The Good Shepherd Primary Catholic Voluntary Academy

Mathematics Policy

Mission Statement

Our mission is to develop our children with active and creative minds, a sense of understanding and compassion for others and the courage to act on their Catholic beliefs.

In our school community, we celebrate our faith and we work together to achieve our personal potential by trying to live like Jesus and become the person that he wants us to be.

The Mathematics Policy of the Good Shepherd Primary Catholic Voluntary Academy was ratified on:

Review Date: Summer 2022

Chair of Governor's signature: Rebecca Burke

Head Teachers signature: Margaret Williams

J. Barfield
Summer 2020

The Good Shepherd
Primary Catholic Academy
Our School • Our Community

THE GOOD SHEPHERD PRIMARY CATHOLIC ACADEMY
MATHEMATICS POLICY

Just looking at a sunflower we can tell that the sunflower was carefully designed by a wise Creator. Maths allows us to see God's design at a new level, revealing the care God took with each aspect of His creation.

'So teach us to number our days that we may get a heart of wisdom.'

Psalm 90:12

Introduction

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education, therefore, provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Rationale – Our Aims

In September 2016, The Good Shepherd began its journey down the road of the 'Teaching for Mastery' approach. This is an ongoing project that is continually developing each year. This approach is supported by up-to-date CPD and research from highly-respected mathematics organisations such as the NCETM. At The Good Shepherd Academy, our mathematics curriculum has the following aims:

- To develop children's knowledge, skills and understanding in mathematics in line with the 2014 National Curriculum.
- To ensure a consistent approach to the teaching of high-quality mathematics throughout the Good Shepherd Primary Catholic Academy.
- To continually enhance our teaching approach in line with the 'Teaching for Mastery' approach.

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- To develop confidence, understanding and enjoyment through a positive attitude to mathematics.
- To develop understanding and efficient use of mathematics in meaningful contexts and to promote its importance in everyday life.
- To ensure equal access to mathematical achievement for all children so that they achieve their full potential regardless of gender, ethnicity or special needs.
- To develop teachers' knowledge and confidence in all areas of mathematics.
- To provide teachers with clear guidelines for the teaching and assessing of mathematics.

Aims of the National Curriculum

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 develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **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 National Curriculum sets out year-by-year programmes of study for key stages 1 and 2. This ensures continuity and progression in the teaching of mathematics. 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.

The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development Matters' non-statutory guidance.

The EYFS Framework in relation to mathematics aims for our pupils to:

- Develop and improve their skills in counting.
- Understand and use numbers.
- Calculate simple addition and subtraction problems.
- Describe shapes, spaces, and measures.

Teaching and Learning

Foundation Stage

- Work undertaken within the Foundation Stage is guided by the requirements and recommendations set out in the Early Years 'Development Matters' EYFS document. All children are given the opportunity to develop their understanding of mathematics. Lessons in the Foundation Stage aim to do this through varied activities which allow children to use, explore, enjoy, practise and talk confidently about mathematics.
- In Foundation Stage 2, daily time is dedicated to mathematics. Overall, these lessons include a good balance between whole-class work, group teaching and individual practice. Throughout the year there is a gradual shift where adult-directed sessions are extended in preparation for Year 1.

Key Stage 1 – Years 1 and 2

- 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 will involve working with numerals, words and the four operations, including using practical resources [for example, concrete objects and measuring tools].
- At this stage, pupils will develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary.
- Pupils will use 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.
- 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 – Years 3 and 4

- 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 will ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.
- At this stage, pupils will develop their ability to solve a range of problems, including those with simple fractions and decimal place value.
- Teaching will also ensure that pupils can draw shapes with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them.
- Teaching will ensure that pupils can use measuring instruments with accuracy and can 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 times multiplication table and show precision and fluency in using and applying them.

- 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 – Years 5 and 6

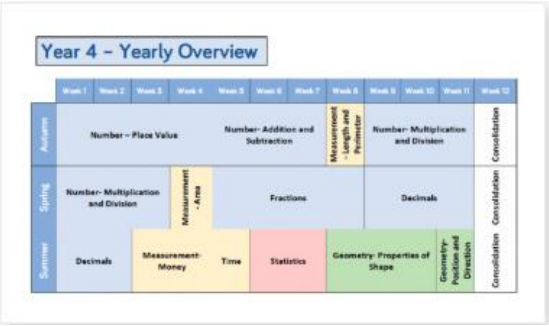
- The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.
- At this stage, pupils 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 solid foundation in arithmetic, pupils are then introduced to the language of algebra as a means for solving a variety of problems.
- Teaching in geometry and measures will consolidate and extend knowledge developed in number.
- Teaching will ensure that pupils can classify shapes with increasingly complex geometric properties and that they learn the vocabulary needed 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 will be expected to read, spell and pronounce mathematical vocabulary correctly.

