Together in God's love, we learn, inspire and grow

Maths Policy

This policy has been adopted by the governing body of
St Andrews' CofE Primary School.
It will be reviewed annually or as required.

Updated: 07.11.2024

Maths Leader: Mrs Wallace

Signed: *P.Dwan* Deputy Head

Headteacher: Simon Jones

At St Andrew's, we want all pupils to be passionate about maths and to be inspired to have a life-long curiosity and fascination with mathematical concepts. We also want to give our children the tools, knowledge and experiences they need in order to be independent and to be able to delve deeper, so that they are prepared and well equipped to study maths beyond the primary curriculum by the time they leave Year 6.

The Maths lead has worked in partnership with the curriculum leader and LDST to construct a Maths curriculum that is ambitious and designed to give all pupils, including disadvantaged and SEND, the knowledge they need to succeed in life. We aim for all pupils to be excited by Maths, to know more, remember more and do more because of their engagement inexciting Maths lessons.

Links to Andrews' whole school curriculum intent:

Whole School Curriculum intent

Our UNIQUE curriculum is designed to recognise and have a solid understanding of children's prior learning, providing knowledge and learning experiences which build resilience and critical thinking. Central to this is excellent skills in Reading – the essential key to the whole curriculum. We provide opportunities to engage learning in a fun and nurturing way and every child is recognised as a unique individual. We plan and provide a clearly mapped out curriculum which results in good quality outcomes. We model and promote positive attitudes to learning which reflect the values of our Christian school, enabling children to take responsibility for their lives. Children leave St Andrew's with a sense of belonging to an outward looking community where opportunities and aspirations are unlimited. At St Andrew's we ensure that equality is embedded in all that we do.

Maths Intent

Understanding – Within each maths lesson 'Review and Do' tasks are used the start of every lesson to revisit prior learning – either from a previous lesson or a previous year group. Learning is sequenced into small steps planning and builds on prior learning and key vocabulary is revisited and then expanded. During each year of the children's Maths journey, they are exposed previous year group learning objectives for scaffolding to allow new learning to be embedded into the children's long term memory by using their prior knowledge.

Nurturing – Each Maths lesson at St Andrew's is delivered in a nurturing, supportive and understanding environment. Teachers consciously use language which supports and boosts children's confidence. Each child has a shoulder partner they can rely on for support, should they need it, or can offer support to if they require it. Shoulder partners are chosen carefully thinking about the needs of each child to promote positive relationships. In addition to this, shared learning tasks are incorporated into each lesson to promote a supportive learning environment for each child.

Individual - Independent practice tasks are designed to allow each child to demonstrate their understanding and skills. Although each task is 'one-for-all', concreate equipment is available to all children to use in their own way to achieve their learning objective. Children are given the opportunity to explain their mathematical thinking and compare with peers who have a different

approach. Children are celebrated for their mathematical understanding and reasoning regardless of their starting point.

Quality – When planning and teaching Maths lessons, teaching staff ensure the children are exposed to the three mathematical steps: concrete, pictorial and abstract. This is to ensure the children are equipped to produce good quality outcomes as each step of their learning builds the foundations of their success. 'Shared learning' and 'Independent practice' tasks are used to ensure learning is sequential and is delivered to the children with the right amount of challenge at each part of the lesson.

Unlimited – Each child at St Andrew's will leave with a deep understanding of mathematical knowledge which will support them in life beyond primary school. Children will learn knowledge and skills that are transferrable to other curriculum subjects. This will support them to succeed in areas they may never have wished. As children succeed within Maths, their resilience will grow; this prepares them for life beyond St Andrew's.

Equality – Teaching staff recognise the fact that they have children of differing mathematic ability in their classes and ensure to provide suitable learning opportunities for ALL children by using small-step planning. This allows each child to have the same opportunity to succeed regardless of their starting point. Teaching staff create an environment where children do not fear speaking out and giving their opinion. As their confidence grows, they look for patterns, use mathematical reasoning, suggest solutions, and try out different approaches to word problems.

