"Creating excellence, embracing all."

SUBJECT POLICY
FOR
MATHS
2025

Subject Lead: Jonathan Jones
Curriculum Action Team: STEM
Headteacher: Jo Reid
Chair of Governors: Sue Miller

Renewal date: September 2026

Policy determined
Botley School Governing Board

Botley School Vision statement

A high-quality education in a positive and happy school, where everyone is included, celebrated and encouraged to be a creative lifelong learner.

Botley School Values

Inclusivity Teamwork Kindness Respect Resilience Creativity

"Numbers have Life; they are not just symbols on paper."

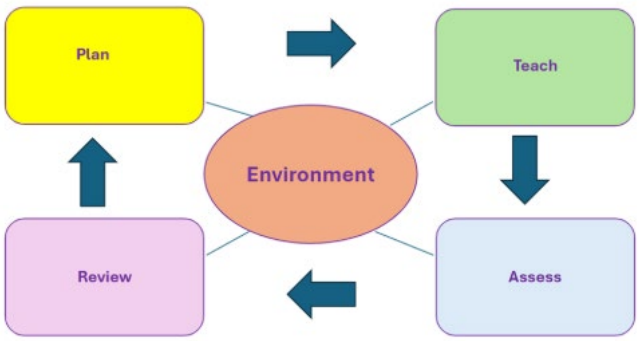
Shakuntala Devi

Maths Vision Statement:

Developing confident mathematicians who demonstrate their love of maths and make contributions as global citizens, inspired by the values that represent our school: creativity, teamwork, inclusion, resilience, respect and kindness.

Pedagogical Principles

The Intent, implementation and impact of the Maths curriculum is rooted in the pedagogical principles as set out in the Botley Teaching and Learning Policy.



Intent

School Aims

- 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 understand the importance of mathematics in everyday life.
- To enable children to celebrate their cultural diversity, the rich heritage of mathematics worldwide and the diverse mathematicians who have led the way.
- To develop mathematical language which children can use appropriately.
- To help children to become independent learners.
- To provide a differentiated Mathematics curriculum which; meets the needs of all children by offering a broad and balanced range of activities.
- To use ICT as a tool to enhance learning.

National Curriculum Aims:

Key Stage 1 & 2

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Key Stage 1 National Curriculum Attainment:

By the end of KS1 pupils should be able to:

- partition two-digit numbers into different combinations of tens and ones. This may include using apparatus (e.g. 23 is the same as 2 tens and 3 ones which is the same as 1 ten and 13 ones).
- add 2 two-digit numbers within 100 (e.g. 48 + 35) and can demonstrate their method using concrete apparatus or pictorial representations. The pupil can use estimation to check that their answers to a calculation are reasonable (e.g. knowing that 48 + 35 will be less than 100).
- subtract mentally a two-digit number from another two-digit number when there is no regrouping required (e.g. 74 − 33).

- recognise the inverse relationships between addition and subtraction and use this to check calculations and work out missing number problems (e.g. Δ − 14 = 28).
- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables to solve simple problems, demonstrating an understanding of commutativity as necessary (e.g. knowing they can make 7 groups of 5 from 35 blocks and writing 35 ÷ 5 = 7; sharing 40 cherries between 10 people and writing 40 ÷ 10 = 4; stating the total value of six 5p coins).
- identify 1/3 , ¼ ½ , ¾ and knows that all parts must be equal parts of the whole.
- use different coins to make the same amount (e.g. pupil uses coins to make 50p in different ways; pupil can work out how many £2 coins are needed to exchange for a £20 note).
- read scales in divisions of ones, twos, fives and tens in a practical situation where all numbers on the scale are given (e.g. pupil reads the temperature on a thermometer or measures capacities using a measuring jug).
- read the time on the clock to the nearest 15 minutes.
- describe properties of 2-D and 3-D shapes (e.g. the pupil describes a triangle: it has 3 sides, 3 vertices and 1 line of symmetry; the pupil describes a pyramid: it has 8 edges, 5 faces, 4 of which are triangles and one is a square).

