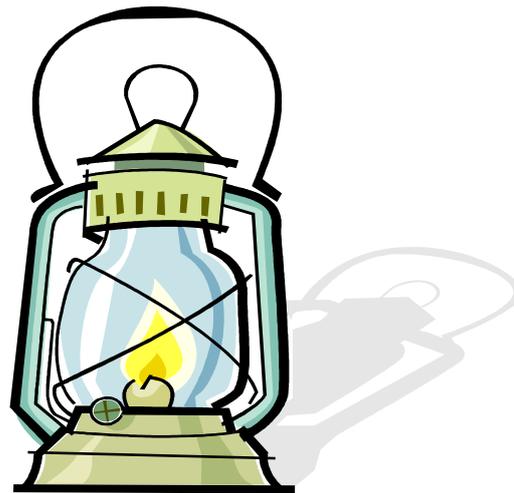




St. Bede's Catholic Primary School & Nursery



MATHEMATICS POLICY



Autumn 2021

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Nature of Mathematics

‘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 science, technology and engineering and necessary for financial literacy and most forms of employment. A high quality mathematical education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the power and beauty of mathematics, and a sense of enjoyment and curiosity about the subject.’ (DfE 2013)

Mathematics is a tool for everyday life that pervades all aspects of our lives and helps us to make sense of our world. It is used to analyse and communicate information and ideas and to tackle a range of practical tasks and real life problems. It also provides the materials and means for creating new imaginative worlds to explore.

With this in mind, our staff endeavour to ensure that our pupils develop a healthy and enthusiastic attitude towards mathematics that will stay with them. Furthermore, our aim is to instil an enjoyment in the subject by supporting children to engage with it, building upon their own understanding and promote further learning.

To ensure continuity and progress in the teaching of Mathematics St Bede’s Primary School follows the National Curriculum’s ‘Mathematics Programmes of Study: key stages 1 and 2 (September 2013)’. In Early Years Foundation Stage the curriculum is guided by the EYFS reforms early adopter framework, which sets out learning objectives for Nursery and Reception pupils.

This policy should be read in conjunction with the following school policies:

- Calculation Policy
- Assessment Policy
- Marking Policy
- SEND Policy
- Equality Policy

Principles

The principles of St Bede’s Primary School for Mathematics are:

- policy and provision are evaluated and reviewed regularly;
- the governing body of St Bede’s Primary School agree to their statutory responsibility with regard to mathematics;
- cross curricular links will be highlighted where appropriate;
- planning of mathematics ensures continuity and progress across all year groups and key stages;
- children’s achievements to be celebrated through high quality marking and feedback.

Aims

General

Using the Mathematics Programmes of Study: key stages 1 and 2 (September 2013) for teaching Mathematics it is our aim to develop:

- competence, confidence and mastery in mathematical knowledge, concepts and skills;
- a positive attitude and enquiring approach towards mathematics;
- an ability to solve problems, to reason, to think logically and to work systematically and accurately;
- an understanding of mathematics through a process of enquiry and experiment;
- initiative and an ability to work both independently and in cooperation with others;
- an ability to communicate mathematics using appropriate vocabulary.

Implementation

At St. Bede's Catholic Primary School we use the Abacus Mathematics Scheme of Work and White Rose resources to support our teachers in the delivery of the Mathematics Curriculum; children are provided with a variety of opportunities to develop, apply and master their mathematical skills and knowledge as they move through the school. Although opportunities are primarily provided in mathematics as a discrete subject, provision is made for children to apply and extend mathematical skills and knowledge in other areas of the curriculum.

All maths lessons begin with a starter activity (this has a focus on mental calculation strategies, arithmetic or the application of known facts – referred to as spinning plates) which is followed by a main teaching activity and lessons end with a quality plenary session / review of the learning which will also look at next steps. Where lessons follow a different format to that set out above the teacher's plans will make it clear as to why the change is appropriate.

Through careful planning, we aim to ensure that the teaching of mathematics at St Bede's Primary School provides opportunities for:

- practical activities and mathematical games, including the use of ICT;
- individual, paired, group and whole class discussions, teaching and activities;
- open and closed tasks - some of which will be problem solving;
- a range of methods of calculating e.g. mental, pencil and paper.

