MATHEMATICS POLICY

OUR MISSION:

WE ARE COMMITTED TO THE CHRISTIAN ETHOS - THAT EVERY CHILD IS SPECIAL IN THE EYES OF GOD AND WE TEACH THAT ALL PEOPLE SHOULD LOVE, CARE FOR AND RESPECT ONE ANOTHER AND OUR PLANET.

It is our ambition that all our pupils use our 5 Christian values Love, Peace, Hope, Compassion and Forgiveness to achieve our vision and mission.

'A New Commandment I give you, 'Love one another as I have loved you.' John 13:34

It is from this Commandment and the teachings of Jesus that we teach our children five Christian values.

Recommended by:	Principal
Ratified by:	**LAGB**
Signed:	V E Jackman
Position on the Board:	Chair of LAGB
Ratification Date	30.11.2024
Next Review:	September 2025
Policy Tier (Central/Hub/School):	School

1. Aims and Objectives.

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 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.

We aim for our children to:

- Be fluent in the fundamentals of maths
- Be able to solve increasingly complex problems
- Develop conceptual understanding
- Recall and apply knowledge rapidly and accurately
- Reason mathematically by using argument, justification and proof.

2. Mathematical attitudes, environments and mindsets:

As teachers and achievement assistants we are aware that in the wider society outside school there are negative attitudes to the subject of mathematics that may affect the attitudes to the subject that our pupils develop.

We are therefore fully committed to:

- Ensuring that the mathematical experiences that the children receive in our school are positive, engaging, motivating and challenging for all abilities
- Providing a supportive mathematical environment that encourages individual and collaborative deep thinking, reasoning and discussion
- Planning activities and tasks that will enable pupils to develop fluency and mastery of calculation knowledge, skills and understanding.

We want our pupils to understand that:

- Everyone is able to succeed in mathematics
- Effort is more important than ability
- Challenges are fun and tussling with a problem develops the synapses in our brain
- Making mistakes is important, because we learn more from our mistakes than our successes

All adults involved in the teaching and learning of mathematics will therefore:

- Display positive attitudes and avoid any negative comments about the subject, including suggestions that maths learning is 'hard' or that 'I can't do that either'
- Show enthusiasm and delight in mathematical learning
- Use appropriate praise – praise the effort rather than the person.

3. Teaching and Learning style.

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 teaching. The school has adopted a 'Singapore style' approach to Maths teaching. The curriculum adopts a spiral design with carefully built up mathematical concepts and processes adapted from the Maths mastery approaches used in Singapore. The Concrete-

Pictorial-Abstract (CPA) approach forms an integral part of the learning process. It incorporates the use of concrete aids and manipulatives, problem solving and group work. The children have the opportunity to use a wide range of resources such as number lines, part whole models, Numicon, tens frames, digit cards, mathematical games, number squares, and small apparatus to support their work. ICT is used in Mathematics lessons to enhance teaching and learning and is an integral part of lessons. The lesson structure is also supported by the teaching and learning cycle where, at different points in the lesson, pupils have the opportunity to connect, inform, explore and apply their learning. Our lesson structure also strongly supports the 10 components of great teaching and learning as listed in the teaching and learning policy.
We also have a strong focus on teaching children the basics, developing mental maths skills and securing a range of calculation strategies. We have developed a calculation policy along with other schools in the trust to support this. We also have a KIRFs (Key Instant Recall Facts) grid which shows progression of mental maths skills across the school to support daily teaching. Teachers use programmes such as Numbots, Times Tables Rock Stars and Mastering Number to support the teaching and learning of key number facts and times tables.
In Key Stage 1 and 2 we use intervention programmes such as Number Stacks, Plus 1 and The Power of 2 to help those who are finding certain areas of Mathematics difficult. We use every opportunity to encourage children to develop and refine their own mathematical strategies and improve their mental skills. In Key Stage 1 we provide bespoke 1:1 interventions and same-day catch up groups where appropriate.
Across school PiXL therapies are used where appropriate.

4. Mathematics Curriculum Planning

Mathematics is a core subject in the National Curriculum, and we use this as the basis for implementing the statutory requirements of the programmes of study for mathematics. Teachers are expected to use the programmes of study for their year group to support their planning. We have adopted the Maths No Problem scheme of work to provide the day-to-day tools to deliver an effective Maths curriculum.
Maths planning should include some or all of the following:

- Recap of prior learning and basic skills
- The methods being taught
- The concrete materials that will be used and how
- Examples of calculations that will be used and modelled
- Pictorial examples if necessary
- The abstract representation – the calculation or number sentence
- Important vocabulary to be taught and reinforced along with sentence stems
- Key questions to assess and extend pupils understanding
- Opportunities for pupils to reason and problem solve, individually, in pairs or in groups.

Planning takes the form of flipcharts that are regularly monitored by SMT to ensure quality provision.
The whole class works through the programme of study at the same pace with ample time on each topic before moving on. Ideas are revisited at higher levels as the curriculum spirals through the years.

