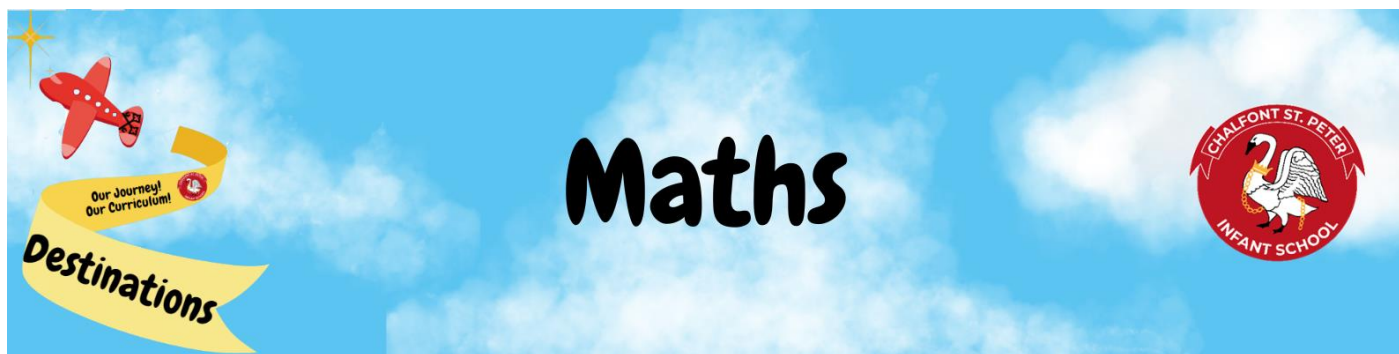




Mathematics Policy

Mathematics helps children develop their ability to calculate, reason and solve problems. It enables children to understand relationships in Number, Measure, Space and Data handling. Mathematics encourages natural curiosity, thinking and reasoning skills and develops the confidence to tackle problems which arise not only in mathematics but other areas of the curriculum.

Our aims in teaching Mathematics are that all children will:

- enjoy the subject through practical activity, exploration and discussion
- study it with confidence, competence and a sense of achievement
- understand the fundamentals of Mathematics and develop the ability to recall and apply knowledge rapidly and with accuracy
- solve problems by applying their mathematical knowledge with increasing complexity, including breaking down problems into a series of simpler steps and persevering in seeking solutions
- reason mathematically by following a line of enquiry

Principles of the Teaching and Learning of Mathematics

Mathematics is a core subject in the National Curriculum. The fundamental skills, knowledge and concepts of Mathematics are set out in the National Curriculum programmes of study. These are organised into distinct domains although pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly complex problems. They should apply their mathematical skills and knowledge to other subjects across the curriculum.

Mathematics in the Early Years Foundation Stage

The development of Mathematics is an important area of experience for children in Year R. Mathematics is covered as one of the seven areas of learning in the revised Early Years Foundation Stage Curriculum. It is one of the four 'Specific Areas' of development. The children in Year R are taught Mathematics formally in the afternoons, however Mathematics is taught primarily by learning through play. We provide children with a rich environment in order 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.

Mathematics in KS1

Our children have daily Maths lessons during which they are taught specific skills and have the opportunity to practise them in different contexts such as number sentences presented in different ways and problem solving. They also have frequent mental and oral Maths sessions where they are continually developing their knowledge of number facts and improving their counting skills. They are given opportunities and encouraged to explain their ideas and talk about the work they are doing.

Pupils follow the 2013 National Curriculum <https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study>

The curriculum is divided into these areas:

Number – Number and Place Value, Addition and Subtraction, Multiplication and Division, Fractions

Measurement

Geometry – Properties of Shape, Position and Direction

Statistics (Year 2 only)

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, Mathematics 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, Health and Citizens Education (PSHCE)

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.

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

To support the teaching of direction, bee-bots and pro-bots are used to introduce the terminology of left, right, quarter turn, half turn and three quarter turn. Teachers may use computing lesson to allow children to play mathematical games linking to prior learning.

Strategies for the Teaching of Mathematics

The principle focus of Mathematics teaching in KS1 is to ensure that pupils develop confidence and mental fluency with whole numbers, fractions of numbers, counting and place value. This involves working with numerals, words and the four operations. Practical resources such as concrete objects and measuring tools are essential for young children. At this stage pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use related vocabulary. Teaching also involves using a range of measures to describe quantities such as length, mass, capacity/volume, time, temperature and money. Pupils read and spell mathematical vocabulary at a level consistent with their increasing word reading and spelling knowledge at KS1.