Long term planning and curriculum design:

The maths curriculum is coherently planned and sequenced through White Rose Maths, working towards clearly defined National Curriculum end points.

Maths Implementation

What is mastery? "In mathematics, you know you've mastered something when you can apply it to a totally new problem in an unfamiliar situation."

Maths at St Andrew's …

We deliver the 'White Rose Maths' scheme of work in years R-6 using the White Rose Maths work books along-side a maths journal. This scheme provides teachers with exemplification for year group specific maths objectives and they are broken down into fluency, reasoning and problem solving and key aims of the National Curriculum. All children are taught in mixed ability groupings and work on the same task at the same time.

We expose our children to a CPA approach, which encourages them use concrete and pictorial representations to scaffold their learning, to allow that learning to be applied to an abstract style question.

The pace of each lesson is brisk, with teachers deepening children's mathematical knowledge through focused questions and allowing children to demonstrate their learning as a group and independently. There is a mixture of reviewing key concepts, shared learning and independent practice within each lesson.

Children are also expected to learn key maths facts like times tables and addition facts by rote to free up working memory and give them the mental space to focus on new concepts.

Key principles:

- Mastery for all pupils
- Number sense and place value come first
- Problem solving is central

Mathematical language - Mastery lessons provide opportunities for pupils to communicate and develop mathematical language through:

• Sharing essential vocabulary at the beginning of every lesson and insisting on its use throughout

• Modelling clear sentence structures using mathematical language (STEM sentences)

• Paired language development activities, known as shared learning.

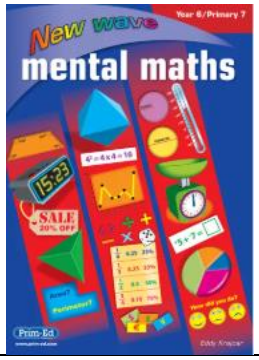
Maths in EYFS

Our reception class use White Rose Maths as their sole mastery curriculum and use Small Steps Planning to ensure that key mathematical concepts are given to support learning. As with all other areas of learning, the teaching and learning of maths in our Reception class, takes place both indoors and outdoors through a wide range of practical and hands on activities. The staff use their knowledge and expertise to plan for a high-quality learning environment which provides children with lots of opportunities to explore different aspects of number and shape space and measures and learn new concepts. The children have a wide range of structured play resources available to them throughout the year – this is known as continuous provision. As the year progresses, children in Reception record their maths outcomes in books which prepares them for the learning in Year 1. As well as learning through play, all children take part in small group, adult led maths activities which then feed into opportunities in the play provision. Maths is also taught through singing, dance and PE.

Teaching and Learning Structure

Maths Timetabling at St Andrew's

The children spend **1 hour and 30 minutes** a day working on maths related tasks.

Morning Task: 8:50am-9:05am	White Rose Mastery Lesson: 9:45-10:45	Fluency Task Year 2: 1pm – 1:15pm Years 3-6: 1:15pm-1:30pm
Children will complete a maths related activity. This activity will be a retrieval task based on prior learning. This is put into the children's fluency books.	This lesson forms part of the small step planning provided by White Rose Maths. The children (year 1-6) work in the White Rose Maths workbooks and years 2-6 journal alongside. 	During this session, children in Year 2 and Year 3 complete 10 fluency-based questions. Years 4-6 complete 20 fluency-based questions. The questions are taken from 'New Wave' fluency workbooks. The focus for this session is for the children to work on their fluency of previous learning objectives. 

St Andrews's maths lesson structure:

At all times during maths lessons at St Andrews, children will have a range of concrete resources readily available to them to use, either, under instruction or through independent choice.

Review and Do!

This is an opportunity for children to work on a mathematical skill or concept that will support them within their lesson. Recapping of previous learning should be discussed during this part of the lesson. It could be recapping the previous days learning or recapping a concept taught in a previous year group. It can be completed with shoulder partners or independently.

