Holy Infant and St Anthony R.C. Primary School

Maths Curriculum Policy

Date adopted:

Reviewed: Summer Term 2025

Next Review Due: Summer Term 2028

Maths Curriculum

Holy Infant and St Anthony RC Primary

'Inspiring each other to excellence, guided by the light of Christ'

Intent

At Holy Infants, the curriculum is rooted in the needs and context of our community and learners. We provide an enriching and exciting curriculum the foundations of which are rooted in quality first hand experiences, designed to develop vocabulary and cultural capital whilst ensuring that knowledge is durable and transferrable allowing pupils to make connections, develop and apply skills and reason.

We aim to develop lively, enquiring minds encouraging pupils to become self-motivated, confident and capable in order to solve problems that will become an integral part of their future. The National Curriculum for mathematics aims to ensure that all pupils:

• become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems

• can reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

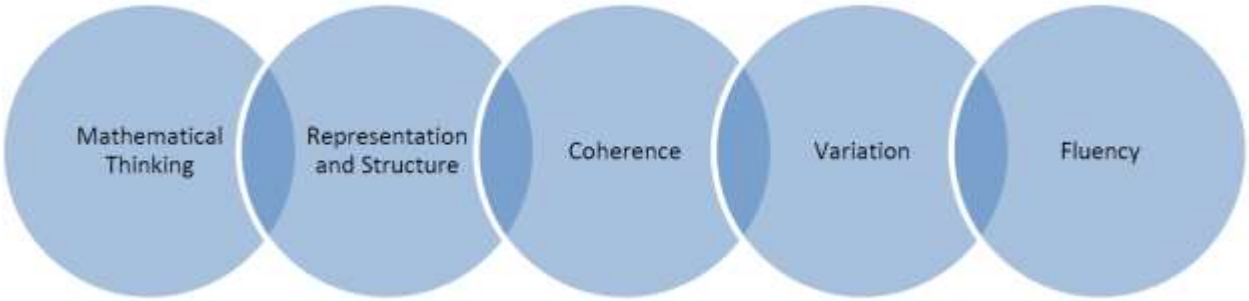
• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

The expectation is that most pupils will move through the programmes of study at broadly the same pace.

Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content.

Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

5 Big Ideas



Our teaching for mastery is underpinned by the NCETM's 5 Big Ideas. Opportunities for Mathematical Thinking allow children to make chains of reasoning connected with the other areas of their mathematics. A focus on Representation and Structure ensures concepts are explored using concrete, pictorial and abstract representations, the children actively look for patterns as well as specialise and generalise whilst problem solving- each lesson follows the CPA approach. Coherence is achieved through the planning of small connected steps to link every question and lesson within a topic. Teachers use both procedural and conceptual Variation within their lessons and there remains an emphasis on Fluency with a relentless focus on number and times table facts.

Teaching Principles

1. Teachers believe in the importance of mathematics and that the vast majority of children can succeed in learning mathematics in line with national expectations.

2. The whole class is taught mathematics together, with no differentiation by acceleration to new content. The learning needs of individuals are addressed through careful scaffolding, questioning and appropriate rapid intervention where necessary, to provide the appropriate support and challenge. Teachers model how to use resources using a visualizer.

3. The reasoning behind mathematical processes is emphasized. Teacher/pupil interaction explores how answers were obtained as well as why the method worked and what might be the most efficient strategy.

4. Precise mathematical language, often coached in full sentences, is used by teachers so that mathematical ideas are conveyed with clarity and precision. We value 'mathematical talk' and children get lots of opportunity to talk about and evaluate their mathematics during lessons.

5a. Conceptual variation and procedural variation are used extensively throughout teaching. This helps to present the mathematics in ways that promote deep, sustainable learning. a. Conceptual variation is where the concept is varied and there is intelligent practice. Positive variation is showing what the concept is, and negative variation is showing what the concept isn't. This clears away misconceptions at the very start. Within positive variation, both standard and non-standard representations are shown.