All calculations are taught in line with the schools' Calculation Policy (see Calculation Policy).

<u>Planning and Organisation</u>

At the Good Shepherd Academy, we use the White Rose Maths Hub schemes of learning to support us in delivering the aims of the National Curriculum and the 'Teaching for Mastery' approach. The White Rose schemes of learning structure the curriculum so that it is taught in blocks.

Long-Term Planning



We aim for each child to achieve the aims of the National Curriculum by the end of the relevant key stages. For children in Years 1-6, we use the White Rose yearly overviews. A yearly overview for each year group suggests the teaching time needed for every block of learning. The Autumn, Spring and Summer sections are split equally into 12 weeks comprising 11 weeks of blocks followed by a week of consolidation. This gives staff a suggestion of time that can be spent on each block (although it is not rigid and staff wish to spend more or less time on a block depending on the cohort.

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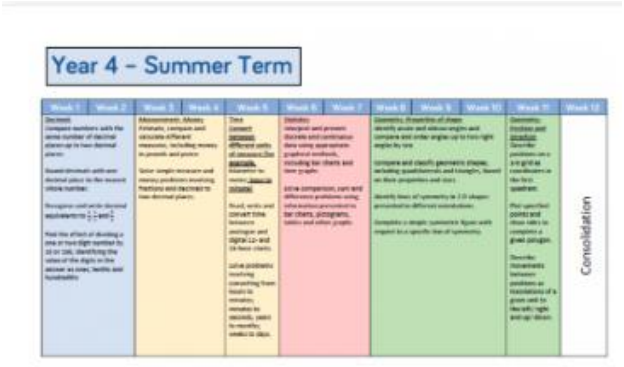
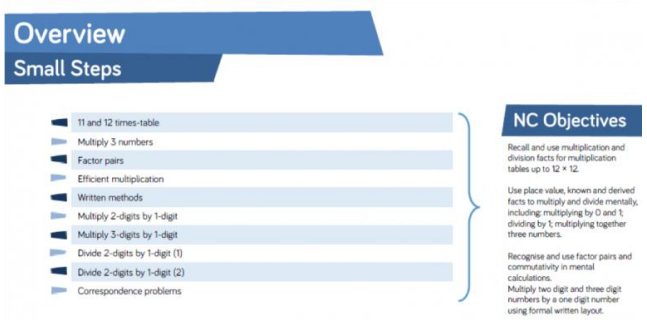
Medium-Term Planning

The termly overviews show the objectives for each block. These objectives derive directly from the National Curriculum. These overviews set out the yearly progression for each class. Where an objective includes bold and underlined text, only the bold and underlined part of the objective is covered in the block; the rest of the objective is covered elsewhere within the scheme. Staff can access these termly overviews from the school server.



Short-Term Planning



The objectives in each block are broken down into a series of carefully planned small steps. It is recommended teaching the content in the suggested order as the step sequence is designed to gradually develop children's understanding. However, staff must use their professional judgement to decide when this is not necessary, they need to spend more time on a small step or spend less time on a small step. A single small step does not necessarily equate to one day of teaching. Teachers will need to judge which steps will need just one day and which will demand two or three lessons. Some small steps early in the block are there to recap learning needed in subsequent steps. Some small steps early in the block are there to recap learning from previous years or blocks. Teachers may plan their lessons in any format which they feel is appropriate; PowerPoints and Smart Notebooks are strongly encouraged in order to reduce workload and focus on the lesson design.

<u>Resources</u>

Each class has a stock of age-appropriate core resources. General resources (such as meter sticks and scales) are stored in cupboards across the school. The Mathematics Leader will review and audit resources each year, ordering new ones accordingly. Staff are free to ask or suggest useful resources they wish to purchase throughout the year and these will be ordered off of the maths budget.

<u>Mathematics Staff Handbook</u>

The Mathematics Staff Handbook provides more detail about how mathematics is organised on a daily basis at The Good Shepherd Primary Catholic Voluntary Academy. This is updated each academic year and shared with all staff on the Admin INSET Day in September.

