

Beech Hill Primary School



Mathematics Policy

Revised for 2025 - 2026

Our vision for Valour Academy is that all children will feel happy, safe and loved.

This document is a statement of the aims and principles for the teaching and learning of Mathematics at Beech Hill Primary School. It supports our over-arching policies, including Assessment, S.E.N, Equal Opportunities, Display, Health and Safety as well as Teaching and Learning Policy and Marking Policy,

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

National Curriculum 2014

Our Mathematics Intent:

At Beech Hill Primary School, we aim to develop confident, resilient, and enthusiastic mathematicians who enjoy challenge and believe that everyone can be a mathematician.

We teach mathematics through a curriculum that builds **fluency, reasoning, and problem-solving**. Children are supported to make links between prior and new learning, apply their knowledge in a variety of contexts, and select the most efficient strategies to solve problems.

We provide **memorable learning experiences** and regular opportunities to revisit and practise key concepts so that knowledge is retained in long-term memory.

Our children are encouraged to be **reflective, independent, and logical thinkers** who can use mathematics in everyday life and the wider world. We aim to equip all pupils with the confidence and skills they need to use maths successfully, now and in the future

Implementation:

Each National Curriculum year group follows the objectives outlined in the National Curriculum.

In EYFS the `Statutory Framework for the Early Years Foundation Stage` and the non-statutory guidance of `Development Matters` provides the long term planning in EYFS. To support further with their planning teachers have access to the White Rose Maths Early Years resources to support teachers with their lesson planning and provision available.

Children in Reception partake in daily "Mastering Number" lessons and shape and space lessons are also provided.

Children in year 1, 2, 3, 4 and 5 also take part in daily "Mastering Number" sessions in addition to their daily maths lesson to develop fluency and automaticity of key skills.

The schemes from White Rose Maths and Oak Academy can be used to support teachers in planning and delivering lessons that meet the year group objectives within the National Curriculum and to ensure that all content is covered by the end of the academic year.

Within lessons, children are exposed to elements of fluency, reasoning and problem solving as the lessons are designed around these three mathematical elements. Regardless of ability, all children should have access to fluency, reasoning and problem solving as well as opportunities to show greater depth of understanding for example through the use of questioning appropriate to the ability of the child.

Teachers will make links and review concepts from the previous taught year group before moving onto current year group content. Teachers in national curriculum year groups will use the “Ready to Progress” criteria to support them in ensuring all children are provided with the necessary skills to be able to move confidently and competently up to the next year group.

Within lessons children will have access to concrete or pictorial resources in order to help them embed and understand new knowledge. Children will have access to concrete resources before moving onto pictorial representations and abstract problems. Children should have access to a range of different variations to support children achieving a deep understanding of a taught concept.

Language is a crucial part of mathematics and at Beech Hill we ensure that children are exposed to a range of mathematical vocabulary which will be displayed in the classroom and referred to on our “Maths greenhouse words” posters. Vocabulary will be current and used regularly within mathematics lessons. Children are encouraged to explain their thinking and use ‘because’ to demonstrate their understanding. From the EYFS children are encouraged to talk and wonder about mathematics.

Mathematics is taught contextually giving the mathematics the children are taught meaning and relevance to daily life. From EYFS mathematics is taught in a context to make learning more personalised and enjoyable for the children.

All children from year 2 have access to Times Table Rockstar’s to continually practise their multiplication and division facts and weekly tables practise is provided in each class too.

Children from year 1 have access to Numbots to practise and learn their number facts. Within Year 2 children will begin to transition from using Numbots and moving onto focusing on multiplication and division facts on Times Table Rockstar’s but may still access NUMBOTS to plug any gaps in learning.

Both Numbots and Times Table Rockstar’s can be accessed both at school and at home for all children in year 1 to year 6.

Impact:

Teachers assess termly (for their own purpose). Teachers may wish to keep their own individual records to show how their class progress throughout the different strands in mathematics.

Gaps in ability groups are discussed in progress meeting with SMT and successes are shared and celebrated.

Where children are not making expected progress, interventions will be provided to support these children.

As Beech Hill follows a mathematics mastery approach it is expected that children will be supported to `keep up` rather than `catch up`. This means that where possible, children will be supported through adult support, scaffolded questions or resources/manipulatives to access their year group work. This will help to ensure that children achieve their end of year expectations.

