*“Christ’s ministry, as recounted in the Gospels, and the values he promoted through his teachings are fundamental to the life of our school in fulfilling its purpose as a Catholic institution.” (Mission Statement)*

Mathematics Policy

At St. Aidan’s Primary School all of our children are given the opportunity to develop their mathematical potential through a rich, engaging curriculum. We want our children to feel confident in using and applying mathematics in a wide range of situations.

We believe that mathematics is uniquely powerful in helping us to make sense of, and describe, our world and in enabling us to solve problems. It is a fascinating subject, dealing with the nature of number, space, pattern and relationships. Useful and creative, it requires not only facts and skills, but also understanding gained through exploration, application and discussion.

In mathematics we aim to develop lively, enquiring minds encouraging pupils to become self-motivated, confident and capable in order to solve problems that will become an integral part of their future.

**Aims**

The purpose of mathematics education is to offer pupils intellectual excitement and challenge; to provide them with a sense of delight and wonder; to equip them with knowledge and skills and the ability and confidence to use and apply these to meet the needs of present and future society.

St. Aidan’s Primary School aims to ensure that all pupils, irrespective of gender, race and culture, have access to a wide range of stimulating problems and activities which will include the appropriate Programmes of Study of the National Curriculum 2014 and the Mathematics area of learning in the EYFS curriculum. As pupils move from home into school and from primary into secondary education their mathematical experience should be continuous and progressive producing competent and confident young mathematicians.

We ensure that the statutory requirements of the National Curriculum and the Early Years Foundation Stage Curriculum are met and so too are their aims:

* 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
* reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
* can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

**Intended Outcomes**

Maths in Early Years In EYFS

We follow the EYFS framework. Teachers ensure the children learn through a mixture of adult led activities and child-initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach using a wide range of sources including material from White Rose Maths and Numberblocks. The children have a wide range of structured play resources available to them throughout the year - this is known as "continuous provision". The adults model the use of these resources and the appropriate mathematical language as they support the children in their play.

Our overarching aims are for children to:

• Make good progress towards the Early Learning Goals

• Be confident in communicating their ideas

• Develop a positive attitude towards maths and be willing to ‘have a go’

Maths in 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. 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).

Maths in our Lower Key Stage 2 (Years 3 and 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).

Maths in our Upper Key Stage 2 (Years 5 and 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 and 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. Our Y6 pupils are prepared for KS2 SATs.

**Teaching and Learning**

All pupils are entitled to a broad mathematics curriculum in which their learning needs are identified and met. Pupils experience a range of practical and written activities on number, measurement, geometry and statistics.

We operate the planning procedure agreed by the whole teaching staff based upon the National Curriculum Programmes of Study 2014 and the EYFS Statutory Framework. Teachers are following twinkl maths plan it for their year groups and adapting the scheme according to the needs of the class.

Classrooms should be rich in discussion between pupils and teachers. Some facts will need to be memorised, others will need to be practised but underpinning all of this will be the development of mathematical reasoning and understanding through exploration, problem solving and investigation.

Our medium- and long-term planning is informed by these documents which map out the mathematics curriculum for each year group. We then develop weekly and daily plans which give specific detail of learning objectives and appropriate differentiated activities.

Mathematics is taught for at least 1 hour per day in KS1 and KS2. In Ks2 Maths is taught Monday – Thursday and then Friday is a Reasoning focus. In the Foundation Stage mathematics teaching occurs throughout the day and takes place in both the indoor and outdoor environments.

Pupils are taught in mixed ability classes and are provided with differentiated activities to ensure tasks are set according to their individual levels. Children who need particular support receive additional support from Teaching Assistants. Each lesson combines short mental / oral starter, main teaching, opportunity to apply new learning through differentiated activities and mini plenaries to move learning on. In Ks2 all pupils are encouraged to have a go at the Maths mastery challenge. (Twinkl)

Pupils in the Foundation Stage use a variety of media but most of the work is practical allowing them the opportunity to explore, enjoy, learn, practise and discuss their developing mathematical understanding.

