



*'Following Jesus, The Good Shepherd, in all we say and do'*

## Curriculum Intent – Maths

2023-2024

### Curriculum

When teaching Mathematics at The Good Shepherd Catholic Primary School, we intend to provide a curriculum which caters for the needs of all individuals and sets them up with the necessary skills and knowledge for them to become successful in their future adventures. We aim to prepare them for a successful working life. We incorporate sustained levels of challenge through varied and high-quality activities with a focus on fluency, mathematical reasoning and competence in solving increasingly sophisticated problems which will enable them to apply mathematical knowledge to Science and other subjects.

The national curriculum for Mathematics intends to ensure that all pupils:

1. 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.
2. Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
3. 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. Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas.

### Mastery

Pupils are required to explore Maths in depth, using mathematical vocabulary to reason and explain their workings. A wide range of mathematical resources are used and pupils are taught to show their workings in a concrete, pictorial and abstract form wherever suitable. They are taught to explain their choice of methods and develop their mathematical reasoning skills. We encourage resilience, adaptability and acceptance that struggle is often a necessary step in learning. Our curriculum allows children to better make sense of the world around them relating the pattern between mathematics and everyday life.



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### Maths Working Walls

Each classroom has a Maths Working Wall which allows children to see written methods for calculations, while absorbing the mathematical language used in a particular area of the subject. They are interactive and include differentiated challenges for children so that learning is extended for children of all abilities.

### Pupil Progress / Assessment

Lessons may be personalised to address the individual needs and requirements for a class but coverage is maintained. We use a range of planning and assessment resources including those provided by the NCETM, GLS, Pixl therapies and IXL to enrich our children's Maths diet.

Children's fluency is developed through practising key skills, repeating, reinforcing and revising. Children are given time to practice and perfect their calculation strategies, including having opportunities to make appropriate decisions when estimating, calculating and evaluating the effectiveness of their chosen methods. Investigative tasks are designed to allow pupils to follow lines of enquiry and develop their own ideas, justifying and proving their answers.

Children work both collaboratively and independently when reasoning and solving problems, which require them to persevere and develop resilience. We as a school continuously remind children as Christians, Perseverance is very important value, and thus they are constantly reminded about the importance of perseverance when faced with solving a problem in Maths.

Through our teaching we continuously monitor pupils' progress against expected attainment for their age, making formative assessment notes where appropriate and using these to inform our teaching. Summative assessments are completed at the end of each half term; their results form discussions in termly Pupil Progress Meetings and update our summative school tracker. The main purpose of all assessment is to always ensure that we are providing excellent provision for every child focusing on challenging questions, analysing of learning, extension work, mini plenaries and discussion with peers.

### Pupil voice

Through discussion and feedback, children talk enthusiastically about their Maths lessons and speak about how they love learning about Maths. They can articulate the context in which Maths is being taught and relate this to real life purposes. Children show confidence and believe they can learn about a new Maths area and apply the knowledge and skills they already have.



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### In-service Training

We continuously strive to better ourselves and frequently share ideas and things that have been particularly effective. Maths Leads take part in training opportunities and regional networking events, such as the NCETM work groups and Trust Maths hub. This enables the Maths leads to keep abreast with the current national initiatives and share best practice with staff.

### Planning and Policy

Teachers design lessons so that there is a carefully sequenced journey through the concept being taught, identifying difficult points and possible misconceptions. Children are challenged through careful questioning and supported through the use of concrete materials and visual representations to develop a deep conceptual understanding. We follow the NCTEM Scheme of work and Curriculum Prioritisation in Primary Maths materials to deliver our progressive and ambitious Maths curriculum. Our children are all taught through the 5 Big ideas of mastery approach. 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. Children who are finding it difficult to grasp concepts access further adult coaching sessions to ensure that all children are maintaining progress. We also utilise our more able learners as coaches within lessons to develop their ability to explain their reasoning and to provide support for peers. We identify misconceptions as starting places for concept building and use this to respond to the needs of each pupil, allowing additional time before moving on.

### How are children taught?

At The Good Shepherd, we teach Maths using a mastery approach; this sparks curiosity and excitement and helps nurture children's confidence and resilience in Maths. We address any misconceptions picked up during lessons. We use Curriculum Prioritisation in Primary Maths materials to support the teaching and learning of mastery in Mathematics. In each Maths Lesson, we begin with different activities whereby children are set a Maths task to ensure general Maths knowledge and fluency are maintained and developed; these may take many forms, for example: arithmetic, specific times tables, rolling number, or several questions about a mixture of Maths topics.

When teaching Maths for mastery, the whole class moves through topics at broadly the same pace. Each topic is studied in depth and the teacher does not move to the next stage until all children demonstrate they have a secure understanding of mathematical concepts. Where advanced learners are accelerated through new content, those pupils who grasp concepts quickly are challenged. Those children who are not sufficiently fluent are provided with additional support to consolidate their learning before moving on.



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Students are given time to think deeply about the Maths and really understand the concepts at a relational level rather than as a set of rules or procedures. This slower pace leads to greater progress because it ensures that students are secure in their understanding and teacher don't need to revisit topics once they've been covered in depth.

Mathematical vocabulary is explicitly included on the school's calculation policy, to ensure that there is a consistency of correct mathematical vocabulary being used across the school. In planning, teachers ensure that STEM sentences are embedded and used throughout each lesson. This will enable children to communicate their ideas with mathematical precision and clarity. Children will also be able to improve their understanding on mathematical language and embed conceptual knowledge.

#### Monitoring Teaching

Maths leaders have been monitoring teaching and learning through observations, learning walks, book scrutinises and pupil voice.

#### Levels of Expectations

We believe that all children can, and will, succeed in Mathematics. We encourage children to have a positive attitude to Maths and understand that Maths is fun and enjoyable. As a school, we work hard to ensure they develop strong mathematical skills/knowledge and we develop a culture where children persevere and are resilient when they are faced with challenging mathematical concepts. We follow a mastery approach for the teaching of Mathematics to develop children's understanding and reasoning on a deeper level. Children are taught through whole-class interactive teaching, where the focus is on all children working together on the same lesson content whilst at the same time challenging and supporting pupils to gain depth of understanding and proficiency. This ensures that all children can master concepts before moving to the next step. Our children are expected to reason and clearly explain their thinking. We firmly believe that the answer is 'only the beginning' and our children need to try to explain why an answer is correct or not.

Staff are expected to ensure that children reach their full potential by planning challenging and interactive lessons that engage children's natural curiosity. Staff will have clear expectations for each area of Maths and build on children's prior learning.

Clear expectations are laid out in the National Curriculum Maths programmes of study.

#### Review and Reporting

Maths is formally reported at the end of the year. Class teachers write a comment for each child and their effort is graded. In addition, parents are given the opportunity to discuss children's progress and attainment targets during parent consultations.



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### Resources

We implement our approach through high quality teaching delivering appropriately challenging work for all individuals. To support us, we have a range of mathematical resources in classrooms including Numicon, Base10 and counters (concrete equipment). When children have grasped a concept using concrete equipment, images and diagrams are used (pictorial/ bar modelling) prior to moving to abstract questions. Through continuous use of 'Concrete – Pictorial – Abstract', children will develop a deeper understanding of what they are learning.

### Developments for 2023 – 2024

- Continue to use the Prioritized curriculum NCTEM
- Continue to use STEM sentences/ Mathematical language
- Developing deep dive approach/mastery
- Challenge pupils who grasp concepts quickly with rich and sophisticated problems within the topic.
- Consistency and high expectation in books across both key stages.