For a very small minority of children who are working significantly below their peers, they may be provided with different work to their peers to ensure progress is attainable.

Cross-Curricular Links.

Mathematics is often taught, as a separate subject yet it contributes to many areas of the Primary curriculum. At Beech Hill we aim to take these opportunities and provide children ways to use maths in real context and providing reinforcement and enrichment through additional provision for mathematics in topic lessons, to creative learning opportunities ranging from Moving Maths to enterprise planning for a school fayre.

Teachers should develop pupils' numeracy and mathematical reasoning in all subjects so that they understand and appreciate the importance of mathematics. Pupils should be taught to apply arithmetic fluently to problems, understand and use measures, make estimates and sense check their work. Pupils should apply their geometric and algebraic understanding and relate their understanding of probability to the notions of risk and uncertainty. They should also understand the cycle of collecting, presenting and analysing data. They should be taught to apply their mathematics to both routine and non-routine problems, including breaking down more complex problems into a series of simpler steps.

Statutory requirements.

Statutory requirements for the teaching and learning of Mathematics and Numeracy are laid out in the Mathematics National curriculum, and in the EYFS documents.

Principle Focuses of Teaching in Key Stage 1- (Years 1 and 2)

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words, pictorial representations and the 4 operations, including with practical resources [for example, concrete or pictorial objects and measuring tools].

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Principle Focuses of Teaching in lower Key Stage 2- (Years 3 to 4)

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the 4 operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have developed a rapid recall of their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should use, read and spell mathematical vocabulary correctly and confidently, using their growing word-reading knowledge and their knowledge of spelling.

Principle Focuses of Teaching in upper Key Stage 2- (Years 5 to 6)

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems.

Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should use, read, and spell mathematical vocabulary correctly when they are working at year 6 level.

Targeted Learning.

At Beech Hill, we plan for challenge for all children. This is both within the class sessions and may also be more directed learning for targeted pupils in small group situations.

Learning Support is also planned and directed by class teachers, either within class time or by withdrawal additional to a daily maths lesson.

“Think pink” is an approach we use to provide rapid intervention to children who have been identified as needing extra support within a lesson or after independent work. These children will meet with a member of staff within the lesson or the beginning of the next lesson to correct mistakes and

misconceptions. The aim of “think pink” is to enable children to be ready to begin work the following day at the same level as their peers.

Beyond this, we also practise tables, mental arithmetic, flashback four and get ready questions in key stage 1 and 2 to develop fluency and over learning of important skills.

From year 2 to year 6 all children also take part in a weekly tables test and practise times tables using games and online programs such as Times Table Rockstars to develop fluency.

All children from year 2 to year 5 take part in additional “mastering number” sessions to further practise and develop automaticity and fluency of key mathematical skills.

Within our daily teaching, we evaluate the lesson and the successes or needs of the children. We use adaptive teaching to support pupils to meet their age related expectation. We also comment upon weekly mathematics teaching and learning in an evaluation book that is read by the head.

In Mathematics at Beech Hill:-

Whole class teaching, group and paired work, as well as individual work is planned and delivered by the teacher.

We follow a learning process of “I do” Teacher or peer models to the class followed by “We do” pairs work together and then finally “You do” where individuals will work on their own.

The pupils engage in:-

- The development of fluency of skills
- the development of mental strategies,
- written methods
- practical work
- investigational work
- problem-solving and reasoning
- mathematical discussion to develop verbal reasoning
- consolidation of basic skills and routines daily and at a distance.

At Beech Hill we use educational researchers (Rosenshine) to strengthen our teaching in mathematics.

In daily lessons, teachers will draw upon Rosenshine’s Principles of Instruction to delivery effective lessons. These may include elements of:

- Daily Review : Daily review questions to strengthen connections and develop fluency to free working memory (Flashback four/maths of the day/get ready questions/quick basic skills games).
- New material in small steps: New material is presented in small steps to avoid overloading the working memory.

