

St Andrew's C of E Primary School



Mathematics

With faith, hope and love we can achieve greater things

St. Andrew's - a Good Samaritan School. Making a difference so all can flourish.



2022-2023

Mathematics Policy

Introduction

Mathematics teaches children how to make sense of the world around them through developing their ability to use number, calculate, reason and solve problems. It helps children to understand relationships and patterns in both number and space in their everyday lives. The Mathematics curriculum should be bold, provide breadth and balance and be relevant and differentiated to suit the needs of all children in the modern world. It should be flexible, motivating all pupils, thus encouraging success at all levels.

Aims

The aims of our maths curriculum at St Andrew's C of E Primary School mirror the aims of the National Curriculum: **fluency, reasoning** and **problem solving** - both in the mathematics lesson and across the curriculum. We recognise that we need to equip our children with the ability to recall basic number facts and acquire fluency in procedures, alongside developing conceptual understanding if they are to be able to solve increasingly complex problems in life and later in the workplace.

The school aims to:

- Promote a positive attitude to mathematics as an interesting subject in which children can gain success and pleasure
- Provide an environment which stimulates and develops mathematical skills.
- Use concrete materials and images to develop concept as a progression to recording in an abstract way
- Encourage cooperation and communication, using mathematical vocabulary, through problem solving, reasoning and real life problem solving activities
- Increase pupils' confidence in mathematics so that they are flexible in their approach to mathematics, selecting appropriate methods and representations
- Encourage persistence through sustained work and make links with previous knowledge
- Raise standards of achievement in mathematics.

A mastery approach to the teaching of mathematics has been adopted here at St. Andrew's Primary School. Maths is taught in mixed ability classes with a mindset that everyone can achieve. Children are taught the programme of study for their year group at broadly the same pace. As we pursue this mastery approach, teachers will use formative assessment to identify children who are experiencing difficulties or who have misconceptions. These children will receive same day 'catch up' sessions or other intervention sessions to prevent them from falling behind. All children will be given opportunities to progress through lessons and complete enrichment tasks which will deepen their understanding of concepts.

The National Curriculum

Planning

Our maths schemes of work have been specifically developed with the National Curriculum at the core. We have also incorporated the White Rose Maths Hub, NCETM resources, NRICH and the Ready to Progress materials into our maths curriculum. This St Andrew's curriculum ensures we are giving our pupils a curriculum that is perfect for them. A curriculum that takes into account basic skills and develops fluency before reasoning and problem solving. Our structured and progressive approach in reaching end of year expectations and deepening mathematical learning is at the centre.

Teaching staff follow the school's calculation policy which delivers a progressive approach, moving through concrete, pictorial and abstract methods. Weekly plans provide opportunities for practice and consolidation, mastery with greater depth tasks. Lessons consist of small, carefully sequenced steps which must each be mastered before pupils move to the next stage. Fundamental skills and knowledge are secured first.

We have developed a 'tiered learning' approach through the use of bronze, silver, gold and platinum tasks. Pupils are encouraged to lead their own learning by progressing through tasks. All have the opportunity to access more demanding reasoning and problem solving activities. Concrete (models) and pictorial representations (images) of mathematics are chosen carefully to help build procedural and conceptual knowledge together. Exercises are structured with great care to build deep conceptual knowledge alongside developing procedural fluency.

Differentiation occurs in the support and intervention provided to different pupils. The learning objective for each lesson is the same for all pupils in the class but the questioning and scaffolding that individual pupils receive in class as they work through problems will differ, with higher attainers being challenged through more demanding problems which will deepen their knowledge of the same content.

Teachers plan together in each year group to produce weekly planning. This is supported by phase leaders. The maths subject leader also supports with planning and advice where needed.

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. We try and identify the mathematical possibilities across the curriculum at the planning stage. We also draw the children's attention to the links between maths and other curricular work so they see it is not an isolated subject. In the Early Years Foundation Stage, these links are more evident due to the practical nature of the curriculum.

Teaching Methods

Lessons are usually made up of the three parts; counting/mental and oral starter, main activity with practice and application opportunities and a plenary. Some lessons will be investigative or require problem solving and reasoning from the outset. Isolated practise of skills may not be necessary in these lessons but the children will be required to use and apply the skills that they have learned previously.

The teaching of maths provides opportunities for:

- Whole class teaching
- Group work
- Paired work
- Individual work

We set work that is challenging, motivating and encourages the children to talk about what they have been doing.

In mathematics the St Andrew's Marking policy is adhered to.

Organisation

In the Early Years Foundation Stage, children approach maths through a practical play based curriculum by where they are following the mastering number programme but incorporating shape, space and measure to allow exposure to key concepts so they are readily prepared for Key Stage One. There are a combination of teacher/ adult led sessions and child initiated activities. There is continuous provision for mathematics so that children can independently apply previously learnt skills. Staff are adept at observing and 'capturing' children's understanding of concepts as they play. Children are supported in developing their understanding in a broad range of contexts both indoors and outdoors. We use the BBC Number blocks resources to inspire and engage our learners.

