

Wrenthorpe Academy

Mathematics Policy Statement



Mathematics equips our pupils with a uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem-solving skills and the ability to think in abstract ways. Mathematics is a creative discipline. It can stimulate moments of pleasure and wonder when our pupil solves a problem for the first time, discovers a more elegant solution to that problem, or suddenly sees hidden connections.

The mathematics teaching at Wrenthorpe is geared towards enabling each pupil to develop and master skills within their capabilities; not only the mathematics skills and understanding for later life, but also an enthusiasm and fascination about mathematics itself.

We aim to increase pupil confidence in mathematics so that they are able to express themselves and their ideas, make connections and form generalisations using the language and symbolism of mathematics with assurance.

We are continually aiming to raise the standards of achievement of the pupils at Wrenthorpe Academy.

In Reception, the curriculum is guided by the Early Learning Goals, which mirror the Foundation Learning Objectives in the National Curriculum. At KS1 and KS2 we follow the National Numeracy Strategy Framework, which provides detailed guidance for the implementation of the Key Performance Indicators and ensures continuity and progression in the teaching of mathematics. The National Curriculum Order for mathematics describes what must be taught at each Key Stage.

Aims and Objectives

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.

Our objectives in the teaching of mathematics are:

- to promote enjoyment of learning through practical activity, exploration and discussion;
- to equip learners to cope with the mathematical challenges of everyday life;
- 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 help children understand the importance of mathematics in everyday life.

Approaches to Learning

At Wrenthorpe Academy we recognise the importance of establishing a secure foundation in mental calculations and recall of number facts before standard written methods are introduced. We look at the National Curriculum when planning to help determine the appropriate vocabulary to use in our teaching and children are expected to use it in their verbal and written explanations when reasoning.

We endeavour to set work that is challenging, motivating and encourages the pupils to talk about what they have been doing.

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, digit cards and small apparatus and manipulatives to support their work. ICT is used in mathematics lessons for modeling ideas and methods. We encourage the application of learning in Mathematics to everyday situations.

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 lessons we adopt a mastery approach using a range of manipulatives to support our learning, 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.

Mathematics Curriculum Planning

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

Planning is undertaken at three levels:

Long term planning is based on the yearly teaching programmes set out in the Framework.

Medium term planning is carried out termly. Teachers select their main teaching objectives from the yearly teaching programme. At Wrenthorpe we recognise the need to revisit topics regularly to revise and consolidate and master skills and then extend them. The objectives are revisited.

Short term planning is carried out weekly. These plans include learning objectives for the mental and oral starter and the main activity, resources to be used, any differentiation,

key vocabulary and key questions. We plan for daily mental maths activities focusing particularly on multiplication tables and key facts.

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.

Reception

We teach mathematics in our Reception Class. We relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goal, 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, practice and talk confidently about mathematics. In every area children have the opportunity to develop and extend their mathematical skills and understanding through planned and self-initiated activities.

Contribution of Mathematics to Teaching in Other Curriculum Areas

Mathematics is taught as a separate subject however links are made with other areas of the curriculum. We try and identify the mathematical possibilities across the curriculum at the planning stage.

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, math's 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 older children with real-life situations in their mathematics 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 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.

Computing

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. 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 can use both standard and non-standard measures for distance and angle. They can also use simulations to identify patterns and relationships.

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 hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents. For further details, see separate policies; Special Educational Needs; Disability Discrimination; Gifted and Talented Children.

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

Intervention through Early Years Action, School Action, Early Years Action Plus, School Action Plus and statementing will lead to the creation of an individual Education Plan (IEP) for children with special education needs. The IEP may include, as appropriate, specific targets relating to mathematics.

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

Assessment for Learning

Teachers assess children during the lesson. Any children that have difficulties are identified and skills/concepts taught again during assembly time – Same Day Intervention (SDI).

We make medium-term assessments to measure progress against the key objectives, and to help us plan the next block of work. We assess before and after each block to track children's progress and identify areas of strength and areas for development.

We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. End of year targets are set at the beginning of each year and children's progress monitored and discussed with the

headteacher every term at pupil progress meetings. We 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 teacher at the end of the year, so that she/he can plan for the new school year.

At pupil progress meetings targets are set for all children and progress discussed. We make the long term assessments with the help of end-of-year tests (NFER) and teacher assessments. We use the national tests for children in Year 2 and Year 6. Older children are encouraged to make judgments about how they can improve their own and each other's work.

Resources

All classrooms have a working wall and a wide range of appropriate small apparatus/manipulatives. Every class has set of numicon to support children with their learning. A range of software is available to support work with the computers.

Monitoring and Review

The coordination 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;
- Provides an annual summary report in which we evaluate the strengths and weaknesses in mathematics, and indicates areas for further improvement;
- Uses specially allocated regular management time to review evidence of the children's work, and to observe mathematics lessons across the school.
- To assist in the development of school development plan and create action plans to support.
- To be aware of data and asses and monitor the progress of pupils.