- Weekly and Monthly Review: Recalling previous learned material from learning from much earlier (e.g. from a previous unit or year group). These may be displayed on walls/math mats etc or also covered in flashback four questions.
- Obtain High Success Rate: 80% success rate within a class before moving on to a next step gives challenge as well as success in learning.
- Asks questions : Questions used a lot to determine how well the new material has been learned and allow children to verbalise their understanding.
- Provide Models : CPA models used and teacher is modelling, thinking aloud with worked examples to clarify specific steps involved.
- Guide Student Practice: Time given to rephrase, elaborate and summarise new material for it to be stored in long term memory and to practise using mathematical vocabulary.
- Scaffolds for difficult tasks: Scaffolds to support achievement of tasks: Could be through use of resources (CPA), adult support or scaffolded questions to allow different abilities to access age appropriate work.
- Check Students Understanding: Teacher feedback oral and/or written addressing misconceptions or to probe and scaffold pupils understanding.

At Beech Hill we recognise the importance of establishing a secure foundation in mental calculation and recall of key facts before standard written methods are introduced.

Children can be awarded tables badges when they are fluent at a set of specific tables and can also be awarded a Times Tables Rockstars or Numbots awards to encourage over learning and greater fluency of key skills.

There are Greenhouse Words display in each classroom where topic related maths vocabulary is displayed and referred to support children in developing the use of new maths vocabulary.

We set work which is challenging, motivating and encourages the children to talk too

Display

We recognise the important role display plays in the teaching and learning of mathematics by having maths work and learning prompts in the classrooms. Every class has a “working wall” which has vocabulary, mathematical definitions or examples of mathematics principles covered in a current unit of work. The working wall is changed regularly to reflect the focus of learning in class.

In addition to this, each classroom should have a variety of learning support manipulatives or maths mats available for all children (resources such as number lines, fractions decimals and percentages or 1-100 grid) and other display materials that provide support for all learners.

Further information on the school displays can be found in the Display Policy.

We also value the work completed by our students in numeracy and this is celebrated in TT Rockstars awards and in our "mathematician of the week" awards. Children are celebrated on the school social media portals and in assembly.

Assessing Pupil Progress

At Beech Hill we are continually noticing our pupils' progress. We see assessment as integral to the teaching process and endeavor to make assessments purposeful, allowing us to match the correct level of work to the needs of the pupils, to develop confidence as well as challenge.

Short-term assessments are an informal part of every lesson and are matched to the learning objectives. These may not necessarily be recorded formally, but can be evidenced in marking children's work, think pink activities, or in a teacher's evaluation book comments and will inform the teachers next immediate planning. The evaluation books act as a regular dialogue between the teacher and Senior managers or between classroom assistant and class teacher.

In addition to this, every child is given a termly Maths target relating to numeracy objectives for their level (displayed in the maths classrooms).

Termly KIRF (Key instant recall facts) targets are recorded in a child's book when they have demonstrated these from year 1 to year 6.

Medium Term assessments are currently carried out every term and are recorded on year group tracker grids. The tracker grids identify progress over a term in progress points and also identify the average progress points of specific groups within the cohort (SEN, Pupil premium, EAL, girls and boys).

The data from these tracking grids is used to inform managers in regular progress meetings and to allow teachers to accurately target pupils within the term.

Termly reports are discussed in parents evening or sent home to inform parents in the Autumn and Spring Term.

At Beech Hill we currently use White Rose Maths Hub termly assessments in non-SATs year groups and past SAT papers or CGP test papers in SATs years. These assessments are analysed within school by class teachers to identify strengths and ways forward for school curriculum development.

At the end of the school year, summative Teacher assessments are made of each child in a national curriculum year group and these are reported in an annual school report alongside progress comments.

Children in foundation stage/early years are assessed against the Mathematical development strand of the EYFS.

Parental Partnership

Regular links with parents are begun by parental interviews early in each new school year. A termly Newsletter for each class also identifies the mathematics focus as well as explaining homework arrangements.

Termly targets focusing on KIRFS for each year group are shared with parents each term.

Achievement certificates, in all areas of school, including mathematics, continue to strengthen home/school links and our school website refers to termly programmes of study for all year groups in Mathematics and mathematicians of the week.

Parents and carers are made welcome into school for planned sessions such as “Mums n Sums” or “Lads n Dads” sessions as well as workshops or calculations sessions. In addition to these planned activities, more informal visits to the class are offered.

Parents with children in statutory testing years (year 2 and year 6) are also invited to sessions explaining the testing procedures and offered ideas of how to support their children during SATs week in Mathematics and Literacy.

All parents also receive an annual written report on which there is a summary of their child’s effort and progress in mathematics over the year.

At the end of each Key Stage, pupils’ levels of achievement against national standards are published to parents.