Key stage 2 National Curriculum attainment:

By the end of KS2 pupils should:

- demonstrate an understanding of place value, including large numbers and decimals (e.g. what is the value of the '7' in 276,541?; find the difference between the largest and smallest whole numbers that can be made from using three digits; 8.09 = 8 + 9/?; 28.13 = 28 + □+ 0.03).
- calculate mentally, using efficient strategies such as manipulating expressions using commutative and distributive properties to simplify the calculation (e.g. 53 – 82 + 47 = 53 + 47 – 82 = 100 – 82 = 18; 20 × 7 × 5 = 20 × 5 × 7 = 100 × 7 = 700; 53 ÷ 7 + 3 ÷ 7 = (53 +3) ÷ 7 = 56 ÷ 7 = 8).
- use formal methods to solve multi-step problems (e.g. find the change from £20 for three items that cost £1.24, £7.92 and £2.55; a roll of material is 6m long: how much is left when 5 pieces of 1.15m are cut from the roll?; a bottle of drink is 1.5 litres, how many cups of 175ml can be filled from the bottle, and how much drink is left?).
- recognise the relationship between fractions, decimals and percentages and can express them as equivalent quantities (e.g. one piece of cake that has been cut into 5 equal slices can be expressed as 1/5 or 0.2 or 20% of the whole cake).
- calculate using fractions, decimals or percentages (e.g. knowing that 7 divided by 21 is the same as 7/21 and that this is equal to 1/3; 15% of 60; 1 ½ + ¾; 7/9 of 108; 0.8 x 70).
- substitute values into a simple formula to solve problems (e.g. perimeter of a rectangle or area of a triangle).
- calculate with measures (e.g. calculate length of a bus journey given start and end times; convert 0.05km into m and then into cm).
- use mathematical reasoning to find missing angles (e.g. the missing angle in an isosceles triangle when one of the angles is given; the missing angle in a more complex diagram).

Early Years Foundation Stage Mathematics

We follow the Early Years Foundation Stage (EYFS) curriculum for Mathematics alongside the NCETM 'Mastering Number' programme. We are committed to ensuring the confident development of number sense and put emphasis on mastery of key early concepts. We understand that all children are at different stages in their mathematical understanding and we aim to begin from children's natural starting points. We use Learning Trajectories to learn about the steps children typically take to learn math so that we can plan for appropriate and challenging activities. The mathematical learning that children are exposed to also helps to develop the 'Children's Effective Characteristics of Teaching and Learning'.

Our aim is to provide high quality mathematical play (playing with mathematics) alongside the direct intentional teaching of math. Pupils learn about mathematics practically through the use of different manipulatives and hands on practical tasks and games. Children are exposed to the vocabulary of mathematics and are encouraged to reflect on this language, helping children to mathematize.

Each classroom has a designated math area and there are daily opportunities for math through direct teaching of adult focus activities and group times, our daily routines and through our well-planned continuous provision. Some examples of math in continuous provision include exploring capacity with the water or sand, exploring size/height/weight/length/shape and problem solving with construction resources and exploring shape and size e.g. half and quarter at the snack area. Please see our 'Maths in the Early Years' document which sets out our curriculum in more detail.

Implementation

Maths Curriculum and the Maths Mastery Approach

Botley School draws on the research and work completed by the National Centre For Excellence in Mathematics (NCETM) and the work of the Buckinghamshire, Berkshire and OXON Maths hub to support the development of the maths mastery approach in school. A central component of the NCETM/Maths Hubs programmes to underpinning teaching for mastery includes the 'Five Big Ideas'. These are:

Coherence

Connecting new ideas to concepts that have already been understood, and ensuring that, once understood and mastered, new ideas are used again in next steps of learning, all steps being small steps.

Representation and Structure

Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation.

Mathematical Thinking

If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others.

Fluency

Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics. We are part of Mastering Number which promotes fluency from EYFS to Year 2 by securing fluency in place value and addition

and subtraction. We also use maths challenge to secure fluency in times tables multiplication and division facts by end of year 4.

Variation

Varying the way a concept is initially presented to students, by giving examples that display a concept as well as those that don't display it. Also, carefully varying practice questions so that mechanical repetition is avoided, and thinking is encouraged. Botley School has invested in the DfE approved maths scheme 'Power Maths' and uses the White Rose planning resources and NCETM materials to support the mastery approach to maths in school.