In KS1 and KS2 Mathematics for approximately 1 hour daily in mixed ability class groups. Other opportunities for maths in different curriculum areas is also planned into the week

We recognise the importance of establishing a secure foundation in mental calculations, written arithmetic and recall of number facts so at the beginning of each Mathematics lesson, all children undertake a counting activity followed by a mental or written starter activity.

The main teaching activity is whole class based with everyone having access to the same content. Groups are flexible within classes with many opportunities for group or paired work, as well as individual work to develop talk for reasoning. Teachers use assessment for learning throughout the lesson to provide support, address misconceptions and provide further challenge with opportunities to deepen learning. Plenary sessions are used to consolidate learning and support the children in further applying the skills that they have learned.

The development of mathematical vocabulary is planned for and children are encouraged to use the appropriate language in their verbal and written explanations.

Each class also has the support of a Teaching Assistant who work under the direction of the class teacher in facilitating children's learning.

Parents and Carers

- The School aims to involve parents and carers in their children's learning as much as possible and to inform them regularly of their child's progress in mathematics.
- Parents and carers have the opportunity to meet with child's class teacher at least twice a year at Parent Consultation Meetings and receive written reports during the year.
- Parents and carers are encouraged to speak to their child's teacher at any point during the year, either informally or by making a specific appointment to discuss anything to further support them at home.
- Parents and carers are encouraged to support their children with homework.
- School also provides a number of opportunities for parents and carers to learn about what their child is learning and the way their child is being taught through Parent Evenings or through parent workshops.
- The Year 2 and 6 teachers hold a SATs Parent's Evening annually to inform and discuss the SATs tests in mathematics.

Equal Opportunities

As a staff we endeavour to maintain an awareness of and to provide equal opportunities for all our pupils in mathematics. We aim to take into account cultural backgrounds, gender and Special Educational Needs (SEN and more able, gifted and talented), both in our teaching attitudes and in the published materials we use with our children.

SEN

We adapt our curriculum to fully include SEN pupils in the daily mathematics lesson. Where necessary, teachers will draw up an Individual Provision Plan for identified children which will allow them to access the curriculum.

Enrichment activities allowing the more able children to deepen their understanding of concepts will be provided during lessons. Identified children will also have the opportunity to undertake such activities as planned intervention delivered under the guidance of teachers by HLTAs or TAs.

Assessment and Recording

We see assessment and record keeping as an integral part of the teaching process and endeavor to make our assessment purposeful, allowing us to match the correct level of work to the needs of pupils, thus benefiting the pupils and ensuring progress. Formative assessment occurs daily in each lesson, allowing teachers to ensure maximum progress within each lesson and also allows them to plan for progression. Each child has an individual target sheet and teachers evidence, with a date, when and where objectives are met.

In Early Years Foundation Stage, children are assessed against age related expectations termly.

Maths books and maths work undertaken in other curriculum areas provide a rich source of evidence of learning and progress alongside observations and tests. KS1 and KS2 complete half termly assessments, using a combination of White Rose Hub and Focus Education assessment materials. Evidence from this wide range of assessments form part of a teacher's overall judgement on a child's attainment.

Children in Y2 to Y6 undertake SATs tests in May. The results of the tests are used as a diagnostic tool and to support Teacher Assessment. Year 4 children will also sit a Statuary Timetable check in June.

Resources

Resources for the delivery of the mathematics curriculum are stored both centrally and in classrooms. Everyday basic equipment is kept in classrooms. Additional equipment and topic specific items are stored centrally near the Year 3 and 4 entrance.

Interactive whiteboard and the use of technology are embedded into the teaching of mathematics. Materials are constantly updated, as new and relevant items become available.

Role of the Maths Leader

- To be responsible for the development of mathematics throughout the school
- To review the mathematics policy on a regular basis
- To analyse results and data to inform development and target setting in mathematics
- To monitor and evaluate teaching in mathematics throughout the school
- To evaluate resources for teaching mathematics and to purchase additional resources within the budget for a core curriculum area
- To be responsible for the development of teaching materials relating to mathematics
- To coordinate with the SENCO and EAL staff to provide appropriate support and teaching materials for SEN and EAL pupils
- To organise staff CPD in mathematics
- To be aware of and respond to national and local initiatives
- To undertake book trawls, lesson observations, scrutinise planning and report to Headteacher and SLT
- To report to governors

Parents and Governors

All parents receive an annual written report on their child's effort and progress in mathematics over the year including any test results. Parents are given the opportunity to discuss their child's achievements, difficulties or problems throughout the year at parent evenings and at any other convenient time.

Governors monitor the teaching of mathematics throughout the school. End of Key Stage results and Year 4 Timetable results are reported to them by the Headteacher.

Signed: _____ Headteacher

Signed: _____ Chair of Governors

To be reviewed: Annually

Date of next review: Academic year 23-24