



Handale Primary School

Mathematics Policy

Policy Version Control	
Policy type	Curriculum
Policy prepared by (name and designation)	Liam Bell
Last review date	June 2021
Description of changes	
Date of Board of Trustees approval	
Date released	
Next review date	June 2022

Introduction

We understand that our learners come from a wide variety of backgrounds with varying exposure to mathematical concepts and practical experience. As a result, they require robust and clear progression through mathematical concepts and support with learning. The goal of our Maths teaching is to deliver the core aims of the National Curriculum - both in the mathematics lessons and across the curriculum as a whole. Our children will be taught to be confident, successful and proficient mathematicians who can apply their Maths to other contexts and situations. We want our children to leave Primary school 'Secondary ready', with excellent foundations for future learning.

Mathematics at Handale Primary School 2021-2022

At Handale Primary School, we use the White Rose Maths scheme of learning, and a modified version of their resources to provide a comprehensive and expertly designed journey through the world of Mathematics. White Rose is based on a small steps approach that keeps all learners together. By using the resources across the school, we can ensure consistency of the mathematical elements and comprehensive coverage of the curriculum. We believe that this approach will facilitate consistent delivery of Mathematics across the school and across the inevitable ability range within year groups. It is also designed to support mathematicians who require more time and visual representation to grasp fundamental concepts and those who require challenging further to achieve Greater Depth.

White Rose Resources support us to provide:

- CPA (Concrete / Pictorial / Abstract) representations.
- Variation (Procedural / Conceptual).
- Logical and effective small steps.
- Vocabulary.
- Manipulative usage.

White Rose resources support:

- All learners through a whole class learning approach.
- EYFS stage learning.
- Visual representation designed to show concepts clearly.
- Re-visiting of concepts.
- Bar models and PPW models for problem solving.
- Clear progression of calculation.
- Fluency of calculation and concept with 'Flashback 4' questions

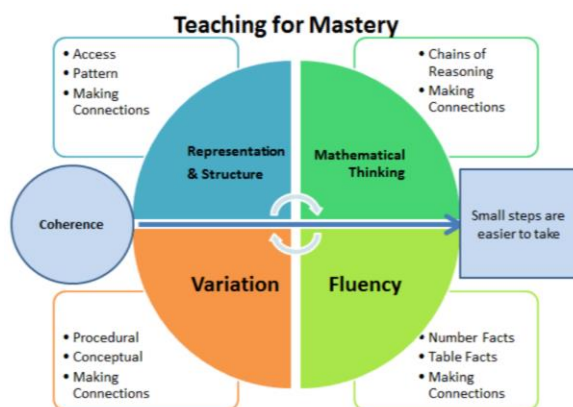
Manipulatives are:

- Used purposefully and appropriately.
- They are available for appropriate lessons – this builds a mental picture of a mathematical concept.
- Manipulative use develops through concepts as the learner moves from EYFS to Y6

Teaching for Mastery

White Rose uses the Teaching for Mastery model as illustrated below. This has been developed by the NCETM.

[NCETM 'Teaching For Mastery'](#)



Concrete – Pictorial – Abstract teaching strategy

Children are encouraged to solve problems each day through the use of concrete resources, pictorial representations and abstract thinking. (Outlined below)

Concrete is the 'doing' stage, using concrete objects to solve problems. It brings concepts to life as children have the opportunity to be hands on and use physical objects to aid them in developing their understanding.	Pictorial is the 'seeing' stage, where representations of the objects are used to support learning. This stage encourages children to make a mental connection between the physical object and abstract levels of understanding, by drawing or looking at pictures, circles, diagrams or models which represent the objects in the problem.	Abstract is the 'symbolic' stage, where children are able to use abstract symbols to model and solve Maths problems.

Lesson Structure

Maths Meeting

- Each lesson will start with a Maths Meeting.
- The Maths Meeting will be used to recap previous learning, pre teach a new topic or work on whole class weaknesses.
- At the beginning of each Maths Meeting, each class should engage in counting. This can be counting into negative numbers, singing times tables songs or counting in fractions, etc.
- Maths Meetings should last 15 minutes and should be quick and snappy.
- When recapping previous learning, the Maths Meeting can be differentiated.
- Flashback 4's are ok, every now and then. These could be used in addition to maths meetings during intervention time.
- When marking the Maths Meeting, the children will mark in green and they will write the correct answer, if it is wrong, in green.
- Children should feedback how they have worked out answers and questioning should be strong. The teacher will be assessing the children whilst they are marking work.