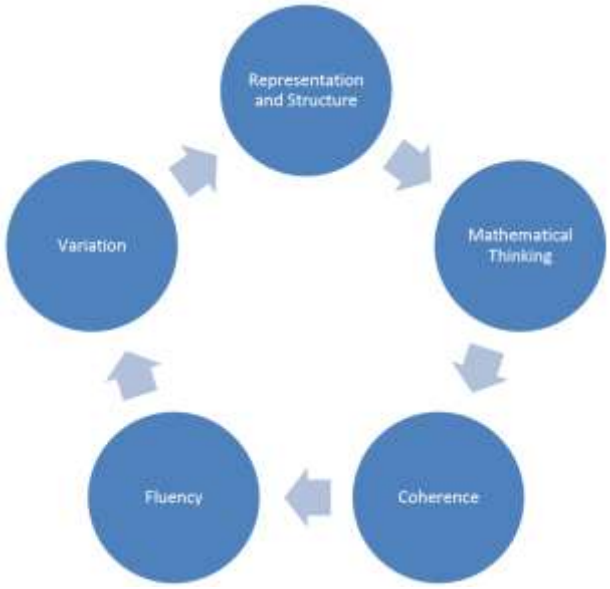
5b. Procedural variation is where different procedures and/or representations are used to bring about understanding. For example, teachers may collect several solutions for a problem (some right, some wrong) before guiding the class towards the most efficient method. It also involves highlighting the essential features of a concept or idea through varying the non-essential features. Variation is not the same as variety – careful attention needs to be paid to what aspects are being varied (and what is not being varied) and for what purpose.

6. Sufficient time is spent on key concepts to ensure learning is well developed and deeply embedded before moving on.

7. Sufficient time is spent on key concepts, to ensure that learning is well developed and deeply embedded before moving on
8. Problem Solving is central to apply their understanding.

Rationale

At Holy Infant and St Anthony RCP, we have adopted a mastery approach to the teaching and learning of mathematics. This can be broken down into five big ideas that underpin mathematics lessons across the school:



At Holy Infants and St Anthony, each class will have 5 lessons a week, with each lesson lasting an hour in upper KS2. Teacher input usually lasts around 20 minutes giving ample time for independent practice whilst the teacher delivers rapid support should somebody require it. During the input, teachers follow the CPA approach modelling how to use the concrete resources under a visualizer. Independent practice includes reasoning, problem solving and higher-order thinking activities. Lessons are sharply focused with one new objective introduced at a time, which will be evident on classes working walls- this is also split up into four sections Concrete, Pictorial, Abstract and Vocabulary/sentence stems. Difficult points and potential misconceptions are identified in advance and strategies to address them planned. Key questions are planned, to challenge thinking and develop learning for all pupils. The use of high quality materials and tasks (White Rose Maths, Classroom Secrets, Learning by Questions, NRICH, NCETM Mastery Assessment materials) to support learning and provide access to the mathematics is integrated into lessons. There is regular interchange between concrete/contextual ideas and their abstract/symbolic representation. Making comparisons is an important form of developing deep knowledge. The questions “What’s the same, what’s different?” are often used to draw attention to essential features of concepts. Teacher-led discussion is interspersed with short tasks involving pupil to pupil discussion and completion of short activities. Formative assessment is carried out throughout the lesson; the teacher regularly checks pupils’ knowledge and understanding and adjusts the lesson accordingly. This forms part of the mastery learning instructional process.

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

It is vital that a positive attitude towards mathematics is encouraged amongst all our pupils to foster confidence and achievement in a skill that is essential in our society. At Holy Infant and St Anthony RCP School, we use the new National Curriculum for Mathematics (2014) as the basis of our mathematics programme. We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education. All teachers are supported by White Rose Maths, all year groups have access to the entire White Rose Maths resources with Year 1 and 2 working in the workbooks and KS2 working in exercise books. Assessment for Learning, an emphasis on investigation, problem solving and the development of mathematical thinking and a rigorous approach to the development of teacher subject knowledge are therefore essential components of the Holy Infant and St Anthony RCP approach to this subject.

EYFS

We follow EYFS curriculum guidance for Mathematics. However, we are committed to ensuring the confident development of number sense and put emphasis on mastery of key early concepts. Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shape, spaces and measures. Pupils explore the 'story' of numbers to twenty and the development of models and images for numbers as a solid foundation for further progress. We use White Rose Maths in EYFS with a Mastering Number slot every afternoon for 15 minutes.