Vocabulary check

Each lesson will be filled with correct mathematical vocabulary that class teachers will model consistently. During this part of the lesson, children will recap vocabulary they already know (coloured red) and new vocabulary linked to the lesson (coloured green).

Shared learning

This is when new learning is introduced. It is a task that should be discussed and completed with 'shoulder partners' to encourage rich, mathematical language and discussion. This part of the lesson can be a fluency task or reasoning and problem solving (depending on where the sequence of lessons is up to). Teachers will use their professional judgement and subject knowledge to decide what the focus for this task should be. If a **fluency** task is given, **varied fluency** should be taken into consideration to ensure the children can apply their knowledge to a different style question, whilst focusing on a specific mathematical concept. Several shoulder partner pairs should be invited to share their answers and methods with the class to promote discussion of efficiency.

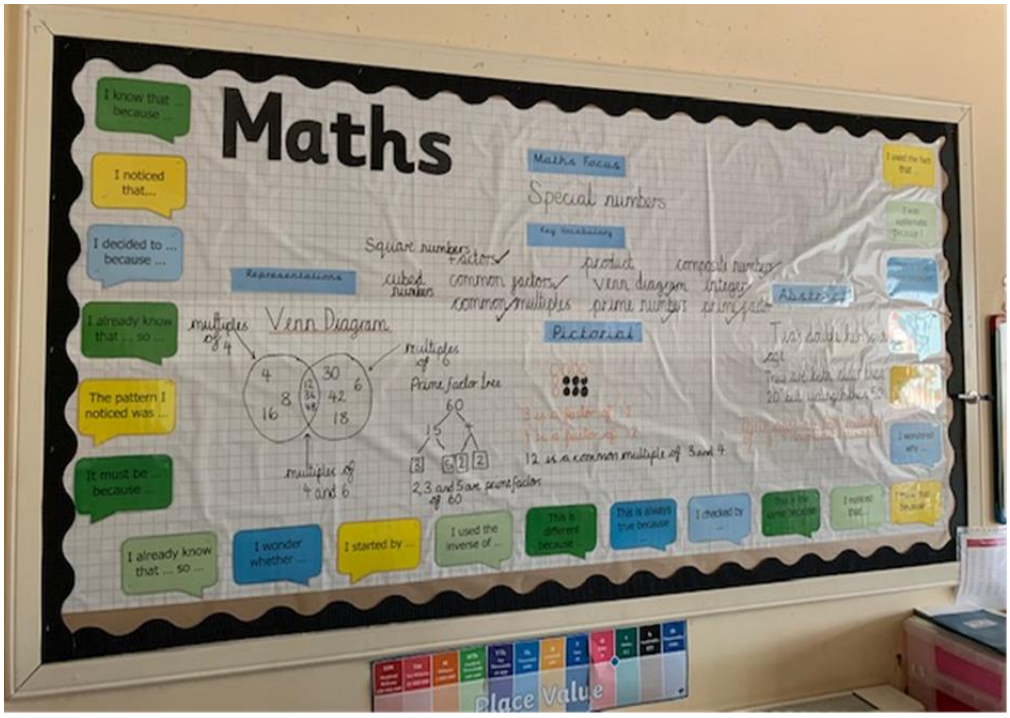
Independent Practice

Once children have indulged themselves in rich discussion, they should be given the opportunity to take their learning further and independently apply their knowledge. This task, again, can be a fluency (must be varied fluency at this point) reasoning or problem solving.

Across a sequence of mastery lessons, there will be evidence of fluency, reasoning and problem solving.

How we ensure that pupils 'know more, remember more and can do more':

Effective use of our maths working walls, which are reviewed each lesson with key vocabulary, and the use of sticky knowledge. The recap of previous learning and vocabulary at the start of every lesson is important and is a crucial part of every Maths Mastery lesson.



How the Maths curriculum meets the needs of all pupils, particularly disadvantaged pupils and SEND pupils:

We have designed our curriculum to meet the needs of all our pupils in line with the school key priorities. All class teachers know who their disadvantaged and SEND pupils are and can target them for specific questioning, support and resources in lessons. All children identified as SEND, will sit next to a suitable shoulder partner to encourage peer discussion and will have access within each lesson to concrete resources to aid their learning. SENCO offers advice and support which enables teachers to plan activities that meet the needs of all children.

