



# Stockham School Maths Policy

## 2018

Our Vision:

Through a positive caring environment, we provide the opportunity for every child to reach their full potential. We aim to ensure all children are ready for their next steps.

### **Rationale**

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways.

Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

The National Curriculum Programme of Study for mathematics describes in detail what pupils must learn in each year group. Combined with the Stockham School's Primary Calculation Policy, this ensures continuity and progression and high expectations for attainment in mathematics.

It is vital that a positive attitude towards mathematics is encouraged amongst all of our pupils in order to foster confidence and achievement in a skill that is essential in our society. At Stockham Primary School we use the National Curriculum for Mathematics (2014) as the basis of our mathematics programme supported by the White Rose Long Term and small steps planning. We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education. Assessment for

Learning, an emphasis on investigation, problem solving and the development of mathematical thinking are therefore essential components of the Stockham Primary School approach to this subject.

### **Aims**

We aim to provide the pupils with a mathematics curriculum and high quality teaching to produce individuals who are numerate, creative, independent, inquisitive, enquiring and confident. We also aim to provide a stimulating environment and adequate resources so that pupils can develop their mathematical skills to the full.

Our pupils should:

- have a well-developed sense of the size of a number and where it fits into the number system
- know by heart number facts such as number bonds, multiplication tables, doubles and halves
- use what they know by heart to when calculating mentally
- calculate accurately and efficiently, both mentally and in writing and paper,
- drawing on a range of calculation strategies
- recognise when it is appropriate to use a calculator and be able to do so effectively
- make sense of number problems, including non-routine/'real' problems and identify the operations needed to solve them
- explain their methods and reasoning, using correct mathematical terms
- judge whether their answers are reasonable and have strategies for checking them where necessary
- suggest suitable units for measuring and make sensible estimates of measurements
- explain and make predictions from the numbers in graphs, diagrams, charts and tables
- develop spatial awareness and an understanding of the properties of 2d and 3d shapes

### **Provision**

Pupils are provided with a variety of opportunities to develop and extend their Mathematical skills, including:

- Group work
- Paired work
- Whole class teaching
- Individual work including 1:1 tuition

Pupils engage in:

- the development of mental strategies
- written methods
- practical work
- investigational work

- problem solving
- mathematical discussion
- consolidation of basic skills and number facts
- maths games

We recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are introduced. We use accurate mathematical vocabulary in our teaching and children are expected to use it in their verbal and written explanations.

Mathematics contributes to many subjects and it is important the children are given opportunities to apply and use Mathematics in real contexts. It is important that time is found in other subjects for pupils to develop their Numeracy Skills, e.g. there should be regular, carefully planned opportunities for measuring in science and technology, for the consideration of properties of shape and geometric patterns in technology and art, and for the collection and presentation of data in history and geography.

We endeavour at all times to set work that is challenging, motivating and encourages the pupils to think about how they learn and to talk about what they have been learning. Additional enrichment opportunities are provided for pupils to further develop mathematical thinking e.g. through cooking, music, and maths investigations and games.

Teachers plan problem solving and investigational activities every week to ensure that pupils develop the skills of mathematical thinking and enquiry.

To provide adequate time for developing mathematics, maths is taught daily and discretely. However we also provide opportunities for mathematical skills to be taught across a range of subject where appropriate.

At Stockham we believe that if firm foundations are established in key mathematical concepts then children are able to develop a deeper and more cohesive understanding of complex mathematics as they develop.

### **Mastery Approach**

Since September 2017 Stockham School has been part of the Mastery Work Group with the BBO Maths Hub. We are now approaching our maths teaching using a mastery approach. To this extent there will be elements of maths mastery teaching in all our classes. This could include mixed ability groupings, differentiation through questioning, support, apparatus or challenge.

During lessons there has been a shift, when appropriate to “hot” marking. This means the teacher/ TA marking during the lesson to spot misconceptions instantly. This means these misconceptions can be dealt with instantly, or later that day when possible.

### **Teaching Approaches**

Teachers use a range of teaching strategies to engage the children in maths and ensure progress is made by all children within a class; no set formula is used. A typical lesson would include:

- Both teaching input and pupil activities,
- A balance between whole class, guided grouped and independent work, (groups, pairs and individual work).

Sometimes the focus for the session is new learning, at other times pupils may be practising, to master the application of a concept they have learned earlier. The focus of the session may vary for different children depending on their learning needs.

At times there may be opportunities to develop skills and understanding of mathematics through additional activities, some of which may take place at home. The school has invested in the 'Mathletics websites which is an accessible learning platform that can be used to set differentiated homework for pupils.

Teachers plan learning that is differentiated to meet the needs of all pupils, whether they have a specific learning difficulty in maths or whether they are particularly able.

Teachers endeavour to differentiate learning appropriately for high attaining, middle attaining and low attaining pupils – possibly with individual work for an SEN pupil at one end of the achievement spectrum, to individual work for a gifted pupil at the other. Differentiation may also be shown through the use of rich mathematical tasks. These task have a low threshold but a high ceiling. Differentiation when following the mastery approach to teaching mathematics may be through questioning and outcome.

Children are given extra support, in addition to the daily maths lesson, if needed, in order to close the gap. This may include 1 to 1 tuition, Rapid Maths intervention, First Class at number or any other intervention that the teacher decides to use, to close the gap. For example targeted morning work.

### **Assessment**

Formative Assessment

Teachers integrate the use of formative assessment strategies such as effective questioning, clear learning objectives, the use of success criteria and effective feedback and response in their teaching.

### **Summative Assessment**

Using termly tests, pupils are assessed against the NC using the schools in house assessment system. The school's progress tracking system is updated termly. Year 2 and 6 use the DFE guidance to help them assess the children in order to be sure of accurate levels. Teachers also cross moderate a selection of children to ensure accuracy in Key Stage 2 Meetings

National Curriculum tests are used at the end of KS1 and KS2; teachers use past and sample papers to inform their assessments as they prepare pupils for these assessments.

All assessments and teaching informs teachers understanding of a child's ability in maths and this is recorded on our in house APP tracking system.

The school's Assessment and Marking Policies inform high quality feedback and pupils' responses in Mathematics. This includes the new approach of "hot" marking.

### **Early Years Foundation Stage (EYFS)**

We follow EYFS curriculum guidance for Mathematics. We are also committed to ensuring the confident development of number sense and put emphasis on mastery of key early concepts. Pupils initially explore numbers to 20 and the development of models and images for numbers as a solid foundation for further progress. Pupils are involved in manipulating numbers through calculation processes. Pupils also learn about shape space and measure through a range of hands on, practical activities, tasks and games.

### **Resources**

A bank of essential mathematics resources including Numicon and Cuisenaire rods is kept within each class. Further resources relating to key whole school topics are kept in the maths cupboard in Key Stage 2.

### **Role of the Subject Leader**

- Ensures teachers understand the requirements of the National Curriculum and helps them to plan lessons.
  - Leads by example by setting high standards in their own teaching.
  - Prepares, organises and leads CPD and joint professional development.
  - Works with the SEND Co-coordinator.
  - Observes colleagues from time to time with a view to identifying the support they need.
  - Attends and delivers appropriate CPD
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- Keeps parents informed about Mathematics issues
  - Discusses regularly with the Headteacher and the mathematics governor the actions and impact of the actions taken.
  - Deploys support staff to address mathematics related needs within the school.
  - Monitors and evaluates mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis.

Signed: J. Burbank

Next review Date: September 2020