Emmaus Primary School

Church of England and Catholic Primary School

Travelling together with Jesus

Maths Policy

Intent

Maths is more than a school subject. A solid mathematical knowledge and understanding can be seen in the fields of science, engineering and technology but is an element in most forms of employment, as well as being a crucial part of personal financial literacy and household management. A child's ability to calculate; apply knowledge; to communicate fluently; to reason and to solve problems mathematically, forms the backbone of their education for life. As the children implement their mathematical skills, they should be able to identify the practical relevance of this subject and be able to apply their knowledge in an ever wider set of familiar and new contexts. Yet, this will only be possible if the children's appreciation of the subject is also nurtured, such that they gain a sense of enjoyment and a curiosity about maths.

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 July 2014)

At Emmaus Church of England and Catholic Primary School our intention is to help children:

- enjoy maths through practical activity, exploration and discussion
- understand the importance of mathematics in everyday life
- become confidence and competent with numbers and the number system
- become fluent in the fundamentals of mathematics
- develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry,
- spot relationships across domains, make generalisations and express an opinion using mathematical language
- solve problems by applying their mathematics to a variety of routine and non-routine problems, including breaking down problems into a series of simpler steps
- keep persevering in seeking solutions and be aware that there are often many or even no solution
- develop an appreciation of the creative aspects of maths; awareness of its aesthetic appeal
- see the historic context and present-day relevance of mathematics

As a result, our Maths curriculum is also intrinsically linked to our whole school curriculum drivers: · **Gospel Values** · **Cultural Capital** · **Diversity** · **Independence** · **High expectations**.

We teach and encourage these values at all times, seeing maths as a subject open to all, to be used for the benefit of all. At Emmaus, we believe that a rich and broad curriculum builds cultural capital and we thus provide our children with a vast range of experiences and opportunities to help them progress and achieve success, linking what they do within the classroom to the world that they will grow up in. Ultimately, we expect the children to aim high, and be able to use the skills they learn in a variety of contexts, working with others when required but specifically to have the confidence to ask their own questions, explore for themselves, and draw their own conclusions. There is a clear and ambitious progression of vocabulary from Early Years to Year 6. We expect this for all children, regardless of their starting point within this subject.

Implementation

Maths is a core subject, given significant time on the timetable, with a daily lesson in every class. The school follows the School Improvement Liverpool scheme of work, such that in the first term of each year there is a heavy focus on number, while in the spring and summer terms, the skills that the children have learnt are revised, built upon and applied in the areas of measurement, geometry and statistics. Each area is progressive, with topics from the curriculum and skills identified and built upon year after year. The sequence of calculations in terms of size of number and complexity is also identified by year group. Also, each sequence of lessons on one particular focus is taught in three sections. In the practice section, children learn calculation methods. In the secure section of the lessons children look at the inverse, units and missing box questions. If the children can complete these, this show sufficient understanding to apply these skills and knowledge to 'solve' problems, look at in real-life situations, challenge opinions and address puzzles and open-ended investigations.

The teachers ensure that the children see maths in a wide context by using resources from a variety of sources, in different formats and with a focus on different aspects of a domain from concrete resources and calculation practice through to the application of skills in abstract and practical situations. This ensures that the children see maths as both a subject in its own right, and also as a subject useful to their future. Teachers have access to worksheets and activities from Primary Maths, Whiterose, NCETM and other online resources as well as having photocopiable and textbook resources. Links are made with other subjects, and the maths used cross-curricular, is of an appropriate standard for the age group.

The subject is well resourced with practical materials, and children are expected to learn when and where to use these resources. Plus, they should over time, identify which calculations need a practical tool for support; which should be completed using a formal method; and which should be done mentally or with jottings. Teachers use and emphasise mathematical vocabulary, and link the teaching to the real world, wherever possible.

Assessment takes place during every lesson, so that children are moved on quickly; at the end of a topic; and formally at the end of Autumn and Summer 2, to ensure that the children have achieved and continue to achieve. Support and intervention for those who need it, is key in maths lessons, but the children are encouraged to work independently and strategically through their tasks. Adaptive teaching takes place to ensure that all pupils can access the planned lessons.

Maths lessons last 1 hour with Fluent in 5 included in each lesson to enable the children to practice their arithmetic skills. Basic skills sessions take place throughout the week.Weekly or topic plans identify the basic skills that will be targeted, based upon the SIL plans, the Fluent in Five activities, some reasoning activities or the identified needs of the class or year group.

