



# Numeracy Policy

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**November 2017**

<b>Signed (Chair of the Local Governing Body):</b>	
<b>Date:</b>	<b>November 2017</b>
<b>Date of Review:</b>	November 2018

*The Arbor Academy Trust reviews this policy annually. The Trustees may, however, review the policy earlier than this, if the Government introduces new regulations, or if the Trust receives recommendations on how the policy might be improved. This document is also available in other formats e.g. e-mail and enlarged print version, on request to the School Offices and is displayed on the schools' websites.*

## **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.

## **2. Teaching and Learning**

- 2.1 The Trust uses a variety of teaching and learning styles 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 a high proportion of whole-class and group-direct 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. Children use ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. Calculation skills are taught through word problems and investigations are taught at least every 2 weeks. This is to encourage the use and application of skills.
- 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.
- 2.3 Guided Maths is used to support mental maths strategies and to close gaps in understanding. This is taught in small, flexible groups and is linked to the specific needs of the children within the group.

## **3. Mathematics Curriculum Planning**

- 3.1 Mathematics is a core subject in the National Curriculum, and we use the New Davies Lane, Selwyn and Acacia Scheme of work, which is based on the National Curriculum as the basis for implementing 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). The new Davies Lane, Selwyn and Acacia Scheme of work sets out the topics and objectives to be taught each week.
- 3.3 Our medium-term mathematics plans, which are adopted from the framework and give details of the main teaching topics for each term and 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 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 often discuss them on an informal basis. Where possible each topic is taught through word problems and investigations.

#### **4. The Foundation Stage**

- 4.1 We teach mathematics in our reception class. As the class is 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.

#### **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. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.
- 5.2 **Computing** - 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. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships.
- 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.

## 6. **Teaching mathematics to children with special needs**

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. Work in mathematics takes into account the targets set for individual children in their Pupil Profiles.

## 7. **Assessment and recording**

7.1 We assess children's work in mathematics from two aspects (long-term, short-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 long-term assessments towards the end of each term, and we use these to assess progress against school and national targets. Children are assessed using the targets, which are based on the expectations from the National Curriculum, to ensure that all targets are covered. We 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.

7.3 Each child is given a grade such as emerging, develop, secure or mastery based on teacher assessments; these are monitored for progress to ensure each child makes the required movement each year.

## 8. **Resources**

8.1 There is a range of resources to support the teaching of mathematics across The Trust. All classrooms have a number line and a wide range of appropriate small apparatus. Calculators are kept in upper Key stage 2, with years 5 and 6 having a class set. The Numeracy room has a range of equipment, posters and books to support teaching. A range of software is available to support work with the computers.

## 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 within The Trust. The mathematics subject leader gives the Executive Headteacher an annual summary in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The Head of School allocates regular management 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 regularly with the subject leader to review progress.