



Mathematics Policy

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This policy outlines the teaching, organisation and management of mathematics at Avondale Primary School. The school's policy is based on the new Primary Curriculum for Mathematics. It sets out a framework within which teaching and non-teaching staff can operate and gives guidance on planning, teaching and assessment.

This document is intended for all teaching staff, school governors and parents.

Intent

The intent of our mathematics curriculum is to design a curriculum which is accessible to all and will maximise the development of every child's ability and academic achievement. 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. We want children to make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. Through their growing knowledge and understanding, we want children to learn to appreciate the contribution made by many cultures to the development and application of mathematics. We want them to know that it is essential to everyday life, critical to science, technology and engineering and necessary for financial literacy and most forms of employment. We want our children to appreciate the beauty and power of mathematics and a sense of enjoyment and curiosity about the subject.

Aims

The aims of mathematics are:

- to promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- to use the concrete, pictorial, abstract (CPA) approach.
- to promote confidence and fluency with numbers and the number system;
- to explore features of geometry, and develop measuring in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- to be able to work systematically, co-operatively and with perseverance;
- to be able to communicate with peers and adults, ideas, experiences, questions, clearly and fluently, using appropriate mathematical language;
- to be able to reason, think logically and independently.
- to understand the importance of mathematics in everyday life.

Implementation, Teaching and Learning

The school uses a variety of teaching and learning styles in mathematics lessons. Our principal aim is to develop children's knowledge, skills, enthusiasm 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. We use a variety of equipment to develop their learning and deeper understanding such as Numicon, number lines, hundred squares, base ten equipment. We deliver lessons through the *Power Maths* scheme. 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 across the curriculum and in everyday situations.

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 adopt a low threshold, high ceiling

approach to our Maths lessons, giving every child the chance to reach their potential. We achieve this through differentiated questioning, tasks and group work. In some lessons, children are organised in pairs/ small groups to work on open-ended problems or games. We use classroom assistants to support children's learning. We ensure that work is matched to the needs of individuals and that children are challenged in their mathematical approaches and thinking by adopting a mastery approach to our teaching.

Mathematics is covered daily with a minimum of 3.5 hours (KS1) and 4.5 hours (KS2) dedicated to mathematics per week.

Each year group sets a piece of Maths work per week and children are expected to use TT Rockstars regularly as part of their homework.

Mathematics curriculum planning

Mathematics is a core subject in the National Curriculum, and we use the New Curriculum for Mathematics 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 Curriculum programmes of study gives a detailed outline of what we teach in the long term.

Our medium-term mathematics plans, are developed from Power Maths inline with the programmes of study from the National Curriculum. They ensure an appropriate balance and distribution of work across each term. This assists teachers in the planning for those emerging, meeting expectations and exceeding.

Short term weekly plans are written by teachers, detailing the objectives covered, how children are being supported and challenged and any resources that are required. These are adapted from the *Power Maths teachers* guides which teachers use to support their teaching. The class teacher keeps and annotates these individual plans, and the class teacher and subject leader may discuss them as part of the monitoring cycle. Specific interventions may be included as part of or outside the daily maths lesson as necessary.

Foundation Stage

We teach mathematics in our reception classes via the Power Maths scheme. The scheme matches Development Matters and the Early Learning Goals. 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

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. The Power Maths textbooks and workbooks encourage children to read and understand a variety of both mathematical and non-mathematical vocabulary. Part of the lesson sequence gives children the chance to reason, explain and justify their thinking both in pairs and larger groups. Younger children enjoy stories and rhymes that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

Computing

Children use and apply mathematics in a variety of ways when solving computing and maths problems for example in simple coding problems. Children also use a variety of computer programmes to develop mathematical skills such as Bee\bots (direction and coordinates), Sum Dog (maths skills using the four functions, shape and space) and Primary Games. Children from Years 1 -6 use i-Pads and computers as regular part of their mathematics lessons in order to extend and reinforce the maths that is being taught.

