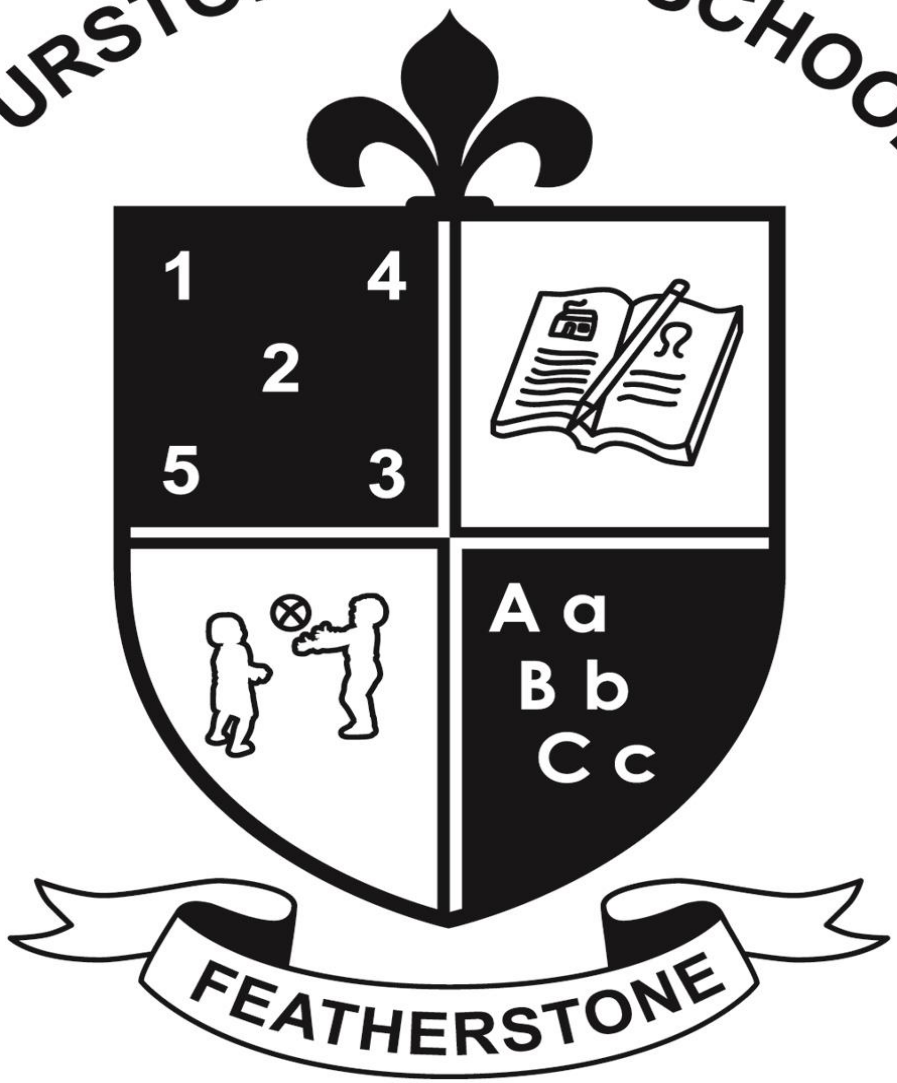
PURSTON INFANT SCHOOL



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Mathematics Policy

At Purston we teach our children using a mastery approach. We encourage all children to work towards achieving mastery in maths by providing activities that build upon concrete, pictoral and abstract opportunities. We strive for our children to acquire a deep, long-term and secure understanding of mathematical concepts. Providing opportunities to develop fluency within maths and ensuring children have the opportunity to embed their mathematical knowledge through meaningful reasoning and problem solving activities whilst challenging children's thinking through questioning.

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 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;
- to develop the cross-curricular use of mathematics in other subjects.

Teaching and learning style

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 to support their work. ICT is used in mathematics lessons for modelling ideas and methods. Wherever possible, we encourage the children to apply their learning to everyday situations.

In all classes, children have a wide range of mathematical abilities. We recognise this fact and children are taught accordingly. 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.

Mathematics curriculum planning

Key Stage 1

Mathematics is a core subject in the National Curriculum.

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term).

KS1 follow the 'Maths Hub' programme in order to ensure coverage of all areas of Mathematics in Years 1 and 2. These plans are kept and reviewed by the subject leader.

We plan the activities in mathematics so that they build on the children's prior learning and to enable children to become fluent in number. 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.

The Foundation Stage

We teach mathematics in our Foundation Stage. We relate the mathematical aspects of the children's work to the objectives set out in the Development Matters, 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 older 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.

Mathematics and 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. They can also use simulations to identify patterns and relationships.

SEND

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 and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details, see separate policies: Special Educational Needs; Disability Discrimination; Gifted and Talented Children; English as an Additional Language (EAL).

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

Intervention through School Support will lead to the creation of one page profiles for children with special educational needs. The one page profile 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 'maths 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 and Recording

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. The interim assessment grid is used to track target groups in Year 2.

We make assessments on a termly basis which are saved on OTrack we use these outcomes to assess pupils progress against whole school and individual

targets. This allows teachers to target any children falling behind through tailored intervention.

Termly assessments enable teachers to set targets for the next term and make a summary of each child's progress before discussing it with parents and carers. At the end of the school year we pass this information on to the next teacher, so that s/he can plan for the new school year.

We make our assessments with the help of end-of-year tests and teacher assessments. We use the national tests for children in Year 2. We also make annual assessments of children's progress measured against the level descriptions of the National Curriculum. The LA is informed of end of year outcomes.

In the early years we assess children against the Early Learning Goals, this informs the Early Years Profile.

The mathematics subject leader keeps samples of children's work in a portfolio. This demonstrates the expected level of achievement in mathematics in each year of the school. Teachers meet regularly to review individual examples of work against the National Curriculum.

Children are encouraged to make judgements about how they can improve their own and each other's work.

Resources

All classrooms have a number line and a wide range of appropriate small apparatus. We have resources available throughout school in order to provide children with 'concrete' objects to ensure this phase in their learning is embedded. Some examples of these manipulatives include, Numicon, blocks, counters, small world resources, Base 10 and number beads.

When moving onto the pictoral and abstract concepts children are encouraged to use ten frames, part part whole model, number lines and 100 squares. However, children are encouraged to use manipulatives until they are confident in specific concepts.

A range of software is available to support work with 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;
- gives the headteacher feedback in which s/he evaluates 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.

The quality of teaching and learning in mathematics is monitored and evaluated by the headteacher as part of the school's agreed cycle of lesson observations.