



## Maths Subject Rationale

### Our Vision

At Abram Bryn Gates Primary School our maths curriculum enables children to see the importance of maths in everyday life and leads to a greater understanding of the world around them, providing a precise means of communication using numbers, symbols and shapes. Children will grow to see maths as a powerful universal language, used to explain, predict and represent events and tackle problems in everyday life. Through their growing knowledge and understanding, maths will prepare children for the challenges of everyday life, whilst maintaining a fascination of its own.

### Rationale:

All pupils are entitled to a broad mathematics curriculum in which their learning needs are identified and met. The Mastery approach to learning forms the basis of our approach to teaching maths. We follow the Primary National Curriculum for all aspects of the maths curriculum. Mathematics is an interconnected subject in which pupils need to be able to move fluently between mathematical ideas. The programmes of study are, by necessity, organised into distinct areas, but pupils will make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They will also apply their mathematical knowledge to science and other subjects.

- Programme- White Rose Hub: By planning a curriculum that has both spiral and mastery elements, pupils revisit concepts, themes and strands within mathematics multiple times throughout their primary education. Although the complexity of these will increase overtime, new learning builds upon existing knowledge and understanding and children are reminded of the progression – what they already know and where they are going – at each step along the way.
- Timetabling: Maths is taught daily with distinct, weekly, time allocated to fluency
- The curriculum is taught through the units as follows with all year groups teaching the same units at similar times. Number and place value, addition and subtraction, multiplication and division, fractions, measurement, geometry and statistics.
- Time is spent building children's understanding of each maths concept ensuring a deep understanding of knowledge and skills that are fully embedded and which children can use and apply in different contexts. It is important that children do not develop gaps in their understanding due to moving on too quickly from one concept to another. It is our duty to ensure that children have solid, concrete understanding of subject knowledge and skills as well as being emotionally resilient for the next year of their education.
- The use of CPA (concrete, pictorial, abstract) approach to all sequences of lessons ensures all children are able to access the mathematical concept at their learning pace. All new concepts are introduced with concrete resources as appropriate, for children to feel and manipulate. As their conceptual understanding develops, they will move towards the pictorial and abstract stages.

- Our intention is to take learning at a steady pace, using a small steps approach, to ensure that no child is left behind as well as providing experiences for children who are grasping ideas quickly to really show a deeper understanding.
- Teachers provide many opportunities for children to explain their understanding by writing or drawing what they understand. Teachers use this to uncover misconceptions, assess and then challenge children.
- Our approach focuses on children achieving what is expected of their age group and not going beyond this. Evidence shows that children need to be able to understand a concept, apply it in a wide range of situations and then be creative with it to really understand (or master) it. Simply going beyond the requirements of their age group does not guarantee they have fully understood something – just that they have heard it. They will spend time becoming true masters of content, applying and being creative with new knowledge in multiple ways.

## Curriculum Aims

- promote a culture of enjoyment of maths
- equip pupils with the confidence, desire and ability to express their reasoning and justification both in their maths books and within the lessons
- expose children to the language of mathematics and the necessary vocabulary to allow them to explain the mathematical process and their reasoning
- allow children to explore the purpose, value, development and history of mathematics in our world
- enable the development of pupils' natural ability to think logically and solve puzzles and real life problems
- equip children with the resilience to apply their mathematical knowledge to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

## Teaching

- ensure progression - children will be required to build on previous links so teachers need to ensure that these links are explicitly made to the children
- provide children with the opportunities to become fluent in using mathematics in a variety of contexts including problem solving and reasoning, including the varied and regular practice of increasingly complex problems over time
- ensure children are fluent in rapidly and accurately recalling mathematical knowledge – this is assessed formally by the multiplication check that focuses on the recall of the multiplication facts that takes place in year 4
- develop the children's confidence and skills to solve problems by using and applying their mathematical knowledge and to solve problems; by reasoning mathematically by following a line of enquiry, understanding relationships and generalisations; and developing an argument, justification or proof using mathematical language
- include the concrete, pictorial and abstract approach so children have an in depth understanding of a variety of concepts and provided with opportunities to move from manipulatives to more abstract methods
- encourage pupils to think creatively and make links between mathematical concepts through exploring patterns in the number system, shape, measures and statistics

## **Assessment**

- allow ongoing formative assessment that identifies what the children have learned and allow teachers to adapt the ongoing learning journey accordingly
- provide responses for the children that compliment, not necessarily match, the teaching sequence in order for next steps to be most relevant for the individual child and ensure rapid progress
- provide 3 summative assessment points based on arithmetic and reasoning  
- NfER- and statutory end of Key Stage assessments
- be supported by the Multiplication Tables Check for Year 4 pupils at the end of Lower Key Stage 2