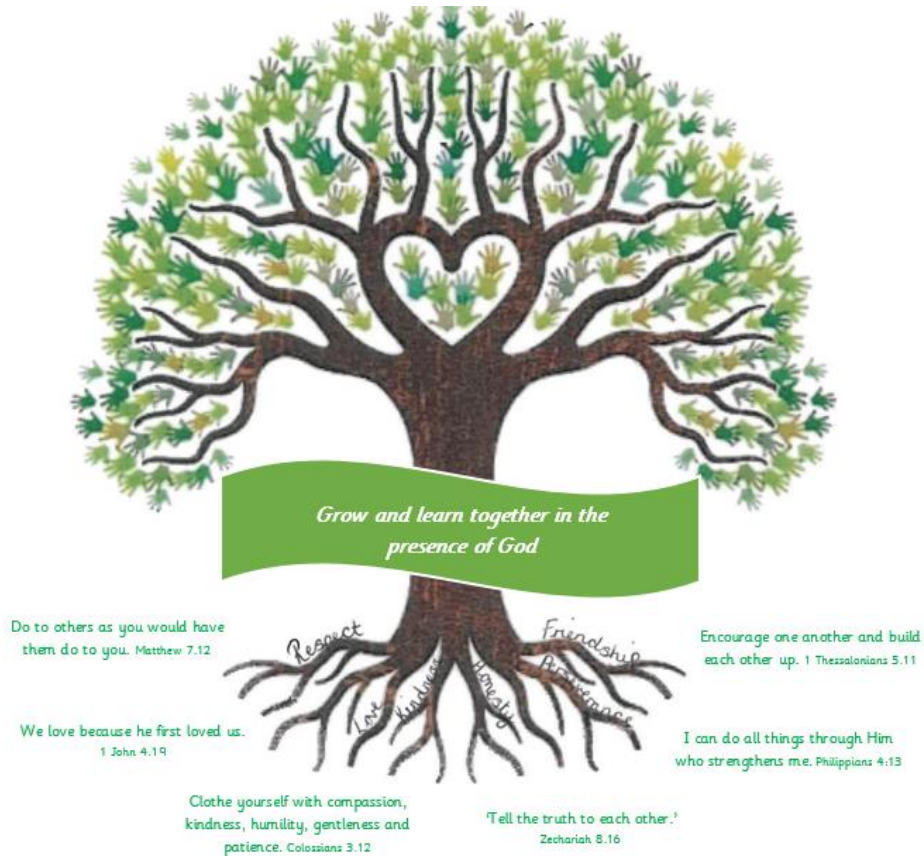


Christ Church (Church of England) Nursery, Infant and Junior School Federation



MATHEMATICS POLICY

Proverbs 22:6 Start children off on the way they should go: and even when they are old, they will not turn from it.

Policy Approved: February 2024

Policy Review Date: February 2026

This policy sets out Christ Church (Church of England) School’s approach to the mathematics curriculum.

“Sometimes the questions are complicated, and the answers are simple.” – **Dr. Seuss**

“Mathematics is not about numbers, equations, computations, or algorithms: it is about understanding.” – **William Paul Thurston**

“Without mathematics, there’s nothing you can do. Everything around you is mathematics. Everything around you is numbers.” – **Shakuntala Devi**

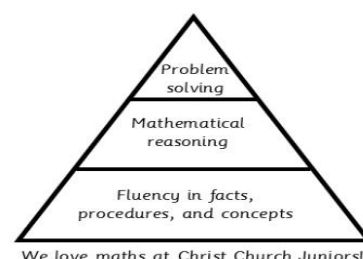
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Introduction

This Mathematics Policy sets out the approach, expectations, and practices of Christ Church (Church of England) Federation in delivering high-quality mathematics education in accordance with the 2014 National Curriculum in England. This policy aims to support teachers and provide clarity to all stakeholders regarding our commitment to excellence in mathematics education.



Shared Vision

Our distinctively Christian ethos contributes to Christ Church as a centre of learning excellence inclusive to all. Through living out our core Christian values – respect, kindness, honesty, love, friendship, and perseverance – we are a community in which all our members are respected and valued and can flourish as human beings equally created in the image of God. As a school we provide an engaging, well balanced, and inspirational curriculum through which every child’s potential may be fulfilled. Through positive encouragement and nurturing, each child can develop to the full – socially, emotionally, spiritually, and academically – so as to be equipped with the life skills needed to live as a valued and valuable member of society.

