Inspire Education Trust

Together we achieve, individually we grow

Mathematics Curriculum Policy - Primary

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Document History

Version	Status		Date	Author	Summary Changes
V1			Apr 22	D Sowerby	Updated throughout due to amended curriculum

Contents

1 Aims and Objectives

If you want to take place in tomorrow's world, you'll need mathematics and statistics just as much as grammar and syntax.'
(Professor Robert Worcester).

1.1 Within our Trust we aim to prepare children by providing them with essential skills for life. We want children to gain a sense of enjoyment and achievement in their mathematical studies by allowing them to build a breadth and depth of understanding of the Mathematical world around them. It is important children do not feel Mathematic lessons are a burden to be endured each day but lessons should provide a vibrant and stimulating arenafor developing skills to be used in a practical context.

1.2 Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand relationships and patterns in both number and space in their everyday lives, developing the skills to apply knowledge in a range of different contexts.

1.3 Our objectives in the teaching of mathematics are:

- to promote enjoyment of learning through practical activity, exploration and discussion;
- to promote **fluency** and **competence** with numbers and the number system;
- to develop the ability to solve problems through decision-making and **reasoning** in arange 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 develop measuring skills in a range ofcontexts;
- to help children understand the importance of mathematics in everyday life;
- to develop a deeper understanding working towards mastery of skills to apply within a range of contexts and the wider world

2 Teaching and Learning

"A great teacher makes hard things easy."
(Ralph Waldo Emerson; 1803–1882.)

2.1 The Trust teaches Maths for Mastery using a range of strategies. The main driver for this is the Singapore maths approach, using the core elements of the Maths NoProblem (MNP) programme. The principal aim is to develop a breadth and depth to children's knowledge, skills andunderstanding. During our daily lessons, we encourage children to demonstrate their understanding using a range of visual and written strategies to ensure a rich depth of understanding.

2.2 Each session starts with a problem for the children to explore. The problem is shared and discussed as a class. Children have the chance to use a range of resources to try and solve the problem. They can develop a range of strategies- children are encouraged to know that there are no right or wrong strategies, as long as children can reason and

explain them. Teachers will then guide and scaffold initial thoughts and add structure. Children will then have the chance to practise and refine their skills using them to complete a range of tasks. Children complete sessions with the chance to share their personal understanding as they journal.

2.3 A key concept at the heart of our approach uses concrete objects to test mathematic concepts and build a clearer understanding of abstract ideas. Key concepts are introduced using a range of resources, giving children the chance to see a problem and using manipulatives to build an understanding and make links across their learning. Throughout the school, classrooms are fully equipped to cater for many different learning styles.

2.4 Children use a wide range of resources, such as dienes, counters, number lines, number squares, digit cards and small apparatus to support their work. Working Walls are consistently utilised effectively to highlight current mathematical learning in the classroom, these include key vocabulary, models, success criteria and challenges. These are developed each day and allow teachers the chance add structure and scaffold children's initial thoughts.

2.5 Children have a wide range of mathematical abilities. We deliver Maths sessions in mixed ability classes. Where possible, children work in mixed ability pairs, particularly when exploring strategies to solve a problem- this benefits all learners. Confident mathematicians are challenged through further questioning and green pen challenges to develop a deeper understanding and depth of knowledge. Teachers and classroom assistants provide support and to ensure that work is matched to the needs of individual.

2.6 We believe that children should develop a rich understanding of a subject area and should not be rushed through the curriculum. Children should be exposed to a range of problems around the same key concepts before being rushed onto another subject area. This builds a solid, secure understanding that can be applied to a range of different problems.

3 Mathematics Curriculum Planning

3.1 Mathematics is a core subject in the National Curriculum and we ensure the statutory requirements of the programme of study for mathematics is implemented.

3.2 National Curriculum expectations are central to the programme we deliver. Maths No Problem has been designed to ensure full coverage of the National Curriculum is allowed during the school year.

3.3 A core part of our CPD offer is ensuring we continuously develop teacher Maths subject pedagogy. All teaching staff either new to Trust, School or year group are upskilled and trained in questioning, scaffolding or challenge to deliver the programme effectively.