Impact

The impact and success of maths teaching is seen in the high scores in test situations; the monitored progress of each child; the positive outcomes of the pupil voice questionnaires and interviews; and the children's independence in lessons. Mathematical confidence, the ability to take on new challenges and yet draw on previous experience, ensures that the children are ready to face the mathematical realities of everyday life.

Curriculum Planning of Maths

Mathematics is a core subject in the National Curriculum.

The National Curriculum materials are all available online at:
https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study

Planning is undertaken at three levels:

Long term plans are the detailed specifications of the National Curriculum Framework. The teaching programme identifies year on year the statutory teaching requirements in the four domains of Number, Measurement, Geometry and Statistics, as well as offering non-statutory guidance in each area.

Medium term plans follow the Liverpool Local Authority Plans. These identify the specific teaching required on a termly basis, for each year group, to meet the long term specifications, and provide examples of the methods and applications of each requirement. They focus initially on number, then how the knowledge and skills learnt can be applied in other domains. It gives the main teaching objectives for each term and ensures an appropriate balance and distribution of work across the year as a whole.

Short term plans are drafted by the teachers in each year group. Based upon the medium term plans, they identify the order each term's topics will be taught, the length of time to be

spent and the differentiation in each lesson. These plans list the specific learning objectives and details of how the lessons are to be taught, including key vocabulary and resources required. These plans will be drafted for parallel classes, but may be annotated by teachers to reflect the abilities and nature of the children in each class, or after teaching the initial lessons, to change the direction of later ones. Planning is carried out weekly by the class teacher. These plans also note the basic skills to be addressed.

A range of resources are used to aid Mathematics teaching, including practical resources kept in each class as well as some held centrally; various online resources such as WhiteRose and Primary Maths; as well as text books and photocopiable worksheets to ensure a variety of styles and formats are seen by the children.

The linking of mathematics within other curriculum areas

A separate policy (Maths in the Curriculum) identifies specific opportunities for linking maths to the curriculum at the appropriate level in each year group. However, in a more general context, maths understanding, knowledge and use has implications across the curriculum. Below are some explanations and examples.

English
Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during plenary sessions. Younger children enjoy stories and rhyme that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

Geography/History/DT/Art
Children use co-ordinates and other mapping skills with increasing accuracy as they move through KS2. In KS1 teaching also includes the vocabulary of direction, initial compass points and the terms clockwise and anti-clockwise. Within the history and design topics teachers should always look for ways of incorporating mathematical knowledge eg Roman numerals; the date and days and times of events; drawing designs to scale; or measuring when creating models

Science
In KS2 it is expected that children would be able to read and interpret graphs, moving on to spotting errors or omissions, and drafting their own charts, tables and graphs to represent the results of experiments they themselves have carried out.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

As a school we are constantly looking at ways to make mathematical connections within the National Curriculum and across the broader curriculum for life, and the above points are not exclusive or finite.

Teaching and learning style

The school uses a variety of teaching and learning styles in mathematics lessons. Our principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole-class and group-direct teaching. During these lessons, and in the basic skills activities, we encourage children to ask as well as answer mathematical questions, using mathematically appropriate age related vocabulary.

Careful planning of key 'open' questions, promotes higher order thinking skills. Children have the opportunity to use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. They use ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. Wherever possible, we encourage the children to use and apply their learning in everyday situations. The application of maths is embedded into the activities carried out by the children across all four domains.

In all classes there are children of differing mathematical ability, but the aim is for all children to be working through the programmes of study at broadly the same pace. We recognise this fact and therefore provide suitable learning opportunities for all children with the correct level of support or challenge. On each topic we achieve this through a range of strategies – in some lessons through staggered inputs, through the application of the calculation sequence, through open ended extension activities verses consolidation activities, by moving children through activities at a greater pace, or in other lessons by organising the children to work in pairs on open-ended problems or games. We use teaching assistants to provide appropriate support to individuals or to groups of pupils.

Teaching assistants within Emmaus Primary School are viewed as an important 'asset' to the school and, as such, are appropriately involved in the delivery of the mathematics curriculum. During the introduction they can either support a group of children or make observations and notes for children who they will focus upon during the session. In the main teaching activity they should support either a group or an individual child, annotating work if required but certainly identifying where and how help has been given, so that the teacher is aware of this when marking. They should be given the opportunity to work with different ability groups throughout the week. Time should be set aside for teaching assistants to work with children who need additional support, following short-term assessment, outside of the maths lessons. This may be a child from any ability group, who needs additional support at their level.

