

# Mathematics Curriculum Intent, Implementation and Impact 2022-2023



## Intent

The intent is to create a curriculum that is based on real life experiences encouraging children to ask big questions about their world. That they learn to grow as artists, historians, musicians, designers, coders, scientists, writers, readers, mathematicians...and flourish as lifelong creative thinkers. The curriculum serves the needs of the children, building courage, compassion and independence to be a champion for what they believe in. They are courageous advocates for themselves and others in the local and global community. At Canon Pyon we encourage children to develop a positive attitude towards mathematics and problem solving as mathematicians in their own right. 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.

### What Maths looks like in our School:

- Inspiring and challenging lessons
- Children working independently and in small groups
- Children who are responsible, competent, confident
- Children confidently using a range of models, images and concrete resources to support their learning journey
- Opportunities for critical thinking, problem solving and reasoning
- Concrete maths resources easily accessible in each classroom
- Maths working walls that are used as a tool for learning
- Vocabulary on display
- Problem solving language displayed and modelled
- Models and images used regularly

### By the end of EYFS pupils will:

- Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically.
- Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.
- Children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built.
- Rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures.

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- Children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

## By the end of Key Stage 1:

- All pupils develop confidence and mental fluency with whole numbers, counting and place value.
- Working with numerals, words and the four operations, including with practical resources, for example, concrete objects and measuring tools.
- Children develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary.
- Teaching involves using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.
- Each year pupils will have learnt specific number facts.
- Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

## By the end of lower Key Stage 2:

- Pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value.
- Pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.
- Pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value.
- Teaching ensures 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 times 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.

## By the end of upper Key Stage 2:

- Pupils extend their understanding of the number system and place value to include larger integers.
- Develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.
- 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.
- Pupils are introduced to the language of algebra as a means for solving a variety of problems.

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- 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.

## Implementation

### This is how it works:

- Lesson provided through daily maths lessons
- Daily maths 'catchup' lessons to clear up misconceptions
- Daily Flashback/Basic Skills sessions
- Weekly Froggy Maths
- Access to TT Rockstars and other educational maths games
- Clear progression of skills developed throughout school
- Clear calculation progression throughout the school
- Progression of knowledge developed each year

### This is what adults do:

- Teachers work collaboratively to support each other in the teaching of mathematics, understanding and applying current developments in the subject, and providing direction for the subject in the school.
- Teachers who show enthusiasm for the subject regardless of personal capabilities
- Curriculum leader evaluates the strengths and weaknesses in the subject and indicate areas for further improvement.
- Create a positive learning environment to encourage discussion and personal opinion
- Ensure an emotionally safe working environment
- Look for opportunities to use specialists and outside providers when necessary

### This is how we support, challenge and ensure all children can access the curriculum:

Our Christian vision challenges all subject leaders to reflect on ensuring that the English curriculum helps all pupils to belong and access learning, appropriate to their needs and abilities. Inclusion and *belonging* is a thread that runs through every area of the school enhanced by collaboration between senior leaders, subject leaders, the SENCO, class teachers, support staff, external agencies, parents and most importantly, the child. At Canon Pyon Church of England Academy, every teacher is a teacher of SEND and every leader is a leader of SEND.

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Special Educational Needs and Disability (SEND)- Including the Lowest 20% of Learners



We firmly believe that *Quality First Teaching* is the solid foundation on which effective SEND provision is built. The first step to children having access to a broad and balanced English curriculum is through appropriate differentiation by skilled and nurturing teaching staff, who have ambitious expectations of their own teaching and students' learning. Differentiation is not a simply case of providing different worksheets, for example. Differentiation is adapting the work, success criteria or support given to help children achieve or make progress.

