Duke of Norfolk CE Primary School
Mathematics Policy

This policy has been written in line with the New National Curriculum 2014.

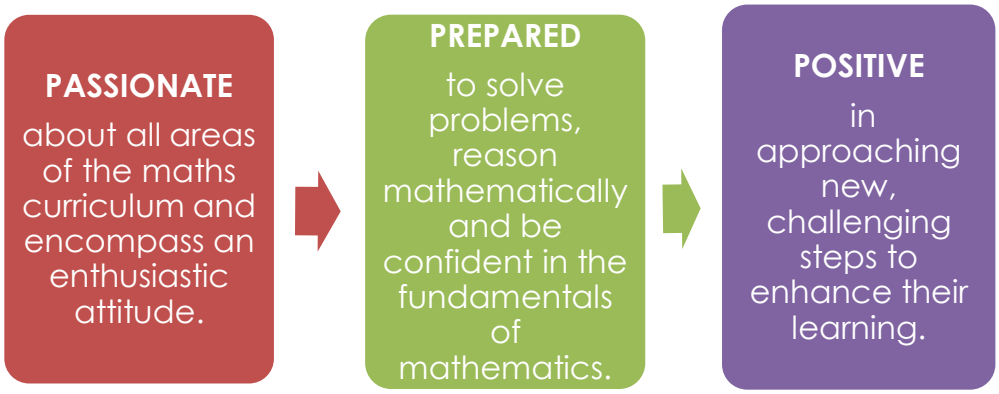
Updated and Reviewed: April 2021
To be reviewed annually.

PURPOSE:

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.

VISION:

To achieve and enjoy an outstanding maths curriculum, teachers and children will be:



AIMS:

We strive for **all children** to reach age related expectations and the teaching of mathematics in our school is based on three key principles:

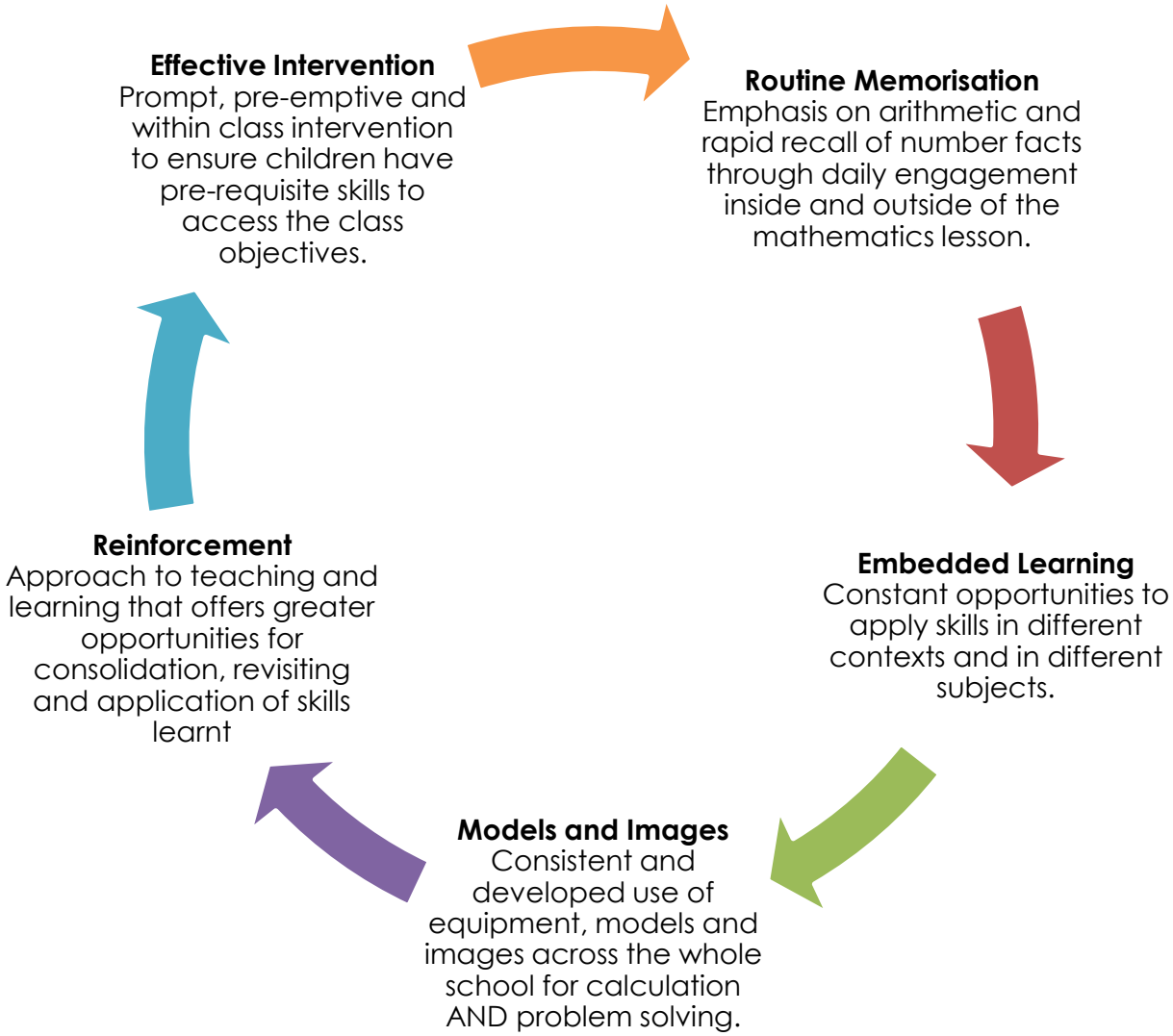
All children become **fluent** in the **fundamentals** of mathematics, through consistent and frequent practice with increasingly complex problems over time, so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

