

WALDRINGFIELD PRIMARY SCHOOL



Mathematics Policy

ADOPTED: September 2019

REVIEWED:

DATE OF NEXT REVIEW: September 2021

Our Mathematics Policy meets the requirements of the National Curriculum 2014.

Early learning in number and calculations in Reception follows the EYFS, "Development Matters" document.

Aims

Our Maths policy has the fundamental aim to develop a growth mindset with learners in the classroom and their future lives. Learning is greatly affected by what learners perceive they can or cannot do.

What is more, it is also shaped by what their parents, carers and teachers perceive they can do.

Mindset – the thinking that determines our beliefs and behaviours – therefore has a fundamental impact on teaching and learning.

Those children with a growth mindset believe that hard work, effort and commitment drive success and that 'smart' is not something you are or are not, but something you become. In short, everyone can do maths!

Therefore, this policy aims to ensure:

- Consistency and progression in our approach to Mathematics
- The consistent use of the CPA (concrete, pictorial, abstract) approach across *Power Maths* to help children develop mastery across all the operations in an efficient and reliable way.
- Children develop efficient and reliable formal written methods of calculation for all operations
- Children can use calculation methods accurately, with confidence and understanding
- Children make sensible choices about the methods they use to solve problems
- Children can communicate their thinking and reasoning in a clear and organised way
- Children can make links to develop an integrated understanding of mathematical concepts
- Children develop in their ability to work independently and collaboratively
- That children feel that they can do Maths and have a growth mindset

It is okay to get it wrong

Mistakes are valuable opportunities to re-think and understand more deeply. Learning is richer when children and teachers alike focus on spotting and sharing mistakes as well as solutions.

Praise hard work

Praise is a great motivator, and by focusing on praising effort and learning rather than success, children will be more willing to try harder, take risks and persist for longer.

Mind your language!

The language we use around learners has a profound effect on their mindsets. Make a habit of using growth phrases, such as, 'Everyone can!', 'Mistakes can help you learn' and 'Just try for a little longer'. The king of them all is one little word, 'yet ... I cannot solve this ... yet!' Encourage parents and carers to use the right language too.

Build in opportunities for success

The step-by-small-step approach enables children to enjoy the experience of success. In addition, avoid ability grouping and encourage every child to answer questions and explain or demonstrate their methods to others.

Age stage expectations

Our Mathematics Curriculum is organised according to age-stage expectations as set out in the National Curriculum 2014. 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 should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should 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.

We use half termly assessments of mathematics ability to inform teacher judgements.

Power Maths



Power Maths is a whole-class, textbook-based mastery resource that empowers every child to understand and succeed. It enables children to:

- build Mathematical concepts in small, progressive steps.
- use tools they need to develop growth mindsets.
- check their own understanding using practical objects
- develop core elements such as intelligent practice and reflection.

To develop mastery in maths children need to be enabled to acquire a deep understanding of maths concepts, structures and procedures, step by step. Complex mathematical concepts are built on simpler conceptual components and when children understand every step in the learning sequence, maths becomes transparent and makes logical sense. Interactive lessons establish deep understanding in small steps, as well as effortless fluency in key facts such as tables and number bonds.