Maths Impact

Overview of Maths assessment procedures,including the expectations of teachers using both formative and summative assessment:

Formative assessment includes:

- Teacher questioning (open and closed questions), assessing vocabulary in a lesson, listening to the discussions of pupils and addressing misconceptions.
- Observing the children's practical activities using concrete materials.
- NFER tests are carried out at the end of each term in Years 3, 4 and 5 and at the end of the spring and summer term in Year 1.
- Year 2 and 6 complete a set of past SAT papers
- Class teachers complete question level analysis to identify strengths and areas for development which informs future planning and the need for interventions.
- Class teachers input their assessment data onto Ask Eddi (LDST Data analysis program) and use the outcomes to inform future planning.

At the end of Year 2 and Year 6, the children will take the compulsory National Curriculum Maths tests (SATs).

Monitoring arrangements

Book Look: These are done half-termly by the Maths lead and a member of SLT. There is a clear focus during the book look and feedback is given to class teachers in written form. Subject leader feeds back to SLT and arranges for training for staff where necessary.

Lesson Observations/drop in: The Maths lead and a member of SLT do this half-termly, feeding back to class teachers and SLT.

Weekly/Medium Term Planning checks: Maths Lead checks planning half termly to ensure that White Rose plans and resources are being used and adapted as necessary

Pupil Voice: Maths lead speaks to a wide variety of children termly, and during lesson observations to measure the children's understanding of concepts being taught, their attitude and their level of enjoyment.

How the subject lead keeps their own subject knowledge up to date, and how they ensure staff subject knowledge is also up to date;

We aim to develop and enhance our subject leads personal interest and passion in Maths through:

1. high quality continual professional development (CPD) e.g: North West Maths Hub
2. networking opportunities through LDST.
3. engagement with the curriculum lead

We aim to ensure all staff's maths knowledge is up to date through:

1. staff meetings termly
2. provision of effective resources
3. engagement with subject lead
4. networking opportunities

Maths Topic Overview

Reception

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Exploring pattern, Numbers 1 to 5	One more, one less Shapes with 4 sides Night and Day	Numbers 6,7,8. Compare mass and capacity Time Combining 2 numbers	Comparing numbers to 10. Number bonds to 10 3D Shapes	Numbers beyond 10 (up to 20) Addition and Subtraction	Doubling, sharing and grouping. Even and odd, Patterns and relationships

Year 1

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Place value	Addition and Subtraction (within 10) Shape	Place value Addition and Subtraction (within 20)	Place Value (Within 50) Length and Height Mass and Volume	Multiplication and division Fractions Geometry	Place value (within 100) Money Time.

Year 2

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Place value Addition and subtraction	Addition and subtraction Shape	Money Multiplication and division	Length and Height Mass, capacity and temperature	Fractions Time	Statistics Position and Direction

Year 3

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Place value Addition and subtraction	Multiplication and division (A)	Multiplication & division (B) Length and perimeter	Fractions (A) Mass and Capacity	Fractions (B) Money Time	Shape Statistics

Year 4

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Place value Addition and subtraction	Measurement (area) multiplication & division (A)	Multiplication & division (B) Length and perimeter	Fractions Decimals (A)	Decimals (B) Money Time	Statistics properties of shape position & direction

Year 5

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number and place value Addition and Subtraction	Multiplication and Division (A) Fractions (A)	Multiplication and Division (B) Fractions (B)	Decimals and percentages Perimeter and Area Statistics	Shape Position and Direction Decimals	Negative Numbers Converting Units Measurement (volume)

Year 6

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Place value Addition and subtraction	Fractions (A and B) Converting Units	Ratio Algebra Decimals	Converting units Perimeter, area and volume	Fractions, decimals and percentages Statistics	Shape Position and Direction KS3 ready tasks