Vernon Primary School

Mathematics Policy



The vision of the Maths curriculum at Vernon Primary School is to provide every pupil with:

- An understanding of the important concepts and an ability to make connections within mathematics.
- A broad range of skills in using and applying mathematics.
- Fluent knowledge and recall of number facts and the number system.
- The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual.
- The ability to think independently and to persevere when faced with challenges, showing a confidence of success.
- The ability to embrace the value of learning from mistakes and false starts.
- The ability to reason, generalise and make sense of solutions.
- Fluency in performing written and mental calculations and mathematical techniques.
- A wide range of mathematical vocabulary.
- A commitment to and passion for the subject.

Introduction

A consistent whole-school approach to Mathematics is important in ensuring clear progression, high expectations and a shared understanding of effective practice. This policy sets out the aims, principles and strategies for the teaching and learning of Mathematics at Vernon Primary School. It reflects the essential part that Mathematics plays in the education of every pupil. The implementation of this policy is the responsibility of all teaching staff, with support and guidance from the Mathematics Subject Leader.

The Nature of Mathematics

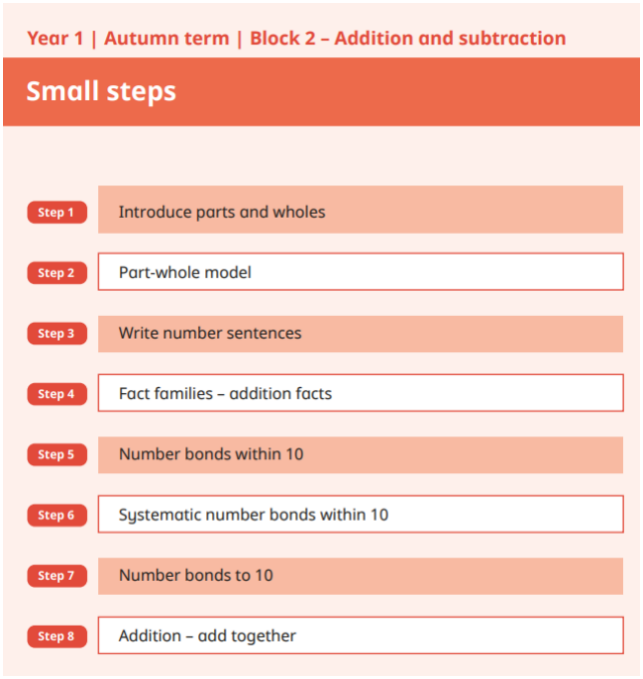
Mathematics is an important tool that is used within everyday life. It is the development of skills that enable children to understand and make sense of the world. As a result we must ensure that children develop a positive and enthusiastic attitude towards the subject.

Through the teaching of Mathematics using objectives from the National Curriculum children should develop:

- A positive approach towards Mathematics
- The skills to apply Mathematics across the curriculum and in real life problems
- Independent, inquisitive and enquiring minds
- An ability to work both independently and in co-operation with others
- A sound understanding and confidence when working in Mathematics
- An understanding of Mathematics through practical, first hand experiences and recorded tasks

Provision

Throughout the school, we use the White Rose Maths Schemes of Learning as the foundation for curriculum sequencing. White Rose follows the National Curriculum through a mastery approach, combining fluency, reasoning, problem solving and concrete, pictorial and abstract representations.



The key element of White Rose that we use is the sequence of 'small steps'. These break larger National Curriculum objectives into manageable teaching concepts and support clarity, coherence and progression. White Rose provides the curriculum spine and high-quality representations; at Vernon, teachers adapt materials, representations and, where appropriate, the timing of some formal calculation methods to best meet the needs of our pupils. These adaptations are set out in the school's Calculation Policy.

Early Years Foundation Stage

Mathematics in the Early Years Foundation Stage Curriculum comes under two strands:

Number

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Numerical Patterns

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

The Early Learning Goals define the level of development children are expected to attain by the end of the Reception year. The vast majority of pupils at Vernon Primary school achieve these Early Learning Goals.

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. This is what the EYFS at Vernon keeps at its core. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.

