for their mathematical work.

Assessment

Assessment takes place continually, using assessment for learning techniques (observing, pupil conferencing, peer assessment, self-assessment and looking at outcomes of work or tests). Teachers will record these day-to-day assessments on short term planning and Pupil Asset multi-ticks, which enable the teachers to identify next steps in learning ensuring progression.

Formative assessment is supplemented by regular formal assessments which help to inform teacher assessments. This includes Rising Stars tests (termly) and 'hot tasks' (at a distance questions). All of these are analysed to identify gaps in learning. Through pupil progress meetings each half term, the Head of School, Maths Coordinator and class teacher monitor and track children's progress and attainment. If children appear to be at risk of not achieving the expected standard then provision is put in place to support and accelerate this. This is monitored and reviewed.

At the end of each term, liaison takes place between class teachers to discuss children's progress and achievement, to ensure continuity and progression between classes. Moderation of assessments happen within school and across our Trust on a termly basis.

Resources

The main resource for our planning is White Rose Maths. However, teachers are encouraged to draw from a wide range of resources to maximise and effectively differentiate learning. Other resources available to us include NRICH, NCETM, Abacus and Testbase.

Physical resources are centrally stored in the resource cupboard with some key resources in the classrooms.

A wide a variety of ICT software is available to support the teaching of Mathematics. In particular the Abacus Scheme with many interactive resources.

99 club

The 99 club has been developed to help raise standards in Maths by encouraging pupils to improve their mental maths knowledge. This then increases their ability to use these maths facts and apply to all areas of arithmetic and problem-solving as well as across the curriculum and in day to day life. All pupils are encouraged to practise the maths facts applicable to their level at home and are given an opportunity per week to achieve their current level and progress to the next level.

Leadership and Management

The subject leader's role is to empower colleagues to teach maths to a high standard and support staff in the following ways:

- *By keeping up to date on current issues; disseminating relevant information and providing training for staff members.

- *Having a knowledge of the quality of mathematics provision across the school.

- *Identifying and acting on development needs of staff members.

- *Monitoring expectations, provision and attainment across the school and providing feedback to develop practice further in order to raise standards.

- *Providing necessary equipment and maintaining it to a high standard. Resources are kept both centrally and within the classroom in clearly labelled trays (for more regular use).

Equal Opportunities

We believe that all children, irrespective of background, race, gender or ability should have equal opportunity and access to the curriculum as stated in each curriculum policy.