

Mathematics and Calculation Policy

This policy is a whole school policy including EYFS

A risk assessment has been completed to take into account government guidelines and statutory requirements regarding Covid 19. With this in mind changes to teaching, procedures and resourcing may occur due to identified risks.

1 Aims and objectives

1.1 Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

1.2 The aims of mathematics are:

- to promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- to promote 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 develop measuring skills in a range of contexts;
- to understand the importance of mathematics in everyday life;
- to promote the development of a range of mental strategies.

2 Teaching and learning style

2.1 The school uses a variety of teaching and learning styles in mathematics lessons. Our Headteacher 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 group-direct teaching paired and group discussion. 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 ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods as well as the use of the interactive white board. Wherever possible, we encourage the children to use and apply their learning in everyday situations.

2.2 In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through differentiated group work, and in other lessons by organising the children to work in pairs on open-ended problems or games. We use teaching assistants to support some children and to ensure that work is matched to the needs of

individuals.

- 2.3** We use every opportunity to extend and consolidate the children's learning through our work in the outside environment using the school grounds, wildlife area and local environment to put maths into real life settings.

3 Mathematics curriculum planning

- 3.1** Mathematics is a core subject in the National Curriculum 2014, and we use the Pearsons Abacus Scheme as our core scheme for implementing the statutory requirements in the subject.
- 3.2** *Abacus* incorporated the National Curriculum 2014 and gives a detailed outline of what we teach.
- 3.3** Our medium-term mathematics plans, which are provided with *Abacus* give details of the main teaching objectives for each term and are tailored by the class teacher to suit their cohort. They ensure an appropriate balance and distribution of work across each term. These plans are reviewed by the subject leader.
- 3.4.1** It is the class teacher who uses the weekly/daily plans, which they have tailored from the scheme for the teaching of mathematics. These weekly/daily plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. Teachers are not bound by the scheme and are encouraged to utilise alternative activities at their discretion.

4 The Foundation Stage

- 4.1** We teach mathematics in our Nursery and Reception classes. As these classes are part of the Foundation Stage, we relate the mathematical aspects of the children's work to the objectives set out in the EYFS. We plan the children's learning in accordance with the EYFS guidance – laying foundations in mathematics. 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 Contribution of mathematics to teaching in other curriculum areas

5.1 English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during plenary sessions and often use talking partners as a way to explain their working and demonstrate their understanding. Younger children enjoy stories and rhyme that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

5.2 Information and communication technology (Computing)

Children use and apply mathematics in a variety of ways when solving problems using computing, both at school and at home. Younger children use computing to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures

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for distance and angle. They use simulations to identify patterns and relationships. The children can use the Interactive White Board to practise and develop skills learnt within maths lessons.

5.3 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. We present older children with real-life situations in their work on the spending of money.

5.4 Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results. The study of famous mathematicians around the world contributes to the cultural development of our children.

All subjects contribute to many aspects of the themed curriculum of which maths plays an important part.

6 Teaching mathematics to children with special needs and disabilities

6.1 We teach mathematics to all children, whatever their ability. It is part of the school curriculum policy to provide a broad and balanced education to all children. We provide learning opportunities that are matched to the needs of children with learning difficulties with differentiated work, often supported by a teaching assistant. Work in mathematics takes into account the targets set for individual children. Certain children who have been identified by the class teacher as requiring extra support with basic principles encouraged to use the Catch up Maths scheme or other appropriate program both at home and in school (one to one at an additional cost to parents. Where parents are unable to pay for one to one support books can still be purchased through the school and for the parents to manage the program at home).

7 Assessment and recording

7.1 We assess children's work in mathematics from three aspects (long-term, short-term and medium-term). We make short-term assessments, which we use to help us adjust our daily plans for each child. These short-term assessments are closely matched to the teaching objectives.

7.2.1 We make medium-term assessments and use the half-termly assessment tests provided within the scheme to measure progress against the key objectives, and to help us plan the next unit of work.

7.3 We make long-term assessments annually using NFER, we use this 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. 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.

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7.4 Children's work is scrutinised regularly in staff meetings and assessment results are collated and monitored by the subject leader.

8 Resources

8.1 There is a range of resources to support the teaching of mathematics across the school. All classes have access to a wide range of age and ability related small apparatus. The library contains a range of books to support children's individual learning. A range of software is available to support work with the computers and Interactive White Board.

9.0 Monitoring and review

The role of subject leaders is to:

- provide a strategic lead for the subject with the aim of improving standards;
- offer support and advice to colleagues on the subject;
- monitor pupil progress in that subject area across the school through observations and discussion with staff and children. Also through leveling and scrutinizing work;
- review the way the subject is taught at the school and plan for improvement;
- understand current standards in the subject across the school and how this compares to expected targets;
- plan how we are going to improve standards in conjunction with staff and the Headteacher;
- provide efficient resource management for the subject;
- review the curriculum plans for the subject and ensure that there is coverage of the National Curriculum, where we feel it is appropriate, and that progression is planned into schemes of work;
- to keep up to date with the developments in the subject at both national and local level;
- keep detailed information on their subject in a subject leader file;
- work with the Headteacher to produce a development plan for the subject which links the whole school objectives;
- review policy annually;

The school gives subject leaders non-contact time, so that they can carry out the necessary duties involved with their role.

This policy is the Headteacher's ongoing responsibility and reviewing its effectiveness annually in consultation with the staff.

Signed Headteacher: *Sally Cox*

Date: 4.8.21