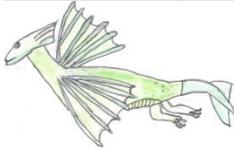


BOREHAM PRIMARY SCHOOL
A Friendship School

'Daring to aim high, scale new heights, spread our wings and fly far'



MATHEMATICS

POLICY

APRIL 2019

Staff Consulted: 11.3.19

Approved by Governing Body: 25.3.19

Next Review Date: April 2021

Boreham Primary School

Mathematics Policy

1 Aims and Objectives

1.1 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. 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 Our objectives in the teaching of mathematics are:

- to promote enjoyment of learning through practical activity, exploration and discussion;
- to promote confidence and competence with numbers and the number system;
- to develop mathematical fluency, including mental maths skills;
- 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 help children understand the importance of mathematics in everyday life;
- to develop the cross-curricular use of mathematics in other subjects.

2 Teaching and Learning Style

2.1 The school uses a variety of teaching and learning styles in mathematics. Our principal aim is to develop children's knowledge, skills and understanding. During our daily 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, Numicon, digit cards and small apparatus to support their work. ICT is used in mathematics lessons for modelling ideas and methods. Wherever possible, we encourage the children to apply their learning to everyday situations.

2.2 In all classes, children have a wide range of mathematical abilities. 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, aids to support thinking and in other lessons by organising the children to work in pairs on open-ended problems or games. We use classroom assistants to support some children, and to ensure that work is matched to the needs of individuals, whilst still aiming to fully embed a 'Mastery curriculum', where every child

3 Mathematics Curriculum Planning

- 3.1 Mathematics is a core subject in the National Curriculum, and we have adapted our planning to reflect the expectations of the new National Curriculum (Sept 2014) and to ensure coverage of the statutory requirements of the programme of study for mathematics.
- 3.2 We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). As a school, we have adopted the White Rose Hub mathematics planning documents, which include lesson objective breakdowns. In addition, we use other available online resources to supplement the White Rose Hub resources, including Twinkl and Classroom Secrets.
- 3.3 Our medium-term mathematics plans, which are adopted from the National Curriculum and the White Rose Hub mathematics planning documents, give details of the main teaching objectives for each term and thus define what we teach. They ensure an appropriate balance and distribution of work across each term.
- 3.4 It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives and expected outcomes for each lesson, and give details of how the lessons are to be taught. They may also identify the use of ICT and group mathematics targets. The class teacher keeps these individual plans. They are submitted to the subject leader for monitoring when appropriate.
- 3.5 We plan the activities in mathematics so that they build on the children's prior learning. While we give children of all abilities the opportunity to develop their skills, knowledge and understanding, we also plan progression into the scheme of work, so that there is an increasing challenge for the children as they move up through the school. We adopt a mastery curriculum, where depth and breadth is valued.

4 The Foundation Stage

- 4.1 We teach mathematics in our reception class, based on the Early Years Foundation Stage Profile (2014). 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

The teaching of mathematics contributes significantly to children's understanding of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, in mathematics lessons, we expect children to read and interpret problems, in order to identify the mathematics involved. They are also improving their command of English when they explain and present their work to others. 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.

5.2 Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of PSHE 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 mathematics work on the spending of money.

5.3 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.

6 Mathematics and ICT

6.1 Information and communication technology enhances the teaching of mathematics significantly, because ICT is particularly useful for mathematical tasks. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. Children use ICT to communicate results with appropriate mathematical symbols; they use it to produce graphs and tables when explaining their results, or when creating repeating patterns, such as tessellations. 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. The addition of iPads has meant that maths apps can also be used in the classroom.

7 Mathematics and Inclusion

- 7.1 At our school, we teach mathematics to all children, whatever their ability and individual needs. 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, as outlined by the mastery curriculum. 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).
- 7.2 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. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels (as tracked using Target Tracker software). This ensures that our teaching is matched to the child's needs.
- 7.3 We enable all pupils to have access to the full range of activities involved in learning mathematics. We encourage the children to participate in activities outside the classroom, such as by using our extensive playground markings or by completing a 'maths trail', for example.

8 Assessment of Learning and Assessment for Learning

- 8.1 Teachers will assess children's work in mathematics from three aspects (long-term, medium-term and short-term). We use short-term assessments to help us adjust our daily plans. These short-term assessments are closely matched to the teaching objectives.
- 8.2 We use marking and planning annotations to review progress towards the key objectives, and to help us plan the next unit of work. We make half-termly assessments of children's progress measured against the descriptions of the National Curriculum using PUMA assessments (or previous KS1/KS2 assessments in Years 2 and 6). Teachers enter the steps in which children are working at into our school tracking software on a half-termly basis.
- 8.3 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 PUMA assessments for children at the end of Years 3, 4 and 5.

- 8.4 Teachers meet regularly to review and discuss children's progress against the national exemplification material which is in line with the new National Curriculum expectations.
- 8.5 Children in Key Stage One and Key Stage Two are encouraged to self-assess their learning against the learning objective using the traffic light system. Older children are encouraged to make judgements about how they can improve their own and each other's work.
- 8.6 Teaching staff and Learning Support Assistants meet during each half-term to discuss key teaching and learning opportunities and to review learning of specific groups of children towards meeting their targets.

9 Resources

- 9.1 All classrooms have a number line or hundred square (either displayed or accessible to the children) and a wide range of appropriate small apparatus, including 2-D and 3-D shapes. Upper Key Stage Two classes have class sets of calculators, mirrors and protractors. The remaining mathematics resources and aids are available from the central storage area outside the Key Stage Two classrooms. A range of ICT software is available to support learning both in the classroom, in the ICT suite and when using the bank of laptops.

10 Monitoring and Review

- 10.1 The co-ordination and planning of the mathematics curriculum are the responsibility of the subject leader, who also:
 - supports colleagues in their teaching, by keeping informed about current developments in mathematics, and by providing a strategic lead and direction for this subject;
 - gives the headteacher an annual subject development plan in which s/he evaluates the strengths and weaknesses in mathematics, and indicates areas for further improvement;
 - uses fortnightly allocated subject leadership time to review evidence of the children's work, and to observe mathematics lessons across the school.
 - meets with teaching staff during Pupil Progress Meetings to review progress and group targets.

- 10.2 The quality of teaching and learning in mathematics is monitored and evaluated by the headteacher and subject leader as part of the school's agreed cycle of lesson observations.
- 10.3 A named member of the school's governing body is briefed to oversee the teaching of mathematics. The mathematics governor meets regularly with the subject leader to review progress.
- 10.4 This policy will be reviewed at least every two years.