Personal, social and health education and citizenship

The mathematics curriculum ensure that the activities that children do within the classroom encourage them to work together and respect each other's views but also to challenge each other respectfully. In order to develop financial responsibility, we present the children with real-life situations in their work on the spending of money. Our school also follows the Money Matters programme. Lessons are delivered to Years 5 and 6 in which the children learn about how to budget and manage 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 with a variety of children, and we give them ample opportunities to discuss their ideas and results. We want them to enjoy success and build self-esteem.

Science

Mathematics enhances the teaching of the Science curriculum. The children are required to apply their mathematics skills, particularly those of data handling, problem solving, systematic and logical thinking, in a range of scientific contexts.

Teaching mathematics to children with SEND

All children are included in the teaching of mathematics, whatever their needs. 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 Individual Education Plans (IEPs). Specific interventions are planned, delivered and evaluated as necessary. Amendments are made in

lessons for children with SEND in order for them to access and the Maths curriculum and achieve their full potential. The progress of children with SEND is tracked on a termly basis to ensure they are making good progress.

As a school we use a CPA approach to enhance our learning in mathematics; where appropriate children are encouraged to use the resources scaffold their learning. Visual prompts are used to support the learning of vocabulary in maths. Where concerns are raised regarding difficulties in learning in mathematics, assessments are carried out to identify any specific learning difficulties such as Dyscalculia and the relevant interventions are put in place.

Pupil Premium

The teaching of maths for pupil premium children is closely monitored and reviewed as part of the pupil progress cycle. For those children who are not making the expected progress interventions are arranged. Pupil Premium children are a focus for same day interventions.

Assessment, impact, recording and reporting.

We assess children's work in mathematics from three aspects (short-term, medium-term and long-term).

Short term assessments are made on a daily basis, both during the lesson (through verbal discussions, group work and on the spot marking) and after the lesson (through marking of books). These judgements are used to inform next steps in the children's learning and any interventions that are required. This can be through VF discussions, evaluating group work with TAs, self-assessment of the child's own work.

Medium term assessments are made at the end of each unit of work, using the assessment units. These are used to check children's understanding and plug any gaps that arise to ensure that children can keep up with their learning.

Long term assessments are made at the end of each term, during assessment weeks. Each year group completes Arithmetic and Reasoning tests that assess year group objects and mirror the end of Key Stage tests. The results of these are inputted into Target Tracker to enable us to monitor and track both individuals and groups of children and their progress. These results are used to set targets in the Autumn Term for each new academic year.

Parents are reported to at the end of the Autumn, Spring and Summer Terms with details of where their child is in relation to age related expectations. Parents are also updated on their child's progress at Parents' Evenings in both Autumn and Spring Terms.

Feedback in lessons and books

Feedback during Maths lessons will be given verbally to the whole class, small groups and individuals when necessary. Children are expected to act upon this feedback, with support if needed, to improve their work in a timely manner.

In books, there will be a variety of self-marked, peer marked and teacher marked work. Next steps will be used to further the children's learning and may take the form of same day interventions, targeted group work, individual fix its or as part of the sequence of lessons. All work will receive some form of feedback.

Management, monitoring and review

Monitoring of children's progress begins with performance review meetings but continues with the subject leader evaluating further evidence to ensure children are making progress. This monitoring happens through examination of work in books, pupil interviews, analysis of assessment results and the assessments used.

Following monitoring activities, feedback is given to staff about how they can strengthen their practice and CPD (professional development) opportunities are built in where it would be deemed valuable. This would usually take place in feedback meetings after the observation of an individual and for more general matters in the forum of a staff meeting/twilight. It may also form part of performance management programme.

The work of the mathematics lead 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 mathematics in the school.

Where specific initiatives have been put in place through action planning for school development, these are monitored by the subject leader in order to evaluate their impact. The mathematics lead gives the head teacher and governing body a termly summary which evaluates the strengths and weaknesses in the subject and identifies areas for further improvement. This continues to inform the school development plan and subject action plan.

Other policies and documents to be read in conjunction with the Maths Policy:

Calculation policy
National Curriculum 2014
Teaching and Learning Policy
Marking Policy
SEND Policy
Homework Policy
EYFS FSP Development Matters