Bedford Hall Methodist Primary School Mathematics Policy

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Chair's Signature	

Mission Statement

Bedford Hall Methodist Primary School strives to provide a caring environment in which every individual can achieve his or her full potential, without limits.

To achieve this we wish to create a happy, secure and purposeful culture throughout the school, which is conducive to learning and high standards, and is based on Christian values.

Our Vision

Safeguarding Statement

At Bedford Hall Methodist Primary School we recognise our moral and statutory responsibility to safeguard and promote the welfare of all children.

We work to provide a safe and welcoming environment where children are respected and valued. We are alert to the signs of abuse and neglect and follow our procedures to ensure that children receive effective support, protection and justice.

The procedures contained in the Safeguarding Policy apply to all staff, volunteers and governors.

CONTENT

1. INTRODUCTION

At Bedford Hall Methodist Primary School, we value mathematics as a tool for life. To function in society, we all need to be able to communicate mathematically. Maths lessons therefore provide a way of viewing and making sense of the real world. Maths is used to describe, illustrate, interpret, predict and explain. Our mathematics policy reflects the principles identified in our whole school intent and the essential part that mathematics plays in the education of our pupils.

All children are encouraged to enjoy mathematics and become enthusiastic mathematicians by developing their skills, knowledge and understanding through practical experiences, which have relevance and purpose in everyday situations.

This policy should be read in conjunction with the Written Progression in Calculations Policy, SEND Policy and Equality Policy.

2. INTENT

At Bedford Hall Methodist Primary School, we recognise our school context and have designed our mathematics curriculum with the intent that pupils build the secure foundations required to become successful and aspirational adults who seek opportunities, take responsibilities and gain life experiences that extend their horizons. We want all children to believe 'I am good at mathematics'.

The school vision ***'Learn, Love, Live: Without Limits'*** is interwoven within our curriculum intent and design. We have developed three curriculum drivers that shape our curriculum, bring about the aims and values of our school, and to respond to the particular needs of our community:

Culture – which helps children develop a wider and deeper knowledge of the locality, society and the world around them, promoting a sense of awe and wonder.

Possibilities – which helps children to build aspirations and know available possibilities for the future lives, so they can live life in its all its fullness.

Diversity – which helps children recognise differences are positive and that individual characteristics make people unique and everyone should love and be loved without limits

3. AIMS

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.

The aims of teaching mathematics in Bedford Hall Methodist Primary School are:

- To promote children's curiosity and enable them to safely investigate, problem-solve and take risks, learning from first-hand experience wherever possible
- For children to become fluent in mathematics by having regular opportunities to revisit their thinking and recall knowledge, supporting them to know more and remember more
- To promote children's ability to reason through opportunities to discuss their thinking and understanding. This emphasis may result in less written work but much deeper understanding.
- To support solution finding for 'non-routine'/real life problems. This is not only true in mathematical learning but in almost all aspects of school life.
- To support children in using new technology and equipment with fear of failure
- To instil a fascination for maths, the manipulation of numbers and awe and wonder of an infinite number system
- To encourage independence, perseverance and systematic thinking
- For children to believe in their own ability and develop secure mental, visual and verbal understanding as well as proficient pencil and paper methods.
- For children to take responsibility for, and pride in, their own learning
- The expectation that all adults and children will converse about mathematics, using the correct mathematical terminology
- To involve parents as educators, by promoting understanding of their child's achievements, progress and targets in maths as fully as possible;
- For children to gain new skills, concepts and knowledge and to practise and apply what they have already learned in a variety of contexts;
- For the curriculum to be equally accessible to all children in line with the school's Inclusion Policy

4. CURRICULUM DESIGN

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Counting to 20 and back Number recognition/formation Matching numeral to quantity Knowing that number represents how many are in a set	Positional language Mathematical language focus Capacity Measurement Weight	Adding two groups together Counting back/forwards on number line One more/less Subtraction	Counting in 10's Doubling Halving 2D Shapes 3D shapes Repeating patterns	Number bonds to 10 Addition and subtraction Sharing Counting in 2's. Problem solving/ challenge activities	Sharing Counting in 2's. Problem solving/challenge Number bonds to 20
Year 1	Place Value, Addition, Subtraction,	Shape, Place Value, Addition, Subtraction,	Place Value, Addition, Subtraction, x2, x5, x10	Length / Height Weight Volume	Multiplication Division Fractions Position and Direction	Place Value Money Time
Year 2	Place Value, Addition, Subtraction,	Money, Multiplication, Division	Multiplication, Division, Statistics, Shape	Fractions Length Height	Position Direction Problem Solving	Time Mass Capacity Temperature
Year 3	Place Value, Addition, Subtraction,	Multiplication, Division	Multiplication, Division, Money, Statistics	Length Perimeter Fractions	Fractions Time Shape	Mass Capacity
Year 4	Place Value, Addition, Subtraction	Multiplication, Division Length /Perimeter	Multiplication, Division Area, Fractions	Fractions Decimals	Decimals Money, Time, Statistics	Shape Position and Direction
Year 5	Place Value, Addition, Subtraction,	Multiplication, Division, Statistics Perimeter / Area	Multiplication, Division, Fractions	Decimals Percentages	Decimals Shape Position and Direction	Converting Units of Measurement Volume
Year 6	Place Value, Addition, Subtraction, Multiplication, Division	Fractions, Position and Direction	Decimals, Percentages, Algebra	Measurement: Converting Units, Perimeter, Area, Volume Ratio	Shape, Problem Solving Position and Direction Statistics	Investigative Work Finance for the Future

