

What is our intent within Numeracy at Wragby?

At Wragby Primary we provide a structured maths curriculum that is engaging, ambitious, progressive and accessible for all. We work hard to ensure that lessons are engaging, that children become confident mathematicians and that their learning is linked to real-life concepts as much as possible. Our curriculum is mapped out following the White Rose progression document, which ensures prior learning is built upon, as the children progress through each year group. We also use Big Maths with each year group across school, which provides a rigorous and progressive structure, allowing children to have a solid foundation of basic skills, which can then be applied to other mathematical concepts within the curriculum.

At Wragby Primary School, we aim for all pupils to:

- *become fluent in the fundamentals of mathematics, so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- *reason mathematically by following a line of enquiry and presenting a justification, argument or proof using mathematical language.
- *be able to solve problems by applying their mathematical skills and knowledge to a variety of problems, with increasing sophistication. This includes real-life scenarios.
- *be able to make rich connections across mathematic ideas, developing their fluency, reasoning and competence in solving problems with complexity.
- *have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately, in order to be successful in numeracy.
- *transfer their mathematical skills into other areas of the curriculum.
- *be ambitious, reach their potential and be proud of their achievements.

How is Numeracy implemented across school?

EYFS

In EYFS, the White Rose Guidance for Reception is used alongside the EYFS Curriculum, which is used to ensure coverage and progression and also introduces the children to key concepts, mathematical language and understanding they will develop further as they move through the school. Big Maths is introduced alongside the White Rose Progression document.

KS1

In KS1, lessons begin with Big Maths. This is split into the following sections: Counting, Learn-Its, It's Nothing New and Calculation (CLIC). The children understand the term 'CLIC' and enjoy taking part. It is an opportunity to practise counting skills and learn-it facts, following the Big Maths scheme for each year group. The session continues with 'It's Nothing New', which builds upon an aspect of prior learning, and demonstrates to the children, that there are times where you can apply your

knowledge to help learn different facts. For example, counting in 1s can help you count in 10s. 1 one, 2 ones, 3 ones... 9 ones, 10 ones, becomes 1 tens, 2 tens, 3 tens etc. The Calculation part of the lesson is where new learning is taught and fluency, problem solving and reasoning skills are practised, following the White Rose scheme. Problem solving and Reasoning opportunities are interwoven throughout numeracy lessons. Some lessons will naturally lean themselves into being focused, 'more on fluency' however, all lessons are expected to contain an element of problem solving and reasoning as much as possible.

Teachers are not only encouraged to use resources from the White Rose (Version 3) materials, but also from other sources and their own creative ideas, to ensure that lessons remain engaging and fun, ensuring progress is made.

Flash Back 4 - These are provided through White Rose. It is vital to ensure that learning is revisited, to help children to be able to store their learning in their long-term memory and to be able to retrieve it when needed. Flash Back 4s are used regularly and consistently across each year group.

Each week as part of Big Maths, the children complete 'Big Maths Beat That (BMBT)' challenges. This is something they particularly enjoy (as identified in our recent Numeracy Pupil Voice meeting). Scores are recorded to ensure children are making progress, challenged appropriately and are on the correct step of their Big Maths learning journey.

Year 1: BMBT is on a Friday and is introduced in stages.

Term 1 - Learn Its

Term 2 - Learn Its and CLIC

Term 3 - Learn Its, CLIC and SAFE

Year 2: BMBT is split each week as follows.

Mon pm - CLIC

Wed pm - SAFE

Fri am - Learn Its

KS2 (Years 3-4) - Lessons are as outlined in KS1, however, all three Big Maths Challenges (CLIC, SAFE, Learn Its) are completed on a Friday. Year 5 - Learn Its completed on a Friday.

In addition to the lesson structure outlined above for KS1, the following is completed:

Year 3: Arithmetic paper - bi-termly.

Year 4: Arithmetic papers are completed every alternate week.

Year 5 and 6: Arithmetic papers are completed weekly.

The children go through the answers as a class, using green-coloured crayon to mark their answers (live marking). We believe this is an important learning opportunity - children help explain their calculations and how they got their answers and collaboratively discuss 'top-tips' to help them remember and embed the application of their learning to arithmetic problems. If a correction is needed, then the children themselves (with support if needed) write their own 'top-tips' to help them remember themselves, what they need to do the next time they meet a similar problem. This also provides opportunities to identify children who require further practise, in 'catch-up' intervention and/or can be used to inform weekly homework.