Curriculum Intent

At Christ Church, the teaching of mathematics is carefully planned and designed to enable each child to develop their learning and reach their full potential. Our aim is not only to develop the necessary mathematics skills for later life but also to instil a sense of enthusiasm and fascination for the subject itself. We want to build pupil confidence in mathematics enabling them to express themselves and their ideas using mathematical language with assurance. Our goal is for children to see the relevance of mathematics in their everyday lives and to recognise the importance as they progress through school into the world of employment.

We incorporate sustained levels of challenge through varied and high-quality activities with a focus on fluency, reasoning and problem solving. Mathematics is a creative discipline that can stimulate moments of pleasure and wonder when a pupil solves a problem for the first time, discovers a more elegant solution to that problem, or suddenly sees hidden connections. We aim to create a sense of ‘wonder’ in our lessons and a thirst for taking mathematical learning beyond the classroom.

We actively encourage our parents to become involved and support their children’s Mathematics learning in a variety of ways e.g. through use of NumBots, KIRFS (Key Instant Recall Facts) and TT Rockstars.

Implementation

Our curriculum is planned and implemented in line with the mathematics programmes of study in the 2014 National Curriculum in England Key Stages 1 & 2 and the Early Years Statutory Framework for Nursery and Reception.

Mathematics is a tool for everyday life. It is a whole network of concepts and relationships which provide a way of viewing and making sense of the world. It is used to analyse and communicate information and ideas and to tackle a range of practical tasks across the curriculum and real-life problems through enquiry and investigation. It also provides the material and means for creating new imaginative worlds to explore.



Early Years Foundation Stage (EYFS)

In the Early Years Foundation Stage, our young mathematicians are provided with many exciting opportunities, through planned purposeful play, teacher-led inputs, and child-initiated activities, to develop and improve their mathematical skills. The teaching of mathematics is integrated through a range of contexts including storybooks, puzzles, songs, rhymes, games, and challenges. Similarly, to the rest of the school, we use manipulatives and resources to make learning more concrete and accessible for all children and to foster a dialogue about mathematics.



Key Stage 1 (KS1 – Years 1 and 2)

In Years 1 and 2, the focus of Maths is to ensure the children develop confidence and mental fluency with whole numbers, counting and place value. This often involves working with numerals, words and the four operations (+ - x ÷). The children should be precise in using and understanding place value and know number bonds to 20. Children's mental arithmetic is also of great importance, multiplication table facts and various strategies for calculation are taught and practised in school.

The children also develop their ability to recognise, describe, draw, compare and sort different shapes. The children will use a range of measures to describe and compare different quantities (such as length, mass, capacity/volume, time and money).

We believe it is important that children are allowed to explore mathematics and present their findings not only in a written form but also visually. Each new concept is therefore delivered using the CPA (Concrete, Pictorial, Abstract) model to ensure pupils' can build their understanding on concrete foundations. This approach allows the children to experience the physical aspects of mathematics before finding a way to present their findings in a visual form prior to relying on the abstract numbers.

Each KS1 lesson begins with 'Tough Ten' or 'Flashback Four' activities to improve arithmetic recall, develop mental agility, and aid revision.

Our Y2 pupils are prepared for the transition to year 3.

Lower Key Stage 2 (KS2- Years 3-4)

In Years 3 and 4, the focus is to ensure the children become increasingly fluent with whole numbers and the four operations (including number facts and place value). Pupils begin to develop efficient written and mental calculations with increasingly large whole numbers. They begin to develop their ability to solve a range of problems, including simple fractions and decimal place value. The children develop mathematical reasoning to help them analyse shapes and their properties and confidently describe their relationships.

By the end of Year 4, children should have memorised their multiplication tables up to and including the 12 times table and be able to show precision and fluency in their work.

Pupils in Year 4 are prepared for the Multiplication Tables Check (MTC).

