



St Gregory's Catholic Primary School

Mathematics Policy

Aims and objectives

“Good Mathematics is not about how many answers you know...it's about how you behave when you don't know.” Unknown

Good mathematics is not all about numbers and being able to answer pages of questions but instead motivates and challenges children's thinking and develops a deeper understanding with mathematics. We believe that children should have the freedom to explore and investigate mathematical concepts, be encouraged to find patterns and provide opportunities for discussions to allow our pupils to develop meaningful explanations.

- At St. Gregory's we want children to become reflective learners and our Mathematics curriculum allows all children to **REFLECT** through discussing the methods that they have chosen as well as discussing the methods that they have chosen to reach an answer.
- Through experiencing a mastery curriculum, children will develop **RESILIENCE** as they will come up against a variety of concepts which will in turn challenge their thinking.
- Mathematics also allows children to explore a variety of concepts and provides the opportunity to use a number of different resources. At the start of lessons children are given exploration time which provides opportunities to develop children's **CURIOSITY**.
- At St. Gregory we encourage children to be **RESPONSIBLE** learners. Through Maths children develop this important skill by looking after equipment, helping each other through discussion times as well as giving opportunities for children to complete challenges independently. All children are encouraged to ask for help, when needed, in order to develop their own knowledge and understanding further.

At St. Gregory's our objectives to teaching Mathematics are:

- To provide children with Mathematical concepts in a context which is relevant to them.
- To build on knowledge each year to lay foundations for children to develop deeper thinking.
- To provide children with the skills to solve problems in a variety of ways in order to meet the needs of all learners in our school.
- To provide lessons that are engaging and challenging for all pupils.

The National Curriculum and Maths No Problem

At St. Gregory's, across Year 1 to Year 6, we use Maths-No Problem! to deliver our Mathematics curriculum. This is a highly structured approach which deepens children's understanding of a range of Mathematical concepts. The theory behind this programme is:

"It is better to solve one problem five different ways, than to solve five problems one way."
George Polya.

Each lesson is based around an 'anchor task' which the children explore using different methods. The children are encouraged to talk about their maths and explore their ideas fully, then work independently using the workbooks.

Maths-No Problem! Is a series of textbooks and workbooks written to meet the requirements of the 2014 National Curriculum in England. The Maths-No Problem! Primary Series was assessed by the DfE's expert panel, which judged that it alone met the core criteria for a high-quality textbook to support the teaching for mastery maths.

Teaching maths for mastery is a transformational approach to maths teaching which stems from high performing Asian nations such as Singapore. When taught to master maths, children develop their mathematical fluency without resorting to rote learning and are able to solve non-routine maths problems without having to memorise procedures.

Each lesson contains a variety of teaching methods that include direct teaching and questioning. High quality direct teaching is interactive and lively. This will also incorporate some of the following elements; directing, instructing, demonstrating, explaining, illustrating, modelling, questioning, discussing, consolidating, evaluating responses, summarising and identifying misconceptions.

The MNP scheme dictates an 'In Focus' task, a 'Let's Learn' and 'Guided Practice'. All of these elements are teacher led and guided to enable to pupils to succeed. Pupils then complete their workbook independently.

Our teaching of Mathematics provides regular opportunities for:

- Group work
- Paired work
- Whole class teaching
- Individual work

Equal Opportunities

We, as a school community, believe in equal access to the whole curriculum for all pupils, which meets the distinct needs of each individual regardless of ability, capability, intellect, social or cultural background or ethnic origin. We endeavour to maintain an awareness of, and to provide for equal opportunities for all our pupils in mathematics. We aim to take into account their cultural background, gender and Special Needs, including those with English as a second language, both in our teaching attitudes and in the materials we use with our pupils to ensure full inclusion. This includes access and sensitivity (especially in the creation and use of class data and oral contributions) for children with physical disabilities, hearing impairments, partially sighted and those with English as a second language.

We aim to fully integrate pupils with special educational needs within our daily mathematics lesson however MNP is fast paced so it may be appropriate for SEN children to work on their own Mathematical targets within the MNP lesson. These targets will be drawn up for the children by their class teacher and in consultation with our SENCO. Teachers will aim to address the child's needs by providing suitable materials and tasks at their level. Learning support staff will be allocated as appropriate.

Organisation

In Foundation Mathematics lessons are taught on a daily basis and last for 30 minutes to one hour. In Key Stage 1 Key Stage 2, lessons are taught daily. A typical 45 to 60 minute lesson will be structured as the MNP scheme dictates. There is no longer a requirement to complete a 'mental and oral starter' every day. Opportunities for mental maths may be planned at other times of the day/week. This is essential as this element is not covered through the MNP scheme.