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Special Educational Needs and Inclusion

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children's pupil passports or class aware forms will incorporate suitable objectives from the National Curriculum for Mathematics or Development Matters and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 basis outside the mathematics lesson. Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. Within the daily mathematics lesson, teachers have a responsibility to not only provide differentiated activities to support children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability. Provision for SEND is in line with the schools' SEND policy.

Assessment

Assessment in mathematics is carried out in line with the schools' Assessment Policy and the schools' Marking Policy.

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of children daily through:

- Regular marking of work.
- Analysing errors and picking up on misconceptions.
- Asking questions and listening to answers.
- Facilitating and listening to discussions.
- Making observations.

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short-term planning evaluated in light of these assessments.

Marking

Our expectations for marking of children's work are supported by advice and research from the NCETM. They state that 'the most important activity for teachers is the teaching itself, supported by the design and preparation of lessons'.

It is important for teachers to distinguish between a pupil's simple slip and an error that reflects a lack of understanding:

- For slips, it is often enough to simply indicate where each slip occurs, particularly when the teacher's/school's approach is to encourage pupils to correct them.
- If errors demonstrate a lack of understanding, the teacher may decide to take alternative courses of action. For instance, with a small number of pupils, the teacher may arrange same-day intervention while for a large number of pupils, the errors will be addressed in the next lesson.

Where children have made minor slips, they should be encouraged to fix these themselves (preferably in the same lesson).

Summative Assessment

At the end of each term, children across the school will be tested using PUMA Assessments. This will provide us with a standardised score which should be submitted on our tracking system (EAZMAG). Teachers will also make judgements about pupils' progress and attainment ant the end of each term and these should be submitted onto EAZMAG.

Children in Year 2 and Year 6 will take SATs tests in mathematics in May. These will assess their arithmetic and mathematical reasoning. In June, Year 4 pupils will take part in the online Multiplication Tables Check.

Parents

Reporting

Reporting to parents is done on a termly basis through consultation meetings and an annual written report. Reports are completed before the end of the summer term. Reporting in mathematics will focus on each child's

- Attitude to mathematics
- Competence in basic skills
- Ability to apply mathematical knowledge to new situations
- Ability in comparison with their peers and
- Progress over the year

Homework

Parents will be encouraged to support their children through homework activities developing positive attitudes to mathematics. Homework activities may take the form of number games or written tasks in KS1. Pupils in KS2 will be expected to complete written tasks set by the teacher or complete regular practice on Times Tables Rock Stars. All children will be expected to practise their Key Instant Recall Facts (KIRFS). These set out the key knowledge that children need to know that half term. A new will be sent home every half term.

Monitoring and Evaluation (see Observation and Classroom Monitoring Policy)

Monitoring and evaluation of teaching and learning in Mathematics takes place in line with the schools' Monitoring and Evaluation Policy. Findings will be shared with all parties involved.

Leadership and Management

The Role of the Governors

- To be familiar with the expectations of the 2014 National Curriculum.
- To adopt and monitor the Mathematics Policy.
- To monitor the progress of the mathematics elements of the SIP.

The Role of the Head Teacher and SLT

- To use assessment and other data to set targets in mathematics.
- To monitor the quality of teaching and learning in mathematics.
- To provide the support and resources needed to enable pupils to achieve the targets set.

Role of the Subject Coordinator

- To ensure that all policies are reviewed and updated.
- To take the lead in policy development and the production of schemes of work to ensure progression and continuity in mathematics throughout the school.
- To take responsibility for the mathematics budget and to purchase and organise resources.
- To keep up to date with developments in mathematics education and disseminate information to colleagues.
- To work with the head teacher to monitor and evaluate progress in mathematics across the school and to address issues arising.
- To ensure that all staff and support staff are familiar with policies, planning formats, assessment requirements and resources in the school and to support them where necessary.

Racial Equality & Equal Opportunities Statement

All children have equal access and inclusive rights to the curriculum regardless of their age, gender, race, ethnicity, religion, belief, disability or ability. We plan work that is differentiated to meet the needs of all groups and individuals. Good Shepherd Primary Catholic Academy is committed to creating a Christian climate which will enable everyone to work free from racial intimidation and harassment and to achieve their full potential. Policies are available to expand on this further.

Review

The Head Teacher and staff will review this policy during the Summer Term 2022. Any suggested amendments will be presented to the governing body.

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