

Mathematics Curriculum



Intent

Mathematics is one of the most important subjects in the curriculum. Maths is a tool which unlocks a wide range of activities and is essential for adult life. It enhances the ability to think in a systematic and logical way. At Holy Family, we promote the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- Become **fluent** in the fundamentals of mathematics, including the varied and regular practice of increasingly complex problems over time.
- **Reason mathematically** by following a line of enquiry, understanding relationships and generalisations, and developing an argument, justification or proof using mathematical language.

Can **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Implementation

We are developing a mastery approach to learning and have implemented the 'Maths No Problem' scheme as a whole-school approach. The children use their MNP textbooks in almost every lesson and this will show a mixture of fluency, reasoning and problem solving. Journals are also used which records the children's learning.



As a starting point, children are encouraged to explore a problem themselves to see what they already know. At the beginning of each lesson in our school this exploration is referred to as the 'anchor task'. They may work in pairs or small groups to attempt to solve the problem and will be encouraged to use concrete apparatus in order to help their learning. Anchor tasks are designed to allow children to show what they already know and give the teacher the opportunity to extend learning. The teacher will lead a discussion with the children in order to organise the findings of the exploration, compare/contrast strategies and guide toward the most efficient strategy.

Teachers use questioning throughout every lesson to check understanding. Children are also encouraged to question each other frequently throughout the lesson; this aids the development of independent learners and deepens their understanding.

Guided practice – This is when the children get the chance to practise the concept under the guidance of the teacher. This is often displayed by lots of discussion around the concept/problem in pairs, small groups or as a whole class. This is where the teacher can support children who are struggling or challenge those who have grasped the concept.

Independent practice – This is when the children work independently to show their understanding of the lesson. After seeing how the children working in the anchor task and guided practice, the teaching will be able to identify those who don't have a firm understanding. Children may then be supported by the teacher/teaching assistant and/or the use of concrete resources. Journals are also used (in Year One to Year Six) which records the children's learning. Our journals gives the children more ownership when showing their reasoning skills as they can draw different representations (e.g. part-part-whole and bar models) . We encourage the children to use their journals as a way of evidencing what they know.

Discussion and feedback – pupils have opportunities to talk to their partners and explain/clarify their thinking throughout the lesson but are expected to complete written work independently (unless working in a guided group with a teacher).

Mathematical Fluency of Number Facts

KS1 - Children from Reception onwards learn their number bonds to 10 and 20.

Year 2 onwards children learn their times table facts and are expected to have a working knowledge of the 2, 10 and 5 times tables by the time they move on to Key Stage 2.

By the end of Year 4, they should have a solid working knowledge of all the times tables as well as good recall of key mathematical facts.

Impact

- Children will become fluent in the fundamentals of mathematics. Through varied and frequent practice with increasingly complex problems over time, pupils will have the conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- Children will be able to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, developing an argument, justification or proof using mathematical language.
- Children will solve problems by applying their mathematics in a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering to seek solutions.
- Fundamental British Values are evident in mathematics and children understand how mathematics can celebrate difference.
- Quick recall of facts and procedures

A mathematical concept or skill has been mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas,

and can independently apply the concept to **When we take part in maths competitions I enjoy being challenged.**

I enjoy working together to solve mathematical problems.

new problems in unfamiliar

I love using Timetables Rockstars to improve my recall of my multiplication tables.

TIMES TABLES

ROCKSTARS

