



Rowde C of E Academy

Mathematics Policy

Date agreed: September 2020

Reviewed: July 2021

Review Date: July 2022

National Curriculum Aims

Mathematics is 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.

1. Intent:

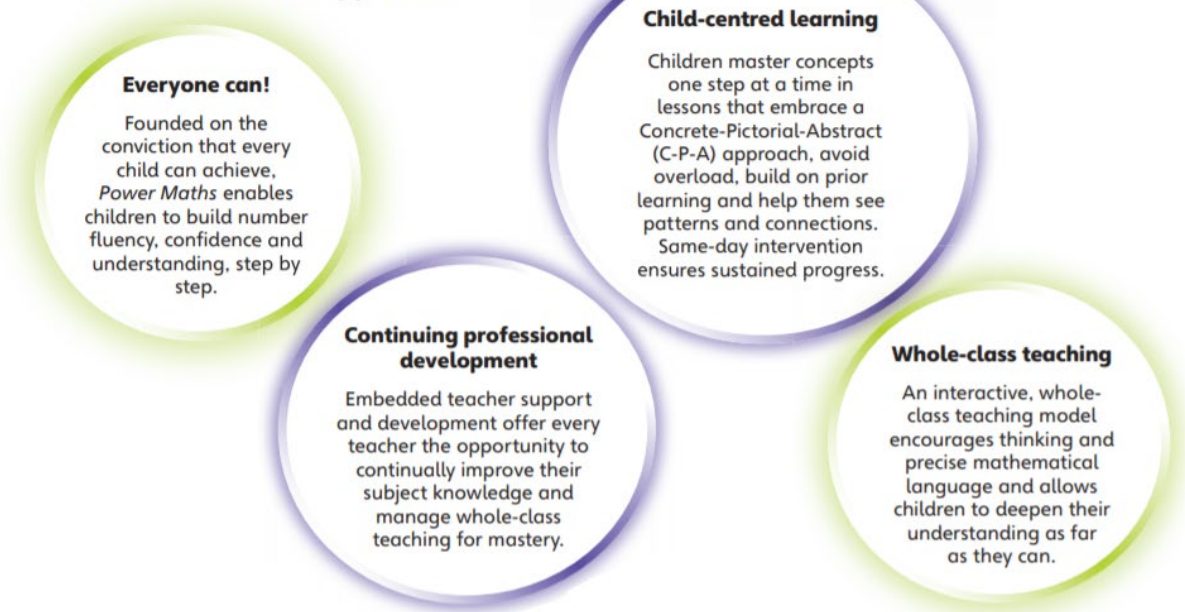
At Rowde we strive for all children to become fluent in the fundamentals of Mathematics, through varied and frequent practice with increasingly complex problems over time. We want pupils to develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. Children will reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and develop an argument, justification or proof using Mathematical reasoning language. They will 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.

Power Maths and Mastery

Power Maths makes mastery practical and achievable by providing structures, pathways, content, tools and support. 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. The whole class approach works on the same content and ensures no child is left behind.