Differentiation- or adaptations- may include:

- Alternative tasks
- Different objectives or goals within a task
- Resources or learning aids
- Amount of adult support within a task
- Frequency of monitoring within a session
- Time given to complete tasks
- Style of language used
- Style of questioning used
- Use of peer support
- Classroom organisation and grouping
- Level or style of feedback given

Differentiation takes many forms to help learners to *belong* within lessons, *believe* in their ability and *behave* in a way that applies their skills. Further support to help inclusion and overall pupil progress in this subject area may include:

- Targeted intervention programmes, which have a proven and measurable impact on progress.
- Have specific 1:1 or small group intervention, including support from Learning Mentor
- Celebration of achievement, as well as attainment
- Time given, as appropriate, to any emotional or behavioural support that may-in turn- be barriers to learning in this subject area
- Monitor pupil attitudes to subject and using pupil voice to ensure that learners have ownership of subject area/tasks
- Specific enrichment activities, visits or events planned/attended in order to suit the needs and interests of specific groups of learners
- Pupil progress meetings, involving the pupil(s) and any relevant adults
- Data analysis, whether this is quantitative performance data from tests, for example, or qualitative data from questionnaires or monitoring observations
- The provision of good quality and relevant training for all staff members.

Other Pupil Groups- Including More Able and Talented (MAT) and the Highest 20% of Learners

We believe that all children have individual gifts, interests and talents. Some children may exhibit a skill that is advanced in comparison to their peers. As a result, such pupils will require a higher level of challenge in order for them to *belong*, be included within English sessions and have their needs

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met. More able and talented pupils (MAT) will also receive differentiation and support appropriate to their needs.

Adapting tasks and providing opportunities to help all children to achieve well will also depend on the diversity of the groups of learners that are represented at Canon Pyon Church of England Academy.

Groupings of learners that could identify trends, spikes or dips in overall progress may include:

- Forces children
- Gender
- Behavioural needs
- Children with emotional needs
- EAL children
- Age (i.e summer born)
- Attendance
- Family support
- LAC
- Ethnicity
- Those experiencing tragedy or loss
- Low self-esteem

This list is not exhaustive, and neither are the methods mentioned in how learners can be catered for in this subject area. We are a listening school and are constantly reflecting on feedback from adults and children, with the constant goal of helping all learners.

## Impact

### This is what you might typically see:

- Happy and engaged learners
  - Children making decisions about the strategies they will use
  - Children demonstrating transferable skills, knowledge and expertise
  - Lessons which are, creative and fun fostering a love of learning
  - Children demonstrating a rich vocabulary
  - Curious children who ask questions and take part in discussions
- Children who understand the importance of making mistakes and persevering to work through problems
- Confident children who are willing to persevere

### How we know how well our children are doing:

- Informal judgements based on observation during lessons
- End of topic assessments
- End of term assessments

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## How mathematics contributes to the spiritual, moral, social and cultural development of the child:

- Developing deep thinking and questioning the way in which the world works, promotes the spiritual growth of our pupils.
- Pupils are always encouraged to delve deeper into their understanding of mathematics and how it relates to the world around them.
- Sequences, patterns, measures and ultimately the entire study of mathematics was created to make more sense of the world around us and enable each of our pupils to use maths as a tool to explore it more fully.
- Pupils are able to experience the awe and wonder of mathematics in science, the arts and nature.
- Problem solving skills and teamwork are fundamental to mathematics, through creative thinking, discussion, explaining and presenting ideas. Students are encouraged to develop their mathematical reasoning skills, communicating with others and explaining concepts to each other.
- Self and peer reviewing are very important to enable pupils to have an accurate grasp of where they are and how they need to improve.
- Working together in pairs or groups and supporting others is a key part of maths lessons.
- Pupils are always guided and instructed in valuing others' opinions and ideas; this extends to consideration for others in all aspects of life

## Cultural Capital:

At Canon Pyon Primary School we believe that all children should have the same opportunities to succeed in life. We believe that all children should become competent mathematicians so that as adult, they are able to function in a digital and mathematical world. Pupils know that whatever roles they choose as adults for children should be in their grasp and a mathematical competency should enable and not hinder this. We know that not all children have the support in life so we target children who may need extra to ensure they achieve.

## Impact of the teaching:

At Canon Pyon you will see confident mathematicians who understand the need for these skills in life. They refer to themselves as mathematicians and can draw on strategies to find answers to problems. During maths lessons you will see children working individually, in pairs or small groups to achieve success. They will be able to use various models and images and will confidently be referring to the interactive maths displays and working walls in the classroom.