



# North Ridge High School Mathematics Policy



## Curriculum Policy for Mathematics 2019

### Equality Statement

#### **Equalities Act 2010**

The Equality Act 2010 has been drawn up to tackle inequality and prevent discrimination against people on the basis of 'protected characteristics'. It brings together several existing laws and aims to make understanding the law simpler. It also introduces a new single public sector equality duty, which requires public bodies to actively advance equality.

All policies at North Ridge take account of this Act.

### UNICEF Rights of The Child

#### **Rights Respecting Schools**

In the 1940s, the United Nations produced the Universal Declaration of Human Rights which was adopted in 1948. This Declaration applies to children as well as adults. However, growing awareness of the rights of children led to calls for a dedicated children's human rights treaty.

Article: 23 (every child had a right to specialist education)

Article: 28 (every child has a right to education)

## INTENT

### Purpose/Rationale

This policy outlines the purpose, nature and management of mathematics taught in our school.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving problems. They should also apply their mathematical knowledge to other subjects and connect this to functional skills they will use in adulthood.

(NC 2014)

This is paramount in our aim at North Ridge, to provide practical maths skills to help students achieve their potential and live full and happy lives.

### Overview

In all key stages, pupils are expected to embed core number skills to then use and apply them to all other areas of the maths curriculum. It is expected that pupils make at least expected

progress through high quality planning, teaching and learning and use of meaningful high quality resources.

It is expected that pupils are to master and embed a core skill before moving onto higher level learning. Pupils then to use and apply their core mathematical understanding throughout all key stages to enable them to achieve recognised educational certificates and enable them to use functional maths skills in adulthood.

It is expected that all key stages plan for a concrete-pictorial-abstract approach for all topic areas of maths. The CPA to either be covered within one lesson for higher ability pupils, or spread across a number of lessons in this order e.g. Lesson 1 concrete, Lesson 2 concrete-pictorial and Lesson 3 pictorial-abstract.

### Aims

We aim for all pupils to be keen mathematicians through engaging, creative and stimulating maths lessons delivered by all staff.

We also want our pupils to:

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

### IMPLEMENTATION

#### Teaching & learning

All KS3 and 4 students have 4 lessons a week timetabled for Maths and KS5 have 2 dedicated Maths lessons and maths skills are encompassed in Functional skills lessons, such as cooking and shopping.

In Key Stages 4 and 5, teachers will ensure planning covers all sections in order for students to accomplish their accreditations. These students will be able to access nationally accredited exam qualifications, such as Functional Skills (Entry Levels and Level 1), Certificate of Educational Attainment, Unit Award Schemes (UAS) and various ASDAN.

Where applicable, staff plan 'grow-it' cross curricular maths sessions to enable pupils to use and apply new skills learnt in a range of settings and contexts.

In addition, where applicable and appropriate to the learning needs of pupils, staff are to plan for 'ask-it' sessions to support mathematical reasoning and problem solving skills.

Staff will use a 'Concrete-Pictorial-Abstract (CPA) systematic structure to support pupils in mastering a skill.

## Planning

Planning is in line with the school planning policy. It covers all the topics and teachers follow the guidance provided. Planning has clear learning objectives, success criteria and is suitably differentiated. All students learning styles are taken into account and planned to include Kinaesthetic, Audible and Visual learners. ICT is used imaginatively wherever possible. Teachers use 'planning guidance' document to ensure they teach the correct number of weeks to given areas in Mathematics.

Due to the nature of students with learning needs, some classes may have a larger number of students who have greater needs, or greater abilities, and their learning will therefore be modified to their needs and attainment levels.

Staff will use a 'Concrete-Pictorial-Abstract (CPA) systematic structure to support pupils in mastering a skill. This will be evident and clear in their planning for all areas of maths.

## IMPACT

### Knowledge, Skills and Understanding

- Pupils master skills in maths which they are then able to apply to a range of contexts within the school and home context
- Pupils are able to embed their new skills and understanding to a range of contexts; thus supporting application and progress in learning
- Pupils acquire core mathematical skills to support their independence as they progress through the school; such as telling the time, using money and counting.
- Pupils are able to apply their understanding to the world of work; supporting them as a young adult when they leave school.

### Assessment, Recording and Reporting

KS3:

Maths is recorded, reported and assessed by the following:

- Work files / work books
- Records of Achievement
- B-squared assessment tool
- Self-assessment faces completed by pupils

KS4:

Maths is recorded, reported and assessed by the following:

- Work files
- Accreditation (AQA Entry level certificates)
- ASDAN
- B-squared assessment tool
- Self-assessment faces

KS5:

Maths is recorded, reported and assessed by the following:

- Work files
- Learning logs
- Classroom monitor assessment tool
- Unit award scheme (UAS)
- Self-assessment faces

In pupil workfiles it should be clear how pupils have accessed teaching and learning through a CPA approach; capturing pupils progress in practical 'concrete' lessons through practical lesson evidence sheets using the set proforma for this.

### Staff Development

Maths training is provided by the Maths TLR (ST) for staff on regular basis to provide a bank of resources, give new ideas and develop staffs understanding of how to teach using key learning strategies for SEN pupils in maths in a creative way.

Staff training will also support members of staff in teaching and planning for a CPA approach for key areas of maths as well as provide opportunities for creative and divergent thinking through conceptual variation.

Staff will have access to external courses where this is clearly linked to SDP and impact on pupil progress.

### Resources

Each class has its own box of resources and Numicon that is kept in the classroom. Numicon is used across all key stages; being used well in the school café and shop.

All other resources are kept neatly in the Maths cupboards, and returned when the lesson is over, in order that all staff have quick and easy access to every maths resource.

Resources are meaningfully selected by the teacher to facilitate.

### Monitoring and evaluation

The Head teacher, Assistant Head, the mathematics Co-ordinator, Assessment Co-ordinator and teachers, monitors mathematics having identified priorities, the SLT and Mathematics Co-ordinator construct an action plan that may form part of the School Development Plan. This forms the basis for any monitoring activities and will clearly identify when, who and what is to be monitored and how this will take place e.g. classroom observation, planning scrutiny, work sampling etc.

### Review

Date approved by Governors: 27/1/2020

Date of review: Jan 2022