Upper Key Stage 2 (KS2 – Years 5-6)

In Years 5 and 6, the focus of Maths is to ensure that children extend their understanding of the number system and place value to include larger integers. Pupils should be able to make connections between multiplication and division with fractions, decimals, percentages and ratio. Children should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers, arithmetic and problems that demand the use of efficient written and mental methods of calculation. Children are introduced to algebra as a means for solving a variety of problems.

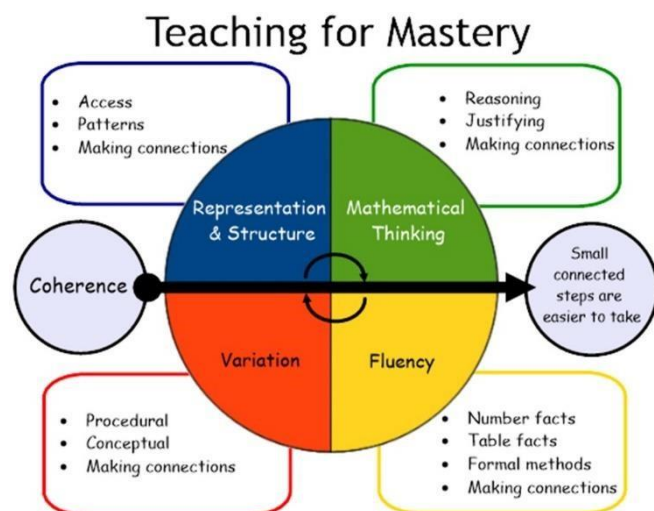
The children's understanding and knowledge in geometry and measures consolidates and extends the knowledge they have developed in number; children should be able to classify shapes with increasingly complex geometric properties, using the vocabulary they need to describe them with accuracy and confidence.

Each KS2 lesson begins with the daily Tough Ten and Flash Back questions, all topics are revisited throughout the year to support children in retention of skills.

Our Y6 pupils are prepared for KS2 SATs.

Medium Term Plan

The White Rose Maths scheme of learning, used by Christ Church, provides a mastery programme of learning designed to spark curiosity and excitement whilst nurturing confidence in maths. However, this is adapted to the children at Christ Church to ensure that content is secure before progressing to the next objective. With our child-centred lesson model, it allows a growth mind-set to be embedded that provides an approach which focuses on helping all children to build a deep understanding of maths concepts. Creating a positive attitude in this way, helps build: competence and confidence in mathematical knowledge; concept and skills that enable children to



solve problems; reason and think logically allowing them to work systematically and accurately. The outcomes should be numerate pupils, who are confident enough to tackle mathematical problems using their prior knowledge and number skills without immediately going to teachers or friends for help. We also supplement our teaching with resources from the NCETM, NRich, Oxford Owl, and mastery documents to provide a broad and challenging curriculum.

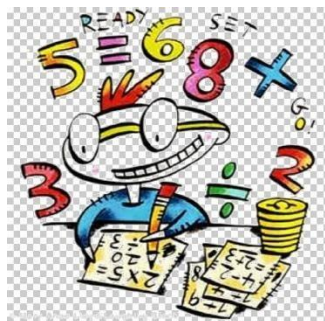
In addition, all children take part in a discrete problem solving lesson at the start of each half term. This lesson focuses on a given skill – visualising, working backwards, reasoning logically, conjecturing, working systematically, looking for patterns or trial and improvement. This enables children to be taught explicit problem solving skills, which they can then apply in their daily maths lessons.



All classrooms are equipped with a wide variety of resources that enable children to learn in a concrete manner, to provide a clear understanding of number, the number system, and appropriate strategies.

Calculation Policy

The ability to calculate mentally is an important part of mathematics and for preparing children to cope with society's demands. At Christ Church we recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are



introduced. Similarly, we also recognise the importance of using the appropriate vocabulary in our teaching that children are expected to use in their verbal and written explanations.

In order to understand and successfully use written strategies to carry out and record calculations that cannot be performed mentally we use a step-by-step approach in order to provide effective and efficient methods of more formal written calculations that provide full understanding.

Full details of methods used by teachers can be found in our Calculation Policy.

Cross Curricular Links

Mathematics is taught mainly as a separate subject, but every effort is made to link maths with other areas of the curriculum. At Christ Church we draw children's attention to the links between mathematics and other curricular work, so they see maths is not an isolated subject.