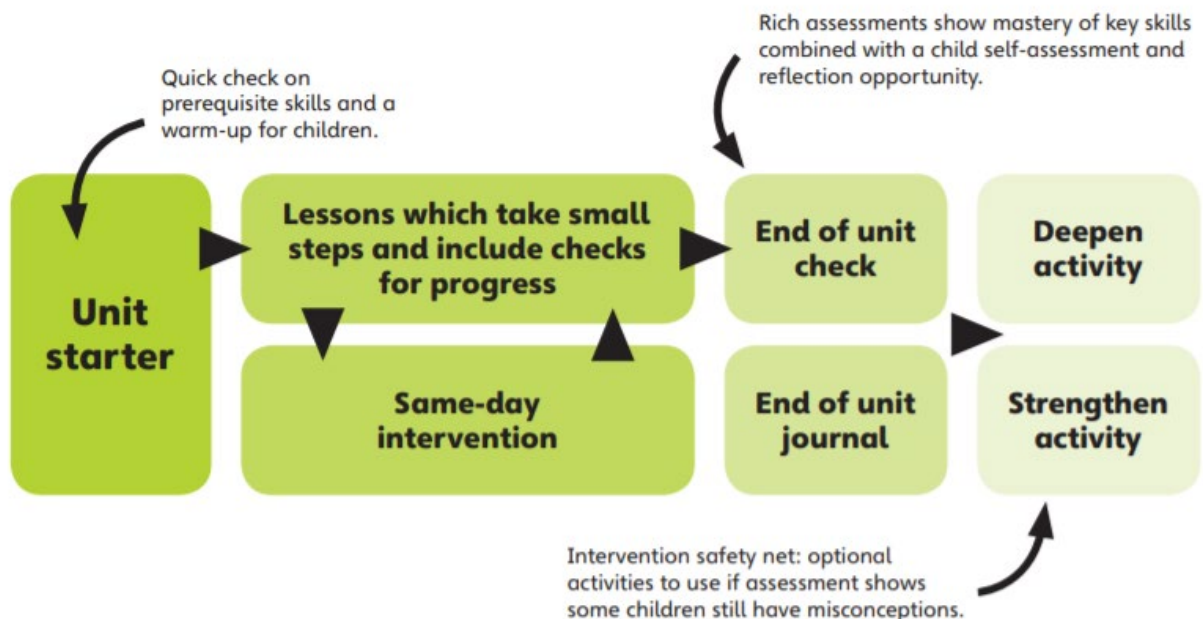
- Power Maths builds every concept in small, progressive steps.
- Is built with interactive, whole-class teaching in mind.
- Provides tools to develop growth mindsets.
- Supports understanding and ensures that every child is keeping up.
- Establishes core elements such as intelligent practice and reflection.

The *Power Maths* approach



The Power Maths Teaching Model

At the heart of *Power Maths* is a clearly structured teaching and learning process that helps you 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

