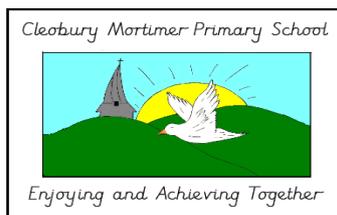


Cleobury Mortimer Primary School



Mathematics Policy

June 2020

To be reviewed June 2022

Introduction

Mathematics is a creative and highly inter-connected 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)

The aims of the 2014 National Curriculum are for our pupils to:

- Become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time.
- Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically; follow a line of enquiry, conjecture relationships and generalisations.
- Develop an argument, justification and proof by using mathematical language.
- Problem solve by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

The National Curriculum sets out year-by-year programmes of study for key stages 1 and 2. This ensures continuity and progression in the teaching of mathematics.

The EYFS Statutory Framework 2017 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to

early learning. This is supported by the 'Development matters' non-statutory guidance. The EYFS Framework in relation to mathematics aims for our pupils to:

- develop and improve their skills in counting
- understand and use numbers
- calculate simple addition and subtraction problems
- describe shapes, spaces, and measures

The purpose of mathematics in our school

Through combining the national curriculum aims and the Maths hub principles, our aims are to develop:

- positive attitudes towards the subject and awareness of the relevance of mathematics in the real world
- competence and confidence in using and applying mathematical knowledge, concepts and skills. Variation will be used to broaden the children's exposure to the learning objectives in a wide range of contexts to ensure deeper understanding of concepts.
- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and motivation to work both independently and in cooperation with others
- confident communication of maths where pupils ask and answer questions, openly share work and learn from mistakes
- an ability to use and apply mathematics across the curriculum and in real life e.g. enquiry and investigation opportunities in science such as data collection and the analysis of results.
- to develop children's mathematical vocabulary as modelled by the teachers using guidance from the vocabulary specified in the national curriculum.

Breadth of study

Careful planning and preparation ensures that throughout the school children engage in:
practical activities and games using a variety of resources
problem solving to challenge thinking
individual, paired, group and whole class learning and discussions
purposeful practise where time is given to apply their learning
open and closed tasks
a range of methods of calculating e.g. mental, pencil & paper and using a calculator
working with computers as a mathematical tool

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

Teachers' planning and organisation

Long Term Planning

The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the basis for long term planning for mathematics taught in the school.

In Nursery, we focus on developing their counting skills, early mathematical vocabulary including shape and pattern through their child initiated play.

The Reception -6 LTP is taken from the White Rose maths hub overviews, which are based on the national curriculum objectives, and their lesson overviews are used to inform MTP. The LTP is used as a guidance tool in order to pace out coverage of the curriculum throughout the year. Although the whole year is planned out, teachers are encouraged to use professional discretion when deciding on how long is needed on a particular curriculum area whilst ensuring all objectives are covered by the end of the academic year.

Medium Term Planning

Medium term plans (MTP) are based on the White Rose hub overviews and are written by the class teacher, in conjunction with the calculation policy, prior to teaching a unit. They provide a brief overview of the learning sequence that they are going to teach. This planning overview will enable staff to build up the skills that the children need and should be adapted to suit the needs of their current class. The MTP will be used by staff to help them write their short term plan. Key questions, activities and vocabulary should be included along with prior learning and curricular targets. Planning should be uploaded to the appropriate planning folder located on the T drive. Teachers should plan to deliver a maths journal style problem every two weeks to help children development their reasoning skills.

Short Term Planning

Short term planning (STP) is recorded each week on the lesson flipcharts/PowerPoints/Smart slides. These plans will include aspects such as: learning objectives to be taught that week; key vocabulary identified and taught; questions; assessment opportunities; fluency, reasoning and problem solving tasks; activities and differentiation. Visual images should be used regularly to help the children's understanding e.g. bar modelling.

Books are monitored by the Maths co-ordinator throughout the term and feedback is provided.

Differentiation

Differentiated activities across the school will take account of the children's differing needs and abilities (working toward national standard, at national standard and working

at greater depth) ensuring all children have access to the mathematics curriculum at the appropriate standard. Children with special educational needs in mathematics are supported to enable them to achieve their learning objective.

All children will be exposed to challenge through tasks and questioning including further mastery standard problem-solving activities for more able pupils.

Special educational needs & disabilities (SEND)

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. A summary of the needs within a class can be found on the class provision map. Outcomes from children's EHCPs are supported through objectives taken from the National Curriculum for Mathematics or development Matters at an appropriate and individual stage of development.