We encourage resilience and acceptance that perseverance is often a necessary step in learning, and we are there to support pupils in every step of their journey to be the best they can be. Mistakes are fine and even celebrated for the learning opportunity they offer! Children who leave Christ Church will leave with the confidence and ability to tackle mathematical problems and continue their Mathematical learning in the next stage of their education.

Impact

Assessment, Reporting and Recording

At Christ Church teachers are continually assessing our pupils' achievement through observation and marking of work. Feedback is given verbally and recorded in books. We see assessment as an integral part of the teaching process, children will sit a maths assessment at the end of each term. Daily assessments for learning are also used to identify any necessary intervention, including same day (reactive) intervention. We endeavour to make our assessment purposeful, to ensure future planning matches the needs of pupils. This information is also shared across the different year groups, including the transition from Christ Church Infant School, to support planning at each stage.

Mathematics Subject Leaders

The Mathematics Subject Leaders, in collaboration with senior leaders, monitor the quality of teaching and learning in mathematics and prepare action plans that state the overall objective and targets, together with actions to achieve this. The role of the Mathematics Leaders is to:

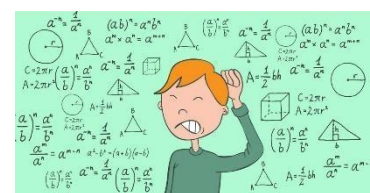
- Prioritise improvements for the teaching and learning of mathematics across the two schools and contribute to the school improvement plan, in consultation with the Executive Head Teacher and Governing Body, driving forward the improvement of mathematics teaching and progress and achievement of learners.
- Regular lesson observations and learning walks.
- Work scrutiny to monitor curriculum coverage and progression.
- Analysis of student work, assessments, and progress data to inform development and target setting in mathematics.
- Student and parent feedback.
- Peer collaboration and sharing of best practice to keep updated in Mathematical developments through appropriate in-service training that includes the planning and delivery of mathematics.
- Lead and/or arrange inset and CPD activities to support staff in developing areas of mathematics.
- Ensure the mathematics display boards are informative and up to date.
- Monitoring of pre and post topic assessments

The designated mathematics governor collaborates with senior leaders and mathematics leaders, convening at least once a year to oversee mathematics education at Christ Church and actively engage in the teaching of mathematics.

We expect most children to have achieved Age Related Expectations (ARE) for their year group. However, some children will have progressed further and achieved greater depth (GD). Whilst others may have gaps in their knowledge and require further support. Interventions are given throughout the year, to help this group of children achieve age related expectations.

Intervention

When planning and teaching the curriculum, Christ Church have due regard to the principle of setting suitable learning challenges. Every child is given the opportunity to achieve the highest standard possible. Whilst the National Curriculum Programmes of Study set out what each child should be taught at each key stage this is tailored to the needs of everyone and may mean teaching knowledge, skills and understanding from earlier key stages/phases. Intervention groups take place within the lesson and outside of it. These sessions may be delivered by the teacher or learning support assistant and may involve individual or small group work. In KS1 same day reactive interventions take place in/after lessons to enable all children to make progress.



Challenge

At Christ Church we are aware that we have children who can achieve beyond the standards for their age. We ensure there is no ceiling on anyone's learning; extra challenges and opportunities for independent learning, allow and enable children to be stretched to their full capability to achieve high levels by the end of Year 6.

Home Learning

Children are also encouraged to practise number bonds and multiplication facts at home. In KS1 all children have a NumBots log in to engage children with the KS1 core maths curriculum being taught in school. Whilst in KS2 Times Table Rock Stars is used to increase children's fluency and recall in times tables, with regular competitions and tournaments. Every week, each class (Y1-6) will reward a pupil with a Numbots /TT Rockstars certificate.

It is considered extremely important for children to be able to develop and extend their techniques and strategies to achieve the success they deserve.

Equal Opportunities

Every child has an equal entitlement to all aspects of the mathematics curriculum and to experience the full range of mathematics activities. Therefore, in delivering mathematics, care is taken to ensure that all learning needs are met. At Christ Church we consider cultural backgrounds, gender and Special Educational Needs both in our teaching attitudes and in the published materials we use with our children.