Long term plans reflect school priorities as agreed by staff and show objectives. Medium term plans are developed within year groups and reflect the needs of the cohort and/or class taking into account the appropriate programmes of study and non-statutory guidance. Pupils who grasp concepts rapidly are challenged through extension activities that allow the children to explain their reasoning and use mathematical skills to solve investigations.

Teaching is based on the following key principles:

- dedicated Mathematics lessons
- direct teaching and interactive oral work with the whole class and groups;
- mental calculation and rapid recall to develop fluency;
- appropriate differentiation, with all pupils engaged in Mathematics relating to a common theme

Methods of Teaching

Teachers focus on direct teaching and questioning of the whole class, a group of pupils, or individuals within guided group work. Good direct teaching is achieved by balancing the following elements: directing,

instructing, demonstrating, explaining and illustrating, questioning and discussing, consolidating, evaluating pupils' responses and summarising. Children must be encouraged to explain their thinking, discuss their work, hypothesise and justify with a strong emphasis on the development of oral skills and good learning attitudes. Learning Support Assistants work with the teacher to support the teaching of Mathematics and also provide extra help and support for children with particular needs, by means of differentiated activities. They also lead intervention groups.

Assessment in Mathematics

Learning Ladders is used to support assessment for learning within Key Stage 1 and Early Years. Teachers review progress on a half termly basis and in KS1 tests are carried out termly. Within the EYFS all children are assessed against the Early Learning Goals at the end of Year R, these assessments are supported by observations which are uploaded to Tapestry. This assessment enables staff to know the level at which the children are working and establish next steps against Development Matters. Regular moderation sessions are held within and across year groups.

At the end of each lesson (KS1), teachers mark the children's work and state whether the child met the learning objective, is working towards the learning objective or did not meet the Learning Objective. In Year R, teacher record observations of Maths on Tapestry. In Year 1 and 2 termly assessments are carried out which enable children to apply their mathematical knowledge. Teachers use these assessments to support planning and revisit areas where necessary. At the end of the year assessments are shared with the next teacher to support them with their planning for the new year. Parents receive verbal reports and Maths targets twice a year and a written report with details of achievement, progress, strengths and weaknesses and next steps of learning.

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

Children have a wide range of mathematical abilities and teachers 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 Learning Support Assistants to support some children and ensure that work is matched to the needs of individuals.

We enable all pupils to have access to the full range of activities involved in learning mathematics. Teachers plan engaging lessons, some which allow the children to use practical resources to show their knowledge and understanding. Children also enjoy participating in activities outside the classroom for example a counting trail and shape hunt.

Mathematics curriculum planning

Mathematics is a core subject in the National Curriculum, which is the basis for implementing the statutory requirements of the programme of study for mathematics.

We use White Rose Maths to support our planning. We use the long-term plan which is then broken down into smaller steps. Teachers use these steps to teach lessons and adapt plans and activities to meet each child's individual needs.

Resources

All classrooms have a number line or hundred square displayed for the children to use. Each classroom also has a range of smaller equipment to support children during lessons.

Year R- Number Lines, Rulers, Shapes, Multilink, Unifix, Compare Bears, Peg Boards, Number Fans, Dice, Money, Clocks, Loose Parts, Scales, Containers, Egg Timers, Numicon, Water

Year 1 and 2- Number Lines, Hundred Squares, Rulers, 2D and 3D Shapes, Place Value Cards, Dienes, Money, Clocks, Multilink, Unifix, 10s frames

There are also shared resources stored in the cupboard opposite Year 2, this contains scales, weights, capacity resources, dienes. Metre sticks and trundle wheels are stored in the hall cupboard.

Inclusion

We provide learning opportunities that enable all pupils to make good progress. Work is differentiated appropriately and matched to their individual needs to enable the child to learn more effectively. Specific targets relating to Mathematics might be included in Individual Provision Maps for children who have individual Special Educational Needs.

Marking

Children benefit from purposeful marking and feedback regarding their work.

Chalfont St Peter Infant School

'Learning Together and Celebrating Success'

Reviewed: September 2024

Next Review: September 2025

Caring Honest Creative Hardworking Respectful