Lessons generally follow a simple format, whereby the teacher will demonstrate, introduce an activity or recap on previous learning, before allowing the children substantial time to engage in related activities. However, teachers can have split inputs to allow for more specific direction, or to allow a group to show that they are 'secure' before moving them on. These activities used will be tailored to suit the individual needs of the pupils. Please see the separate Calculation Policy for the progression and guidance in mental and written strategies for calculations.

The teaching of mathematics provides opportunities for whole class teaching, group work, paired work and individual work. Pupils engage in:

- The development of mental strategies
- Written methods
- Practical work
- Investigative work
- Problem solving
- Mathematical discussion

At Emmaus Primary School we recognise the importance of establishing a secure foundation in mental calculation and the recall of number facts before standard written methods are introduced. We also plan for the mathematical vocabulary to be used when teaching and expect the children to use this in their verbal and written explanations.

Mathematics contributes towards many subjects and it is important that the children are given opportunities to apply and use mathematics in real contexts. We endeavour to set work that challenges, deepens understanding, motivates and encourages the pupils to talk about what they have been doing.

We recognise the importance of developing teachers' and teaching assistants' skills in teaching maths and keeping abreast of developments in the numeracy curriculum. Through staff meetings, monitoring of the children's work and lesson observations, needs can be highlighted and planned for by the Mathematics Lead and the Senior Management Team.

Early Years

Mathematics is taught in Nursery and Reception according to guidance for the Early Years Foundation Stage (EYFS) Curriculum – Early Learning Goal 11 (Numbers) and Early Learning Goal 12 (Shape, Space and Measures). The children are given rich opportunities to develop their understanding of number, calculating, measurement, pattern, shape and space through structured and child initiated play-based activities both indoors and out. This enables the children to enjoy, explore, learn, practise and talk about their developing understanding of mathematics.

In Reception, a mathematics learning experience is planned every day and children are involved in adult-led guided group work, as well as using and applying their mathematical skills and understanding within continuous provision areas. Children's progress is charted on the Early Years Outcomes and by the end of the Reception year, judgements can be made on whether children are working towards, met or exceeded the learning goals for this area on the EYFSP.

Children with Special Educational Needs (SEND)

Children with SEND are always included in the daily mathematics lesson so that they benefit from the emphasis on oral and mental work and by listening and participating with other children in demonstrating and explaining their methods.

Teachers will, in consultation with the Special Educational Needs Co-ordinator (SENCO), the parents and the pupil, decide upon a plan for each child. When planning, teachers will address every child's needs through differentiated or modified tasks, or the use of support staff. Under teacher direction, teaching assistants can support small groups and individual children with specific outcomes to achieve. This should take place in the classroom, during the main maths lesson.

Children who are More Able

Able pupils will be taught with their own class and stretched through an expectation of greater pace, being allowed to start activities at a different point, or skip some questions, or by extension, greater problem solving and open-ended questions. The aim is to vary the context of questions, to set more challenges and to allow the children to investigate a topic from different perspectives. When working with the whole class, teachers will direct certain questions towards the more able to maintain their involvement. However, based upon teacher judgement, a tiny minority of children may begin working on elements of the programme of study from the year above.

Additional Support

Children in both Key Stages work within lessons, supported by a teaching assistant on several mornings a week. Some groups may be withdrawn from lessons to have a separate input from the TA, that more specifically reflects their stage of development and ability. In addition, those who have found the lesson more complex will work with the TA, individually or in small groups, in the afternoon using materials designed by the teacher or the TA. This could be a child within any group, who has found the task set trickier than anticipated.

Progression is monitored, and groups of children receive additional booster classes after school when this is deemed necessary. This may be in preparation for end of Key Stage 2

(KS2) Standard Assessment Tests (SATs), during year 6, but has in previous years been used to support groups in year 2 and year 5.

Assessment and recording

Assessment is regarded as an integral part of teaching and learning and is a continuous process. It is the responsibility of the class teacher to assess all pupils in their class.

At Emmaus, we continually assess our pupils and record their progress. We see assessment as an integral part of the teaching process and endeavour to make our assessment purposeful, allowing us to match the correct work and amount/type of support to meet the needs of the pupils, thus benefiting the pupils and ensuring progress.

