

# Sherburn Primary School

# Mathematics Policy



Reviewed October 2018

Next update October 2020

# Sherburn Primary School Mathematics Policy

## Rationale:

At Sherburn Primary School we aim to inspire all children to reach their full potential, academically, socially and emotionally. In mathematics this means ensuring a curriculum that is fully inclusive of all children which:

- Develops children's knowledge and understanding of Mathematical concepts whilst enabling them to practice and hone skills and methods.
- Enables them to think critically and communicate their understanding.
- Gives them opportunities to apply learnt mathematical skills in different contexts across the curriculum.
- Provides opportunities to develop reasoning and problem solving skills useful for Maths and across the curriculum.

This policy is set within the context of the school's vision, aims and policy on teaching and learning. As a result of their learning in mathematics across the curriculum children will:

- Be prepared for applying their skills effectively in everyday life situations, in their future learning and in the work place.
- Have the building blocks in place and to provide a solid foundation to lead onto secondary, further and higher education.

Our school aims to teach through a mastery approach, which is defined by **five key principles** listed below:

## Fluency

- Quick recall of facts and procedures.
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in Mathematics

## REPRESENTATION & STRUCTURE

Mathematical structures are the key patterns, number relationships and generalisations that underpin understanding and learning.

## VARIATION

- *Procedural variation* - This is a deliberate change in the type of examples used and the questions set, to draw attention to certain features.
- *Conceptual variation* - When a concept is presented in different ways, to show what a concept is, in all of its different forms.

## MATHEMATICAL THINKING INVOLVES

- Looking for pattern and relationships
- Logical Reasoning
- Making Connections

## COHERENCE

Teachers should develop detailed knowledge of the curriculum in order to break the mathematics down into small steps to develop mastery and address all aspects in a logical progression. This will ensure deep and sustainable learning for all pupils.

- As a result of teaching and learning in mathematics, our aim is that pupils will be able to meet the key aims of the National Curriculum for maths.
- In our school we aim to promote children's **curiosity** and enable them to safely take risks and learn from firsthand experience wherever necessary.
- Our primary focus is to support the children to become fluent in mathematical **understanding** from the most basic level so that they can build upon their own understanding.
- We aim to enable our children to develop conceptual understanding, **recall** of number facts and patterns and apply their knowledge rapidly and accurately.
- We aim to promote children's ability to **reason** through opportunities to discuss their thinking and understanding. This emphasis may result in less written work but much deeper understanding.
- We promote **problem solving** and solution finding. This is not only true in mathematical learning but seek opportunities across the curriculum and in almost all aspects of school life.
- We aim to support children to make **progress at their own pace**. Often misconceptions cause greater difficulties at a later stage of learning.

## Principles

Planning begins from a thorough understanding of children's needs gleaned through effective and rigorous assessment and tracking, combined with high expectations and ambition for all children to achieve. Long term learning objectives are year group specific as defined by the [National Curriculum in England: Mathematical program of study](#). We are primarily using [White Rose Mastery Maths](#) to scaffold our scheme of learning.

## Teaching

In the Foundation Stage, children are given the opportunity to develop their understanding of number, measurement, pattern and shape and space through a combination of short, formal teaching as well as a range of planned structured play situations, where there is plenty of scope for exploration.

Maths learning builds from a concrete understanding of concepts where children are manipulating objects. When children are able to see concepts this way, they then need to understand the same concepts represented pictorially. Children are then ready for abstract representation before being able to apply their knowledge to different situations.

Children are encouraged to communicate their understanding of maths so that it clarifies their thoughts.

In the new curriculum structure there is a greater emphasis on arithmetic skills as fluency in this is paramount for effective and efficient mathematical calculations.

Using a mastery approach, we aim to promote progression towards written calculations that will be applied consistently in each year-group, the school Calculation Policy provides a detailed guide of these methods.

When teaching reasoning and problem solving skills time will be given to each aspect of problem solving ensuring children get thorough practice at: 'preparing for problem solving', 'thinking through problems to establish what they know and don't know so far'; actually 'doing the problem solving' effectively and 'communicating the answer effectively'. They should evaluate the process too. Over time children will improve at each aspect.

## **Assessment**

Assessment for learning occurs throughout the entire Maths lesson, enabling teachers/teaching assistants to adapt their teaching/input to meet the children's needs.

On a daily basis, children should self-assess against the learning objective and success criteria, giving them a sense of success. Children should know when they are meeting their targets and be self-assessing against those too.

Pupil's work should be marked in line with the Marking Policy and should model how corrections should be made, giving children a chance to learn from their misconceptions or incorrect methods.

Future lesson planning should depend on class success evaluated through marking and observations made during the lesson. The Mastery approach identifies pupils who have not met the daily objectives and ideally intervention should be happen within the lesson/arranged for some time on the same day to give the children the best opportunity to keep conceptual pace with the other children.

Summative assessments are made at least once per half term in order to provide further understanding of the level a child is working at and to inform a more rounded judgement of their abilities.

Tracking is used in order that children in specific groups (SEND, disadvantaged children or those children who fall within the trends identified in our School Improvement Plan' who are not making good progress/making better than expected progress over time can be targeted for support in a way which is tailored to the individual. For example, the support may be a simple strategy within whole class teaching that is needed. Where further support is deemed necessary, children can access interventions or when applicable referred to the SENDCo for additional advice and support as in line with our whole school approach.

### **Monitoring:**

Monitoring of children's progress begins with performance review meetings but continues with the subject leader evaluating further evidence to ensure children are making progress. This monitoring happens through examination of work in books, pupil interviews, analysis of assessment results and the assessments used, and through other means depending on what information needs to be gleaned. Identified intervention needs which go above and beyond quality first teaching and reinforcement of concepts which can be provided in the lesson time by an additional adult, will be referred to SLT for consideration for a specific intervention programme.

Following monitoring activities feedback is given to staff about how they can strengthen their practice and CPD (professional development) opportunities will

be agreed by the SLT where it would be deemed valuable. These opportunities may take the shape of inputs during staff meetings, tutoring, courses or by a variety of other means.

Where specific initiatives have been put in place through action planning for school development, these are monitored by the subject leader in order to evaluate their impact.

### **Display and Resources**

In the classrooms there should be, either on display or easily accessible to children, level appropriate resources, particularly concrete and pictorial apparatus to support children to grasp concepts.

Mathematical vocabulary should be displayed so that children use this in the communication of their understanding.

There should be maths work on display in classrooms and in other areas of the school in order to encourage a positive attitude and enthusiasm towards mathematics for all groups of children.

### **Parents and Homework**

We recognise that parents make a significant difference to children's progress in Maths and encourage this partnership. We provide a weekly homework club for all pupils in Year 1-6 and booster sessions for pupils in Year 2 and Year 6.

Written October 2018

To be reviewed October 2020