Mathematics at St Gregory's Catholic Primary School

Intent

Purpose

At St Gregory's, the curriculum our children experience enables us to live out our Mission Slogan: ***Loving all, like Jesus, we flourish together***.

We aim to enable ***all*** our children to ***flourish***, regardless of background or disposition by offering a rich and informed curriculum packed with opportunities for all our children to experience 'life to the full' (John 10:10).

Taking the National Curriculum as our basis, alongside the fundamental life skills of Maths, our Mathematics curriculum provides opportunities for our children to develop ***The Seven Skills of the Steward*** – attributes and attitudes which we believe are essential so as to enable our children to thrive in the world of the future and help make 'Thy Kingdom come':

Team-working † Problem-solving † Creativity † Peace-making

Empathy † Resilience † Gratitude

We believe that this powerful combination will enable our children to perform well at end points in their relevant stages of education (for example at the end of EYFS, Key Stage 1 and Key Stage 2), as well as allowing them to enjoy successfully playing their part in helping to make our wonderful world an even better place and make 'Thy Kingdom come'.

At St Gregory's, we value a Mathematics curriculum that is creative, engaging and accessible to all; it is our intent that our Mathematics curriculum will maximise the development of every child's ability and academic achievement. Our children need to develop the necessary skills to make them deep thinkers, acquiring mathematical skills that can be recalled quickly and transferred and applied in different contexts. We want children to make rich connections across mathematical ideas, as well as applying this to the wider curriculum, to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. We want children to realise that mathematics has been developed over centuries, providing the solution to some of history's most intriguing problems. We want them to know that it is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. As our pupils progress, we intend for our pupils to be able to understand the world, have the ability to reason mathematically, have an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims

At St Gregory's, in age and stage-appropriate ways, we aim to ensure that all pupils:

- experience a Maths curriculum which is **meaningful, motivating and memorable**
- understand the meaning and the wider application of mathematics in the real world
- understand that maths is a process of enquiry and experiment

- have the ability to solve problems and think logically in order to work systematically and accurately
- equip pupils with the mathematical knowledge required to understand the uses of maths, today and for the future
- 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

Curriculum Design

Careful designing and mapping of the aims and objectives of the National Curriculum for Mathematics has ensured our curriculum is sequenced so as to enable current learning to be founded upon prior development of relevant knowledge, skills and understanding. It has also been created so as to maximise cross-curricular links with other subject areas in order to make our children's learning as meaningful as possible, giving children wider opportunities to apply their mathematics learning. The Mathematics curriculum in EYFS helps to begin this process, laying strong, relevant foundations of number and numerical pattern. Art, Design & Technology, Science, and Computing all have strong links with our mathematics curriculum to keep activities engaging.

The program of study for mathematics is set out year-by-year for Key Stages 1 and 2 and follows the National Curriculum. Teachers at St Gregory's base their planning on this program of study for their relevant year groups. Teachers at St Gregory's follow the White Rose 3.0 scheme of learning across school; EYFS use the Mastering Number Approach and White Rose for Shape, Space and Measure strand. Using the mastery approach, we strive for all children to access learning and differentiate appropriately where necessary. At St Gregory's, teachers have the flexibility to meet the core curriculum requirements in other ways should they feel it more appropriate where cross-curricular areas of study offer equally exciting but different ways to explore certain mathematical skills. EYFS, Year 1 and Year 2 are using The Mastering Number Approach (Maths Hub) to further support children's understanding and development of number. In Year 1 and 2 these sessions are in addition to the daily Maths lesson (4 times per week) and in EYFS these sessions are the children's main daily Maths lesson.

Informed by stakeholder voice, the curriculum for Mathematics is tailored to suit the specific needs and interests of the children at St Gregory's, developing knowledge, skills and understanding that fulfil but also embellish the National Curriculum requirements. Amongst other things, this is done in the following ways: we place specific emphasis on laying the strong foundations of mathematics in the early years; we provide real-life purpose for the children's mathematics with meaningful end-points so our children see the relevance of this subject area in their lives; we take our children on enriching trips to broaden their life experience and savour the impact of Mathematics on our society as a whole; we stage Enterprise Week when people from all different types of employment

come and talk to our children about their world of work, providing excellent opportunities for our children to experience how Mathematics can influence the career they may choose.

Enrichment

We enrich the Mathematics curriculum in a number of ways:

- Real-life application, where we apply our mathematics to the real-life world and enhance this with visitors where possible.
- STEM club where children can apply their Mathematics and understand the links between, Mathematics, Science and Design and Technology.
- Problem Solving Day is celebrated each term where children apply their mathematics to a range of real-life problems.
- Time Tables Rock Stars and Numberbots to enforce mathematics at home, alongside weekly awards for the 'Rock Star' of the week.

Curriculum Coverage, Review and Assessment

The curriculum is reviewed annually, with developments based on monitoring conducted throughout the year. A whole-school curriculum map is in place which outlines relevant coverage of Mathematics, as well as individual maps for each year group. This follows White Rose 3.0 which has been meticulously planned out with clear progression within year groups, incorporating the National Curriculum programme of study.

Assessment

Assessment happens daily, using a range of AFL techniques as well as formal termly Mathematics assessments. At St Gregory's, we believe that the best form of assessment result from ongoing dialogue and interactions with children. Daily interactions are what provide the soundest judgments of pupil progress and are what should inform planning and teaching. We also recognise that progress in learning is not linear and therefore children should not be judged solely on the basis of a test. Where data is gathered, it should also be used as a means to support those children who are underachieving or to extend the most able; it is used to accurately pinpoint successes and diagnose areas for development in order to remedy and extend accordingly. As well as ongoing, formative assessment, we use White Rose end of unit assessments and White Rose termly assessments to inform our judgements alongside AFL techniques.

