Mathematics Curriculum Policy

At St Maxentius CE Primary School, we strive to give children the best possible education. The curriculum is designed to build on prior learning, with relevant and engaging learning experiences, which supports the development of resilient learners, and creative and critical thinkers. As a school, we passionately believe that every child is made by God to be unique with their own skills, talents and innate potential to achieve. We celebrate and welcome the differences within our school community and we strive to ensure that every child can reach their potential, without exception. The curriculum is underpinned by our Christian Values of hope, faith and love and our ethos is driven by the parable of the lost sheep:

"And when he finds it, he joyfully puts it on his shoulders and goes home.
Then he calls his friends and neighbours together and says
"Rejoice with me; I have found my lost sheep" Luke 15: 5-6

At St Maxentius, we give our children the very best. Through a supportive and purposeful curriculum linked with national curriculum objectives, we strive to ensure that all our pupils are able to succeed and find their unique talents and strengths. Our staff are committed to developing a love of learning, whilst developing the skills and values to support the all-round development of every pupil. St Maxentius C of E Primary School is a special place where we believe and achieve together.

Intent

At St Maxentius, we believe that Mathematics is a key life skill, providing children with a means of making sense of the world in which they live. It demands practical understanding of the ways in which information is gathered, presented and sorted. Therefore, St Maxentius offers opportunities for children to develop their confidence and competence with numbers, shapes, measures and data and develop their ability to solve a variety of problems they may come across in real life.

Teachers ensure that pupils understand and remember mathematical knowledge, concepts and procedure appropriate for their starting points, including knowledge of efficient algorithms to ensure pupils are ready for their next stage of education.

Children, at St Maxentius, typically enter school with gaps in their mathematical knowledge and teachers rapidly address these, appropriate to their starting points. They will sharpen their mental agility in numeracy and the ability to instantly recall basic facts. They will be able to explain their strategies and talk about their reasoning, sharing ideas with others through using specific mathematical terminology. They will acquire the skills needed in handling data and interpreting information and presenting in graphs, diagrams, charts and tables.

Staff at St Maxentius cultivate an enjoyment for mathematics and a positive attitude, approaching all problems with confidence and enthusiasm, enabling children to reach their full potential and achieve their highest possible standards.

Leaders have carefully planned and sequenced the appropriate knowledge, concepts and procedures to build mathematical knowledge and skills systematically over time and draw connections across the curriculum. The maths curriculum is designed with clear end points of what pupils will be able to achieve. Teachers introduce new material, in manageable steps, lesson by lesson. Planning is linked directly to the mathematics programmes of study. Teachers use formal, as well as on-going, teacher assessments to adapt their planning, where appropriate, to meet the needs of all pupils. For vulnerable pupils, including those with special education needs, the curriculum has been adapted to ensure it contains the content that leaders have identified as most useful.

The school curriculum allows opportunity for mathematical reasoning and solving problems, so that pupils can make useful connections between identified mathematical ideas, or to anticipate practical problems, they are likely to encounter in adult life. The curriculum is designed so that there are sufficient opportunities to revisit previously learned knowledge, concepts and procedures. This is to ensure that, once learned, mathematical knowledge becomes deeply embedded in pupils' memories.

Long term memory
Knowledge empowers and nourishes children; it belongs to the many, not the few. A knowledge-rich curriculum has the power to address issues of social disadvantage. Leaders at St Maxentius instil high ambitions so that all pupils can take full advantage of opportunities, responsibilities and experiences in later life.

Learning can be defined as alteration in long term memory. With this being the case, leaders have implemented strategies taken from cognitive science to enhance and support pupils in the transfer of new knowledge into their long-term memory.

Teaching staff have drawn on research focussing on Cognitive Load Theory, and understand that pupils working memory is limited and that new content should be introduced to pupils in small, manageable steps to avoid overloading the working memory.

Leaders utilise 'dual-coding' strategies to support pupils in integrating new knowledge into long term memory. By providing simple images to pupils when new content is introduced, they can use both visual and auditory strategies to process the information, forming a greater link with long term memory. 'Spaced retrieval' is also employed by teachers to enhance pupils' retrieval and secure knowledge into long term memory. Lessons typically begin with a daily retrieval opportunity and additional retrieval sessions are planned over the year.

Implementation

Mathematics teaching at St Maxentius will reflect the philosophy of the national curriculum 'Mastery' approach to which children are taught the skills of fluency, reasoning and problem solving. This will form the basis of our numeracy content, providing each child with a broad, balanced, relevant and differential curriculum. All teachers have strong mathematical, pedagogical and content knowledge to deliver topics effectively.