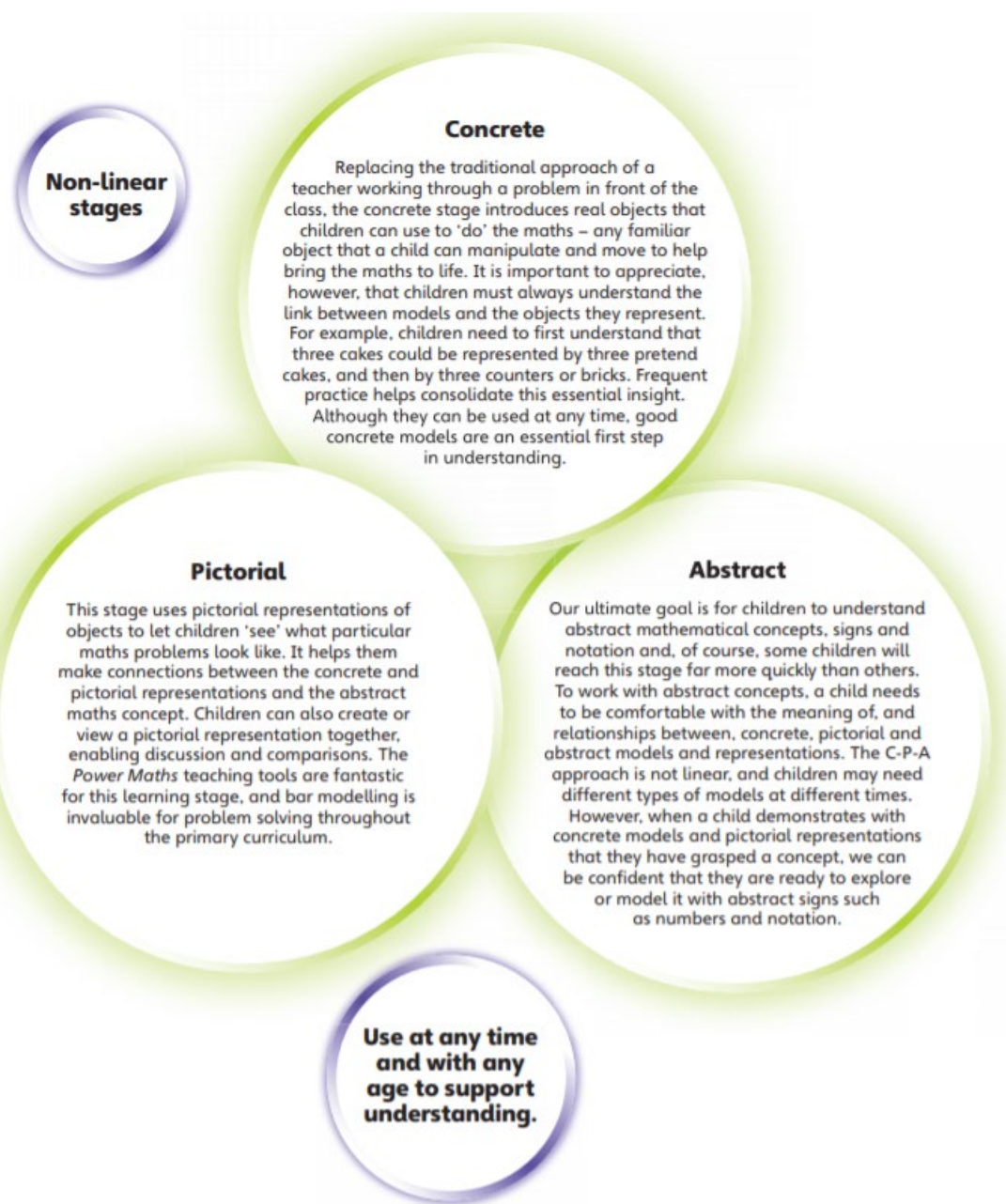


The Lesson

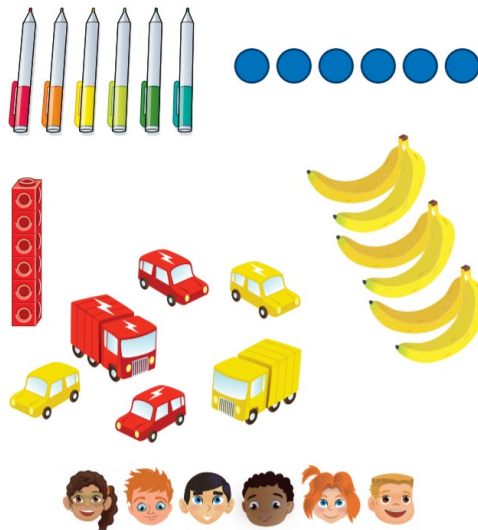
Once a unit has been introduced, it is time to start teaching the series of lessons. Each lesson is scaffolded with Textbook and Practice Book activities and always begins with a Power Up activity (available via online subscription). *Power Maths* identifies lesson by lesson what concepts are to be taught. The Teacher Guide offers lots of support to get the most from every child in every lesson. As well as highlighting key points, tricky areas and how to handle them, question prompts check

on understanding and clarification on why particular activities and questions are used. Once a unit is completed, end of units checks are used as summative assessment to see which children have mastered the key concepts and where misconceptions lie.

By taking a Concrete-Pictorial-Abstract (C-P-A) approach, Power Maths allows children to tackle concepts in a tangible and more comfortable way.



Children find it much easier to visualise and grasp concepts if they see them presented in a number of ways, so this scheme offers and encourages many different representations. For example, the number six could be represented in various ways:



Planning and Delivering the Lesson

Teachers use SMART flipcharts to plan and deliver their lessons. Lessons are planned according to the diverse needs of the class. Teachers and Teaching Assistants evaluate their lessons and pupil performance to inform future planning and teaching. Teacher’s planning should follow the stipulations within the Staff Handbook (October 2020 iteration).

