



### 'Safe, Respectful and Ready to Learn.'

#### Rationale

At Woodford Primary, we see mathematics as a creative and highly interconnected 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. This policy aims to encourage a love of these things both inside and outside of the classroom.

#### Aims

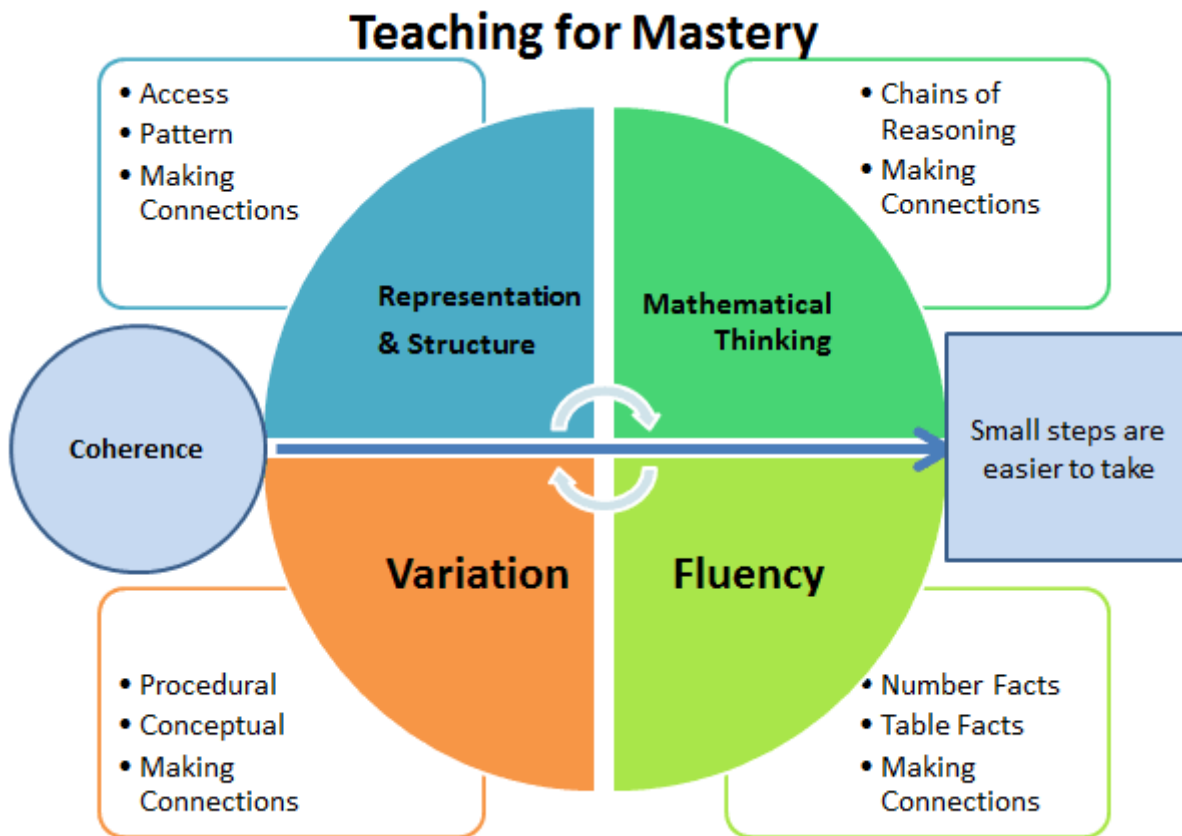
The national curriculum for mathematics aims to ensure that all pupils:

- 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 rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can 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

#### School Curriculum

At Woodford Primary School, we have designed an ambitious mathematics curriculum using the National Centre for Excellence in the Teaching of Mathematics (NCETM) Curriculum Prioritisation Materials. Our intent is to make maths accessible to all and will maximise the development of every child's ability and academic achievement.

Here, we know that children's chances of success are maximised if they develop a deep and lasting understanding of mathematical procedures and concepts. We teach through a Mastery approach to give all pupils the very best chances of mastering mathematics. Mathematics Teaching for Mastery is based on the 'Five Big Ideas' which are woven through each mathematics lesson.



To develop understanding in mathematics it is necessary to make connections not just between different elements of mathematics but also between different aspects of each element of mathematics, linking them to previous learning and existing understanding. Mathematics can be experienced through contexts, language, mathematical images/pictures and symbols. We encourage children to use what they know and understand rather than treating each area as separate and unconnected.