3.4 Upskilling in Mathematics comes in many formats. This includes coaching models with

Maths leads or Senior members of staff, planning workshops and observing experienced members of staff, this leads into reflection time and the chance to review progress in own practise.

3.5 Each session of MNP has been designed to allow children to develop understanding over an extended period and apply their knowledge accordingly. Lessons are planned and tasks have been developed to allow children to show the depth of understanding they have gained.

3.6 Teachers have access to the MNP website where expectations for the lessons are provided, question examples are given and suggestions to add further challenge, support and assessment are highlighted. Teachers are then expected to personalise sessions with further questions/challenges that can challenge and support the individual learners in their classes. Each year group has a termly Medium term plan provided as skeletal overview of what class teachers should be covering. From here, class teachers personalise for the needs of their children and ensures correct scaffold and challenge is planned to meet the needs of learners. These are based on GAP analysis tasks at the end of each term.

3.7 Class teachers plan specific strategies and key learning that needs to be demonstrated to ensure children are working at the age-related expectation. This will give details of how the lessons are to be organised and where scaffolding will need to be used to ensure all learners are supported and challenged.

3.8 The daily lesson generally comprises of mental skills (mental/oral starters), exploration, scaffolding/modelling, workbook work, journaling and further challenge. Workbook work and journaling are ordered in a way that is suitable for class teacher and the children in the class. It is essential that all lessons build in an opportunity to enhance skills to a real-life context and this should allow children to reason, use and apply and confirm learning- this is done in each and every MNP session.

3.9 Weekly Arithmetic sessions are built into the flow of sessions to ensure there is a healthy balance of conceptual understanding, this being the main focus of delivery, but also the time to practise procedural approaches with accuracy.

4 The Early Years Foundation Stage

4.1 We teach mathematics in our Foundation Stage through play and activities with the focus on children building a conceptual understanding through the use concreate resources leading to abstract understanding. This becomes more formal as the children progress through Nursery into Reception. We relate the mathematical aspects of the children's work to the objectives set out in the Early learning goals, we use a range of materials in the Early years, including White Rose materials, to support and guide learning. We give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space, through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

5 Mathematics Across the Curriculum

"Enthusiasm is excitement with inspiration, motivation,and a pinch of creativity."
Bo Bennett

5.1 Thematic Curriculum

Theme sessions are designed to provide valuable learning opportunities for children to apply their understanding of Mathematical concepts. These meaningful cross- curricular links help to embed maths and provide real life context and relevance to the concepts and skills they are acquiring. As a part of a STEM cycle, Maths becomes a key focus of one of the three termly topics taught throughout the year where skills are applied across all areas of the theme.

5.2 Science

Mathematics is an essential element of scientific enquiry and provides a great opportunity to embed skills and apply to a useful and practical purpose. Science planning

Highlights where maths skills for measurement and data handling are present allowing the teacher to assess children using and applying these skills.

5.3 English

In mathematics lessons, we expect children to read and interpret problems and pick out the key information in order to identify the mathematics involved. They are also improving their command of English when they explain and present their work to others during sessions- particularly when reasoning in their Mathematical explanations. In English lessons, too, maths can contribute: younger children enjoy stories and rhyme that rely on counting and sequencing, while older children encounter mathematical vocabulary, graphs and charts when reading non-fiction texts.

5.4 Personal, social and health education (PSHE)

Mathematics contributes to the teaching of PSHE. Children are aware of how to apply their mathematic skills to enhance their social and economic wellbeing E.g Money wise Programme . The work that children do outside their normal lesson also 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.

5.5 Digital Technologies

There is a variety of software available to present information visually, dynamically and interactively, so that children understand concepts more quickly. Children use technology to communicate results with appropriate mathematical symbols and use it to produce graphs and tables when explaining their results. When working on control, children can use both standard and non-standard measures for distance and angle. They can also use simulations to identify patterns and relationships.

6 Mathematics and Inclusion

6.1 In our Trust, mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching, we provide

learning opportunities that enable all pupils to make good progress. MNP provides all learners with suitable support and challenge. At the centre of MNP, is the process of using concrete-pictoral-abstract ways of showing learning. Resources are available for all learners to help see and make links within their understanding. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details, see separate policies: Special Educational Needs; Disability Discrimination; Gifted and Talented Children; English as an Additional Language (EAL).