To develop numeracy skills, mathematics teaching will take place on a daily 45-60 minutes basis and will take the form of whole class, group work or individual tuition, where appropriate. It will be mindful of each child's abilities, will respect individual pace and progress and deliver new content is small, manageable steps to support long-term memory. Support staff will be used to target the development of pupils' basic number skills. In key stage 2, children are streamed according to ability, in order to provide a more bespoke approach to teaching.

Children will use a variety of methods to record and present their work, including graphs and diagrams. When completing written methods, they will follow the school's calculation policy which will also be displayed in classrooms when these methods have been taught.

Teachers will draw on a range of high-quality resources aligned to the curriculum intent, such as, White Rose, PiXL, Learning By Questions and Testbase. ICT will also be used to support and enhance mathematics teaching where relevant, particularly through the use of MyMaths.

Teachers ensure that there is flexibility in curriculum planning so that any gaps in pupils' mathematical knowledge, that may hinder their capacity to learn and apply new content, can be addressed swiftly. Pupils who are behind age related expectations are provided with opportunities and resources to support their learning of mathematical knowledge and skills necessary to accelerate their progress. This may take the form of an additional intervention, targeted teaching or bespoke resources.

Interventions are reactive to on-going assessments to continually raise attainment in maths. 'Concrete, Pictorial & Abstract' approaches are utilised to embed learning, ensure a secure foundation of knowledge and support children, particularly those with special educational needs.

Teachers use a summative assessment system called 'PiXL' which enables them to identify if pupils have retained the intended knowledge and skills.

Marking & Feedback

Teaching staff follow the school policy for marking and feedback. Leaders value the effectiveness of live marking and verbal feedback to further pupils' learning. Feedback informs subsequent lessons and interventions.

Mastery skills

In addition to a secure understanding of number and calculation, children will be taught essential skills for high quality mathematics learning, Mastery in Mathematics means to acquire a deep, long-term, secure and adaptable understanding of the subject, which include skills, such as:
Problem Solving – knowing the strategies and resources, which need to be used to solve a problem.
Reasoning – being able to explain their results verbally and in written form, using mathematical language and symbols. They will be able think logically and justify their ideas.
Securing times tables facts and be able to apply them in lessons.

Multiplication tables

The teaching of multiplication facts are explicitly taught and routinely assessed to ensure retention in long-term memory. There are regular opportunities for pupils to over-learn multiplication facts and apply them in their learning. The expectation is:

Year 1 – Count in multiples of 2, 5 and 10. Recall and use all doubles to 10 and corresponding halves.
Year 2 – Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.
Year 3 – Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Year 4 – Recall and use multiplication and division facts for 6 & 7 multiplication tables and up to 12 x 12.
Year 5 – Revision of all times tables and division facts up to 12 x 12.
Year 6 – Revision of all times tables and division facts up to 12 x 12.

Weekly checks take place for pupils to practise their skills and teachers to assess their knowledge. Information is collated and monitored on a tracking system. Pupils are aware of their weekly scores and are competitive and eager to improve their own score and the class average. For those children who continually attain full marks, an additional time challenge is given. The school utilises the Times Table Rockstars app to enable pupils to have frequent opportunity to practise and overlearn their times tables facts related to their year group. This app can also be accessed at home for pupils where weekly homework is set to further practice and develop their rapid recall.

In June, pupils in year 4 will take part in the national multiplication tables check. This is a national standardised assessment and is used as a tool to support ongoing assessments. The tables check is administered online within the school day.

Presentation

Children must be set high expectations for the presentation of their work:

- Children will use one symbol per square when writing out calculations.
- Decimal points are used on the line between two numbers (not in it's own box).
- Pencil needs to be used for all work in numeracy.
- Rulers must be used for all drawings of lines.

- The writing of explanations should be legible.
- Mistakes are crossed out using a single line.
- All corrections must be completed in purple pen.

Impact

Pupils develop detailed knowledge and skills in maths and, as a result, achieve well. This is evident in the progress score being consistently well-above national averages for the past three years for all pupils. The outstanding progress in mathematics ensures they leave school with a sound understanding of numbers and measures, which will form a solid foundation on which to apply the use of mathematics for everyday life. They will leave as confident, critical thinkers, enabling them to be effective in their reasoning and problem-solving. They will be able to articulate information and ideas directly related to the world in which they live.

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