Pupils engage in:

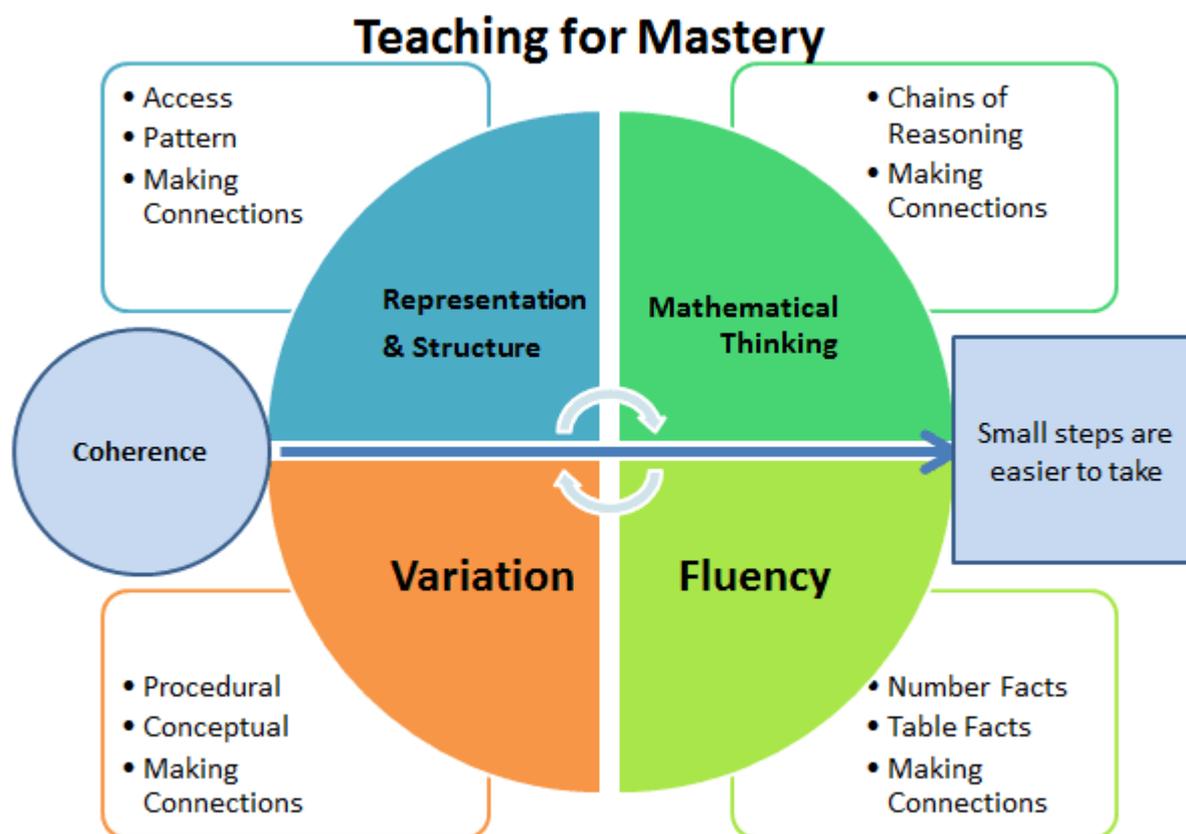
- developing their understanding of mental strategies;
- written methods;
- practical work;
- investigation work;
- problem solving;
- mathematical discussions;
- consolidation of basic skills and known facts relating to number, geometry and measure;
- areas of number, measures, geometry and data handling.

At St Bede's Primary School, we recognise the importance of establishing a secure foundation in mental calculation and recall of maths (known) facts before standard written methods are introduced. To support children in their acquisition of number facts and other mathematical facts from across the Mathematics Curriculum we administer weekly known facts tests. We include mathematical vocabulary within our plans, which teachers use during lessons, and children are expected to use appropriate terminology in their verbal and written explanations.

Mathematics contributes to many subjects; consequently, we provide pupils with opportunities to apply and use Mathematics in a variety of real contexts.

What is teaching for mastery?

Mastering maths means pupils acquiring a deep, long-term, secure and adaptable understanding of the subject. Achieving **mastery** means acquiring a solid enough understanding of the maths that has been taught to enable pupils to move on to more advanced material.



It Involves:

Fluency

- Quick recall of facts and procedures.
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connects in mathematics.

Variation

Procedural Variation – This is a deliberate change in the type of examples used and questions set, to draw attention to certain features.

Conceptual Variation – When a concept is presented in different ways, to show what a concept is, in all of its different forms.

Representation and Structure

Mathematical structures are the key patterns and generalisations that underpin sets of numbers, they are the laws and relationships that we want our pupils to spot. Using different representations can help children to ‘see’ these laws and relationships.

Mathematical Thinking Involves:

- Looking for patterns and relationships.
- Logical Reasoning.
- Making Connections

Early Years

Mathematics within our EYFS is developed through purposeful, play based experiences and which are represented throughout our high quality indoor and outdoor provision. The learning will always be based on our pupils' interests and current themes and focus on the expectations from Development Matters / Early Adopter. Mathematical understanding can be developed through stories, songs, games and imaginative play, child initiated learning and structured teaching. As our pupils progress, they will be encouraged to record their mathematical thinking in a more formal way.

It is essential that all our pupils in EYFS develop a strong grounding in number so that they can then develop the necessary building blocks to excel mathematically. It is our aim that our children can count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns around 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 - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, our EYFS curriculum includes rich opportunities for our children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. 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.

