



## Curriculum Statement for Mathematics

*'Be yourself, but be it very well'*

*'Every child has the right to an education'* UNCRC Article: 28

**Please see also our overall curriculum statement.**

### **Intent**

At St. Cuthbert's Catholic Primary school, our Mathematics curriculum aims to ensure that all pupils can become confident mathematicians who are excited by mathematical challenges and have the motivation and resilience to solve these problems. They will do this by:

- Becoming fluent in the fundamentals of mathematics so that they can recall and apply knowledge rapidly and accurately
- Reasoning mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- Solving problems by applying their mathematics to a variety of problems
- Moving fluently between different representations of mathematical ideas
- Making rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems
- Applying mathematical knowledge to other areas of the curriculum, particularly Science
- Using mathematical vocabulary confidently and accurately to explain their reasoning
- Being inquisitive learners who are excited by the opportunities offered by working in mathematics
- Understanding that mathematics is essential to everyday life and necessary for financial literacy

### **Implementation**

At St. Cuthbert's, we have high aspirations for all learners and believe that all children can succeed in Mathematics. We are a member of the Archimedes Maths Hub, where staff work in collaboration with other schools to develop excellent practice in the teaching of mathematics for the benefit of all our pupils.

We use the mastery approach to mathematics, where the focus is on all pupils working together on the same objective. This ensures that all pupils can master concepts before moving onto the next step within the learning sequence. Pupils who grasp concepts rapidly are challenged through rich and sophisticated problems that encourage them to reason about their learning and explore a concept in greater depth. When pupils struggle to grasp a new concept, interventions will be implemented to ensure that any learning gaps can be closed.

From Reception to Year 6, pupils study Mathematics daily. Lesson plans are based upon the White Rose Scheme of Learning, used alongside materials from NCETM and the Written Calculation Policy developed by staff.

Teachers place great emphasis on mathematical language and questioning so pupils can discuss the mathematics they are doing within lessons and support them to take ideas further. In addition to daily lessons, pupils have a daily 'Basic Maths' session, in which they revise basic number facts and strategies for solving calculations involving the four rules of number.

The objectives for each year group are taught in blocks so that pupils can spend time on exploring the key threshold concepts and deepening understanding. The overview for each year group is as follows:

Year Group	Autumn	Spring	Summer
<b>Reception</b>	<ul style="list-style-type: none"> <li>* Daily Routines</li> <li>* Positional Language</li> <li>* Numbers to 5</li> <li>* Shapes and Patterns</li> </ul>	<ul style="list-style-type: none"> <li>* Numbers to 10</li> <li>* Spatial Thinking</li> <li>* Measure</li> <li>* Shape</li> </ul>	<ul style="list-style-type: none"> <li>* Numbers to 20</li> <li>* Spatial Reasoning</li> </ul>
<b>Year 1</b>	<ul style="list-style-type: none"> <li>* Place Value (within 10)</li> <li>* Addition and Subtraction (within 10)</li> <li>* Shape (2D and 3D shapes)</li> <li>* Place Value (within 20)</li> </ul>	<ul style="list-style-type: none"> <li>* Addition and Subtraction (within 20)</li> <li>* Place Value (within 50)</li> <li>* Length and Height</li> <li>* Weight and Volume</li> </ul>	<ul style="list-style-type: none"> <li>* Multiplication and Division</li> <li>* Fractions (halves and quarters)</li> <li>* Position and Direction</li> <li>* Place Value (within 100)</li> <li>* Money and Time</li> </ul>
<b>Year 2</b>	<ul style="list-style-type: none"> <li>* Place Value (up to and including 100)</li> <li>* Addition and Subtraction (up to two 2-digit numbers)</li> <li>* Money</li> </ul>	<ul style="list-style-type: none"> <li>* Multiplication and Division</li> <li>* Statistics (tally charts, pictograms and block diagrams)</li> <li>* Shape (2D and 3D shapes)</li> <li>* Fractions (halves, quarters and thirds)</li> </ul>	<ul style="list-style-type: none"> <li>* Position and Direction</li> <li>* Length and Height</li> <li>* Time</li> <li>* Mass, Capacity and Temperature</li> </ul>
<b>Year 3</b>	<ul style="list-style-type: none"> <li>* Place Value (up to 1000)</li> <li>* Addition and Subtraction (column method)</li> <li>* Multiplication and Division (mental methods)</li> </ul>	<ul style="list-style-type: none"> <li>* Multiplication and Division (written methods)</li> <li>* Statistics (bar charts, pictograms and tables)</li> <li>* Money</li> <li>* Length and Perimeter</li> </ul>	<ul style="list-style-type: none"> <li>* Fractions</li> <li>* Shape (angles, lines, 2D and 3D shapes)</li> <li>* Time</li> <li>* Mass and capacity</li> </ul>
<b>Year 4</b>	<ul style="list-style-type: none"> <li>* Place Value (up to 10,000)</li> <li>* Addition and Subtraction (up to 4-digits)</li> <li>* Length and Perimeter</li> <li>* Multiplication and Division (mental methods)</li> </ul>	<ul style="list-style-type: none"> <li>* Multiplication and Division (written methods)</li> <li>* Area</li> <li>* Fractions</li> <li>* Decimals</li> </ul>	<ul style="list-style-type: none"> <li>* Money</li> <li>* Time</li> <li>* Statistics</li> <li>* Properties of Shapes</li> <li>* Position and Direction</li> </ul>
<b>Year 5</b>	<ul style="list-style-type: none"> <li>* Place Value</li> <li>* Addition and Subtraction</li> <li>* Statistics</li> <li>* Multiplication and Division</li> <li>* Perimeter and Area</li> </ul>	<ul style="list-style-type: none"> <li>* Multiplication and Division</li> <li>* Fractions</li> <li>* Decimals and Percentages</li> </ul>	<ul style="list-style-type: none"> <li>* Decimals</li> <li>* Properties of Shapes</li> <li>* Position and Direction</li> <li>* Converting Units</li> <li>* Volume</li> </ul>
<b>Year 6</b>	<ul style="list-style-type: none"> <li>* Place Value</li> <li>* Addition, Subtraction, Multiplication and Division</li> <li>* Fractions</li> <li>* Position and Direction</li> </ul>	<ul style="list-style-type: none"> <li>* Decimals and Percentages</li> <li>* Algebra</li> <li>* Converting Units</li> <li>* Perimeter, Area and Volume</li> <li>* Ratio</li> </ul>	<ul style="list-style-type: none"> <li>* Statistics</li> <li>* Properties of Shapes</li> <li>* Preparing for Key Stage 3</li> </ul>

