

Mathematics Policy



*'Learning for life,
building a firm foundation'*

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At All Saints, we believe that our vision, *Learning for life, building a firm foundation*, is really important in terms of mathematics because we believe that children need firm foundations on which to build in all aspects of their lives. Mathematics as essential to everyday life 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, and a sense of enjoyment and curiosity about the subject.

In the case of this policy, that means supporting our children to enjoy mathematics through developing a growth mind set and a belief that we can all be mathematicians.

We are currently (September 2023) entering the development year of the Teaching for Mastery Programme and believe this programme will support All Saints Primary School to achieve greater outcomes in enjoyment, engagement and achievement for all our pupils as we better equip ourselves to teach for mastery.

Curriculum Intent

At All Saints our vision for mathematics is to provide a mathematics curriculum that will allow them to become confident individuals through developing their mathematical skills to their full potential. We also aim to present maths as a challenging, exciting, creative and relevant subject in order to promote a positive and confident attitude.

In line with the National Curriculum (2014), our overall intent focuses on all pupils developing their ability to be able to:

- Use and understand a wide range of appropriate mathematical language to discuss, explain and justify their mathematical thinking.
- 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.
- Move between different representations of mathematical ideas.
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing and argument, justification of proof using mathematical language.

- Solve problems by making connections and applying their mathematics to a variety of problems with increasing sophistication, persevering in seeking solutions.
- Apply mathematical knowledge and skills across the curriculum and to real life situations.
- Consolidate learning and concepts through repetition and intervention to acquire sound foundations for fluency of mathematics.

Curriculum Implementation

At All Saints, we are committed to providing a mathematics curriculum which is accessible to all. Our whole school approach to the teaching and learning of maths involves the following:

- Planning for mathematics follows the White Rose Schemes of Learning and is enhanced by a wide range of resources. This ensures a progressive curriculum in every year group. Teachers know which objectives must be taught and assessed in each year group and can follow progressive small steps to ensure pupils have a comprehensive understanding of maths.
- Teachers are encouraged to use the White Rose resources and adapt them for the needs of their individual classes and individual pupils.
- WRM (White Rose Maths) ensures concepts are introduced in a practical/concrete way to progress to pictorial then abstract (C-P-A). This can be adapted by teachers to include more of a specific element of the progression to meet the needs of individual pupils within their classes as appropriate, to ensure progress within the small stems of learning.
- Teachers teach the whole class the same curriculum with the possible exception of those children with EHC Plans or specific learning needs. Teachers should use their professional judgement to determine the activities, timing and organisation in each lesson to suit the teaching objectives and ensure children understand each small step.
- For pupils who may struggle with parts of the curriculum, in class support is provided on a daily basis. Additionally, intervention and consolidation is provided wherever possible in the afternoon to support pupils to be ready for the next lesson. For some SEN pupils a separate curriculum may be more appropriate.
- In KS1 & KS2, pupils have daily maths lessons. In Reception, Year 1 and Year 2, we also have an additional Mastering Number session four times weekly. Where appropriate this can also be used as an intervention for a

small number of children in KS2. In KS2 pupils have an additional Morning Maths or Fluent 5 session four times weekly. This ensures the planned revision of previous learning, fluency practice and consolidation.

- The teaching of mathematics at All Saints Primary School promotes the use of mathematical vocabulary through encouraging pupils to explain their thinking, strategies and mistakes during lessons to embed understanding and to support peer on peer learning. The National Curriculum for Mathematics reflects the importance of spoken language in pupils' development across the whole curriculum. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof.
- During lessons we live mark which provides children with immediate feedback and time to reflect on their learning. Mistakes can be discussed and pupils learn well from this and can correct work within the lesson time. Self-marking is also used when appropriate, again giving opportunities for assessment of learning and further discussion, benefiting the pupils and developing their confidence and growth mind set.

Curriculum Impact

- The impact of our mathematics curriculum will mean that children believe they can achieve in maths and enjoy their learning. They will be able to see where maths can be applied across the curriculum and in their daily lives now and into the future.
- Regular and ongoing assessment in all year groups informs teaching, as well as intervention, to support and enable the success of each child. Assessment for learning is integral to the daily teaching of mathematics where teachers assess learning in lessons through careful observation, listening to the children, engaging them in discussions about work, asking open-ended questions and checking for understanding. Summative pupil attainment is recorded each term using Sonar software, informed by ongoing assessments of progress. Termly Pupil Progress Meetings provide opportunities for teachers to discuss the progress of individual children in more depth with the Senior Leadership Team (SLT).

Teaching and learning

EYFS

In Nursery & Reception the focus is on number recognition, shape recognition and practical activities involving lots of mathematical language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. Nursery and Reception at All Saints Primary School have to be vocabulary rich environments due to the starting points of many pupils. Mathematical vocabulary is emphasised at every possible opportunity.

