



# SHANKLEA PRIMARY SCHOOL

## Mathematics Policy

SPS

### Policy Control Details

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Approved for issue by:	Gareth Pearson	Signature	Date
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# Shanklea Primary School Mathematics Policy

## Aims

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.

### The aims of teaching 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 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.

## Teaching and learning style

The school uses a variety of teaching and learning styles in order to address learning preferences, stimulate and maintain interest levels. Our principal aim is to develop children's knowledge, skills and understanding whilst at the same promoting enjoyment, enthusiasm and intrigue in the subject. 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 supportive and stimulating resources in their work as well as access relevant interactive classroom displays. ICT is used in lessons for modelling ideas, methods and providing reinforcement/extension opportunities for group and individual work. As much as possible, we encourage the children to apply their learning to everyday situations.

Within the constraints of this organisation, we recognise that there remains a wide range of mathematical abilities and so we provide suitably differentiated 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/individually on extension work, open-ended problems and games. Whenever possible we use adult support to encourage some children, and to ensure that work is matched to the needs of individuals. This policy of support and encouragement is inclusive and applies to children considered to be of average and higher ability as well as those with learning difficulties.

## **Mathematics curriculum planning**

Mathematics is a core subject in the National Curriculum, and we use the National Numeracy Strategy as the basis for implementing the statutory requirements of the programme of study for mathematics.

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The National Numeracy Strategy Framework for Teaching gives a detailed outline of what we teach in the long term, while our yearly teaching programme identifies the key objectives we teach to in each year.

Our medium-term mathematics plans, which are adopted from the Framework, and give details of the main teaching objectives for each term, define what we teach. They ensure an appropriate balance and distribution of work across each term.

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. The class teacher keeps these individual plans, and the class teacher and subject leader may discuss them.

### **The Foundation Stage**

We teach mathematics in our nursery and reception classes. As the classes are part of the Foundation Stage of the National Curriculum, we relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals, which underpin the curriculum planning for children aged three to five. 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.

### **Contribution of mathematics to teaching in other curriculum areas**

#### **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 during plenary sessions. 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.

#### **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 the children with real-life situations in their mathematics work on the spending of money.

### **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. Key stage Two children may be presented with some facts about some of the famous mathematicians around the world and this contributes to the cultural development of our children.

### **Mathematics and ICT**

Information and communication technology enhances the teaching of mathematics significantly, because ICT is particularly useful for mathematical tasks. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly at their own level of understanding. They may use ICT to communicate results with appropriate mathematical symbols; 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 as well as apply their understanding of position and movement.

### **Mathematics and Inclusion**

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. We strive 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.

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, 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. This ensures that our teaching is matched to the child's needs.

## **Assessment for learning**

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.

We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work linked to a specific area of mathematics. These assessments are carried out each term and are stored in individual pupil records which are reviewed by the Assessment Co-ordinator, Headteacher and Senior Leadership Team.

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 finally reporting this in their annual report. 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, and the optional national tests for children at the end of Years 3, 4 AND 5 .

Samples of children's work are kept centrally for reference and comparison.

## **Resources**

Teachers use a range of practical apparatus to support and enhance the teaching of Mathematics and Maths On Target text books are used throughout Key Stage Two. These resources include number lines, hundred squares and place value apparatus. Additional resources are also used to teach shape and fractions. A range of resources are available on the School 360 platform. These are used in lessons and the children are encouraged to also access these at home. Apps are available on the I pads and the children also have access to My Maths. Weekly mental maths tests are used throughout key stage 2 and the Maths Mountain is used across school to reward children on their mental maths skills.

The Every Child Counts programmes for success @ number 1 and 2 and success @ arithmetic are used throughout school when children are identified as needing extra support with Mathematics.

## **Monitoring and review**

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the numeracy co-ordinator.

- The role of the co-ordinator also involves supporting colleagues in their teaching, being informed about current developments in the subject, and providing a strategic lead and direction for mathematics in the school.

- The co-ordinator gives the headteacher an annual summary in which she evaluates strengths and weaknesses in the subject, and indicates areas for further improvement. As a post Ofsted requirement, the coordinator measures impact on overall standards.
- The headteacher allocates management time to the co-ordinator so that she can review samples of children's work. On an annual basis, and linked to school improvement priorities, the coordinator undertakes lesson observations of mathematics teaching across the school. In addition, mathematical coaching cycles are established and reviewed on an annual basis.
- A named member of the school's governing body is briefed to oversee the teaching of numeracy. Focus visits occur to measure the impact of initiatives. This governor meets with the subject leader to review progress on an annual basis. The numeracy coordinator meets with the full governing body to share the annual action plan.

This policy will be reviewed on an annual basis.