**We stress the importance of knowing multiplication tables. By the end of Year 4, pupils should have memorised their multiplication tables up to and including the 12 times table.**

## **Threshold Concepts**

There are nine threshold concepts for this subject:

**Know and use number:** this concept involves understanding the number system and numbers they are used in a wide variety of mathematical ways.

**Add and subtract:** this concept involves understanding both the concepts and processes of addition and subtraction.

**Multiply and divide:** this concept involves understanding both the concepts and processes of multiplication and division.

**Use fractions:** this concept involves understanding the concept of part and whole and ways of calculating with this.

**Understand the properties of shapes:** this concept involves recognising the names and properties of geometry shapes and angles.

**Describe position, direction and movement:** this concept involves recognising various types of mathematical movements.

**Use measures:** this concept involves becoming familiar with a range of measures, devices used for measuring and calculations.

**Use statistics:** this concept involves interpreting, manipulating and presenting data in various ways.

**Use algebra:** this concept involves recognising mathematical properties and relationships using symbolic representation.

## **SEND**

When a pupil has been identified with additional needs, they will be given individual targets by their class teacher. These targets will be set according to their area of need and teachers will plan targeted interventions to help pupils achieve these targets. These interventions will be delivered by the class teacher or teaching assistant (under guidance of the class teacher) and may be part of a small group session or one-to-one tuition. We use the 'Plus 1' and 'Power of 2' intervention programmes, alongside other resources determined by the class teacher to match the individual needs of each pupil.

## **Links to other subjects**

Mathematics underpins many curriculum areas and pupils are required to apply their mathematical knowledge in many different situations. This list below contains some examples, but is not exhaustive:

### ***English***

- Mathematical reasoning can help to improve speaking and listening skills

### ***RE***

- Pupils need to draw accurate lines and tables

### ***Science***

- Mathematical skills are essential for reading and presenting data

### ***Geography and History***

- Pupils need to apply knowledge of coordinates to read maps
- Measurement skills are essential for collecting and presenting data in fieldwork
- Pupils need to apply their knowledge of time and dates in History (including Roman Numerals)

### ***Computing***

- Pupils will use numbers during computer programming activities

### ***Art and Design***

- Pupils need to apply the ideas of ratio and proportion when producing artwork
- Pupils will produce artwork linked to the tessellation of shapes

### ***Music***

- Pupils need to apply their knowledge of counting, time and speed to follow rhythmic patterns

### ***Physical Education***

- Gymnastics and Dance build upon the concepts of pattern, movement and symmetry

### ***Life Skills***

- In Year 5, pupils apply their mathematical knowledge when learning about the value of money and budgeting
- In Year 6, pupils apply their mathematical knowledge when learning about jobs prospects, wages and salaries

## **Impact**

An effective Mathematics curriculum will ensure that pupils are excited and motivated in lessons. They will be able to recall facts and carry out procedures accurately and efficiently. A mathematical concept or skill has been *mastered* when a child can show it in multiple ways, using mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.

Teachers will assess the impact of teaching informally during each lesson by using questioning during discussions and by assessing work produced by pupils in books (see Policy for Marking).

Impact will be measured formally in Years 1 to 6 using White Rose End of Term Assessments. The results enable teachers to track long-term progress and assess pupils against age related expectations. End of term assessments are recorded on our whole school tracking system, with pupils being assessed as working at one of the following standards: Pre-emerging, Emerging, Developing, Expected or Greater Depth.

Each term, the Maths lead works with the Leadership Team to analyse the data for achievement across the school. This enables Leadership Team to identify groups of pupils who are at risk of underachieving, in which case, intervention strategies, programmes and support will be put in place to support learning.

In Early Years, pupils are assessed against the Early Years Foundation Profile and are awarded levels of Emerging, Expected and Exceeding, matched to their achievement of the assessed statements.

At the end of Key Stages 1 and 2, SATs will be used to measure pupil progress throughout the school.

## **Monitoring**

The monitoring of the impact of Mathematics in school is done through:

- Lesson visits
- Work scrutiny
- Planning scrutiny
- Reports to Governors
- Discussion with pupils (Learning Council)

**Subject Leader: Miss R. Anthony**

**Link Governor: Mr P. Dodds**

**Date: March 2021**

**To be reviewed: March 2022**