Planning

- **Long term** planning is based on the yearly teaching programmes of study set out in the MNP framework.
- **Medium term** planning is carried out half-termly. Teachers use the sample medium-term planning which is outlined in the MNP programme and teachers will adapt in order to suit the needs of their class. This provides a balance mathematics curriculum and ensures that key objectives are covered at least once by the end of the year.
- **Short term** planning is carried out weekly. These plans include exploration time where children familiarise themselves with resources they may need and introduces key vocabulary needed for the lesson. Structured learning follows which is teacher guided and then children, at the end of the lesson, complete their independent learning challenge in their workbooks. Maths- No Problem! do provide very detailed planning which teachers follow but do adapt as necessary to meet the needs of the children in their class.

Differentiation will begin in the planning stage, where teachers will take into account children's abilities and plan appropriately challenging tasks. The whole class are taught together using MNP

where most differentiation is given through concrete or pictorial support. Teaching Assistants may also be used to focus and support key pupils.

Assessment

In our school, pupils are assessed in many different ways. Both summative and formative assessments are used to monitor and record pupils' progress and inform planning. Assessment is an integral part of the teaching process which is purposeful, allowing us to match the correct level of work to the needs of the pupils, thereby benefiting the pupils and ensuring continuity of progress.

Assessment is carried out at three levels;

- Short term assessment which is an important part of every lesson and are matched to the teaching objectives. Pupils' workbooks are highlighted either **GREEN** or **PINK**. **GREEN** indicates that the child has met the learning objective. **PINK** indicates that the child has not yet met the learning objective.
- Medium term assessments are carried out at least once every term. In Key Stage 1 and 2 MNP provide reviews at the end of the unit but in additional levelled assessments may also be given. In the Summer Term, SATs or Optional tests are given.
- Long-term assessments take the form of both formative summative assessments. Summative assessments are given at the end of Key Stage 1 and 2 in the form of SATs testing. Our formative assessments are built up by using optional SATs testing are given in Years 3,4 and 5.

Individual teaching staff keeps a record of relevant information from formal and informal forms of assessment. Our formal assessment data is kept on a Whole School Tracker (SIMS) and this information is used to calculate individual pupil progress. This database builds on assessment data that is passed on from class to class. Receiving teachers are given relevant class data at the start of the academic year.

Monitoring is carried out throughout the year by the Maths Subject Leader and this is shared with the Senior Leadership Team. Monitoring is carried out in many forms such as

- Book celebrations
- Pupil interviews
- Weekly planning and lesson observations

Termly data is analyzed by the Maths Subject Leader to monitor pupils' progress. Next steps and targets may be discussed during termly progress meetings with the Subject Lead and class teacher.

Approach to Calculation

Our whole approach to calculation, across Key Stage 1 and 2, is set out based on the government guidelines. These strategies are developed in Key Stage 2 and head towards a more formal standard of written method.

Mental/Oral Skills will be emphasised throughout the school. Children will be directly taught and provided with regular opportunities to develop the different skills involved. These skills include:

- Knowing and rapidly recalling number facts.

- Using known facts to work out new facts.
- Developing a repertoire of mental strategies, supported by jottings.
- Solving problems by selecting the appropriate operations and then explaining the methods and reasoning used, both orally and in writing.

Written work will be used to:

- Informally support a mental calculation.
- Develop the skill of explaining the method used.
- Help someone else to follow the method or assess the work.
- Practise writing and using the correct symbols and notation.
- Help remember or practise the recall of number facts.
- Carry out the working of a standard written method of calculation

Creative Curriculum Links

Mathematics is taught mainly as a separate subject but every effort is made to link maths with other areas of the curriculum. Mathematical links with other areas of the curriculum might comprise:

English- teaching mathematical vocabulary and technical terms, asking children to read and interpret word problems, to explain their thoughts and reasons and learning stories, rhymes and songs.

Science- scientific investigations require such mathematical skills as classifying, counting, measuring, calculating, estimating, and constructing recording, reading and interpreting scales, graphs and tables.

Art, Design and Technology- measuring, use of patterns, enlarging or reducing designs.

I.C.T- collect and analyse data, enter it into data handling software, produce graphs and tables, and interpret and explain their results. Their work in control includes measurement of distance and angle, using standard and non-standard measures.

History, Geography and R.E- collecting data by counting, measuring, constructing and interpreting graphs and the passing of time and using a calendar to record the recurring annual festivals. Studying maps includes co-ordinates, angle, direction, position, scale and ratio.

P.E and Music- measuring, counting, time, symmetry, movement, position and direction.

Home-School Links

To maximize pupil learning, we aim to work in partnership with the children and their parents. Parents will be updated on their child's progress in maths as well as the other curricular areas. St Gregory's annually subscribes to 'Mathletics' to support homework and encourage children and parents to work together. Maths homework is set weekly in both Key Stage 1 and 2 This work should reflect and consolidate what is being taught in class and take no more than 30 minutes to complete at both key stages.

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Miss L Crook

Subject Leader