Input for the lesson

- Before the lesson, children will read the Learning Challenge to understand what they are going to learn on that day.
- Teachers will begin their input with a recap of learning from the previous lesson. The recap will be verbal, using talking partners and 'me to you'.
- Teaching slides are available for every teacher to use during the input. They are very useful and show pictorial representations. This then allows the teacher and the children to have further discussions through talking partners and 'me to you'. Questioning during the input will be strong and precise, with the teacher making sure to challenge the children's understanding.
- In addition to the teaching slides, teachers will use the C.P.A approach. If starting a new topic, or if they have some children who are struggling with the understanding of that topic, the teacher will show children concrete representations. Flipchart paper will be used to show further abstract representations.
- An input will usually last around 15 minutes and the children will be engaged throughout.
- When the teacher is modelling concrete representations, children will be positioned closely around so they can see what he/she is doing.
- Maths vocabulary will be strong and consistent throughout the school. For example; during column addition, when the children are carrying numbers, they will be able to say, 'we are regrouping 10 ones for 1 ten.'

Children's Work in Lesson

- During a lesson, the teacher will monitor the whole classroom, making sure children are on task and achieving a high level of understanding. If the teacher is working with a group, they will not be afraid to leave them once they have the understanding or while they are working on a question. If the teacher works with a child or children, a 'TF' will be placed in their book, next to the question they received support for.
- Children will not get up to constantly to show the teacher their work. They will know where challenges are kept instead of asking the teacher for them. If they want extra help or support, they will raise their hand.
- Teachers will have resources ready for children to access.
- Stuck in worksheets will be used sparingly and only when necessary.
- If a child encounters a misconception during a lesson, the teacher will 'Pink for Think' the problem and intervene with a TF.
- Expectations will be high and clear for all children. Staff at Handale expect nothing less than their best.

Expectations

- Expectations are the same in maths as they would be in every other lesson- Handale teachers expect nothing less than the children's best. We are proud of our maths books. No matter the ability of the child, they will take pride in their work.
- Presentation is consistent across school. Teachers at Handale understand the importance of presentation and precision in maths- as such, they do not accept anything less than children's best.
 - The short date, Maths Meeting and Learning Challenge will be shown on every piece of work. Children in Key Stage 2 will underline these.
 - Children will use 'purple polishing pens' to correct misconceptions and errors that they have independently observed.
 - Children will use green to respond to the teacher's 'Pink for Think' marking.
 - Children write one number per square.
 - Handwriting will be the child's best.
 - Shading (bar models, fractions etc) will be completed neatly.
 - Challenges and other 'stuck in' sheets will be straight and folded neatly if necessary.

Marking in Maths

Refer to the school's marking policy.

Other Elements

Fluency - Number facts

It is critical that children know the number facts in line with their year group and the maths they are learning. Without secure number facts, learners have to spend too much processing time calculating rather than investigating and practising new concepts. Subsequent years build on that experience.

At Handale, we promote the learning of 'Key Instant Recall Facts' (**K.I.R.F Targets**) to support pupils' maths learning across the school. These are maths objectives, taken from The National Curriculum, which children working at age-related expectations should be able to mentally calculate and recall accurately and rapidly. Each year group has one or two different objectives every half term, which will be practised regularly in class and will be reinforced through homework activities.

An important part of maths development has always been rote learning of certain maths facts. For many years this has included practising times tables and addition facts, such as number bonds and doubles. Each half term children will be assessed on Key Instant Recall Facts (KIRFs) that will be taught in school but also need to be practised at home as well.

It is important that they know these facts thoroughly and can recall them instantly. Whilst children have a wide range of abilities in mathematics, the KIRFs are designed to be a set of facts that need to be learnt thoroughly as they build on each other year on year. Again, we stress that the children must aim to know their KIRFs inside out, back to front and with instant recall.

EYFS

EYFS follow the Handale Early Years Curriculum- principally securing the understanding of numbers up to 10. Children are encouraged to spot patterns and identify differences through variation. EYFS children begin their fluency journey by noticing and recalling numbers up to 10. EYFS practise is predicated on exploration and discovery with songs and repetition to secure foundational knowledge.

Impact

Through the White Rose learning journey and the clear small steps approach, the teachers, support staff and the pupils assess their learning continuously throughout the lesson.

At the mid-point of each term (Autumn 1, Spring 1 and Summer 1), block assessment tasks are completed, where children have the opportunity to reflect on their knowledge and understanding.

Three formal assessments take place at the end of each term (Autumn 2, Spring 2 and Summer 2).

We are continuing to develop our assessment systems to enable teachers to make informed judgements about the depth of learning and the progress learners have made over time.

Monitoring and Evaluation

The following elements will be monitored:

- Planning (Smart Notebook of each lesson and sequence)
- Children's books
- Pupil conferencing and classroom practice visits through Learning Walks.
- Lesson observations

This monitoring will be fed back to staff and governors.

Learning Walks will be used to monitor classroom practice - including:

- Learning walls
- Pupil voice
- Delivery of learning
- Mathematical vocabulary/STEM sentence use
- TA provision including intervention.