A. PLANNING

At Bedford Hall Methodist Primary School, we use the White Rose Schemes of Learning from Reception to Year 6 for long term planning. An annual overview for each year group suggests the teaching time needed for every block of learning, however individual teachers will use their professional judgement to determine how long is spent on these blocks. Content is taught in the suggested order as the sequence is designed to gradually develop children's understanding and build on prior knowledge. Technology and mathematical equipment are used to enhance learning where appropriate.

Termly overview sheets show the objectives for each block. These objectives derive directly from the National Curriculum. Coverage is tracked, by the class teacher, and subject leader using these to ensure the curriculum requirements are met within the year.

Class teachers use White Rose's 'Small Steps' document for Medium-Term Planning. This is where the complex National Curriculum objectives are split in to 'Small Steps' or manageable chunks. These are the titles children record in books and relate their learning to. Year 1 to Year 6 has four 'Small Steps' lessons per week, whereas Reception class has five. A single 'Small Step' does not necessarily equate to one day of teaching and learning – some may demand two or three lessons. Some small steps early in the block are there to revisit learning from previous years or blocks, which will need to be applied in subsequent steps.

B. DELIVERY

Daily maths teaching provides opportunities to practise and advance in written and mental arithmetic, problem solve, think and reason mathematically and to apply and review learning independently. Our approach is based on the mastery-learning model. In short this means spending greater time going into depth, giving children the opportunity to apply their learning in a wide range of contexts before moving on. It is the idea that teachers talk less, to allow children to learn more.

In EYFS, 'Small Steps' are split into three areas:

-Number, which follows a progression of key skills, is focused on three days per week.
-Shape, Space and Measures (which applies learning in number wherever possible) is focused on two days per week
-My Day, which is part of the classroom routine, is revisited daily.

Time is built in daily for short, adult-led focused inputs which are either whole class or small group. This isn't always formal and includes number rhymes, songs and games. Opportunities to further practise counting and subsidising skills through play are provided in areas of provision. The aim of Early Maths teaching throughout our EYFS is for children to gain a secure sense of numbers. This develops gradually through repeated experiences in different contexts.

In Years 1 to Year 6, maths lessons follow a five-part structure:

FIF (Fluent in Five) - five arithmetic questions for children to record in books, showing their working out. This is to revisit prior learning, enabling children to remember more and develop the flexibility and fluidity to move between different representations of mathematics. This use of procedural variation (a deliberate change in the type of examples used and questions set) supports children to achieve mastery.

Fluency - **5 minute** mental warm up – counting, chanting, times tables, recall skills

POD (Problem of the Day) A shared reasoning problem for whole class discussion and journaling. Children use concrete materials to investigate new concepts to ensure learning is relevant and not abstract. This use of conceptual variation (when a concept is presented in an unfamiliar way) supports children to achieve mastery.

Model - *(This part may not be in every single lesson and may not be present in books if the modelling is practical).* For new concepts, this part of the lesson will include teacher modelling or group work.

Apply - This is the part of the lesson where children apply their learning. The part of the lesson is indicated with the title of the 'Small Step'

In addition to the four 'Small Step' lessons, one maths lesson per week is dedicated to becoming fluent in the fundamentals of mathematics. The learning objective for these lessons derives from whole class misconceptions in previous lessons or after careful analysis from termly assessments, where the teacher wants the time to hone in on a particular skill in depth. Some time in this lesson may be dedicated to personalised learning targets, making use of our subscriptions for IXL or TT Rockstars for example.

5. ROLE OF THE SUBJECT LEADER

The school subject leader for mathematics will provide advice for individual teachers about the school's mathematics curriculum, purchase relevant resources, monitor and evaluate whole school performance through drop-ins and book monitoring, as well as seek out relevant training for staff (individual or whole) as appropriate.

The subject leader will track coverage to ensure the curriculum requirements are being met and monitor pupil progress and attainment. They will advise teachers on recommended interventions and ELOs (Extended Learning Opportunities) that can be delivered to children who need them, over short, intense periods to ensure all children are able to achieve.

They will also support staff through providing joint planning opportunities and support drop-ins. The subject leader will deliver training and staff updates through staff meetings based on their findings from analysing assessment data, work scrutiny and whole school drop-ins. It will also be part of the role for the subject leader to work closely with the Headteacher to discuss any areas of development.

The Subject Leader keeps the governing body aware of changes within the maths curriculum and of pupil progress and attainment, so they can support and challenge effectively. The subject leader is responsible for maintaining positive links with the mathematics governor by hosting separate meetings where appropriate to keep them fully informed. Governors are invited to attend mathematics focus days on the school calendar, such as 'Rockstar Day'.

