

THE HOLY FAMILY CATHOLIC PRIMARY SCHOOL

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Maths Policy

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'Pupils feel safe in school and believe that the adults take good care of them.'

'The quality of teaching, learning and assessment in the school is strong.'



**CATHOLIC SCHOOLS
INSPECTORATE**
THE NATIONAL FRAMEWORK FOR THE INSPECTION OF CATHOLIC SCHOOLS, COLLEGES AND ACADEMIES

Catholic Schools Inspection February 2023

'The visitor is left in no doubt that this is a loving Catholic school that prides itself on a genuine, warm welcome.'

'Staff provide the highest level of pastoral care; there is a deep commitment to the most vulnerable.'

'Prayer is central to life in Holy Family.'

At The Holy Family School we are committed to Safeguarding Childre

Mathematics Policy

Intent

At The Holy Family School, we believe mathematics is an important part of children's development throughout school, right from an early age. The children learn basic mathematics skills that they consolidate over time through understanding and reasoning. We intend on delivering a curriculum which is in line with the expectations of the National Curriculum. Our vision is for the children to make links between their mathematical skills and real life situations and use this in the future. We aim for our mathematics lessons to be well paced as well as exciting and interesting to all. No one is limited in mathematics. We like to ask the 'why?' and 'how?' as this deepens the children's understanding and explanation skills. We aim for the children to make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. At The Holy Family School the children learn that mistakes in mathematics are expected, respected, inspected and corrected so that they have a greater understanding. The mapping of mathematics across our school shows clear progression in line with age related expectations. Teachers use their professional judgement when deciding if and when certain areas of mathematics need to have more or less time spent on them, rather than simply following what the scheme of work suggests. We give each pupil a chance to believe in themselves as mathematicians and develop the power of resilience and perseverance when faced with mathematical challenges.

Mission Statement (Written by staff March 2022)

At Holy Family maths is engaging, inspiring and practical. Our pupils will be confident, resilient mathematicians with a growth mindset, who are given the freedom to make mistakes and learn from them. Their skills will be embedded and relevant, to enable our pupils to apply these skills in a every day context

Implementation

Our mastery approach to the curriculum is designed to develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y6. At The Holy Family School, we are committed to providing a motivating and challenging mathematics curriculum. It is accessible to all and links the use of mathematics across a range of subjects, adding meaning to the learning of mathematics. Our children are constantly reminded about the importance of perseverance when faced with solving a problem in mathematics. Our whole school approach to the teaching and learning of mathematics involves the following;

- At The Holy Family School, children study mathematics daily covering a broad and balanced mathematical curriculum including elements of number, calculation, geometry, measures and statistics.
- In Early Years, pupils receive quality adult input and also opportunities to practise and consolidate their knowledge through a variety of planned, child initiated activities.
- Our mathematics planning is based on ESSENTIALmaths by Herts for Learning. This is enhanced by a wide range of resources. This ensures a progressive and thorough curriculum in every year group. Teachers know which objectives must be taught and assessed in each year group and can follow progressive steps to ensure pupils have a comprehensive understanding of mathematics. Daily mathematics lessons include fluency, reasoning and problem solving.

- Teaching assistants are designated to work with groups or individual children. They work collaboratively with the class teacher, liaising closely on a day to day basis to insure everyone is kept informed.
- Teachers are encouraged to promote kinaesthetic learning to ensure children acquire fluency of skills by introducing concepts in a practical/concrete way to progress to pictorial then abstract (C-P-A).
- Differentiated learning is provided through a selection of tasks to consolidate fluency, using skills to solve problems and using reasoning skills to solve greater depth challenge problems.
- Children who have shown their understanding at a deep level within the unit, will have opportunities to apply these skills in a greater depth activity. This should be challenging and ensure that children are using more than just one skill to be able to answer the mathematical problems.
- For pupils who are below ARE, in class support is provided on a daily basis. Additionally, intervention and consolidation is provided before school during early morning booster sessions.
- Children with additional needs are included in whole class lessons and teachers provide scaffolding and relevant support as necessary. For those children who are working outside of the year group curriculum, individual learning activities are provided to ensure their progress.
- The teaching of mathematics at The Holy Family School promotes the use of mathematical vocabulary through encouraging children to explain their thinking, strategies and mistakes during lessons to embed understanding. Teachers ask probing questions such as prove it, convince me ...
- During lessons, in particular in KS2, we are starting to encourage children to self-mark. We are also having whole class discussions about answers, strategies and mistakes/misconceptions. This provides children with immediate feedback and time to reflect on their learning. Children respond well to this and learn from their mistakes.
- From the 2019/20 academic year onwards, schools in England will be required to administer an online multiplication tables check (MTC) to year 4 pupils. The purpose of the MTC is to determine whether pupils can recall their times tables fluently, which is essential for future success in mathematics. It will help schools to identify pupils who have not yet mastered their times tables, so that additional support can be provided. To support the children with their multiplication practice we use Times Table Rockstars as an online and fun learning platform.
- PurpleMash, Times Table Rockstars and Numbots are online mathematics learning tools to support children in their learning. Children are set homework on these platforms in line with The Holy Family School Homework Expectations. They are encouraged to use Times Table Rockstars regularly to support them in their learning of the times tables.