**Cross Curricular Links**

Mathematics is an integral part of our daily lives and therefore manifests itself in many areas of the curriculum. Links with Computing and Science are continually developed through use of laptops and appropriate software. There are many opportunities to link maths across the curriculum creatively such as pattern and shape through art and design technology.

**Special Educational Needs**

Children with additional needs are supported by using practical resources and differentiated activities where needed. They are also further supported by additional support staff whenever possible. Where applicable, children’s provision maps will incorporate suitable objectives from the National Curriculum or the EYFS curriculum and teachers keep these objectives in mind when planning work. In addition to quality first teaching, interventions also take place during the afternoons and focus on those children who may need more specific targeted input.

**Assessment and Reporting Arrangements**

Assessment is an integral part of the maths curriculum and not an addition to it. Children’s work in mathematics is assessed from three aspects:

1) Informal, formative assessments are made continually by questioning the children, observing and monitoring their work. These short term assessments are closely related to the learning objectives for the lesson and help inform next steps.

2) Periodic assessments take place at the end of a unit/ ½ termly – we use a variety of mini assessments to check progress and understanding of content covered. This information also informs interventions.

3) Summative assessment is less frequent - this is the use of tests or more formal assessments to find out what children have learnt. We use NFER tests which are similar in style to SATs and give age related and standardised scores. (Twice a year)

Statutory Assessment Tests (SATs) are used for children in 6, plus children in Year 4 are also required to take multiplication tables check (MTC) in the Summer Term. purpose of the check is to determine whether pupils can fluently recall their times tables up to 12, which is essential for future success in mathematics.

Teacher assessments are entered termly and are closely analysed to identify children working at greater depth or who are at risk, appropriate intervention is then put in place to close gaps. We see the relationship with parents as very important in supporting their children’s mathematical skills. There is a dedicated maths page on our school website with provides specific documents for parents outlining what is covered in each year group and ways they can support at home. Parents also receive an end of year report which provides information on their child’s outcomes and progress.

**Calculations**

See Calculation booklets for progression.

**Times tables**

At Saint Aidan’s Primary School, we believe that through a variety of interactive, visual and engaging techniques, all children can achieve the full multiplication tables knowledge by the time they leave Primary School. The National Curriculum (2014) states that by the end of year 4, pupils should be able to recall multiplication and division facts for multiplication tables up to 12x12. Children in Year 4 are also required to take a multiplication tables check (MTC) in the Summer Term. The purpose of the check is to determine whether pupils can fluently recall their times tables up to 12, which is essential for future success in mathematics. This means it is important for the children to learn their multiplication tables facts and to be able to recall them quickly and accurately.

 We teach times tables using the following progression:

Year 1 – Be able to count in multiples of twos, fives and tens

Year 2 - Be able to recall 2, 5 and 10 multiplication and division facts

Year 3 - Be able to recall 3, 4 and 8 multiplication and division facts

Year 4 - Be able to recall 6, 7 and 9 multiplication and division facts

Year 5/6 - application of multiplication and division facts to problem solving

**Resources**

Pupils should engage in activities from a variety of sources – practical apparatus, worksheets, textbooks and the environment. Through regular and frequent access to computers and the outside learning environment, they will experience the fascination of mathematical exploration and investigation. They should also have the power to solve real and challenging problems.

Each classroom has a variety of teaching aids to support the teaching and learning of mathematics. Pupils are encouraged to choose resources which are relevant to their work, take care of and return them. Pupils have target sheets for each mathematical topic, these set out clearly the learning objectives covered as well as the vocab the teachers expect to hear. All pupils from y1-6 are expected to use these in Maths lessons.

We have a wide range of mathematical resources available for the children to use in their lessons.

**The role of the Maths Co-ordinator:**

Ensure a core of material is available

Review and monitor planning

Monitor maths teaching and evaluate pupils work

Arrange liaison with outside consultants

Work alongside staff to support if required

Attend relevant courses to be aware of new ideas and disseminate these to all staff and to arrange appropriate inset for colleagues

Carry out a curriculum review and relay findings to the Governors and staff

Update the policy document and schemes of work as necessary