6. ORGANISATION

A. CROSS CURRICULAR LINKS

The teaching of Mathematics contributes significantly to children's understanding of other curriculum areas. Links are planned, where possible, and taught appropriately in line with Creative Curriculum and Science topics being covered at the same time.

B. MARKING

Children's work is marked according to the agreed school's marking policy. Much of the marking is completed on-the-spot by teachers or support staff. Children may also mark their own work or their peers' work so they can revisit any corrections in a timely manner.

C. PRESENTATION

-Short date – one digit per square, underlined
-Roman Numerals Date (from Y4 – on line directly beneath date), underlined
-Subheading for FIF followed by 5 arithmetic
-Subheading for POD, POD stuck in books with individual journaling underneath
-The title will be written, centred where possible. This title will be the 'Small Step'
-Subheadings for Model or Apply (or 'Challenge' if they have mastered the model and apply)

-All calculations should be written one digit per square, using a ruler for answers
-Fraction should be over ***two*** squares - numerator in a square and denominator in a square (even if the denominator has 2 digits) This is the exception to the 'one digit per square' rule..
- During fluency practice, children should draw a margin down the centre of the page so arithmetic can be done in columns to save space in book.
-Wherever possible, application should be completed directly in books. This may involve writing book and page number after the subheading 'apply'. For example Apply: HS Mastery p19
-When a worksheet would enhance learning (for example statistics and geometry) worksheets should be trimmed and stuck in whole, with no folds or flaps.

D. RESOURCES

Resources are available in line with the requirements of the Early Years Foundation Stage and the National Curriculum;

- Resources that are used on a regular basis will be stored in classrooms in appropriate boxes easily accessible for the children;
- All other resources and mathematical equipment will be stored centrally, well organised and clearly labelled;
- Teachers will have access to a wide range of supporting materials to extend mathematical learning;
- Teachers are responsible for the collection and return of resources. They are also responsible for reporting lost or damaged items to the Subject Leader;
- Online subscriptions for White Rose Premium, Classroom Secrets, IXL and TT Rockstars are used to enhance learning.

7. ASSESSMENT, RECORDING AND REPORTING

Assessment takes place in line with the agreed school's assessment policy.

Assessment is regarded as an integral part of teaching and learning and is a continuous process. Teachers assess children's work in the short, medium and long term.

Short-term assessments are matched to the teaching objective and help to adjust daily plans, and form the learning objective for the weekly Fluency lesson. A range of Assessment for Learning strategies are used.

Periodic assessments, carried out termly, measure progress against assessment foci linked to National Curriculum and informs future planning and teaching. Long term assessments are used to assess progress against school and national targets. National tests are used for Y2 and Y6. Annual assessments of children's progress are measured against the level descriptions of the National Curriculum.

8. MONITORING AND EVALUATION

The teaching staff monitor their pupils through observation, discussion, teacher assessment, marking work and assessments.

The teaching of mathematics is monitored through book scrutiny, lesson observations, pupil voice, discussion during staff meetings and tracking children's progress through the

school's tracking system. It is the responsibility of the subject leader and Headteacher to monitor this subject. Termly pupil progress meetings take place to ensure all children are on track to achieve and timely interventions and ELOs are provided where required.

9. INCLUSION

All children have equal access to the mathematics curriculum. Our school strives to meet the needs of all children and teaching assistants are utilised effectively to support learning within mathematics lessons.

Concrete resources are accessible to all children and those that have not mastered a concept in an abstract way are encouraged to use these resources to support their learning until they are not necessary.

Wherever possible children with SEND will be taught their own year group objectives, made accessible through the use of additional resources or facilitated by the class teacher or teaching assistant. For independent work, the class teacher will select resources that are appropriate to the child's level of understanding in that area of mathematics.

Children with SEND may be given pre-learning opportunities through carefully-planned ELOs (Extended Learning Opportunities) so they are equipped with the skills necessary to access future lessons with their peers.

Children who are working at greater depth in their year group are challenged throughout the lesson, and not just at the end. They will be provided with opportunities to deepen (not accelerate) their learning through careful questioning techniques and adaptations of problems. Question stems such as the following are used:

Are you sure...? Explain how you know.
What do you notice about..?
Convince me/prove that…
Is there another way to…?
Is this always, sometimes or never the best method? Explain how you know.
Can you imagine…

Children working at greater depth who have shown they have mastered the objective being modelled by the teacher, may complete different work to their peers instead of completing the modelled tasks. Teachers use a range of resources such as Third Space Learning, NRich and Mathsteasers (Y4-6). Children will write the subheading '**Challenge**' in their books to indicate this.

10. HEALTH AND SAFETY

Children are made aware of their responsibility regarding safe and sensible use of equipment. All equipment used is of a suitable nature e.g. no glass jars for capacity work. Any equipment such as compasses are stored away safely. A risk assessment is carried out prior to children participating in a mathematical activity outside the classroom.