Planning

- Each teacher uses the National curriculum 2014 to inform their planning.
- Teachers follow appropriate Units or topics of work to cover Key Objectives for each year group, based on the White Rose Maths Resources.
- Medium term planning is laid out at the beginning of a new half term.
- Teachers follow the Mathematical Calculations Policy which is available on the school website.
- Short term planning is flexible. Teachers adapt their weekly plans as appropriate to the needs of the children they are teaching.
- Teachers following the maths curriculum in which one lesson is taught on 1 topic and 4 lessons a week on another topic.
- Teachers that share a class may take on different objectives in order to ensure progression and continuity within their class.
- Objectives for mixed age classes are considered for individual year groups. However, each child is planned for their personal needs as is felt appropriate by the class teacher.
- Planning within the school shares some key features; objectives, prior learning, differentiation to ensure the needs of all children are met, key vocabulary, assessment foci and some personalised tasks (as appropriate.)
- Teachers have a range of resources to support their planning and formative assessment, including: White Rose Maths Hub planning resources; Power Maths Scheme of work and online teaching tools; Target Maths books; Rising Stars Arithmetic; Twinkl resources; NRich activities; NCETM planning guidance for Mastery and Greater Depth; NCETM progression tables for each mathematical strand, Classroom Secrets resources.
- Learning support assistants take an active role in accessing daily plans and providing feedback for future planning.

Organisation of Mathematical Teaching and Learning

- In KS1 and KS2, teachers use the National Curriculum 2014 for teaching Mathematics and ensure that all parts of the Programme of Study are taught.
- Throughout the key stages a lesson of between 45 and 60 minutes is taught daily.
- Opportunities are taken to link mathematical experiences in other curriculum areas, particularly science, technology and engineering. (STEM)

- The teacher groups the children according to ability and need. These groups are flexible to allow the teacher to meet the children's needs and challenge them, with the help of the learning support assistant if available.
- Guided group work takes place during the lesson.
- Teachers of the Nursery and Reception class base their teaching on the objectives in the Early Years Foundation Stage Framework; this ensures that they are working towards the 'Early Learning Goals for Mathematical Development'. Towards the end of Reception, teachers aim to draw the elements of a daily mathematics lesson together so that by the time children move into Year 1 they are familiar with a 45-minute lesson.

Resources

- Each class is equipped with a range of mathematical apparatus and materials to aid planning to which children have free access.
- Relevant courses are attended by all staff. Feedback is given and appropriate information is shared with staff.
- The senior teacher responsible for Mathematics manages the resources.
- All teachers organise an area within the classroom dedicated to mathematics resources. This area is easily accessible to all children and allows them to become familiar with all resources.
- Maths challenges are available in the classroom either on display or in a location that the children are aware of.
- Children will be given regular opportunities for free choice of resources in order to achieve a given objective.

SEND

We are an inclusive school. As with all subject areas, delivery of Maths is made to all pupils through Quality First Teaching, which takes into account the learning needs of all the children in the classroom. Learning and teaching will be ambitious for all pupils and lesson plans will be adapted to meet the individual needs of the pupils in an inclusive learning environment that is sensitive to the individual learning, emotional, social or economic needs of pupils. Pupils who receive 1:1 support will have access to support during Maths lessons as appropriate to their needs which are based on their Pupil Profile and/or Individual Education Health Care Plan (EHCP).

- Lesson plans will take account of differing needs and be ambitious for pupils with SEND.
- Children with SEND are taught within the daily mathematics lesson and are encouraged to take part when and where possible.
- Where applicable, children's Pupil Profiles change to incorporate suitable objectives from the revised National Curriculum and teachers keep these objectives in mind when planning work.
- When additional support staff are available to support groups or individual children, they work collaboratively with the class teacher.
- Within the daily mathematics lesson teachers not only provide activities to support children who find mathematics difficult but also activities that provide appropriate challenges for all children based on their individual ability and stage of learning in mathematics.
- Same day interventions are used to provide additional input, clear misconceptions and enable pupils to be ready for the next stage of learning.

