Holy Family Catholic Primary School
'Serving the Community'

Mathematics

Intent

At Holy Family Catholic Primary School, we want to give children a curriculum that promotes a passion and curiosity for learning where 'Only the Best is Good Enough'. It is our vision that each child fulfils their potential, regardless of their background or circumstances, in a safe, stimulating and caring environment. We aim to develop a love of learning inspired by quality teaching, foster high aspirations and encourage positive self esteem.

At Holy Family we believe that **all pupils can achieve** in Mathematics. We do not put ceilings on what pupils can achieve in maths and we do not hold pre-conceptions about any pupils' ability to make progress. We believe that maths is a journey and long-term goal, achieved through **exploration, clarification, practice and application** over time. At each stage of learning, pupils should be able to demonstrate a deep, conceptual understanding of the topic and build on this over time. Mathematics lessons should provide the opportunity for all children, regardless of their ability, to work through fluency, reasoning and problem solving activities. We want all pupils to 'master' maths, and follow a 'mastery' teaching approach (*A mathematical concept or skill has been mastered when a child can show it in multiple ways, use the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar concepts).* We want pupils to be able to move between different contexts and representations of mathematics, and be able to recognise relationships and make connections in maths.

Our intention is to spend a large proportion of time reinforcing number to build **competency and fluency**. Number is at the heart of our primary mastery scheme of learning, with more time devoted to this than other areas of mathematics. It is important that pupils secure these key foundations of maths before being introduced to more difficult concepts. This increased focus on number will allow pupils to explore the concepts in more detail and secure a deeper understanding. Key number skills are fed through the rest of the scheme so that pupils become increasingly fluent.

By using objects, pictures, words, numbers and symbols we intend to help pupils to explore and demonstrate mathematical ideas, **enrich their learning experience and deepen understanding**. Together, these elements help cement knowledge so pupils truly understand what they have learnt. All pupils, when introduced to a key new concept, will have the opportunity to build competency in this topic by taking this approach.

Concrete – Pupils should have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.

Pictorial – Pupils should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.

Abstract – With the foundations firmly laid, pupils should be able to move to an abstract approach using numbers and key concepts with confidence.

Problem Solving

Mathematical problem solving is at the heart of our approach. Pupils are encouraged to identify, understand and apply relevant mathematical principles and make connections between different ideas. This builds the skills needed to tackle new problems, rather than simply repeating routines without a secure understanding.

Mathematical concepts are explored in a variety of representations and problem-solving contexts to give pupils a richer and deeper learning experience. Pupils combine different concepts to solve complex problems, and apply knowledge to real-life situations.

Reasoning

The way pupils speak and write about mathematics transforms their learning. Mastery approaches use a carefully sequenced, structured approach to introduce and reinforce mathematical vocabulary. Pupils explain the mathematics in full sentences, both in verbal and written answers. They should be able to say not just what the answer is, but how they know it is right. This is key to building mathematical language and reasoning skills.

Fluency

Pupils should be able to recall and apply mathematical knowledge both rapidly and accurately. However, it is important to stress that fluency often gets confused for just memorisation – it is far more than this. As well as fluency of facts and procedures, pupils should be able to move confidently between contexts and representations, recognise relationships and make connections in mathematics. This should help pupils develop a deep conceptual understanding of the subject. Frequent, carefully designed, intelligent practice will help them to achieve a high level of fluency.

Implementation

Classroom organisation: Pupils sit in mixed-ability groupings, which are changed throughout the year. Teaching Assistants are used to scaffold activities to groups or individuals who need support for activities. Displays in class support children with prompts and visual representations.

How a Mastery Maths lesson will be planned and delivered: We teach maths in 'blocks' to ensure that key areas of maths are covered in depth. Each year group starts the year teaching place value, and moves on to addition and subtraction, multiplication and division. Within each block, learning is broken down into small steps to ensure that understanding is built in layers. We ensure that children use concrete apparatus to support their understanding, and move through to using pictorial representations before abstract representations.

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Support for slower graspers: Within lessons, pupils who find the concept more difficult to grasp, will be given extra support to ensure they are able to master the concept. This might by through deploying teaching assistants, additional scaffolding or targeted questioning. Teachers may also work directly with slower graspers within or after the lesson. Slower graspers may need to use concrete and pictorial representations for longer, and may need more work to consolidate understanding.

Extending rapid graspers: Rapid graspers will be encouraged to show their depth of understanding through their journaling. They will be encouraged to represent problems in a variety of ways, and to make additional links with other areas of maths.

The approach to the teaching of mathematics within our school is based on:-
a revisit activity each morning to ensure the children have time to practice their mathematical skills, a mathematics lesson every day and a clear focus on direct, instructional teaching and interactive oral work with both the whole class and smaller ability groups.

A typical lesson involves all classes following the White Rose scheme of work which is a transformational, whole-school primary maths programme. Questions are carefully crafted to develop children's fluency, reasoning, and problem solving skills and conceptual understanding for mastery. It focuses on core topics to build deep understanding. Planning will be done weekly and will be shared with support staff.

Teaching in maths should develop pupil's understanding of important concepts, techniques and recall of facts, enabling children to work independently. Opportunities are provided for problem solving in different contexts, discussion and investigations. These should be done in a creative and imaginative way, making links to other areas of study, real life, books and the outdoor environment. This ensures that teaching is done using an appropriate range of resources and teaching strategies.

Marking and Feedback: Feedback and marking should be completed, where possible, within the lesson. All marking and feedback is given in line with our marking and feedback policy.

Formative Assessment is an integral part of every maths lesson to inform teachers' planning and ways forward.

Summative Assessment; Summative assessments will be entered onto progress sheets. In order to support judgements, teachers will complete White Rose End of Block Assessments at the end of each unit as well as White Rose End of Term Assessments in Autumn, Spring and Summer. Teachers should use their ongoing assessment from lessons alongside any tests to make a summative assessment judgement. If tests are used, care should be taken to ensure that pupils are prepared appropriately for the test, and any barriers to accessing these is removed (for example by reading questions in a reasoning paper)

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Intended Impact

- Pupils will enjoy learning maths
- Pupils of all abilities will be able to succeed in all maths lessons
- Pupils will be able to quickly recall key facts
- Pupils will use efficient procedures for solving problems in new contexts
- Pupils will recognise relationships and make connections in maths
- Pupils will be able to reason mathematically, justifying answers
- Pupils will be able to represent concepts in a variety of ways
- The % of pupils working at ARE within each year group will be at least in line with national averages.
- The % of pupils working at Greater Depth within each year group will be at least in line with national averages
- The will be no significant gaps in the progress of different groups of pupils (e.g. disadvantaged vs no disadvantaged)