Provision For All

In keeping with our intention to enable all our children to flourish, the curriculum for Mathematics provides challenge for all groups of children, such as SEND, more able, pupil premium, EAL. This is done through a wide variety of differentiated approaches ranging from in-class support and targeted questioning to use of specific tools, tailored next steps marking and enrichment activities.

Implementation

White Rose 3.0

As a school, we follow the White Rose 3.0 Scheme of Learning from Year 1- Year 6. The structure of the lesson is consistent across school in the following way.



- Flashback 4 used as a starter in children's fluency books
- Using White Rose resources to enhance teaching
- Using White Rose Text Books after the main teaching input
- Using concrete resources where appropriate
- Incorporating and adapting fluency lessons into learning where necessary
- Using White Rose reasoning and problem solving/ true or false questions to extend learning and as a plenary

Early Mathematics

The Mathematics curriculum in EYFS helps to begin this process, laying strong, relevant foundations of number and numerical pattern. At St Gregory's, we follow the Mastering Number Programme and White Rose 3.0 for Shape, Space and Measure. To help develop a life-long love of mathematics, we utilise the following:

- A multi-sensory approach to learning
- High-quality daily interactions with adults
- Daily math's sessions relevant to individual and group needs
- Children who are working below ARE intervened daily
- Mathematics Stay and Play sessions
- Opportunities to explore mathematics through continuous-provision and outdoor learning
- Enthusiastic staff who share a love of mathematics with the children

Subject Knowledge and the Monitoring Cycle

At St Gregory's we endeavour to ensure that teacher and subject leader expertise is sufficient to successfully support the intentions of the Mathematics curriculum across the school. If in any rare instances this is not the case, then high-quality training (sharing best practice, visits to other leading schools, attending relevant courses) is put in place. The annual audit of Mathematics, as well as the on-going monitoring cycle, helps to identify any areas of development which may present themselves. These are then fed back into the School Improvement Plan with time allocated accordingly to rectify the situation. During this process, current resources are evaluated and updated so our children are provided with high-quality equipment which allows them to work practically and with increasing accuracy. Specific time is also allocated to Mathematics during Governors meetings, SLT meetings and staff meetings in order to, amongst other things, present situation reports, monitor books and planning and provide CPD training accordingly. The subject leader monitors annually in a wide range of ways, including: book looks, planning looks, lesson observations and pupil voice.

Planning and Progression

All planning outlines the knowledge, skills and understanding expected for each objective covered, as well as when opportunities to practice the Seven Skills of the Steward will take place and how to make the learning memorable, meaningful and motivating. All planning also shows how real-lie application can be applied to the mathematical concept. In addition to this, teachers consider how

concrete resources can be used to enhance learning. This is consistent across KS1 and KS2 with EYFS incorporating the same elements but in a slightly different format. Children in EYFS are given a wide variety of opportunities to develop their mathematical knowledge and skills in adult-led and child-initiated continuous provision, with maths and vocabulary being at the heart of the provision. Each year group follows White Rose progressive calculation policy, supplemented with concrete resources where possible, whereby the methods show progression through a concrete, pictorial, abstract approach throughout the key stages. Vocabulary specific to Mathematics is planned into topics so as to be taught and used by children independently and with understanding, not only in mathematics but across the wider-curriculum.

Incorporating Stakeholders

Survey Monkey surveys are used to ascertain pupil voice throughout the year in order to tailor the learning accordingly and formative assessment is used throughout each unit to inform immediate next steps as well as future learning. Parents are informed of their child's attainment in Mathematics every term in both reports and during parent's evening. Parents are also encouraged to be involved in their child's learning, for example, during 'stay and plays' and joining us in our 'problem solving' days as well as a range of different enrichment days and activities.

Impact

The curriculum in Mathematics has been created so the objectives are carried out, applying this across the curriculum where possible, which link up children's learning from different areas in order to help them see the relevance of what they are doing, making their experiences meaningful and therefore motivating and ultimately memorable. To this end, we aim to enable our children to develop a love for their learning in Mathematics and the practical ways it can enhance the world around us. Children make rich connections across mathematical ideas, as well as applying this to the wider curriculum, to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

The progression within Mathematics is evident in planning and in children's books. The work the children produce provides evidence of both fluency and reasoning, with this being applied practically and to the world around us where possible. It also shows a growing repertoire of knowledge, understanding and skills in order to problem-solve and reason in mathematics and also the wider-curriculum. Through various enrichments, and interactions with experts, children have the understanding that Mathematics has changed our lives and that it is vital to the world's future prosperity. Children at St Gregory's enjoy mathematics and this results in motivated learners with sound mathematical understanding.

Outcomes are assessed in relation to the National Curriculum descriptors throughout each half term, using a range of AFL strategies, as well as termly formative Mathematics assessments, with summative levels being given at the end of each term. KS1 and KS2 SATS assessment provide us with information, as well as the RBA and the teacher's own baseline assessment in EYFS, moving onto the EYFS profile at the end of the year. The subject leader analyses this data and feeds back successes and areas for development into the normal school improvement cycle, including feeding back to governors. Children's work is moderated internally, as well as externally through cluster subject leader sessions.

S Nightingale

September 22 – to be reviewed August 23