EYFS

In Early Years, 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 shapes, spaces, and measure.

Pupils are taught to:

Number

- count reliably with numbers from 1 to 20
- place them in order and say which number is one more or one less than a given number
- add and subtract two single-digit numbers and count on or back to find the answer using quantities and objects
- solve problems, including doubling, halving and sharing

Shape, space and measure

- use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems
- recognise, create and describe patterns
- explore characteristics of everyday objects and shapes
- use mathematical language to describe them

Key Stage 1

The National Curriculum (2014) states that:

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools].

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Lower Key Stage 2

The National Curriculum (2014) states that:

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12-multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2

The National Curriculum (2014) states that:

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Impact

Our successful approach to the teaching and learning of mathematics, results in a fun and engaging curriculum that embeds understanding and knowledge through hands on, practical activities. Well planned sequences of learning support children to develop and refine their mathematics skills. Children are able to independently apply their knowledge to a range of increasingly complex problems. Children are developing skills in being able to reason verbally, pictorially and in written form. Across the school, children are becoming more familiar with using sentence stems to help them explain their reasoning, both through spoken and written forms of reasoning. Introductions to concepts using concrete materials and practical activities supports learning through memorable activities which children can recall at a later date, relating the learning to new situations. By introducing self-marking within lessons this supports children in recognising their strengths and areas for development. Connecting mathematics across the curriculum highlights how mathematics relates to life. We use and highlight our use of mathematics in science investigations, collecting, recording and presenting data. Computing also highlights the real use of mathematics with statistics and data collection and analysis. Special weeks timetabled throughout the year also celebrate mathematical thinking, such as Maths and Science week.

Assessment processes

We see assessment as an integral part of the teaching process and strive to make our assessment purposeful, allowing us to match the correct level of work to the needs of the pupils, thus benefiting the pupils and ensuring confidence and progress. The HfL Assessment Criteria for Mathematics is used to assess. In Year 2 the children are assessed against the ITAF's.

Formative Assessment

Teachers integrate the use of formative assessment strategies such as effective questioning, clear learning objectives, the use of success criteria and effective feedback and response in their teaching. Feedback is given on children's learning in line with our feedback and marking policy. Formative assessment within every lesson helps teachers to identify the children who need more support to achieve the intended outcome. It also allows teachers to identify the children who are ready for greater stretch and challenge through planned questioning or additional activities.

Summative Assessment

Teachers administer a termly arithmetic paper and reasoning and problem-solving paper which specifically links to the coverage for that term. (Herts diagnostic assessments) The aim is to support teachers to identify strengths and weaknesses of the class, as well as address where fundamental learning has not fully been secured or where misconceptions need addressing for groups of pupils and individuals. This is then fed into future planning. They are also used to inform the whole school tracking of attainment and progress for each child which is updated termly on Sims.

Assessment data in mathematics is reviewed throughout the year to inform interventions and to also ensure good or better progress for all.

National Curriculum tests are used at the end of KS1 and 2. Assessments are reported to parents at parent consultations in the autumn and spring terms and in the end of year report in the summer term.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Leadership and Management

To lead in the development of mathematics throughout the school.

- To monitor the planning, teaching and learning of mathematics throughout the school.
- To help raise standards in mathematics.
- To provide teachers with support in the teaching of mathematics.
- To monitor and maintain high quality resources.
- To keep up to date with new developments in the area of mathematics

Monitoring and Evaluation

The subject leader/SLT take part in monitoring standards and quality in mathematics through learning walks, book scrutiny, monitoring of planning and pupil voice. This is to monitor the quality of teaching. The mathematics leader is released from their classroom on a termly basis in order to monitor and evaluate the quality and standards of mathematics throughout the school. Evaluative written feedback is provided to all staff. Regular provision is made for the mathematical development of staff including CPD and staff meetings within school from the mathematics subject leader.