Role of the Subject Leader

The Mathematics Subject Leader is responsible for co-ordinating mathematics throughout the school. This includes:

- 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 by:
 - advising and supporting colleagues in the implementation and assessment of mathematics throughout the school;
 - ensuring continuity and progression within, and between, year groups.
- Providing all members of staff with guidelines and a scheme of work to show how aims are to be achieved and how all aspects of mathematics are to be taught.
- To provide staff with CPD opportunities where appropriate. This will be in line with the needs identified in the school's 'Development Plan' and within the confines of the school budget (this will be achieved in part through regular mathematics insets).
- To monitor and maintain high quality resources required for the teaching of mathematics; again this will be within the confines of the school budget.
- To keep up to date with new developments in the teaching of mathematics.
- To termly audit progress made in mathematics which should be reported to the Head teacher and the Governing Body.

Monitoring and Evaluation

The Mathematics Subject Leader regularly works alongside other class teachers and HLTAs. This time is used to monitor and evaluate the quality and standards of mathematics throughout the school and enables the leader to support teachers in their own classrooms. Support takes place across the school and it takes the following forms:

- modelling lessons;
- team teaching;
- observing lessons.

All support involves dialogue with colleagues focusing on the ways in which support has been beneficial and how it will impact on the delivery of future mathematics lessons.

Once a term, the monitoring of pupils' books is carried out by the Leadership Team, which forms part of the school's Performance Management Cycle. Book looks results are reported back to the Head teacher as part of the Subject Leader's annual Running Audit, which is used to inform strategic plans for maths as outlined in the Subject Development Action Plan and in whole school's Development Plan.

Role of Class Teachers

Each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics subject leader. They are also responsible for:

- ensuring that a daily maths lesson takes place, although mathematical skills run through many areas of the curriculum;
- ensuring progression in the acquisition of mathematical skills with due regard given to the National Curriculum's Mathematics Programmes of Study: key stages 1 and 2 (September 2013);
- incorporating a variety of teaching and learning strategies including: use of models, images, concrete resources and ICT (learning styles of children should be taken into account);
- developing and updating their own skills, knowledge and understanding of mathematics;
- identifying inset needs in mathematics and take advantage of training opportunities;
- keeping appropriate on-going assessment records;
- an interactive maths display and an up-to-date maths working wall;
- marking children's work and providing quality feedback, including setting targets in arithmetic and reasoning each half term, which are regularly reviewed;
- informing parents of pupils' progress, achievements and attainment;
- planning using a common planning format (see Abacus daily planning proforma), which includes differentiation, and for making available copies of plans on the school's staff drive.

Role of Learning Support Assistants

Learning Support Assistants are used in Early Years, Key Stage 1 and Key Stage 2 classes. They work with small groups of pupils to reinforce, consolidate or extend children's understanding of topics and concepts previously introduced to the pupils by the teacher.

Inclusion

We aim to ensure that pupils attain their full potential regardless of race, gender or class. The materials we use reflect a multi-cultural society of women and men so that pupils see mathematics as relevant and interesting to everyone including themselves. Teachers ensure that no particular group or gender dominates the use of equipment or other aspects of teaching and learning situations.

In the case of pupils with English as a second language, consideration should be given through such areas as:

- repeating instructions;
- speaking clearly;
- emphasising key words;
- using picture cues.

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 Passports incorporate suitable objectives from the Mathematics programmes of study: key stages 1 and 2 or the Framework for Mathematics 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 children who are high achievers in mathematics.

Differentiation

This should always be incorporated into all mathematics lessons and can be done in various ways:

- Stepped Activities which become more difficult and demanding but cater for the less able in the early sections.
- Common Tasks which are open ended activities / investigations where differentiation is by outcome.
- Resourcing which provides a variety of resources depending on abilities e.g. numicon, counters, bead strings, cubes, 100 squares, number lines, mirrors.
- Grouping according to ability so that the groups can be given different tasks when appropriate. Activities are based on the same theme and usually at no more than three levels.

Assessment

We continually assess our pupils and record their progress through daily marking and feedback; children are formally assessed once a term in Years 1 to 5, and half termly in Year 6. Assessment is seen as an integral part of the teaching process and we strive to make our assessment purposeful, allowing us to match the correct level of work to the needs of pupils, thus benefiting the pupils and ensuring progress. It is the responsibility of the class teacher to assess all pupils in their class.

Marking

(see **Effective Feedback and Marking Policy**)

Homework

(see **Homework Policy**)

We aim to extend and consolidate the pupils' mathematical techniques, strategies and knowledge. Homework includes interactive activities and work which the family are encouraged to participate in.

Parental Involvement

At St. Bede's Catholic Primary School, we actively encourage our parents by:

- inviting them twice yearly to discuss the progress of their child and give targets in both arithmetic and reasoning;
- holding workshops for parents;
- sending homework home in line with our school's homework policy.