Homework

Early Years pupils have regular opportunity for sharing Home Learning packs with their family and from Yr.1 to Yr6 children are given focussed tables or number bonds facts to learn and practise.

We follow the EEF research findings regarding the effectiveness of homework for primary school children.

Resources

Resources for the delivery of mathematics curriculum are mostly in classes with some shared centrally. Practical resources are used widely to accommodate differing learning styles and every class has working wall displays or possibly maths mats to support visual learners.

I.C.T. materials are available for class and computer- suite lessons and all children make great use of smartboards or I-pads to gain access to interactive software.

We have a variety of published materials to facilitate maths teaching but recognise the need for teaching of maths to be scheme assisted, not scheme led.

The main resources used to develop long term planning are the White rose maths Hub long term plans.

Reference materials (such as NCETM exemplar materials) as well as teaching resources are becoming increasingly available online. These can be modified for specific teaching groups and classes.

Equal Opportunities

As a staff we strive to maintain an awareness of, and to provide for equal opportunities for all our pupils in mathematics. Beech Hill aims to take into account cultural background, gender and special needs, both in our teaching attitudes and in the published materials we use with pupils.

Community Cohesion

Where appropriate, links should be made in Mathematics teaching to help children learn about and understand how the local, regional, national and international community in which they live has and does contribute to our everyday maths (including calculation methods e.g Egyptian multiplication, Roman Numerals, Greek symbols and geometrical discoveries.) helping to develop an appreciation of other cultures. This can be the beginning of fascination in the global world of maths.

Within a fortnightly Monday assembly, we celebrate and explore the contributions of a mathematician from history who used maths to change the world.

SEND.and Highly Able Pupils.

We fully include S.E.N.D pupils in the daily maths lesson so that they benefit from the emphasis on fluency in introductory tasks and by listening and participating with other children in demonstrating and explaining their methods.

Where necessary, teachers will draw up additional targets for a child, in conjunction with S.E.N.Co. to include a specific mathematical target, in line with research indicating this as best practice where appropriate. Some children may be working at a different key stage level to their peers and may receive very personalised teaching that requires some element of out of class time in order to access very specific learning for their needs.

When planning, the teacher provides for the pupil's needs, both S.E.N.D. and highly able pupils by modified tasks and / or the support/ use of resources//extension provision provided by the teacher or a teaching assistant. Children are taught with their own class wherever possible and more able children will be extended through greater depth reasoning and problem-solving contexts.

Health and Safety

As expected in all areas in school resources are to be used safely. The health and safety of pupils, staff and visitors is paramount.

Role of the Mathematics Manager

As mathematics Manager, the person will be responsible for the development, guidance, enthusiasm and promotion of Mathematics throughout Beech Hill Primary School. These responsibilities will include:

- To advise the Head teacher and Governing Body on current and next developments of Mathematics at Beech Hill Primary School.
- To plan, write and keep under review policy documents/guidelines which will incorporate the requirements of the National Curriculum.
- To prepare and review the implementation of the Development Plan for Mathematics, as part of the School Development Plan.
- To be responsible for the implementation of the policy documents and to monitor (linked to the schools long term monitoring plan) the development of Mathematics throughout the school, with particular regard to continuity, achievement and progression as well as challenge and accessibility for all our pupils.
- To evaluate continuity, breadth, achievement and progression across the whole school by monitoring the teachers' planning and pupils' work to ensure that appropriate learning outcomes and activities are planned.
- To liaise with pupils (including mathematics champions from the year 6 dream team) to find out their "Pupil Views" on their Mathematics curriculum and, where possible, improve maths with requests made by pupils.
- To analyse and respond to pupil data analysis on mathematical progress, including targets.
- To observe and support in the classroom in the area of Mathematics (as time allows).
- To liaise with and advise colleagues in the field of Mathematics, including S.E.N.Co, Governors or Newly appointed staff.
- To plan and lead learning opportunities, alongside consultants and inspirational professionals to strengthen our teaching and learning practice with creative and memorable mathematical outcomes.

- To control, evaluate and requisition equipment as required for the implementation of policy documents.
- To drive enthusiasm and understanding in Mathematics with all members of the School both in and beyond the classroom situation.
- To keep up to date with current developments in the field of Mathematics in primary education through reading, courses, visits, research internet etc.
- To encourage and foster equal opportunities for all children in the field of Mathematics.

Jackie Manning

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