### EYFS

Children in EYFS, are taught through the Mastering Number programme set out by the NCETM. Throughout the day, there are many opportunities for child-initiated learning in mathematics. A wide range of concrete and pictorial resources are available to children in the Early Years. Activities are planned into the continuous provision to allow children to consolidate skills taught in teacher-led activities and to promote interest. We aim to help children understand and use numbers; calculate addition and subtraction problems; use and describe shapes, spaces and measures.

### Mastering Number

Daily Mastering Number sessions throughout the school will give children opportunity to increase their mental fluency and aid their learning of relevant number facts. The Mastering Number Programme has been developed by the NCETM. It aims to secure firm foundations in the



development of good number sense for all children. EYFS run four Mastering Number sessions each week.

In Year 1 and Year 2, children will take part in a short, daily Mastering Number session, in addition to their main maths lesson. The intention is that children will leave KS1 fluent in addition and subtraction number facts and confident to use their knowledge flexibly. Within the programme children use a variety of resources, representations and models that help develop their sense of number. They explore subitising and investigate how a number can be composed of two or more smaller numbers. The programme also uses the engaging Numberblocks children's TV series animations to support the key teaching points. Year 3 run Embedding Mastering Number sessions in the autumn term to consolidate learning from KS1 and ensure children are ready to access the KS2 curriculum.

Knowledge of multiplication and division and its applications forms the single most important aspect of the KS2 curriculum, and is the gateway to success at secondary school. In KS2, from Years 4 – 6, children will take part in short, daily Mastering Number sessions focussed on the multiplicative structure, ensuring that pupils in KS2 develop automaticity in multiplication and division facts.

All Mastering Number sessions are inclusive with all children securing the same learning point in an interactive and engaging manner. Pupils are encouraged to become mathematically observant, look for relationships, make connections with prior learning and communicate their mathematical ideas.

Year 2 - 6 use TTRockstars to support the learning and practise of times tables (including related division facts). Foundation – Year 6 use NumBots to support the learning of addition and subtraction number facts. We encourage children to use these programs at home as well. Achievements are celebrated as a whole school.

## Written Methods

Although there are agreed written procedures, it is important to recognise that a child's mental fluency to solve calculations is at the heart of the curriculum. During their time at Woodford Primary School, children will be encouraged to see mathematics as both a written and spoken language.

Teachers will support and guide children through the following important stages:

- developing the use of models and images to represent numerical activities
- using standard symbols and conventions
- use of jottings to aid a mental strategy
- use of pencil and paper procedures

## Information and Communication Technology (ICT)

Calculators should not be used as a substitute for good written and mental arithmetic. They should therefore only be introduced near the end of key stage 2 to support pupils' conceptual understanding



and exploration of more complex number problems, if written and mental arithmetic are secure. Teachers should use their judgement about when ICT tools should be used. Interactive whiteboards in classes will be used to support the delivery of lessons and interactive activities.

## Spoken Language

The national curriculum for mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. They must be assisted in making their thinking clear to themselves as well as others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

## Feedback

The main form of feedback provided by teachers and teaching assistants to children is verbal feedback during lessons. We believe that children make accelerated progress when they receive 'live' feedback during the lesson; they can act on this immediately. Teachers and teaching assistants aim to visit every child in each lesson so children of all levels of attainment receive equal feedback. We aim to praise and encourage children and tick tasks which have been successfully completed. Mistakes and misconceptions are identified with a dot. Adults will discuss this with the child before they independently address this. Children respond in purple pen.

## Self-Assessment

Assessment for Learning is used across the school and pupils are involved in assessing their own learning. Daily lesson objectives are shared with children during teaching sessions. These are introduced as 'I can' statements. Pupils are given time to reflect on their learning. Peer assessment is also used for focussed reflection.

## Intervention Programmes

As an extension to quality first teaching, individual year groups and classes use focus group learning to support individual and group learning needs. The main form of intervention provided is 'pre-teaching', delivered by teachers. This gives struggling learners an opportunity to familiarise themselves with upcoming lesson content before the lesson and therefore increases their confidence in lessons. We feel this is a much more positive process than post-lesson intervention. This also allows teachers to adapt lessons for the whole class based on insights gained with children during pre-teaching.

## Role of the Subject Leader



The subject leader should be responsible for improving the standards of teaching and learning in mathematics through:

Monitoring and evaluating:-

- pupil progress and attainment, feeding back to the SLT
- provision of mathematics (including planning, intervention and support programmes)
- the quality of the learning environment
- the deployment and provision of support staff

As well as:

- The continued professional development of teachers and teaching assistants
- Providing lesson support/delivery
- Taking the lead in policy development
- Analysing the impact of targets
- Purchasing and organising resources
- Keeping up to date with recent mathematical developments
- Creating and updating school action plans

Approved at HAB