

CANTRELL PRIMARY AND NURSERY SCHOOL



MATHEMATICS POLICY

January 2017

At Cantrell our aim is for every child, whatever their background or circumstances, to have the support they need to:

- Be healthy
- Stay Safe
- Enjoy and achieve
- Make a positive contribution
- Achieve economic well-being

The five outcomes are universal ambitions for every child and young person, whatever their background or circumstances. Improving outcomes for all children and young people underpins all our work.

The outcomes are mutually reinforcing. Children learn and thrive when they are healthy, safe and engaged; and the evidence shows clearly that educational achievement is the most effective route out of poverty.

In Mathematics we address the enjoy and achieve strand, with children enjoying school and achieving stretching national educational standards whilst at primary school. We also address the making a positive contribution strand by developing self-confidence and successfully dealing with significant life changes and challenges. In addition, we address the economic well-being strand by enabling children to engage in further education, employment or training on leaving school, making children ready for employment, giving children access to transport and material goods, and children living in households free from low income.

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.

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, including different cultures

2 Teaching and learning style

2.1 The school uses a variety of teaching and learning styles (VAK) in mathematics lessons. Our principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has whole-class and some group teaching. 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. Mathematical dictionaries are available in most classrooms. Children use ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. 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 classroom assistants to support some children and to ensure that work is matched to the needs of individuals. In Year 3,4,5 and 6 children work in flexible target groups according to need.

3 Mathematics Curriculum Planning

3.1 Mathematics is a core subject in the National Curriculum.

3.2 We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The curriculum for Mathematics gives a detailed outline of the objectives that we teach in the long term.

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

Across the school weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. They identify key questions, ICT use and opportunities for problem solving. They also show links to other curriculum areas.

4 The Foundation Stage

4.1 We relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals, which outline 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. We base activities around problem solving and give children opportunities to use and apply their knowledge and understanding. As speaking unpins all areas of learning in the Early Years curriculum we actively encourage children to use mathematical vocabulary and weave this into our topic work wherever possible.

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. Younger children enjoy stories and rhyme that rely on counting and sequencing, this includes rhymes in different languages and from a variety of cultures. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

5.2 Information and communication technology (ICT)

Children use and apply mathematics in a variety of ways when solving problems using ICT. Younger children use ICT 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. Key Stage 1 and 2 use Mathletics to enhance and develop mental maths skills and revise work on different areas both at school and home. Dynamo Maths is being used as an intervention to support mathematical development incorporating visual and auditory skills. Year 5 and 6 use MyMaths website to support teaching and learning.

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 children with real-life situations in their work wherever possible.

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.

5.5 Home Study

Homework is provided in all year groups which relates to the current mathematics topic being taught. The amount and level of homework will meet the needs of the children it is provided for. Also Mathematics activities may be used and set as additional homework. In Upper KS2 My Maths is used to support in class and used as additional home study.

6 Teaching mathematics to children with special educational needs (including Gifted and Talented)

6.1 At our school we teach mathematics to all children, whatever their ability. 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 progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels.

6.2 When progress falls significantly outside the expected range, it may be an indicator of a special educational need. 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. This ensures that our teaching is matched to the child's needs.

Children on the SEN list will have an Individual Provision Map (IPM). The IPM may include, as appropriate, specific targets relating to mathematics. Where appropriate we involve external agencies who provide their expert advice and offer support to enable children to overcome barriers to learning.

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

7 Progress, 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. These short-term assessments are closely matched to the teaching objectives.

7.2 We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work. Targets are based on areas of need identified by the previous year's data analysis and progress towards these is assessed. Children are assessed for levels three times a year with the results being recorded on the class tracker (SIMs). Targets for each class are based on children progressing in accordance with age related expectations.

7.3 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. 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 the optional national tests for children at the end of Years 3, 4 and 5. We also make annual assessments of children's progress measured against the level descriptions of the National Curriculum.

7.4 The mathematics subject leader can assess samples of children's work at three levels. This demonstrates what the expected level of achievement is in mathematics in each year of the school.

8 Resources

8.1 There is a range of resources to support the teaching of mathematics across the school. These resources are stored centrally and are accessible to all year groups.

9 Monitoring and review

9.1 Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the mathematics subject leader. The work of the mathematics subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The mathematics subject leader gives the Head Teacher an annual summary in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The Head Teacher allocates leadership time to the mathematics subject leader so that s/he can review samples of children's work and undertake lesson observations of mathematics teaching across the school.

A named member of the school's governing body is briefed to oversee the teaching of numeracy. This governor meets with the subject leader to review progress termly and receives a written commentary which reports on:

- recent development work
- performance analysis
- pupil outcomes in relation to development priorities, their impact on teaching and learning, and future developments.

Governors are also invited to monitor the effectiveness of the school through a variety of other activities including learning walks and classroom observations as per the Monitoring and Evaluation framework in the School Improvement Plan.

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