Times tables

At Holy Infants and St Anthony Primary School, we believe that through a variety of interactive, visual and engaging techniques, all children can achieve the full multiplication tables knowledge by the time they leave Primary School. The new National Curriculum (2014) states that by the end of year 4, pupils should be able to recall multiplication and division facts for multiplication tables up to 12x12. Children in Year 4 are also required to take a multiplication tables check (MTC) in the Summer Term. The purpose of the check is to determine whether pupils can fluently recall their times tables up to 12, which is essential for future success in mathematics. This means it is important for the children to learn their multiplication tables facts and to be able to recall them quickly and accurately.

We teach times tables using the following progression:

Year 1 – Be able to count in multiples of twos, fives and tens

Year 2 - Be able to recall 2, 5 and 10 multiplication and division facts

Year 3 - Be able to recall 3, 4 and 8 multiplication and division facts

Year 4 - Be able to recall 6, 7 and 9 multiplication and division facts

Year 5/6 - application of multiplication and division facts to problem solving

To support children's learning of multiplication tables we have a Multiplication Table Challenge and children have access to Times Tables (TT) Rockstars. This is an online resource that Years 2-6 use to aid the teaching and fluency of Multiplication and division facts Weekly competitions are set where classes challenge one another and we also have in house class competitions. Termly TT Rockstars clubs are also set for different year groups throughout the academic year. We also have a system within school called 'Judo Maths' where children work up to a black belt and this is tracked throughout school.

Fluency Bee

To support with Fluency, we use Fluency Bee which is a structured teaching programme designed to give children confidence with numbers through varied and frequent practice. Key representations are used throughout the programme to help children build visual images, and there's lots of emphasis on mathematical talk, games and a hands-on, practical approach. The programme runs from Year 1-4 with a daily 15 minute session completed.

Assessment

Both formative and summative assessment is used to assess whether or not pupils have mastered core concepts. Formative termly assessments, note whether children have mastered and retained the objectives from each term. We make long-term assessments towards the end of the school year, and use these to assess progress against school and national targets. We can then set targets for the next academic year and make a summary of each child's progress to discuss with parents and carers. We pass this information on to the next teacher at the end of the year, so that she/he can plan for their new class. Children in Years Two and Six sit the National SAT's in May each year. National Curriculum tests are used at the end of KS1 and 2; teachers in other classes use NFER tests to assess progress. We then use NFER assessment tool to complete a data analysis test to see where gaps are in children's learning and this will have an impact on teaching.

The school's Assessment and Marking Policies inform high quality feedback and pupils' response to it in Mathematics.

Resources

A bank of essential mathematics resources including Numicon and Cuisenaire rods are kept in each classroom, so teachers have these at hand when they are needed. Teacher's reference books and research documents are kept in the teachers' PPA room off the staff room.

Information and Communication Technology ICT is used in various ways to support teaching and motivate children's learning. Each classroom has a PC connected to an interactive whiteboard and an I-pad 'visualiser'. All teachers are provided with an I-pad to support their planning and provision and are encouraged to use ICT to enhance teaching and learning in mathematics where appropriate. The school is equipped with two laptop trolleys (each with 30 laptops). LBQ resources are also used throughout Year groups.

Role of the Subject Leader

- Ensures teachers understand the requirements of the National Curriculum and supports them to plan lessons. Leads by example by setting high standards in their own teaching.
- Leads continuing professional development and learning (CPDL); facilitates joint professional development – especially Lesson Study; provides coaching and feedback for teachers to improve pupil learning.
- Leads the whole-school monitoring and evaluation of teaching and learning in mathematics by: observing teaching and learning in maths regularly; analysing assessment data in order to plan whole school improvement in mathematics; conducting work scrutiny to inform evaluation of progress; conducting pupil interviews.
- Takes responsibility for managing own professional development by participating in external training, independent private study, engagement in educational research and scholarly reading.
- Keeps parents informed about mathematics issues.
- Ensures that the school's senior leaders and governors are kept informed about the quality of teaching and learning in mathematics.
- Works in close partnership with the school's SENDCo to ensure the learning needs of all pupils in mathematics are met effectively.
- Keeps the school's policy for mathematics under regular review.