The Mastering Number Programme is taught in Reception class four times weekly to ensure a secure foundation of number. Other areas of maths are taught in the fifth session to ensure a rounded coverage of mathematics.

Free flow allows the children independent opportunities to apply what they have learnt with children often proudly choosing to show their mathematical learning to the staff whilst sharing their learning with their peers.

KS1

The focus in KS1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This involves working with numerals, words and the four operations including with practical resources (C-P-A approach). They 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. Pupils read and spell mathematical vocabulary at a level consistent with their increasing word reading and spelling knowledge and Key Stage 1.

In both Year 1 and Year 2, the Mastering Number Programme continues to be taught and we aim for all pupils to know the number bonds to 20 and be confident within their understanding of place value. The emphasis on this secure understanding at KS1 will aid fluency and progression in KS2.

KS2

In Lower Key Stage 2 the focus is to ensure pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value, to develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. Pupils

are encouraged to make links with their learning, noticing how one calculation can help with another. Pupils should develop their ability to solve a range of problems including simple fractions and decimal place value. Teaching should also develop mathematical reasoning in all areas of maths including analysis of shapes and their properties, measurements and connections between measure and number. Pupils will continue to increase their mathematical word reading and spelling knowledge.

By the end of Year 4, we aim for all pupils to have fluent knowledge and understanding of their multiplication tables up to and including the 12 times table. They should be able to use this knowledge to make links when performing larger calculations and show precision and fluency in their work.

In Upper Key Stage 2 the focus is on extending pupils' understanding of the number system and place value to include larger integers. Teaching continues to focus on making links between learning and the pupils will further develop the connections multiplication and division have with fractions, decimals, percentages and ratio. Pupils at this stage develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic and problems demanding the use of efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to algebra as a means for solving a variety of problems. Teaching in geometry and measure consolidates and extends knowledge developed in number. Teaching ensures that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary needed to describe them. Pupils should read and spell mathematical vocabulary correctly.

By the end of Year 6 we aim for all pupils to be fluent in written methods for all operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Mathematics and Resources

Staff all have access to the White Rose Maths website to enable them to use and plan from the wealth of information and resources provided. The NCETM site is also a resource source which staff use to supplement lessons, research concepts and develop their own mathematical subject knowledge. Staff also have access to Test Base to provide further materials to support their delivery of the mathematics curriculum.

Each class has a bank of resources for the day-to-day maths lessons and these should be freely available for all children to select and choose those that will be

most helpful to them for their mathematics learning. This includes maths dictionaries. Further maths resources are located in the corridor leading from the hall towards the Year 3 classroom for staff to access.

Each class has a maths working wall which is added to throughout the week of mathematics learning, showing stem sentences, calculations, success criteria and helpful hints to ensure children can refer to it in every lesson and use what they need to help them be successful learners.

Classrooms have interactive whiteboards and access to Chrome books to enhance mathematical learning.

Sets of 'Rekenreks' are located in Reception Class, Year 1 & Year 2 for use with Mastering Number programme and to support daily maths lessons where appropriate.

Children in KS1 and KS2 have a login for Times Tables Rock Stars which they can access in school and at home to support their times table learning.

Mathematics and Assessment

Formative assessments are recorded in Sonar on a regular basis throughout the term. Statements are highlighted to show the stage a pupil is working at for that particular objective. Formative assessment happens in every lesson, so that planning and resources can be adapted to meet the needs of the pupils' and same day interventions or longer term regular intervention can be put into place if needed, wherever possible.

Summative assessments are also recorded on Sonar termly. These assessments are discussed at a termly Pupil Progress Meeting with a member of the SLT alongside interventions which have been, or are needed to be, put in place for any groups of pupils who may need them.

Termly testing using Test Base materials in KS2, also supports teacher assessments and informs intervention needs.

The maths lead along with SLT monitor teaching through learning walks, looking at pupils' work and talking to children about their experiences of maths.

Mathematics and equal opportunities

- We aim to give every pupil the opportunity to enjoy and achieve in Mathematics and have high expectations for all pupils.

- Staff will create an environment that challenges stereotype and supports the appreciation of other cultures.
- Diversity and difference are celebrated and respected.
- All pupils will have an equal opportunity to reach their full potential across the mathematics curriculum regardless of their race, gender, cultural background, or special needs.

Mathematics and inclusion

We recognise that in all classes, children have a wide range of mathematical ability, and so we seek to provide suitable learning opportunities for all children by providing a C-P-A approach enabling children to access the same learning from a shared starting point. While some children will continue to need the concrete resources throughout a mathematical concept, other children will be able to progress through to the abstract while all working on the same concept.

Pupils will work for the majority of their time in mixed ability groups allowing for discussion and peer talk regularly. Classroom teaching assistants alongside the teacher will provide support to enable those children who need it to make progress.