All children **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.

All chilren **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.

THE APPROACH TO TEACHING MATHEMATICS:

Children will engage with at least four high-quality, dedicated mathematics lessons per week. They will also be given opportunities to apply their learning within different subjects on a regular basis.



STRATEGIES FOR THE TEACHING OF MATHEMATICS:

The key to successful mathematics lessons is careful preparation and effective planning. Planning will include:

- At least four high-quality maths lessons per week
- Daily fluency practice
- Daily reasoning
- Daily problem solving
- Access to Mental Maths

At Foundation Stage, Key Stage 1 and Key Stage 2, the teaching of mathematics is supported by the use of concrete materials, equipment and pictures, before moving onto abstract learning (Concrete, Pictorial, Abstract approach, see calculations policies).

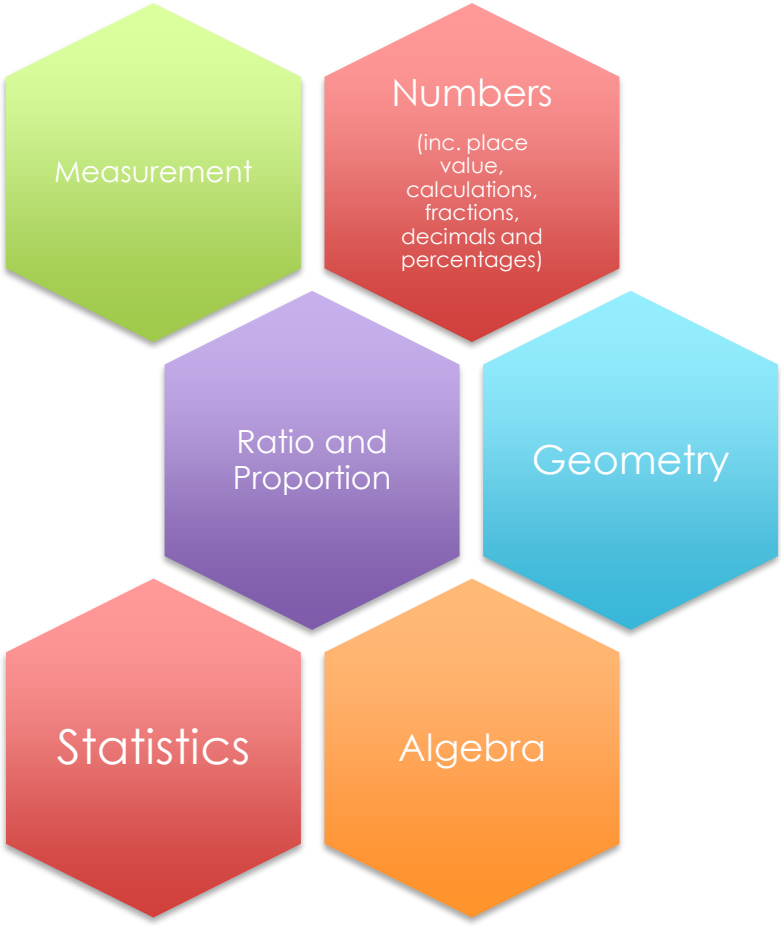
Worded problems are modelled using the progressive Singapore Bar Method. The pedagogical and mathematical vocabulary is consistent across all classes and progressive through the school.

