Mathematics Curriculum

At St Wilfrid's, our approach to Maths is grounded in an absolute belief that every child can enjoy and succeed in mathematics, regardless of background. We use a 'mastery approach', using combined elements of concrete, pictorial and abstract, in order to support deeper conceptual understanding of concepts in order to allow children to apply their skills in a variety of different contexts. By promoting a growth mindset culture within the school, we believe that ability can be attained over time through effort, dedication and hard work, by all. We want this for all our pupils, so as to build resilient and successful members of our society, who have a positive and enjoyable attitude towards maths.

The approach is based around three principles, known as the 'Dimensions of Depth':
1. Conceptual Understanding supports *all* pupils to deepen their understanding by representing concepts using objects and pictures, and more abstractly, with words and symbols, and making connections between these. **2. Language and Communication** supports pupils to deepen their understanding by explaining, creating problems, justifying and proving using mathematical language. This acts as a scaffold for their thinking and deepening their understanding further. **3. Mathematical Thinking** supports pupils to deepen their understanding by giving an example, by sorting or comparing, or by looking for patterns and rules in the representations they are exploring problems with. **These three 'Dimensions of Depth' are deeply intertwined throughout the programme, with mathematical problem solving at the heart of the curriculum.**

INTENT

Alignment to National Curriculum

The school follows the White Rose Mathematics Scheme, which is fully aligned to the National Curriculum. Inspired by and informed by robust, world-class research and global maths experts, the scheme aims to transform maths education and change the experience of maths forever. The White Rose approach aims to help all pupils to *master mathematics.*

End Points

We are very clear about being ambitious in all year groups and the programme is designed to take the children to greater depth within the statutory assessment frameworks. The aim is for all children to become confident mathematicians, who have the skills to approach, tackle and solve a range of problems.

Sequencing

To learn mathematics effectively, some things have to be learned before others, e.g. place value needs to be understood before working with addition and subtraction, addition needs to be learnt before looking at multiplication (as a model of repeated addition). You will see this emphasis on number skills first, carefully ordered, throughout our curriculum. For some other topics, the order isn't as crucial, e.g. shapes and statistics need to come after number, but don't depend on each other. We try to mix these so pupils have as wide a variety of mathematical experiences as possible in each term and year. These are then applied and connected throughout the school year to consolidate learning. This gives pupils the opportunity to 'master maths'; by using previous learning.

Addressing Social Disadvantage

A key principle of our teaching is the belief that every child can engage with the curriculum for their year group, unless they have a significant developmental delay. Effective whole class feedback is in place to ensure that all children can engage with the key learning.

IMPLEMENTATION

Pedagogical Approaches

The school follows a small-step approach to learning. The lessons are carefully designed to ensure pace of learning as well as regular checks for understanding. Fluency sessions are an important part of the programme, used to consolidate key learning, outside of the maths lesson.

Teachers' Expert Knowledge

Teacher development is central to the success of maths teaching. Professional development for teachers is routinely considered and acted upon by the subject leader. Key professional development points are highlighted on lesson guides. Whole school workshops and subject knowledge enhancement workshops can be delivered by the subject leader in a tailored approach.

Promoting Discussion and Understanding

Our maths programme includes both knowledge and vocabulary that are specific to the concepts that the pupils are studying. The lesson structure, especially the partner talk tasks, promote regular discussion and this is structured to lead to building understanding.

Knowing More and Remembering More

Curriculum maps have been carefully constructed to present the content in a logical progression. The school's approach builds on current research into metacognition and includes carefully crafted check points in between each stage, for example using recall and retrieval practice of key skills.

IMPACT

Approach to Assessment

Teachers review pupils' work on a daily basis to identify any pupils who need same day intervention and to inform planning. Assessment is against the key constructs. Star assessments and White Rose end of unit and end of term assessments are used throughout the year to provide standardised scores and to identify gaps.

Performance Data

The school tracks data using Insight. The most recent pupil performance SATS data can be found on the DfE website.

Pupils' Work

The school has very high expectations of all children in terms of the quality and presentation of their work, which we believe leads to a sense of pride. Emphasis on precision of number and symbol formation supports pupils to think logically, organise their reasoning and represent the maths accurately. Photographic evidence is also used in mathematics lessons.

Talking to Pupils

All members of the senior leadership team and, particularly, the maths leader talk informally and formally to the pupils as part of the regular monitoring. The purpose is to explore what they have learnt and what they can remember as well as how much they have enjoyed it. In mathematics, this is generally based

Local Context

For a proportion of lower attaining pupils, language development is a key focus. Through highlighting of key, precise mathematical vocabulary and a high expectation for all pupils to ask and answer in full sentences, as well as a large emphasis on teacher modelling and appropriate scaffolding, pupils develop and broaden their vocabulary, which supports them to articulate their responses and reasoning skills.

Teacher Assessment

Each part of the lesson is an opportunity for the teacher to assess the learning before moving onto the next part. Through the use of the whole-class feedback books, misconceptions are identified and addressed. Throughout each lesson, formative assessment takes place and feedback is given to the children through marking and next step tasks, to ensure they are meeting the specific learning objective. Teachers then use this assessment to influence their planning and ensure they are providing a mathematics curriculum that will allow each child to progress.

around conceptual understanding. Key improvement actions can be identified as a result.

Links / References

https://whiteroseeducation.com/
https://ttrockstars.com
https://play.numbots.com
https://www.mymaths.co.uk
https://learningwithparents.com