MATHS

INTENT

At The Queenswell Federation, we want all children to enjoy Maths and experience success in this subject. We believe that all children can achieve in Mathematics and aim to develop a growth mindset in our children so that they are not afraid to take risks and understand the value of making mistakes. Our aim is to develop enthusiastic, competent and articulate mathematicians, who are fluent in the fundamentals of mathematics, able to solve problems and reason mathematically.

Through the teaching of Maths, we intend to develop in our children:

- A love of mathematics
- The ability to think logically and work systematically in order to solve problems
- The ability to make connections across the areas of Maths and other subjects
- Number sense, through the modelling of different methods and using different representations to deepen children's understanding
- The ability to work both independently and in cooperation with others
- Their mathematical vocabulary, so that pupils are able to reason confidently
- A growth mindset - so that children are able to recognise and understand the value of mistakes and have a can- do, risk-taking attitude to their learning in Maths
- A secure, long term, deep and adaptable understanding of Maths, that they are able to apply in different contexts

IMPLEMENTATION

We implement our approach through high quality teaching, delivering appropriately challenging work for all children in the class.

Our lessons

Every class in Key Stage 1 and Key Stage 2 follows the White Rose Scheme of learning, which is aligned to the National Curriculum. This ensures that teaching methods and practice are consistent across the school, and that children have the opportunity to develop their fluency, problem solving and reasoning in each lesson.

Lessons are designed to follow a teaching for mastery approach, which promotes deep understanding and achievement for all. This means that children are not ability grouped, but work in mixed ability pairs to discuss methods and reason mathematically. We have a range of mathematical resources that are used in lessons (such as Base 10, Numicon, number lines and counters), to support the CPA (concrete, pictorial, abstract) approach. When a concept is initially introduced it is represented using equipment (concrete). Once the children have grasped a concept using resources, images and diagrams are used (pictorial) prior to moving onto written calculations or problems (abstract). This approach ensures that children understand a concept in depth. Extensions and challenges are provided for those children who have achieved an objective, and these are designed to deepen their understanding through problem solving and reasoning rather than moving children onto the next objective. This way all children progress through the year group objectives at the same pace.

In lessons, mistakes are valued and teachers are aware of the language that they use so that they are always promoting a growth and not fixed mindset.

Online Maths Tools

In order to advance children's maths skills in school and at home, we utilise Times Tables Rock stars in Years 2-6, for multiplication and division practise, application and consolidation.

Assessment

We continuously monitor pupil's progress within and across lessons and will target those children who need extra support in fluid, teacher or TA led groups either within the lesson or as an intervention before the next.

Summative assessments are completed every term and their results from discussions in Pupil Progress meetings. Teacher's use the White Rose Assessments, along with their own knowledge of the children, to inform these assessments and the progress of each child is also recorded. This ensures that teachers are providing provision for every child and can adapt their planning and teaching accordingly.

LINKS TO EYFS

Mathematics

Intent

It is essential for children to develop a *strong understanding of number* in order to develop the necessary building blocks to excel mathematically. We aim to provide an environment that allows children frequent and varied daily opportunities to use their understanding of number in real life-contexts. We intend to provide children with the secure base of knowledge and vocabulary that they will need to master mathematics. It is also important that there are rich opportunities for children to develop *spatial reasoning skills* across areas including *shape, space and measure;* and to develop positive attitudes and interests in maths; look for patterns and relationships; spot connections; 'have a go'; talk about what they notice; and not be afraid to make mistakes.

Implementation

We provide a *mathematically challenging* environment. This includes:

- a *number-rich environment* – number lines and other visuals showing the correlation between numerals and quantities.
- a range of loose part manipulatives available as part of continuous provision such as pebbles and tens frames for organising counting.
- Daily opportunities to practice counting and understanding of number e.g. counting children at register, sharing and sorting equipment, fruit and/or milk.
- Maths mastery scheme of work – White Rose Maths (in Reception).
- Resources and activities suggested by NRICH.
- Block areas in all year groups with varying degrees of challenge to help develop spatial reasoning skills and mathematical language around shape, space and measure.
- *Mathematical vocabulary rich* environment - vocab words, explicit questions and challenges displayed and referred to throughout continuous provision.
- Adults understand the 5 counting principles.

Maths Overview

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
EYFS	**Pre-school**: Children use number names in their play and are beginning to compare quantities using language such as 'lots' or 'more'. They explore shape, space and measure through their play and can tell the difference between objects that are 'bigger' or 'smaller'. **Nursery**: Children have some concept of number and numerals and their relation to quantity. They explore mathematics through a range of open-ended and natural resources and use these to demonstrate their understanding of number, shape, space and measures. **Reception**: Children have a secure understanding of numerals and their relation to quantity. They confidently use maths throughout their play (e.g. using money in their role play; measuring when building or counting to measure time). They are able to make use of mathematical concepts to solve problems, including during sustained shared thinking with others.					
Year 1	Place Value (within 10) Addition and Subtraction (within 10)	Addition and Subtraction (within 10) (continued) Shape Consolidation	Place Value (within 20) Addition and subtraction (within 20)	Place Value (within 50) Length and Height Weight and Volume	Multiplication and Division Fractions Position and Direction	Place Value (within 100) Money Time
Year 2	Place Value Addition and Subtraction	Addition and Subtraction (continued) Shape	Money Multiplication and Division	Length and Height Mass, Capacity and Temperature	Statistics Fractions Position and Direction	Problem Solving Time
Year 3	Place Value Addition and Subtraction	Addition and Subtraction (continued) Multiplication and Division A	Multiplication and Division B Length and Perimeter	Fractions A Mass and Capacity	Fractions B Money Time	Shape Statistics
Year 4	Place Value Addition and Subtraction	Area Multiplication and Division	Multiplication and Division Length and Perimeter	Fractions Decimals	Decimals Money Time	Shape Statistics Position and Direction
Year 5	Place Value Addition and Subtraction Multiplication and Division A	Multiplication and Division (continued) Fractions A Multiplication and Division B	Fractions B Decimals and Percentages	Decimals and Percentages (continued) Perimeter and Area Statistics	Shape Position and Direction Decimals	Decimals (continued) Negative Numbers Converting Units Volume
Year 6	Place Value Four Operations	Four Operations (continued) Fractions A Fractions B Converting Units	Ratio Algebra Decimals	Fractions, Decimals and Percentages Area, Perimeter and Volume Statistics	Shape Position and Direction	Themed projects, consolidation and problem solving