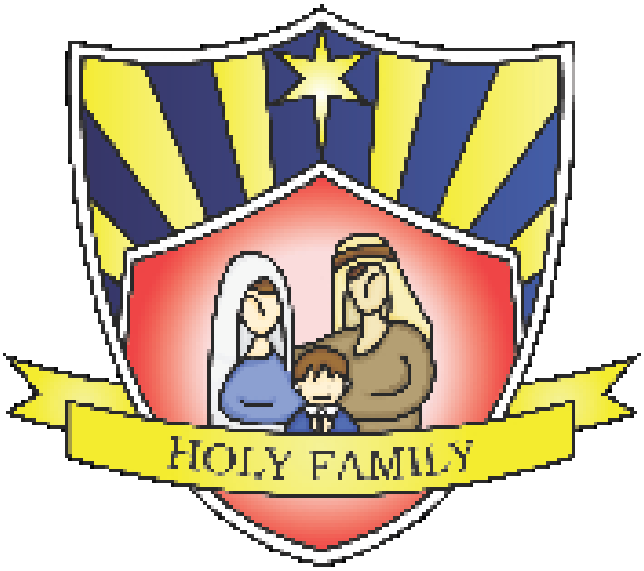
Holy Family Catholic Primary School



Maths Policy

At Holy Family, we learn, believe and seek to make the right choices as God's children.

Curriculum Statement
Intent

The 2014 National Curriculum for Maths aims to ensure that all children:

- Become fluent in the fundamentals of Mathematics
- Are able to reason mathematically
- Can solve problems by applying their Mathematics

At Holy Family, these skills are embedded within Maths lessons and developed consistently over time. We are committed to ensuring that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts.

We want all children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically. We are committed to developing children's curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics.

Implementation

The content and principles underpinning the 2014 Mathematics curriculum and the Maths curriculum at Holy Family are included in our lessons.

- Teachers reinforce an expectation that all children are capable of achieving high standards in Mathematics.
- The large majority of children progress through the curriculum content at the same pace; Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind.
- The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.
- Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts.
- Teachers use questioning in class to test conceptual and procedural knowledge and assess children regularly to identify those requiring intervention, so that all children keep up.
- Key facts such as multiplication tables and addition facts within 10 are learnt to automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts.

https://www.ncetm.org.uk/media/uhjhtxy1/the-essence-of-maths-teaching-for-mastery-june-2016.pdf

To ensure whole consistency and progression, the school uses the nationally recognised White Rose Maths scheme.
The White Rose curriculum is a cumulative curriculum, so that once a topic is covered, it is met many times again in other contexts. For example, place value is revisited in addition and subtraction and multiplication and division. The curriculum is designed to have an emphasis on number, with a large proportion of time spent reinforcing number to build competency.

Lessons are planned to provide plenty of opportunities to build reasoning and problem solving elements into the curriculum. When introduced to a new concept, children have the opportunity to use concrete objects and manipulatives to help them understand what they are doing. Alongside this, children are encouraged to use pictorial representations. These representations can then be used to help reason and solve problems. Both concrete and pictorial representations support children's understanding of abstract methods.

Mathematical topics are taught in blocks, to enable the achievement of 'mastery' over time. These teaching blocks are broken down into smaller steps, to help children understand concepts better. This approach means that children do not cover too many concepts at once which can lead to cognitive overload. Each lesson phase provides the means for children to achieve greater depth, with children who are quick to grasp new content, being offered rich and sophisticated problems, within the lesson as appropriate.