By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting – our children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, our curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. We feel it is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

Key Stages One and Two

At Key Stages One and Two, teachers plan learning from the National Curriculum for Mathematics. Long-term plans are based on the White Rose Maths materials and their sequenced small steps, adapted to meet the needs of Vernon Primary pupils. This provides a coherent progression through the curriculum while allowing teachers to revisit, consolidate or extend learning where assessment shows this is needed. Pupils develop key knowledge and skills and apply them across different areas of Mathematics so that understanding becomes deep, connected and increasingly fluent.

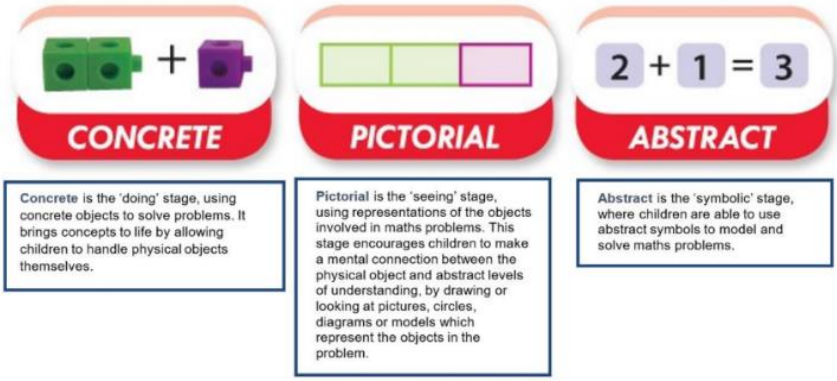


The Calculation Policy, which can also be found on our school website, sets out how addition, subtraction, multiplication and division progress throughout the school. It reflects the White Rose sequence and representations while documenting the small number of deliberate Vernon adaptations to the timing and presentation of formal methods.

Planning and delivery

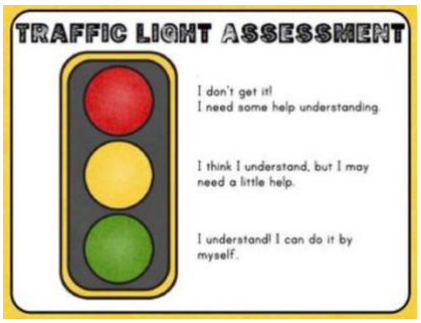
Through careful planning and preparation, at Vernon Primary School, we aim to ensure that pupils are provided with a variety of opportunities to develop and extend their mathematical knowledge skills. These are catered for through:

1. An opportunity to revisit prior knowledge in order to consolidate what has gone before and build on this.
2. First hand experiences, often related to real life and where appropriate linked into the theme, particularly up to Year Four.
3. Learning new concepts moving from concrete to pictorial to abstract.
4. High quality teacher modelling
5. Independent application by the children
6. Fluency:
    a. Fluency is quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics.
    b. We ensure there is constant reinforcement of learning to ensure fluency is attained. We do this through our FIT tasks, independent work and our mental starters.
    c. In addition, short daily fluency activities are planned to strengthen automaticity in number facts, multiplication facts and efficient mental calculation. These should be brief, purposeful sessions, normally no more than ten minutes, and should reflect the needs and stage of the year group.
        i. Year 1 and Year 2: secure number facts, including number bonds and efficient mental calculation appropriate to the curriculum.
        ii. Year 3 and Year 4: develop rapid recall and flexible use of multiplication and division facts, alongside continued practice of key number facts and mental strategies.
        iii. By the end of Year 4, pupils are expected to know multiplication and division facts for the multiplication tables up to 12 x 12.
        iv. Year 5 and Year 6: maintain fluent recall of key facts and develop increasingly efficient mental and written arithmetic, drawing on prior learning.
7. Reasoning
    a. Reasoning in maths is the process of applying logical thinking to a situation to derive the correct problem solving strategy for a given question, and using this method to develop and describe a solution.
    b. Put more simply, mathematical reasoning is the bridge between fluency and problem solving. It allows pupils to use the former to accurately carry out the latter.
8. Problem solving
    a. Problem solving involves selecting and applying mathematical knowledge and strategies in both familiar and unfamiliar contexts. It is not limited to word problems: pupils should encounter routine and non-routine problems, make choices about approaches, explain their reasoning and evaluate whether their solutions are sensible.