Teachers use purposeful assessment of children's mathematical knowledge and skills to ensure high expectations are factored into planning stages. Making reasonable adjustments through suitable activities and resources are implemented to improve access to learning, participation and progression. These targets may be worked upon within the lesson as well as on a 1:1 or small group basis outside the mathematics lesson. Maths focused intervention in school is designed to help children with gaps in learning and/or barriers to learning to improve mathematical understanding. These are delivered by trained support staff and overseen by the SENCO and/or the class teacher.

Within the daily mathematics lesson teachers have a responsibility to not only provide differentiated activities to support children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability.

Staff may record children's mathematical thinking/explanations on post it notes to gain a sense of children's understanding when writing may act as a barrier to learning.

Equal Opportunities

Positive attitudes towards mathematics are encouraged, so that all children, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with mathematics. The aim is to ensure that everyone makes progress and gains positively from lessons and to plan inclusive lessons. Lessons involving lots of visual, aural and kinaesthetic elements will benefit all children including those for whom English is an additional language (EAL). Differentiated questions are used in lessons to help children and planned support from Teaching Assistants and other adults.

Lessons

A dedicated daily mathematics lesson planned in each class, which will last for approximately an hour in KS1 and KS2. In the Foundation Stage there will be daily lessons which will last for up to 30 minutes, alongside opportunities for mathematical activities daily through continuous provision.

- Lessons are well structured, lively and delivered at a good pace.
- Lessons are structured to embed mathematical understanding through concrete, pictorial and abstract representation.
- The foundations of mental calculation and recall of number facts are established thoroughly through daily starters which consolidate mental recall and informal/written calculations.
- In all lessons, learning objectives and success criteria are clearly displayed and discussed.

The emphasis in lessons is to make teaching interactive and lively, to engage all children encouraging them to talk about mathematics. Lessons involve elements of:

- Instruction and demonstration - giving information, showing, describing and modelling mathematics using appropriate resources and visual displays, giving accurate and well-paced explanations;
- Questioning and discussing;
- Consolidating;
- Reflecting and evaluating responses - identifying mistakes and using them as positive teaching points;
- Summarising - reviewing mathematics that has been taught enabling children to focus on next steps

Pupils' Records of Work

Children are taught a variety of methods for recording their work and are encouraged and helped to use the most appropriate and convenient. Children are encouraged to use mental strategies and their own jottings before resorting to more formal written methods. Children's own jottings to support their work is encouraged throughout all year groups.

Marking/Feedback

Marking of children's work is essential to ensure they make further progress and any feedback given needs to be in the moment as much as possible. Feedback reflects the learning objective and success criteria in line with the school marking and feedback policy. Children are encouraged to self-assess their work and to make corrections or improvements. Some pieces of work are self-marked by children where appropriate, guided by the teacher.

Assessment

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of children daily through:

- regular marking of work
- analysing errors and picking up on misconceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations

These ongoing assessments inform future planning, teaching and interventions. Lessons are adapted readily and short-term planning evaluated in light of these assessments.

Medium term

Termly assessments are carried out across the school using the assessment materials for each year group provided by White Rose or Government in line with the schemes of learning. EYFS will use Development Matters to guide their assessment. These materials, used alongside ongoing teacher assessment, support class teachers in making judgement for each child which is then entered onto the pupil progress forms. Pupil Progress meetings are timetabled each term for all classes. Progress of pupils is discussed and appropriate intervention considered and put in place where appropriate.

Long term

Y2 and Y6 complete the national tests (SATs) in May.

Yrs. 3, 4 and 5 complete optional SATs papers produced by Testbase which inform teacher summative judgements in the summer term.

Reception use ELG

Resources

Each class has a stock of core resources that are age appropriate. Additional mathematical equipment and resources are stored centrally in the Tulip room.

MyMaths

MyMaths, a fully interactive online mathematics learning tool for children in year groups 1-6 and which is used by teachers to support mathematics learning both in class and at home. Children are set homework on MyMaths in line with the homework policy and are encouraged by school to access it regularly at home to support areas of mathematical learning. Where no online access is available support will be given to access it in school.

Role of the Maths Subject Leader

- To lead in the development of maths throughout the school.
- To monitor the planning, teaching and learning of mathematics throughout the school.
- To help raise standards in maths.

- To provide teachers with support in the teaching of mathematics.
- To provide staff with CPD opportunities in relation to maths within the confines of the budget and the School Improvement Plan
- To monitor and maintain high quality resources.
- To keep up to date with new developments in the area of mathematics