Direct teaching will include a variety of styles, pupil interaction, mental 'warm ups' and discussion. These are all integral parts of the daily mathematics lesson. All lessons will ensure children are actively involved, immediately.

Planning will be completed in departments (EYFS, KS1, LKS2 and UKS2). As there are mixed-age classes, teams will ensure coverage of both year groups' objectives through carefully matching objectives and activities.

Weekly planning is completed as teams, which includes daily opportunities for recall, fluency, reasoning and problem solving. KS1 and KS2 teams use White Rose Maths for progression, and Busy Ant Books are used regularly in lessons for a range of independent fluency, reasoning and problem solving activities.

The New National Curriculum 2014 framework has six main areas of study:



These six areas are not taught in all Year groups but will be taught when the National Curriculum 2014 suggests.

THE CONTRIBUTION OF MATHS TO TEACHING IN OTHER CURRICULUM AREAS:

- Children are expected to use their English skills: reading, writing, and speaking and listening during maths lessons. Children record their work in maths books and activities which involve writing hold the same expectations across the curriculum.
- Maths skills should be applied in science lessons wherever possible. This can take place in a number of ways, such as when the children use measures; using and applying number; through working on investigations they learn to estimate and to predict, record and analyse results.
- The schools half-termly attributes: Resilience, morality &social justice, critical thinking, healthy body & mind, confidence & communication, joy & hope, can be fulfilled through teaching maths in a way that creates curious and excited children who can apply their knowledge when answering mathematical questions.
- Where possible, links to maths should be made in other areas of the curriculum, for example, with statistics in geography lessons, counting in French, Music or PE, etc.

DIFFERENTIATION AND INCLUSION:

We recognise that in all classes, children have a wide range of abilities and we ensure that we provide suitable learning opportunities for all children by matching the challenge of task to the ability of the child. All children, except those with a statement for SEN or the very gifted (who may need to have individual targets), will work toward the same learning objective. The teacher is responsible for differentiation and this may be through, for example, teacher support, the use of concrete objects, open-ended tasks, etc. The higher attaining children will be given work that provides depth of mastery of a given skill or area of understanding. We strive to meet the needs of all pupils, including those with special educational needs, disabilities, special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress will be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly will be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Currently, our aim is to close gaps and catch up on learning missed during the pandemic, as well as encouraging and engaging children to become fluent and confident mathematicians, being particularly mindful of girls' confidence (focus prior to March 2020).

ASSESSMENT:

Children's work is marked in line with the school marking policy. Assessment is on-going, throughout lessons, and provides information for planning and target setting. Teachers assess children in a variety of ways against the National Curriculum objectives, and record assessments on Insight, ensuring they can reference evidence that the skills were achieved independently and out of context. Summative tests may be used to show progress over a term.