



## Maths Intent

At Neville's Cross, we provide a curriculum which caters for the needs of all individuals. A typical maths lesson will provide the opportunity for all children, regardless of their ability or age, to work through Fluency, Reasoning and Problem Solving activities. We incorporate sustained levels of challenge through varied and high quality activities with a focus on fluency, reasoning and problem solving. Once children are fluent in a particular area, they are quickly moved onto more challenging reasoning and problem solving activities. Children are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings. A wide range of mathematical resources are used and children are taught to show their workings in a concrete fashion, before establishing ways of pictorially and formally representing their understanding. They are taught to explain their choice of methods and develop their mathematical reasoning skills. We encourage resilience and acceptance that struggle is often a necessary step in learning. We provide excellent opportunity for mathematics to be applied across all areas of the curriculum and in 'real life' contexts. Our curriculum is organised and carefully planned so that each term children have opportunities to revisit all areas of the maths.

## Introduction

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, 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, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. (National Curriculum 2014)

### **The aims of the 2014 National Curriculum are for our pupils to:**

Become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time.

Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.

Reason mathematically; follow a line of enquiry, conjecture relationships and generalisations.

Develop an argument, justification and proof by using mathematical language.

Problem solve by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

The National Curriculum sets out year-by-year programmes of study for key stages 1 and 2. This ensures continuity and progression in the teaching of mathematics.

The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development matters' non statutory guidance. The EYFS Framework in relation to mathematics aims for our pupils to:

develop and improve their skills in counting

understand and use numbers

calculate simple addition and subtraction problems

describe shapes, spaces, and measures



The purpose of mathematics in our school is to develop:

- positive attitudes towards the subject and awareness of the relevance of mathematics in the real world

- competence and confidence in using and applying mathematical knowledge, concepts and skills

- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and motivation to work both independently and in cooperation with others

- confident communication of maths where pupils ask and answer questions, openly share work and learn from mistakes

- an ability to use and apply mathematics across the curriculum and in real life

- an understanding of mathematics through a process of enquiry and investigation

We aim to provide a stimulating and exciting learning environment that takes account of different learning styles and uses appropriate resources to maximise teaching & learning.

### **Breadth of study**

Careful planning and preparation ensures that throughout the school children engage in:

- practical activities and games using a variety of resources

- problem solving to challenge thinking

- individual, paired, group and whole class learning and discussions

- purposeful practise where time is given to apply their learning

- open and closed tasks

- a range of methods of calculating e.g. mental, pencil & paper and using a calculator

- working with computers as a mathematical tool

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

### **Teachers planning and organisation**

#### **Long term planning**

The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long term planning for mathematics taught in the school.

#### **Medium term planning**

Year 1-6 use the Durham Local Authority medium term plans and plan lessons around the individual maths objectives that are broken down into fluency, reasoning and problems solving – the key aims of the National Curriculum.

#### **Short term planning**

Lessons are planned using an individual planning format and are monitored at intervals by the mathematics subject leader. EYFS planning is based on the medium term plans and delivered as appropriate to individual children with thought to where the children are now and what steps they need to take next.

All classes have a daily mathematics lesson where possible. Teachers of the EYFS 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.



### **Special educational needs & disabilities (SEND)**

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children's support plans incorporate suitable objectives from the National Curriculum for Mathematics or development Matters and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 basis outside the mathematics lesson. Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. These are delivered by trained support staff and overseen by the SENCO and/or the class teacher. Within the daily mathematics lesson, teachers have a responsibility to not only provide differentiated activities to support children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability.

### **Equal Opportunities**

Positive attitudes towards mathematics are encouraged, so that all children, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with mathematics.

The aim is to ensure that everyone makes progress and gains positively from lessons and to plan inclusive lessons. Lessons involving lots of visual, aural and kinaesthetic elements will benefit all children including those for whom English is an additional language (EAL). Differentiated questions are used in lessons to help children and planned support from Teaching Assistants and other adults.

### **Lessons**

In all lessons, learning objectives are clearly displayed and discussed. The emphasis in lessons is to make teaching interactive and lively, to engage all children encouraging them to talk about mathematics. Lessons involve elements of:

- Instruction – giving information and structuring it well;
- Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays;
- Explaining and illustrating – giving accurate and well-paced explanations;
- Questioning and discussing;
- Consolidating;
- Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points;
- Summarising – reviewing mathematics that has been taught enabling children to focus on next steps

### **Pupils' Records of work**

Children are taught a variety of methods for recording their work and are encouraged and helped to use the most appropriate and convenient. Children are encouraged to use mental strategies and their own jottings before resorting to more formal written methods. Children's own jottings to support their work is encouraged throughout all year groups.

### **Marking**

Marking of children's work is essential to ensure they make further progress. Work is marked against the learning objective, in line with the school marking policy. Children are encouraged to self-assess their work and make corrections or improvements. Responses to marking are made as close to the work as possible, ideally within the lesson. Some pieces of work in mathematics can be marked by children themselves, exercises involving routine practice with support and guidance from the teacher – particularly in years 5 & 6.



### **Assessment**

Assessment is an integral part of teaching and learning and is a continuous process.

Teachers make assessments of children daily through;

- regular marking of work
- analysing errors and picking up on misconceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated in light of these assessments.

### **Medium term**

Termly assessments are carried out across the school using the assessment materials for each year group provided by NFER. These materials are used alongside judgements made from class work support teachers in making an accurate assessment for each child. Pupil Progress meetings are timetabled for all classes. Progress of pupils is discussed and appropriate intervention considered and put in place where appropriate.

### **Long term**

Year 2 and Year 6 complete the national tests (SATs) in May. Years 1, 3, 4 and 5 complete optional SATs papers produced by NFER, which inform teacher summative judgements in the summer term.

Year 4 complete the MTC national test from 2020.

### **Resources**

Each class has a stock of core resources that are age appropriate. Additional mathematical equipment and resources are stored centrally in the resources room.

Children have TTRockstars accounts, which is a fully interactive online mathematics learning tool that is used by teachers to support the teaching of times tables learning, both in class and at home.

### **Role of the Maths Subject Leader**

To lead in the development of maths throughout the school.

To monitor the planning, teaching and learning of mathematics throughout the school.

To help raise standards in maths.

To provide teachers with support in the teaching of mathematics.

To provide staff with CPD opportunities in relation to maths within the confines of the budget and the School Improvement Plan

To monitor and maintain high quality resources.

To keep up to date with new developments in the area of mathematics