9. Appropriate recorded work is used alongside practical, oral and collaborative mathematical activity. The form and quantity of recording should reflect the learning purpose and the needs of the pupils.
10. Individual, group or whole class work
    a. Effective classrooms are filled with purposeful discussions among classmates and the teacher about concepts, skills, and problem solving strategies. Students who communicate with their peers and teachers about their thinking, solution pathways, and insights into how they solved a problem develop a deeper understanding of math.
11. Misconceptions are identified and addressed promptly so that pupils develop accurate conceptual and procedural knowledge.
12. Scaffolds are used where needed so that pupils can access the intended learning while maintaining appropriate ambition and opportunities for success.
    a. An example of this is children being given a number line to help them to accurately add a one digit number.
13. Adaptive teaching is used to respond to assessment, including breaking learning into smaller steps, varying representations and providing additional practice where needed.

Assessment



Ongoing formative assessment

Children are encouraged to self-assess their learning, including through the school's traffic-light approach, so that they reflect on their confidence and identify when they may need further support.

Teachers assess pupils' understanding against the learning objective using a range of evidence, including questioning, observation, pupil explanations and work in books. The established one-, two- and three-tick system is used to communicate the appropriate next step in learning:

✓ One tick - the pupil is not yet secure in the learning and will work with the teacher or receive targeted support before moving on.

✓✓ Two ticks - the pupil is achieving the learning objective and is given opportunities to consolidate understanding and develop fluency.

✓✓✓ Three ticks - the pupil is secure and confident in the learning and is ready for greater variation, reasoning, problem solving or further challenge.

The ticks indicate the next teaching and learning response rather than a fixed judgement of a pupil's mathematical ability. They support responsive teaching and may change as pupils revisit and deepen their understanding.

At the beginning of the next lesson

- Feedback and Improvement Task (FIT) activities are used where appropriate to address misconceptions, revisit prior learning and consolidate understanding.
- Teachers use assessment from the previous lesson to adapt teaching and select the most appropriate FIT or follow-up activity.

At the end of the week:

- Teachers review learning regularly to identify what has been secured, what requires further consolidation and what should be revisited. This ongoing assessment informs future planning, adaptive teaching and the level of support or challenge provided.

At the end of the unit:

- Children will complete a mini assessment to see how well learning has stuck through the week or weeks. It will be used to see who needs further interventions and whether the class needs further focused revisiting of objectives which are yet to be secure.

At the end of the term:

- Children are given individual targets linked to a unit of work of that is being taught, for example Addition or Geometry. Children should have at least one target each half term. Each time they meet their target they will receive a tick. After three ticks, the child will be rewarded and given a new target.
  The targets will be shared with each child so that they can work towards achieving them and moving their mathematical capabilities forward. As the children progress through the school, they will become more involved in discussing with their teacher what the target should be.
- Towards the end of each term, children in Years 2 to 6 complete a Progress in Understanding Mathematical Assessment (PUMA) test to inform future planning and act as a diagnostic tool. Teachers use the information from these tests, as well as their professional judgements, to complete the termly tracking grids (see below).

- At the end of each term, teachers complete their tracking grids to monitor children's progress. This identifies any children who require further support and ensures all children are making progress.

Statutory assessment:

- The statutory Reception Baseline Assessment is completed when children enter Reception. Progress is tracked throughout the year and, at the end of Reception, children are assessed against the Early Learning Goals as part of the EYFS Profile. Each Early Learning Goal is reported as 'emerging' or 'expected'.
- In Year 2, teachers may use the optional Key Stage 1 assessment materials, alongside teacher assessment and the school's own assessment processes, to support their judgements. Statutory end of Key Stage 2 assessments are completed in Year 6.
- Pupils in Year 4 complete the statutory Multiplication Tables Check, which assesses fluent recall of multiplication facts up to 12 x 12.

