



# NORTHSIDE Primary School

## Mathematics Policy

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### Rationale

The aims of Mathematics teaching throughout Northside are for pupils to enjoy mathematics, be successful and have a positive attitude to the subject. It is important for children to understand where mathematics fits into other subjects such as Science and ultimately, our everyday life.

### Key Principles

It is vital that Northside pupils develop a conceptual understanding of basic mathematical concepts through using manipulatives in order for them to have the ability to calculate successfully.

Lessons are carefully designed to incorporate the key skills of fluency, reasoning and problem solving. Northside pupils are taught to develop their fluency skills by recalling and applying key facts. Maths activities encourage the children to reason using the correct mathematical language and solve problems logically using their mathematical knowledge.

The objectives within the school are to ensure that all pupils:

- follow a broad and balanced mathematics programme based on the requirements of the National Curriculum
- are provided with interesting and challenging tasks that enable them to achieve and exceed their potential.
- can work both independently, with their learning partners and can also contribute to class discussions when making decisions about their learning.
- judge whether answers are reasonable and have strategies for checking them where necessary
- explain methods and reasoning using correct mathematical vocabulary
- explore features of shape and space
- make sensible estimates and accurately measure using a range of equipment
- interpret and explain graphs, diagrams, charts and tables.

### Northside Values

**RESPECT** to value our needs, beliefs and each other

**PRIDE** to have confidence in our abilities and celebrate success

**INCLUSION** to work together with families and our diverse community to become life-long learners

**CHALLENGE** to have high expectations of ourselves so we achieve our best

**CREATIVITY** to creatively express our feelings and ideas

**RESILIENCE** to develop life skills so we fulfil our potential

### In Practice

Our teaching and learning strategy is based on the White Rose Maths Hub Schemes of learning, available at [www.whiterosemathshub.co.uk](http://www.whiterosemathshub.co.uk) and 'Development Matters in the Early Years'.

At Northside, we teach in a cross curricular way and link maths to topics and real life as and when appropriate.

Lesson structure:

Lessons will have clear learning objectives and success criteria that are communicated to the pupils. The focus is on direct teaching that is oral and interactive with the whole class and groups. It will involve different elements:

**Re-visiting** learning from the previous day/week to either address misconceptions, allow for consolidation or offer further challenge to the pupils,

**Demonstrating a new concept** (showing how to, which is referred to during lessons as 'My turn')

**Explaining** (giving examples of),

**Questioning** (challenging and understanding),

**Discussions and Evaluation** (talking about methods and errors)

**Direction** (taking care and setting out neatly).

The class will then apply this new knowledge when completing short tasks (referred to as 'your turn') which the teacher will review throughout the Maths lesson

Mathematics is taught on a daily basis in each class lasting between 50 minutes and 1 hour. Opportunities for mathematical learning in the Foundation Stage are derived from 'Development Matters in the Early Years' with an emphasis on learning through imaginative play; rhyme, song, ICT and a range of practical activities.

#### Recording of Work

Maths books with different size squares are available. Where applicable, children are encouraged to write the learning objective from Year 2 onwards and present their work neatly, using a pencil, (one digit in one square).

Learning can be presented in a range of different ways. For example: a drawing, a written explanation, a photograph of a game or activity with a caption or through showing their working out.

Our approach to calculation is contained in our Calculation Policy and is echoed in our Northside Curriculum Map which ensures continuity and progression.

Speaking and Listening is a key part of Maths lessons. Teachers should model the correct use of vocabulary and make use of learning partners and group discussions when appropriate to support mathematical understanding and reasoning.

#### Resources to support learning and teaching of mathematics

Each classroom contains manipulatives such as Numicon, Base 10 equipment (in KS1 and KS2) and multilink. These are clearly labelled and accessible to children and adults. Number lines and number grids should also be displayed in each classroom or available for the children to access. ICT is used to support learning and teaching in maths, these could include such as NRICH, BEAM, NCETM, Hit the Button, Times tables Rockstars and software such as Mathbase.

#### Homework

Homework is set for Year 1 to Year 6 children (see Homework Policy). It reinforces work already covered in class and is set using MyMaths. Children are also encouraged to practise their individual times table target regularly at home and access Times Table Rockstars regularly (Year 2 upwards). Parents/carers are also supported through a half termly leaflet on their classes class page detailing objectives for parents to support learning at home.

#### Inclusion

We aim for all children to achieve and succeed in their study of mathematics. Children sit in mixed ability pairs so that can learn from each other. Children are provided with further challenges throughout the lesson to encourage deeper understanding and higher-level thinking.

#### Planning

The White Rose Hub Scheme of Work and 'Development Matters in the Early Years' forms the school's long term plan for the teaching of mathematics; the skills and knowledge is mapped out progressively in the whole school overview. Teachers use this to map out medium term plans for each half term.

Daily/weekly planning is based on the appropriate block objectives, informed by on-going assessment for learning. Real life, cross-curricular and creative opportunities for children to use and apply are exploited wherever possible. Teachers include key questions on their planning and/or on whiteboard files.

## Assessment

Our pupils should:

- have a sense of the size of a number and where it fits into the number system
- learn by heart number facts such as number bonds, multiplication tables, doubles and halves
- calculate accurately and efficiently, both mentally and with pencil and paper, using a range of calculation strategies
- make sense of number problems and recognise the operations needed to solve them
- understand which method would be most efficient to use and decide how they will use that method according to the problem that they are solving

Short-term assessment (assessment for learning) is closely linked to the learning objectives and are an integral part of every lesson. Their purposes are to check a children's understanding, subsequent progress and the strategies used so as to give the teacher information to help adjust daily teaching.

Formative assessment is a constant and on-going daily process. The learning of the previous day is referred to at the start of every lesson. Teachers plan activities based on misconceptions and difficulties from previous lessons. Teachers (from Years 1-6) provide pupils with pre-assessments for each White Rose block which inform teachers' planning to address gaps and trends across the class. Pupils then revisit these pre-assessments at the end of the unit to see if they can now answer those questions (post assessments).

Summative assessments can be used from the White Rose tests at the end of each term. Teachers then analyse gaps and use this to inform future planning.

Learning and teaching is monitored, evaluated and reviewed regularly by the Senior Leadership Team and Maths Leader through lesson observations, learning walks and book discussions. Areas for development are fed back to individuals and the whole staff as appropriate and may feed into targets and the school improvement plan.