Equal Opportunities

- All children will be given equal opportunities. Activities are presented to children regardless of gender and cultural difference.
- In the daily mathematics lesson, we support children with English as an additional language in a variety of ways. For example: repeating instructions, speaking clearly, emphasising key words, using picture cues, playing mathematical games, children to join in counting, chanting, finger games and rhymes. For pupils with English as an Additional Language, teachers will ensure key vocabulary is clearly defined and understood and provide additional support where appropriate. All classes have an Inclusion Action Plan which includes general teaching strategies for different groups within the class based on teacher assessment.

Health and Safety

Children are taught to use all apparatus with due care and awareness of other children. Shared resources in the EYFS and KS1 classrooms are cleaned and/or sterilised on a regular basis.

Enrichment and the Wider Community

Staff encourage pupils to get involved in national and international competitions through online resources. Pupils are encouraged to find ways to raise funds for charities and to create items to sell at the Christmas fair.

Spiritual, Moral, Social and Cultural Development

The Maths curriculum and enrichment opportunities inherently support the spiritual, moral, social and cultural development of the pupils at Botley School through:

- Their sense of enjoyment and fascination in learning about themselves, others and the world around them.
- Their use of imagination and creativity in their learning.
- Their willingness to reflect on their experiences.
- Their understanding of the consequences of their behaviour and actions.
- Their interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues.
- Use of a range of social skills in different contexts, for example working and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds.

Impact

Recording

Pupils record their work in a range of ways, photographs, concrete models, diagrams, on whiteboards and in books. There is a presentation policy for formal maths work in maths books.

Assessment

The Botley School Maths progression document enables staff to understand what pupils have learnt before, what they need to learn now and what they will learn next (See link in Appendix 2). At Botley School, we base the progression of calculation on the White Rose Maths Calculation policy. For progression in specific strands of maths, Botley School has adopted the NCETM progression tables.

Formative Assessment

Teachers use a variety of resources to assess mathematical learning formatively, including White Rose end of block assessments, Times tables booklets, weekly maths homework and purple mash activities. Teachers assess the work at the end of each lesson to determine whether a same day intervention is necessary.

Summative Assessment

Three times per year, the pupils will sit an end of term NFER summative assessment to check progress and analyse for gaps. In Year 6 they complete previous years SATs assessments.

In the summer term, all pupils in years 1, 3, 4 & 5 sit the NFER summative maths assessment which provides a standardised score for tracking from year to year.

In year 2 and 6, pupils sit the statutory SATs assessments.

At the end of each school year, pupils will be assessed within one of the following bands: Pre-Key Stage (PKS); Working Towards the curriculum (WT); Working at Expected (EXP); Working at Greater depth (GDS).

Pupils will be expected to demonstrate all the core skills on the progression table relevant to their year group and attain a standardised score of 100 in NFER and SAT assessments to be assessed as EXP. Pupils working at greater depth will be expected to utilise the expected level of development to explain, create and solve problems and provide their reasoning for their answers. They will be able to demonstrate how they are developing their mathematical learning through use of maths in other areas of the curriculum, including science. They will attain a standardised score of 116 in NFER summative assessments or a standardised score of 110 in SATs to be assessed as greater depth (higher standard).

Reporting

Pupils are given regular feedback; during lessons and after lessons verbally or in the marking of books. Peer feedback is encouraged and lessons start with time to correct.

Parents are given feedback at parents' evening twice a year.

A final summative assessment for Maths will be reported to parents within the annual school written report in the summer term and parents are given the opportunity to discuss their child's progress.

Monitoring

The maths subject leader is responsible for the monitoring of maths teaching, learning and outcomes across the school.

As a core subject, maths is featured in the yearly monitoring programme and is monitored throughout all year groups using a variety of strategies such as planning monitoring, lesson observations, performances and pupil interviews.

Linked policies:
Curriculum policy
Learning and Teaching Policy
Assessment policy
Health and Safety Policy
Equal Opportunities policy
SEND policy

Appendix 1: Key Document Links:
Reading

Maths Curriculum Overview

Maths Progression Map

Maths in the Early Years

Addition and Subtraction Calculation policy

Multiplication and Division Calculation policy