Roles and responsibilities

Role of the Subject Leader

The Mathematics Subject Leader holds responsibility for leading mathematics throughout the school. This involves:

- Monitoring the teaching and learning of mathematics across the school
- Informing others of in-service training where appropriate
- Support colleagues in their development of detailed plans and in assessment and record keeping
- Assisting with requisition and maintenance of resources required for the teaching of mathematics
- Monitor progress and continuity from each year group
- Scrutiny of work and planning
- Tracking under achievers and high achievers
- Implementing new initiatives
- Ensuring they have the most current knowledge in Maths teaching
- Monitoring remote learning should it be required.

Role of the Class Teacher

- To develop and update skills, knowledge and understanding of mathematics
- To identify CPD needs and attend training
- To keep up-to-date records of assessment
- To plan effective mathematics lessons, through short, medium and long terms plans
- To mark recorded work in line with the school's Marking Policy
- To inform parents of their child's progress in Mathematics
- To ensure teaching assistants are aware of the role they play in the mathematics lessons.
- To ensure that a maths target is given and reviewed when appropriate for the child in line with the whole school policy

Role of the Teaching Assistant

During whole class work Teaching Assistants can:

- Provide extra support for a targeted group of children
- Prompt children who are shy or lacking in confidence
- Help children to use specific resources to find an answer
- Observe the participation of a fixed set of children to feed into assessment

Within the main part of the lesson Teaching Assistants can:

- Support the work of a small group
- Encourage participation of children in group work
- Look for and note any common difficulties that children have so that teachers can address them during the plenary or subsequent lessons
- Ensure children interpret questions correctly
- Assess children during independent work or whole class

Parental Involvement

- Parents/Carers are invited into school three times a year to look at their child's work and discuss their child's progress.
- Parents/Carers are invited to an 'Open Evening' in the summer term
- Parents/Carers are welcomed into school to work within the classroom
- Parents/Carers are encouraged to support their child with mathematics homework.
- Parents/Carers are invited to a Mathematics evening when their child is in Year One and Two to establish how Maths is taught at Vernon Primary.

Reporting to Parents

Children's progress is reported to parents in an annual written report at the end of the year, as well as an interim report in the Spring term.

Homework

Mathematics homework is provided regularly from Year Three onwards. Homework provides parents with an opportunity to work with their child at home and see their progress. These activities may only be brief but are valuable in promoting children's learning in Mathematics.

To support our children in learning their times tables, in Years Three and Four each child has a small squared paper book to practise their times tables. They practise the table that they are focussing on in class that week. This is marked and checked by the class teacher to ensure that each child is making progress. The school provides access for children in Year Three and Four to Times Tables Rockstars. This is an app that the children are expected to use at home to practise their times tables to sharpen their skills.
Please see the Homework Policy for homework progression and expectations.

From **Year 4 onwards, mathematics homework is regularly set through Learning by Questions (LBQ)**. LBQ gives pupils the opportunity to practise and apply the mathematics they have been learning in class, while receiving **immediate feedback** on their answers. Questions are carefully sequenced so that pupils can build confidence and develop fluency, reasoning and problem-solving skills at an appropriate level. The platform also provides teachers with useful information about pupils' responses, helping to identify misconceptions, gaps in understanding and areas that may need revisiting in future lessons. This makes homework more responsive and purposeful, while also encouraging pupils to work independently and take greater responsibility for their learning.

Special Educational Needs

Children with SEND are taught within the daily Mathematics lesson and are encouraged to take part at every given opportunity in the same way as their peers.

Activities are planned in such a way that all children, no matter what their ability, are encouraged to participate. Teachers use appropriate adaptive teaching and scaffolding, as well as ambitious goals, within their planning to ensure that all children are being challenged at their own level

Monitoring and Review:

We are aware of the need to regularly review our policies to take into account the new initiatives, changes in curriculum or developments in technology.

Claire Kitchen
Subject Leader for Mathematics

Policy date – November 2028
Review Date – November 2028
Ratified by Governors – November 2026