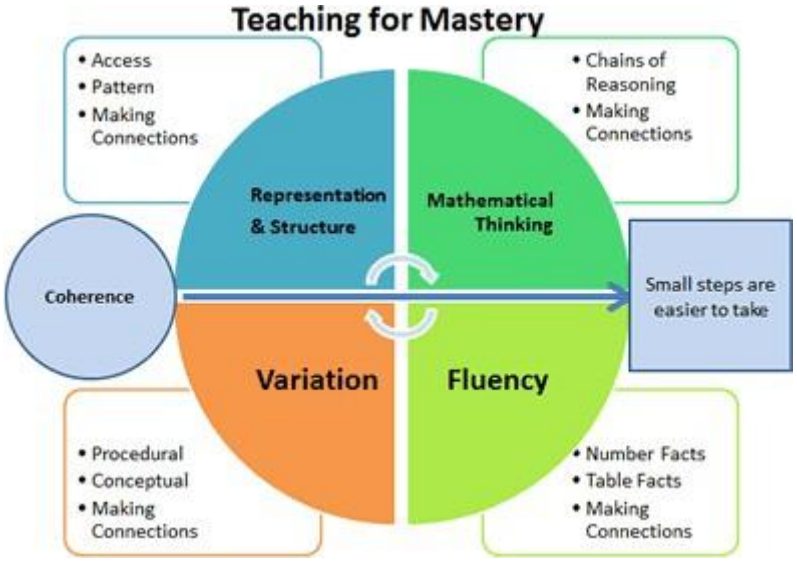
Impact

The school has a supportive ethos and our approaches support the children in developing their collaborative and independent skills, as well as empathy and the need to recognise the achievement of others. Students can underperform in Mathematics because they think they cannot do it or are not naturally good at it. The school's use of White Rose Maths addresses these preconceptions by ensuring that all children experience challenge and success in Mathematics by developing a growth mindset.

Regular and ongoing assessment informs teaching, as well as intervention, to support and enable the success of each child.

Teaching and Learning

Effective teaching for mastery is underpinned by five big ideas, first published by the National Centre for Excellence (NCETM) in mathematics in 2017 -



Coherence

Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.

Representation and Structure

Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation.

Mathematical Thinking

If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others

Fluency

Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics

Variation

Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

Organisation

Maths is taught daily usually during the morning. A typical maths lesson lasts approximately 1 hour and begins with a short recap fluency activity and then follows the structure of the White Rose lesson.

Where appropriate and depending on the topic, children will continue to have access to concrete resources which they can use to complete the practice task. Some children might be supported through additional scaffolding provided by the teacher. This may include provided models of the calculation method that the children will need to use, or copies of the worded question, with key aspects and vocabulary highlighted.

The final part of the sequence is a 'True or False' question, which requires the children to use mathematical reasoning to prove or disprove a related statement or mathematical problem related to the key learning.

Assessment

Assessment for Learning:

Children receive effective feedback through teacher assessment, both orally and through written feedback, and AfL is integral to the design of each lesson;

- The structure of the teaching sequence, ensures that children know how to be successful in their independent work. A daily fluency activity supports children's recall of key number facts, which frees working memory.
- The 'Let's Learn' task provides the means for the teacher to assess, review and revisit previous related content, so that all children are well prepared for new content.
- The 'Get Ready' part of the lesson is when a new mathematical concept is introduced and the guided practice aspect of this part of the lessons means that children are well prepared to be able to apply the skills, knowledge and strategies taught they have learnt for the 'Your turn' task (which is often the first two questions of the practice task).
- Common misconceptions are identified and addressed within the teaching sequence and key understanding within each 'small step' is reviewed and checked by the teacher and the children before progression to further depth.
- The final phase of the lesson is a whole class 'True or False' statement. Teachers use the children's responses as a means to assess the depth of their understanding.
- Opportunities for additional practice and correction are provided by the teacher, as appropriate, with a focus on promoting and achieving a growth mindset approach in the subject.

Formative Assessment:

Short term assessment is a feature of each lesson. Observations and careful questioning enable teachers to adjust lessons and brief other adults in the class if necessary.

The lesson structure of a White Rose Maths lesson is designed to support this process and the 'True of False' statement at the end of each lesson also allows for misconceptions to be addressed.

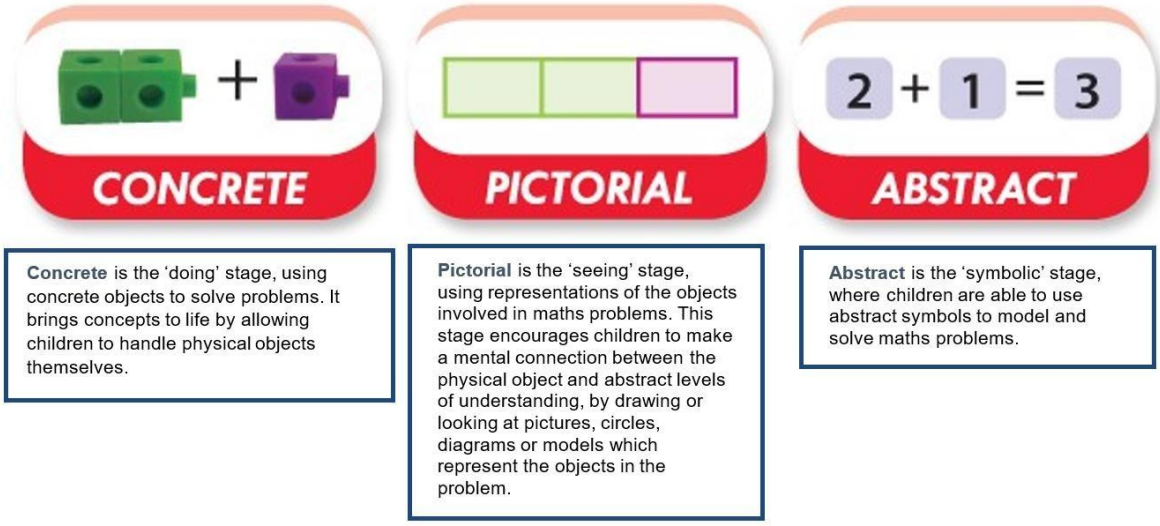
Summative Assessment:

Teachers administer a fortnightly arithmetic test. The results of these papers are inputted onto a spreadsheet which is added to throughout the year. Every Term during Assessment week NFER tests are completed from Y1 – Y5. Y6 use previous past SATS papers.

The above are used to inform the whole school tracking of attainment and progress of each child.

Planning and Resources

The use of manipulatives objects is an integral part of the White Rose Maths scheme which incorporates the concrete – pictorial – abstract pedagogy:



Each classroom has its own supply of mathematical equipment, in line with the White Rose Maths calculation policies, which the school as adopted (this is also available on the school's website)

Teachers have access to the White Rose Maths Interactive Teaching Resources for the purpose of modelling strategies and demonstrating the use of concrete resources.

The school subscribes to the White Rose Maths Premium Resource Centre. This provides access to visual resources (including lesson slides that teachers can adapt), as well as small steps planning guidance and reasoning and problem solving questions that accompany each small step, to inform and use in lessons.

EYFS

There are six key areas of early mathematics learning, which collectively provide a platform for everything children will encounter as they progress through their maths learning at primary school, and beyond:

- Cardinality and Counting
- Comparison
- Composition
- Pattern
- Shape and Space
- Measures.

Children in Nursery and Reception have a short daily Maths teaching session, during which time they begin to develop their understanding of simple mathematical concepts. These are informed White Rose Maths sessions.

Monitoring:

Monitoring in Mathematics is the responsibility of the Maths Lead, Assessment Lead and Headteacher. This will begin with a Deep Dive, to assess a range of information relating to teaching and learning in Maths and will involve undertaking a range of activities involving a variety of stakeholders. This will enable the subject leader to monitor progress and attainment. It will also enable key areas of development to be identified, which will form the Maths Action Plan.

Maths will be monitored each term with actions for development given to class teachers, and a short report provided for the Headteacher/Governors. Monitoring activities could include the following, although not all activities will be undertaken at each scrutiny point:

- Consultation with staff
- Consultation with pupils
- Work scrutiny
- Learning Walks
- Lesson observations
- Monitoring of formative and summative assessments

The Role of the Maths Lead:

The Maths Subject Lead is responsible for the implementation of the Maths Policy across the school.

Their role is to:

- Offer support to all members of staff in their teaching, planning and assessment of Maths.
- Provide opportunities for colleagues to observe good practice in the teaching of Maths.
- Maintain resources and advise staff on the use resources.
- Monitor classroom teaching and learning.
- Monitor the children's work at each level to ensure consistency across the school.
- Monitor assessment of Maths as a whole school, to inform planning/practice.
- Lead staff training as necessary.
- Attend appropriate in-service training (Maths Hub).
- Have enthusiasm for Maths and encourage staff to share this enthusiasm.
- Keep the Headteacher and governors informed on the implementation of Maths in school.

The Role of the Class Teacher:

Individual teachers will be responsible for ensuring a high quality teaching and learning in Maths. They will plan and deliver the requirements of the National Curriculum for Maths, through White Rose to the highest possible standard. The class teacher's role is a vital role in the development of Maths throughout the school and will ensure continued progression in learning and understanding, and create effective learning environments.

The class teacher will also:

- Secure pupil motivation and engagement.
- Provide equality of opportunity using a range of teaching approaches, techniques and resources.
- Use appropriate assessment techniques and approaches.
- Maintain up to date assessment records.

Inclusion and Equality:

At Holy Family Catholic Primary School we are committed to providing all children with an entitlement equal to the universal offer made to all children for teaching and learning in Maths. We set high expectations for all our pupils and provide opportunities for all to achieve regardless of race, gender, culture, religion, class or SEND status.