Year 5 and Year 6: Reasoning and Problem-Solving questions, revisiting all aspects of prior learning together with age-related learning, are completed weekly. Live Marking is completed as explained above for the marking of arithmetic. Again, this is absolutely invaluable in the children's confidence, belief and ability to make rich connections across mathematic ideas, but also developing their fluency, reasoning and competence in solving problems with complexity.

ICT - There are plenty of opportunities to support mathematical learning through the use of ICT programmes, such as, TT Rockstars and Numbots.

Intervention - Intervention is completed daily across all year groups. At Wragby, we follow the belief that 'no child should go home not understanding a concept' therefore, 'catch-up' intervention is delivered in the afternoon if required. In line with the National Curriculum, pupils who grasp concepts rapidly are challenged through being offered rich and sophisticated problems (mastery and greater depth) rather than acceleration through new content. Those who are not sufficiently fluent with earlier material consolidate their understanding prior to moving on.

Impact - How is this seen and monitored?

Mathematics is an important strand in our school, as it is essential that the children understand how maths is used in our world today. The impact of our implementation is measured and monitored as outlined below:

***Observations** - Observations provide excellent opportunities to see our implementation in action, including the whole class input, adult led activities, independent/group tasks and how adult support is used in lessons to support pupils, ensuring progression is made. Joint observations with SLT help to validate what is seen. Feedback provides opportunities to identify what is working well and creates discussion points for any possible developments. Observations happen formally and are completed by the Senior Leadership Team (SLT).

***Drop ins** - SLT and the Subject Leader complete drop-ins termly. Drop-ins are an informal 'drop-in' to lessons and a great way to see a snapshot of the learning happening in the classroom. It provides an ideal opportunity for a 'book-look' alongside children, where they can share their mathematical knowledge and demonstrate their understanding of what they are learning, why they are learning it and what prior learning they are building upon. Staff are seen in action too.

***Pupil Voice** - This is an excellent way to find out how the children feel about their Numeracy learning in school. It is the children who receive our implementation - their opinions on what they feel works well and what they feel needs to be completed differently, is invaluable. A random selection of children complete a questionnaire to share their views. The data is analysed and appropriate action is taken and fed back to staff. For reception children, talking to them during maths activities provides an insight into their understanding and an opportunity to promote conversation and discussion about what they are doing. Careful and considered questioning allows younger children to demonstrate their knowledge and understanding. Drop-ins also provide informal opportunities to hear views from pupils.

***Staff Voice** - It is important to hear the views of teaching staff about how they feel about Numeracy, with regards to what is working well and what could be developed further. Termly staff meeting time provides staff with the opportunity to share their ideas and views. Talking to the teachers who implement Numeracy is essential and their feedback and ideas are always very valuable. Continued Professional Development opportunities can be identified, together with opportunities to share expertise and best practise across school.

***Data tracking and analysis** - Monitoring data is important to ensure that progress is made and sustained. Formal assessments are completed at the end of Term 2, 4 and 6. Children complete White Rose end of term assessments, both in Arithmetic and Reasoning and Problem Solving. These scores, together with teacher knowledge, expertise and assessment, are used to decide the level of each child, within their year group's expectations.

***Book Scrutinies** - Looking in books is imperative for a number of reasons including:

- *Checking that work is engaging and that a variety of activities are used.
- *Ensuring that planning is following the White Rose progression document.
- *Identifying that work is pitched at age-related expectation and that the children are appropriately challenged.
- *Identifying how children are being supported with their learning.
- *Ensuring that progression is evident and work is differentiated where necessary and as appropriate.
- *Assessments are accurate and reflect deep and secure understanding
- *There is evidence of concrete, abstract and pictorial learning.

***Learning walks** - Completed both as a staff, by SLT and by the Subject Leader. This is an excellent opportunity to ensure that learning walls are current and up-to-date, check that mathematical vocabulary is used consistently throughout their learning journey through R-Y6 and to see evidence of children working both fluently ensuring opportunities are being given to demonstrate their reasoning and problem-solving skills. It should also be possible to see progression through school with regards to learning and evident how prior learning is being built upon.

***Policies** - Policies are reviewed annually, considering national guidance and best practise, and updated accordingly.

"Mathematics is the language with which God wrote the universe." Galileo

"There should be no sure thing as boring mathematics." Edsger Dijkstra

"The only way to learn mathematics is to do mathematics." Paul Holmos

"Mathematics is the most beautiful and powerful creation of the human spirit." Stefan Banach