



Bradwell Village School

Mathematics Policy

Written by: L Vincent

Date: September 2021

Approved by: Full Governing Body

Date: July 2023

Last reviewed on: July 2023

Next review due by: September 2024

Mathematics Policy

Introduction

Mathematics equips pupils with a powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them. The National Curriculum order for mathematics describes in detail what pupils must learn in each year group. Combined with the Bradwell Village School Calculation Policy, this ensures continuity and progression and high expectations for attainment in mathematics.

Intent

We aim to provide the pupils with a mathematics curriculum and high-quality teaching to produce individuals who are numerate, creative, independent, inquisitive, enquiring and confident. We also aim to provide a stimulating environment and adequate resources so that pupils can develop their mathematical skills to the full.

We believe that it is vital that a positive attitude towards mathematics is encouraged amongst all of our pupils in order to foster confidence and achievement in a skill that is essential in our society. At Bradwell Village School, we use the National Curriculum as the basis of our mathematics programme. We are committed to ensuring all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education.

Our intent is for the children to demonstrate a quick recall of facts and procedures. This includes the recollection of the times table. We want the children to show confidence in **Believing** that they will achieve enabling them to achieve the expected standards for their year group or making appropriate progress from their starting point. We want the children to develop flexibility and fluidity to move between different contexts and representations of mathematics and therefore provide opportunities to develop the ability to recognise relationships and make connections between concepts or skills. We aim for the children to be secure by demonstrating their knowledge and skills in multiple ways, using the mathematical language to explain their ideas, and by independently applying the concept to new problems in unfamiliar situations. A further aim is to ensure that all children show a high level of pride in the presentation and understanding of the work.

Our aims for our pupils are to:

- have a chance to believe in themselves as mathematicians and develop the power of resilience and perseverance when faced with mathematical challenges;
- recognise that mathematics underpins much of our daily lives and therefore is vital in order that children aspire and become successful in the next stages of their learning;
- make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems;
- have opportunities to apply their mathematical knowledge to other subjects (cross-curricular);

- have equal opportunities for children to apply their mathematical knowledge to other subjects across the curriculum;
- experience a curriculum which is in line with the expectations for their year group.

Implementation

Assessment for learning, an emphasis on investigation, problem solving and the development of teacher subject knowledge are essential components for the Bradwell Village approach to this subject.

Teachers use a range of teaching strategies to engage the children in maths and ensure progress is made by all children within a class; no set formula is used. A typical lesson will include:

- both teaching input and pupil activities;
- a balance between whole class, guided grouped and independent work, (groups, pairs and individual work);
- effectively differentiated activities/objectives and appropriate challenge;
- varied fluency which can include concrete, pictorial and abstract approach to teaching and learning;
- reasoning and problem solving within strands of the National Curriculum pitched at the appropriate level.

Sometimes the focus for the session is new learning, at other times pupils may be practising, to master the application of a concept they have learned earlier. The focus of the session may vary for different children depending on their learning needs.

At times there may be opportunities to develop skills and understanding of mathematics through additional activities, some of which may take place at home. The school has invested in the 'TimesTable Rockstars' and White Rose websites which are accessible learning platforms that are used to develop mathematical concepts and calculations.

Teachers plan learning that is differentiated to meet the needs of all pupils, whether they have a specific learning difficulty in mathematics or whether they are particularly able. Teachers differentiate learning appropriately across all abilities: high attaining, middle attaining and low attaining pupils – with individual work for SEN pupils at one end of the achievement spectrum, to individual work for a gifted pupil at the other. Within year groups, classes are set by ability for mathematics to allow clear definition of the needs of individual pupils whether this is ability based, learning style or teacher style. Enrichment activities are provided to further extend the most able pupils in mathematics.

Pupils are provided with a variety of opportunities to develop and extend their mathematical skills, including:

- group work;
- paired work;
- whole class teaching;
- individual work;
- same day interventions;

- tailored intervention programmes.

Pupils engage in:

- the development of mental strategies;
- written methods;
- practical work;
- investigational work;
- problem solving;
- mathematical discussion;
- consolidation of basic skills and number facts;
- maths games.

We recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are introduced. We use accurate mathematical vocabulary in our teaching and children are expected to use it in their verbal and written explanations. Mathematics contributes to many subjects and we give the children opportunities to apply and use mathematics in real contexts. Time is provided in other subjects for the pupils to develop their mathematical skills, e.g. measuring in science and technology and art, and for the collection and presentation of data in history, geography and science. Teachers plan appropriate mathematical tasks within science and foundation subjects that are the appropriate level including challenge.