Assessment is carried out on three levels:
Short-term assessments are an informal part of every lesson and are closely matched to the teaching objectives. They are generally not to be recorded because they are for the teacher's immediate attention and action. However, at the end of lessons children are given feedback through marking and discussion. Any correction or extension required are identified by the teacher and completed by the children as part of the marking process. The children are then given a brief test at the end of each topic, and the results recorded by the teacher.

Medium term assessments are undertaken at the end of term. The purpose of these assessments is to set targets for the following term. Children's progress and achievement is updated at the end of term on Insight (online assessment tool), based upon the topic and termly tests, and is reviewed termly prior to meeting parents.

Summative assessments are based primarily upon the school's assessment records (Insight), with supportive data from the children completing the NFER tests for each year group. These are carried out at the end of autumn term and summer 1. The statutory KS2 SAT Mathematics test is completed in Year 6.

Marking

Marking is carried out in line with the main Marking Policy, such that it supports and encourages the children, but also looks to set additional tasks and identify the next stages in the children's learning. Children are encouraged to respond to the comments and challenges set, leading to a dialogue between teacher and pupil.

Presentation

The neat presentation of work shows that the children are taking pride in their work and also shows clear calculation methods, which produces fewer errors. However, children must be encouraged to show their working out even when this is in note form. Pencil is used in maths, with children from an early age shown how to put a single digit in each square, with the squares reducing in size from year 1 to year 2 and year 3 to year 4.

Reporting

All parents receive a termly report in December and March, detailing their child's current level of progress in maths, and an annual written report on which there is a summary of their child's attainment and progress in mathematics over the year. At the end of Key Stage 2 each pupil's level of achievement in the Mathematics SAT test is included as part of their annual written report.

Parents

In addition to termly reports, parents can gain additional information about maths through the website, which contains all policies relating to maths; the topic pages which detail the curriculum in each year group; and the maths faculty page which has recommendations for websites.

Display

Display, including working walls, should play an important part in the education process. They should be support and a celebration and part of the process of ensuring that the children recognise the importance of maths. A working wall is the public display of the learning process and may include: objectives, success criteria/steps to success, models and images, challenge, vocabulary or examples of good work.

Resources

Resources for the delivery of the mathematics curriculum are stored both centrally and in classrooms. Everyday basic equipment is kept in classrooms, where it can be accessed by the children. Larger additional equipment and topic-specific items are stored centrally.

Emmaus Primary School uses a variety of published materials to facilitate the teaching of mathematics but recognises the need for the teaching of mathematics to be 'scheme assisted not scheme driven.'

Materials are constantly updated, as new and relevant items become available. The Mathematics faculty leader orders new resources after consultation with the staff.

There are excellent interactive resources on the internet for use in introducing topics.

Calculators and ICT

In focussing on good written and mental arithmetic, and ensuring the children's understanding of mathematical processes, the use of calculators is not seen as a necessary requirement. However, calculators are introduced at the end of year six when exploring more complex number problems, and in preparation for year seven.

Homework

All homework given reflects work covered in class and the needs and abilities of the children. Children are usually given at least one piece of mathematics homework every week. Changes to this will be at the discretion of the class teacher, for example, during the SATs period in Year 6.

The format of the homework will be at the discretion of the class teacher. Not all homework is written work. Feedback will be given to pupils, as appropriate.

Monitoring and review

Monitoring of the standards of children's learning and of the quality of teaching in mathematics is the responsibility of the mathematics lead and SLT. The work of the mathematics lead also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.

The Headteacher allocates time to the mathematics lead so that they can review samples of children's work, undertake lesson observations of mathematics teaching across the school and analyse summative assessment results. Named members of the school's governing body are briefed to oversee the teaching of numeracy. Mr. D. Glencross and Mrs. Gilbertson, the numeracy link Governors, meet with the subject leaders to review progress at least annually.

This policy should be read in conjunction with:

The Calculation Policy, Maths in the Curriculum Policy, The Maths Procedural Guide

Our statement of SMSC

Through our varied curriculum our children will have…

- A sense of enjoyment and fascination in learning about themselves, others and the world around them, including the intangible
- imagination and creativity in their learning
- A willingness to reflect on their experiences.
- The ability to recognise the difference between right and wrong and their readiness to apply this understanding in their own lives
- An understanding of the consequences of their actions
- A willingness to participate in a variety of social settings, cooperating well with others and being able to resolve conflicts effectively
- A willingness to participate in, and respond to, for example, artistic, musical, sporting, mathematical, technological, scientific and cultural opportunities

Date: September 2025 **Review: July 2026**