Tasks and activities are designed to be easy for pupils to enter while still containing challenging components. For advanced learners, the textbooks also contain non-routine questions for pupils to develop their higher-order thinking skills.
Lessons and activities are designed to be taught using problem-solving approaches to encourage pupils' higher-level thinking skills. The focus is on working with pupils' core competencies, building on what they know to develop their relational understanding.
Based on Jerome Bruner's work, pupils learn new concepts initially using concrete examples, such as counters, then progress to drawing pictorial representations before finally using more abstract symbols, such as the equals sign.
The questions and examples are carefully varied to encourage pupils to think about the maths. Rather than provide mechanical repetition, the examples are designed to deepen pupils' understanding and reveal misconceptions.

5. The Foundation Stage

The statutory framework for the Early Years Foundation Stage sets out the Early Learning Goals in relation to Mathematics which then dovetail into the Year 1 Programme of Study in the National Curriculum.

We give all children support in developing their understanding of Mathematics in a broad range of contexts in which they can explore, enjoy, learn, practise and talk about their developing understanding of the subject. We give all children opportunities to practise and extend their skills and to gain confidence and competence in their use, through child-initiated and adult led play based activities.

6. Contribution of mathematics to teaching in other areas.

Mathematics is taught using Maths No Problem as a vehicle. This places Maths in a real life scenario and makes learning meaningful for the children. See Curriculum Policy for further information.

7. Teaching mathematics to children with special needs

We teach mathematics to all children, whatever their ability. It is part of the school curriculum policy to provide a broad and balanced education to all. Children develop at different rates and we provide learning opportunities that are matched to their needs. When children experience difficulties we encourage them to talk about what they have done, giving them the opportunity to discover for themselves where things went wrong. We also encourage children to use a wide range of equipment which will help to develop their understanding of particular Maths concepts.
Class teachers are responsible for identifying children who are under-achieving and would benefit from extra support. This could take the form of:
Wave 1 support: High Quality Teaching where the child is supported in the classroom and given additional scaffolding or equipment where necessary.
Wave 2 support: Small group interventions such as PiXL therapies and Number Stacks.
Wave 3 support: 1:1 support with an adult outside of the lesson time.
Class teachers are also responsible for identifying and reviewing targets for individual children on their provision maps with the support of the Special Educational Needs Co-ordinator and Mathematics subject leader when necessary. These pupils are discussed regularly at pupil progress or HOTA meetings.

8. Parents

We are anxious to recognise and build on the mathematical experiences that our children bring with them to school. The school encourages parents to be involved in their children's mathematical development and tries to help parents gain confidence to support children in their learning. We help raise an awareness of this through half termly class curriculum letters, induction meetings, family learning programmes, extended Stay and Play and parents' evenings. We keep parents informed about their child's progress in mathematics and are always available to discuss problems and/or share successes. Children are set homework regularly from the end of the Foundation Stage.
Children in Key Stage 2 have access to the on-line resource Times Tables Rock Stars to further develop their mathematics skills outside of normal lesson time while children in Early Years and Key Stage 1 have access to the on-line resource Numbots.

9. Assessment and Recording

We assess children's work in mathematics from three aspects – long-term, medium-term and short-term. Assessment is recognised as part of normal classroom life. We make continuous evaluations to ensure that learning experiences provided are suitable and relevant and use these to inform future planning.

We make short-term assessments, which we use to help us adjust our daily plans. These short-term assessments are closely matched to the teaching objectives. We gather the information needed to assess what children can do by observing, talking and listening to children as well as considering children's written outcomes. Problem solving activities are recognised as a rich source of assessment in giving the teacher a true understanding of the child's ability to generate ideas, to investigate, discover and interpret. Marking also forms an important part of our short term assessment by providing feedback to the children and providing them with opportunities to respond to this feedback.

We make medium-term assessments using a system common to all schools in the Trust. Each half term children are tracked against their target and against age-related expectations (ARE). Provision is put in place for any children not on track. At the end of each term children are given a grade to indicate their current level of attainment in relation to the National Curriculum statements for their year group.

We make long term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We can then set targets for the next school year and make a summary of each child's progress before discussing it with parents. We pass this information on to the next teacher at the end of the year, so that s/he can plan for the new school year. We use national tests for children in Year 2 and optional Maths No Problem tests and/or PiXL tests for children in Years 1, 3 and 4.

Teachers review individual examples of work against the national exemplification materials produced by the DFE at the end of Key Stage 1. They regularly take part in in-school moderation to check the consistency of teachers' judgements, to identify and resolve any differences and to agree school standards, and take part in regular external moderation.

In Foundation Stage we assess all children through regular observations of child-initiated and adult led activities recorded in their learning journeys, which inform the planning and feed into the EYFS profiles.

10. Monitoring and Review

Monitoring the standard of children's work and the quality of teaching in mathematics is the responsibility of the Maths Subject Leader. The work of the Maths Subject Leader 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 Maths Subject Leader reviews annually results of Key Stage 1 and Years 1, 3 and 4 tests. A summary of the strengths and weaknesses in mathematics and indications of areas for improvement is given to the head teacher and shared with all staff. The head teacher allocates management time to the Maths Subject Leader so that s/he can review samples of children's work, talk to pupils, monitor flipcharts and undertake lesson observations of mathematics teaching across the school. The governors' curriculum committee is briefed to oversee the teaching of Mathematics and meet the Maths Subject Leader in school.