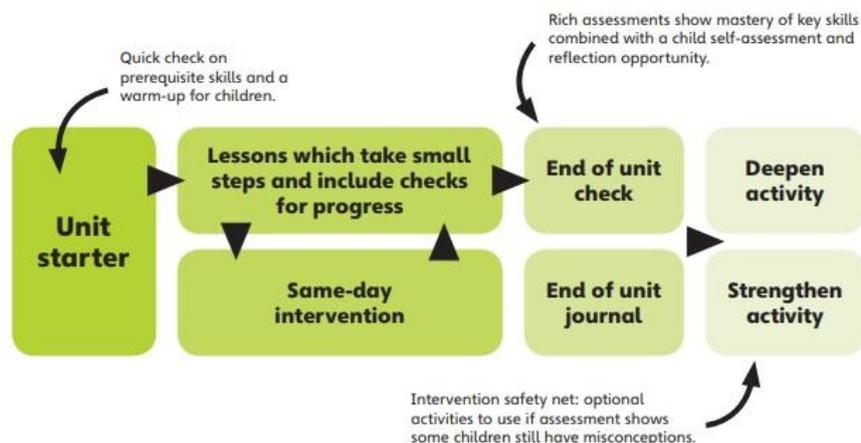
Curriculum Time

Approximately 5 hours each week is allocated to teaching maths in KS1 and KS2 following the Power Maths approach. In EYFS, Maths is taught as a discrete subject in addition to learning opportunities as part of continuous provision.

Teaching

At the heart of Power Maths is a clearly structured teaching and learning process that helps teachers make certain that every child masters each maths concept securely and deeply.

For each year group, the curriculum is broken down into core concepts, taught in units. A unit divides into smaller learning steps – lessons. Step by step, strong foundations of cumulative knowledge and understanding are built.



The Power Maths Characters

The Power Maths characters model the traits of growth mindset learners and encourage resilience by prompting and questioning children as they work. Appearing frequently in the Textbooks and Practice Books, they are the allies in teaching and discussion, helping to model methods, alternatives and misconceptions, and to pose questions. They encourage and support children, too: they are all hardworking, enthusiastic and unafraid of making and talking about mistakes.

Flexible Flo is open-minded and sometimes indecisive. She likes to think differently and come up with a variety of methods or ideas.



'Let's try again.'
'Mistakes are cool!'
'Have I found all of the solutions?'

'Let's try it this way ...'
'Can we do it differently?'
'I've got another way of doing this!'

Determined Dexter is resolute, resilient and systematic. He concentrates hard, always tries his best and he'll never give up – even though he doesn't always choose the most efficient methods!



'I'm going to try this!'
'I know how to do that!'
'Want to share my ideas?'



'What if we tried this ...?'
'I wonder ...'
'Is there a pattern here?'

Curious Ash is eager, interested and inquisitive, and he loves solving puzzles and problems. Ash asks lots of questions but sometimes gets distracted.



Miaow!

Sparks the Cat



Brave Astrid is confident, willing to take risks and unafraid of failure. She is never scared to jump straight into a problem or question, and although she often makes simple mistakes she is happy to talk them through with others.

Assessment and Monitoring

Teachers assess progress in Maths through every lesson. Appropriate feedback is given to individuals, mostly through immediate, verbal communication with the child. This allows children to develop their understanding through timely intervention and support.

Same-day interventions are vital in order to keep the class progressing together. Therefore, Power Maths provides plenty of support throughout the journey.

- Intervention is focused on keeping up now, not catching up later, so interventions should happen as soon as they are needed.
- Practice questions are designed to bring misconceptions to the surface, allowing you to identify these easily as you circulate during independent practice time.
- Child-friendly assessment questions in the Teacher Guide help you identify easily which children need to strengthen their understanding.

At the end of a unit, summative assessment tasks reveal essential information on each child's understanding. An End of unit check in the Pupil Textbook lets teachers see which children have mastered the key concepts, which children have not and where their misconceptions lie. The Practice Book includes an End of unit journal in which children can reflect on what they have learned. Each unit also offers Strengthen and Deepen activities.

Half termly assessments for arithmetic and reasoning are used, following the Power Maths scheme of work. Teachers use the results of these assessments, alongside their work in lessons and progress books, to inform half termly data judgements.

Homework

While Power Maths does not prescribe any particular homework structure, we acknowledge the potential value of practice at home. For example, practising fluency in key facts, such as number bonds and times-tables, is an ideal homework task, and carers could work through uncompleted Practice Book questions with children at either primary stage.

We offer children opportunities to extend their learning at home through apps and online resources, such as Emile and Prodigy.