We endeavour at all times to set work that is challenging, motivating and encourages the pupils to think about how they learn and to talk about what they have been learning. Additional enrichment opportunities are provided for pupils to further develop mathematical thinking e.g. through cooking, music, and maths investigations and games.

Teachers plan problem solving and investigational activities fortnightly to ensure that pupils develop the skills of mathematical thinking and enquiry. To provide adequate time for developing mathematics, maths is taught daily and discretely.

At Bradwell Village School we believe that if firm foundations are established in key mathematical concepts then children are able to develop a deeper and more cohesive understanding of complex mathematics as they develop. Therefore, throughout KS2 each class devotes two 20-minutes a week developing these ideas (B2B – Back to Basics) through games and other activities. In Year 6, this is combined into one 40-minute session a week.

All classrooms have mathematical vocabulary on display. A bank of essential mathematics resources including counters and cuisenaire rods, is kept in the Learning Support Assistants mathematics packs and within individual year groups. Further resources relating to key whole school topics for example 'Fractions' are found in the mathematics area.

Special Educational Needs Disability (SEND) / Pupil Premium / EAL/ Higher Attainers

All children will have Quality First Teaching and an adapted Curriculum. A variety of teaching methods and resources are used to cater for individual learning styles and needs, and to maximise participation/ engagement in lessons, e.g., games, oral presentations, cloze procedures, role-play, dictation, dictionary work, videos, etc. Our school offers a demanding and varied curriculum, providing children with a range of opportunities in order

for them to reach their full potential and consistently achieve highly from their starting points.

Any children with identified SEND or in receipt of Pupil Premium funding may have work additional to and different from their peers in order to access the curriculum dependent upon their needs.

Adaptive Teaching

To enable all children to access learning in Maths, all lessons are adapted. The following strategies are used to adapt teaching:

- Resources are closely matched to the individual pupil's level of ability;
- pace within and across lessons which ensures individual pupils move on at a pace to suit their level of understanding and learning needs;
- resources are used to support and deepen understanding and which are used in different ways depending on the needs of the individual pupil e.g., a variety of models and resources;
- self-selection activities which encourage the pupils to reflect on their learning needs and push themselves to meet new challenges;
- common tasks which are open ended activities/investigations where adapted learning is by outcome and linked to the support needed;
- additional teacher support to assist different abilities ensuring the pupils are suitably challenged in order to make progress.

Remote learning

Children have access to learning resources delivered through Padlet or Google classrooms and they are able to respond to the tasks set either through the above platforms or by emailing their work to their class teacher.

Developing staff's knowledge and understanding of maths

To enable the staff to deliver an effective curriculum for maths, the subject leader provides the planning for each class following discussions with the class teachers. During the weekly teachers' meetings there are opportunities for subject leaders to lead sessions to develop class teachers' understanding of the maths topics planned for the term.

Assessment and Impact

Assessments for all core subjects are carried out on a half termly basis. This is above the minimum requirement due to the need to establish gaps in learning and the need for the children to make accelerated progress if they are to fulfil their pre-lockdown potential. Data is analysed at each data point and the reports produced identify actions for the following half term. These reports also inform the pupil progress meetings where progress, attainment and interventions are discussed and further actions identified.

Using half termly Headstart Arithmetic Tests and Termly Reasoning Tests tests, pupils are assessed against NC objectives. The school's progress tracking system is updated termly. National curriculum tests are used at the end of KS2; teachers use past and sample papers to

inform their assessments as they prepare pupils for these assessments. Across KS2, diagnostic and impact assessments are used to support the quality of teaching across the school. Teachers use this data to plan appropriate interventions which target specific learning objectives to help close the gap.

All assessments and teaching inform teachers understanding of a child's ability in maths and this is recorded in Insight and in the children's maths books.

The school's Assessment and Marking Policy inform high quality feedback and pupils' response to it in mathematics.

Teachers integrate the use of formative assessment strategies such as effective questioning, clear learning objectives, the use of success criteria and effective feedback and response in their teaching.

Monitoring

This policy is monitored through:

- lesson observations;
- learning walks;
- work scrutiny;
- the monitoring of planning;
- progress data.