2. Implementation

The school uses the 2014 National Curriculum, Power Maths pedagogy and EYFS Curriculum to direct the teaching of mathematics. Teachers have high expectations through teaching to the appropriate yearly objectives and create work for the needs of the children in their class. The structure of the lessons are carefully considered, with representations and models used to aid understanding of individual approaches. At Rowde we are committed to the belief that children should not be afraid to make mistakes, and should embrace the fact that mistakes are part of learning. Opportunities for returning to, and expanding on prior knowledge and making explicit links is essential to allow concepts to enter the long-term memory.

An example of a Year 2 yearly overview shows how the units are arranged each term;

***Power Maths Year 2,
yearly overview***

Textbook	Strand	Unit	Number of Lessons	
Textbook A / Practice Workbook A (Term 1)	Number – number and place value	1	Numbers to 100	10
	Number – addition and subtraction	2	Addition and subtraction (1)	12
	Number – addition and subtraction	3	Addition and subtraction (2)	9
	Measurement	4	Money	9
	Number – multiplication and division	5	Multiplication and division (1)	9
Textbook B / Practice Workbook B (Term 2)	Number – multiplication and division	6	Multiplication and division (2)	9
	Statistics	7	Statistics	7
	Measurement	8	Length and height	5
	Geometry – properties of shape	9	Properties of shapes	12
	Number – fractions	10	Fractions	14
Textbook C / Practice Workbook C (Term 3)	Geometry – position and direction	11	Position and direction	4
	Number – addition and subtraction	12	Problem solving and efficient methods	12
	Measurement	13	Time	9
	Measurement	14	Weight, volume and temperature	10

3. Impact

Cross-curricular Links

Whenever possible and relevant, cross-curricular links are made and Mathematics skills are applied within other areas of the curriculum e.g. measuring in DT and reading and interpreting graphs in Science and Geography. Efficient and appropriate use of Computing should be utilised to enhance the lessons being taught such as when using interactive white boards, laptops, iPads and a range of software.

Special Needs

All children are encouraged to participate in Mathematics activities, appropriate to their ability. All pupils learn in whole class lessons within the classroom to complete their Math's work. Teachers provide quality first teaching within the classroom and through this, differentiate to cater for the range of abilities in each class.

Children with specific learning difficulties within Maths, whose progress or attainment is below their peers will be supported by lesson differentiation and focused interventions. These involve consolidating learning to support embedding concepts and pre-teaching new ideas. Children who receive additional funding through the Pupil Premium fund may receive intervention in Mathematics if appropriate for the child.

More able children are stretched by challenging work and extended questioning. Children's understanding of a concept will be deepened and broadened in a range of contexts. Children's learning is supported through concrete or symbolic representations by the class teacher and manipulatives should be actively encouraged for pupils to use. Effective differentiated questioning should be used to support the lower attaining children.

Assessment and Record Keeping

Teachers assess children in a variety of ways including, marking, observations, discussions and specific assessment activities. Evaluation of the weekly plans and end of unit summative assessments help to identify areas in need of future reinforcement. Scrutiny of work is carried out during the year by the subject leader to ensure consistency and progression. Teacher's assessment and record keeping should follow procedures within the Assessment Policy and the Staff Handbook.

Resources

Each class has its own Mathematics resources as well as access to central resources. Number resources are specific for each class and a progression of these can be found in the calculations policy. Geometry and Measures resources are stored centrally. Class resources should be easily accessible and clearly labelled for both pupils and adults to find and use.

All classes have their own Mathematics working wall display areas in prominent locations within the classroom. These should be referenced as part of lessons and replicate the models and images from within a lesson. The working wall is a good way to document the children's learning and reinforce skills through the term. Mathematics should have a high profile within the class. Displays should include both supportive resources for children in class as well as examples of pupil's work. Displays should be in line with classroom environment checklists and the staff handbook.

Equal Opportunities

All children will be given equal opportunities to access the Mathematics curriculum. A steps progression system is used to identify individual targets that can be differentiated for, allowing all children to access the Mathematics daily lesson and achieve success.