6.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style and differentiation – so that we can take some additional or different action to enable the child to learn more effectively. Where this is the case, children will have a modified programme of study suited to them as individuals, to build on their own needs.

6.3 Individual Education Plans (IEPs) are created for children with special educational needs; this may include, as appropriate, specific targets relating to mathematics.

6.4 We enable all pupils to have access to the full range of activities involved in learning mathematics. Where children are to participate in activities outside the classroom. We carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

7 Assessment for Learning

7.1 Teachers will assess children's work in mathematics from three aspects (long-term, medium-term and short-term).

7.2 Short-term assessments are integral to every lesson. These daily assessments are closely matched to the teaching objectives and help teachers monitor how learning is progressing during the lesson. From these assessments teachers can adjust their daily plans. Written or verbal feedback is given to help guide children's progress. Children are given regular opportunities to self-assess and review their own work and they are encouraged to make judgments and reflect on their own learning.

7.3 There are three key assessment points throughout the year: Autumn term, Spring term and Summer term. Children will complete written tests where they will complete arithmetic and reasoning tests. Teachers will use this and their day to day assessments to decide on the children's end of year outcome. GAP analysis is an integral part of our assessment process and this allows us to adapt and modify our provision and plan effectively to meet the needs of all children in the short and medium term.

7.4 We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We can then set targets for the next school year and make a summary of each child's progress before discussing it with parents and carers. We pass this information on to the next teacher at the end of the year, so that

s/he can plan for the new school year. We make the long-term assessments with the help of end-of-year tests and teacher assessments. We use the national tests for children in Year 2 and Year 6, plus Cornerstones assessments for children in both Key Stage 1 and 2. We also make annual assessments of children's progress measured against the expectation descriptors of the National Curriculum relating to ARE which are embedded throughout the Maths No Problem programme.

8 Parental Involvement

8.1 Maths homework is focused on children ensuring they have strong Number fluency skills. This focuses on number bonds initially, before moving onto quick fire recall of timetables facts. In year 2 and 6, Revision guides/booklets are provided for children in the build up to SATs. Oak academy resources are made available for children/parents at home linked to the weekly focus in school.

8.2 Teachers meet parents and report to them verbally each term. A full written report is provided for all parents towards the end of the Summer Term.

8.3 Where applicable, parent workshops will be held to share strategies and expectations for children at all ages. This is supported with route ways through calculations that can be accessed on the schools website.

9 Monitoring and Review

9.1 The quality of teaching and learning in mathematics is monitored by Headteacher, Maths lead and standard leaders where appropriate with the addition of external validation on an annual basis. They monitor standards in Maths through observing lessons, discussions with teachers, work book and journal trawls and pupil interviews.

9.2 Maths Subject Leads work to upskill themselves and develop their practise consistently based on up to date research (e.g. EEF) and best practise across the school Trust and beyond. Subject leaders use this to help upskill and support staff across their schools. This happens in coordination with the Trust Strategic lead for Maths who oversees wider Maths Developments.

9.3 The coordination of the mathematics curriculum is the responsibility of the subject leader, who also:

- supports colleagues in their teaching, by modelling best practise, sharing advice, training and by providing a strategic lead and direction for this subject;
- monitors data and helps to identify target groups thus ensuring adequate provision and intervention is available during pupil progress meetings.
- gives the Executive Principal /Headteacher an annual summary report in which s/he evaluates the strengths and weaknesses in mathematics, and indicates areas for further improvement.

9.4 A named member of the school's Local Governing Body is briefed to oversee a School Improvement Priority which includes the teaching of mathematics. The governor meets at least once a year with the subject leader to review progress.

9.5 This policy will be reviewed at least every two years.

Reviewed by:	Damien Sowerby	April 2022
Next Review Date:		April 2024
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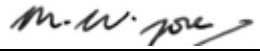
Signed:

Lois Whitehouse
Headteacher



Mark Gore
Chair of Standards