

# HAZELDENE SCHOOL



## NUMERACY POLICY REVISED SEPTEMBER 2019

APPROVED BY THE DEVELOPMENT COMMITTEE ON 12<sup>TH</sup> NOVEMBER 2019

**TO BE REVIEWED APRIL 2021**

## HAZELDENE MATHEMATICS POLICY

### RATIONALE

The new National Curriculum states that:

*“Mathematics is a creative and highly inter-connected 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.”*

At Hazeldene we believe Mathematics should be a joyful and awe inspiring experience for all the children. We believe that Mathematics is a cross curricular and inter-connected subject which should encourage creativity. We want the children to see Mathematics as being relevant to their world and applicable to everyday life. Strong subject knowledge is expected from all teachers and the Mathematics Lead will provide ongoing professional development. A range of pedagogical skills are also required to facilitate substantial progress in Mathematics and will be used daily to develop Mathematical skills.

## **Our Curriculum Intent**

By the time our children leave at the end of Year 6 ....

- Children to have a positive attitude and belief that they all can succeed in Maths.
- Children to be self- motivated to improve subject knowledge by being offered a range of awards for them to work through.
- Children to have high aspirations to challenge themselves to achieve great things, taking responsibility for their learning and future success.
- Children to reason confidently using appropriate mathematical vocabulary.
- Children to be fluent in maths, have a good number sense and be able to choose the most appropriate method for the task at hand.

For staff...

- Staff to feel confident using professional judgement when planning, to allow greater time to teach concepts when needed. This will ensure that all learners understand what they need before moving onto more complex and abstract maths.

## **Our Curriculum Implementation**

- There will be a dedicated 60 minutes mathematics lesson everyday:
  - Teachers will use the mastery approach to planning daily lessons.
  - direct teaching and interactive oral work with the whole class and groups:
  - ongoing development of mental calculation skills.
  - access to a full range of manipulatives .
  - daily opportunities for reasoning.
  - Conceptual and procedural variation will be planned to ensure children see connections.
- To provide high-quality teaching that is interactive, engaging and contextual
- Fluency lessons to be planned and delivered daily outside of the Numeracy lesson.

- To encourage the children to explain their mathematical thinking orally and display their mathematical thinking using a variety of representations.
- To encourage children to develop and apply their mathematical skills in real contexts through the study of other curriculum areas.
- To ensure that children are able to use and apply mathematics in a variety of ways.
- To ensure ICT is used when appropriate to best support learning.
- Working walls will be used to show the journey of learning through topics. They will model correct use of vocabulary and STEM sentences.
- Parents will be well informed on the learning in the classroom through Class dojo- working walls.

### **Our Curriculum Impact**

Summative assessment takes place at the end of each term and children's progress and attainment is discussed with senior leaders in pupil progress meetings. Formative assessment takes place on a daily basis and teachers adjust planning accordingly to meet the needs of their class. Attainment and outcomes in mathematics have a prominent focus throughout our academy. The teaching of mathematics is monitored frequently by leaders through lesson observations, book scrutinies and pupil interviews

## **TEACHING AND LEARNING**

### **Curriculum Planning**

The National curriculum is broken down into objectives to be covered in each year group. To ensure curriculum coverage of the objectives for each year group, teachers will use the White Rose Maths scheme for their year group. Teachers should use their professional judgement to amend these blocks to suit the needs and abilities of their current class.

The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development matters' non statutory guidance.

The EYFS Framework in relation to mathematics aims for our pupils to:

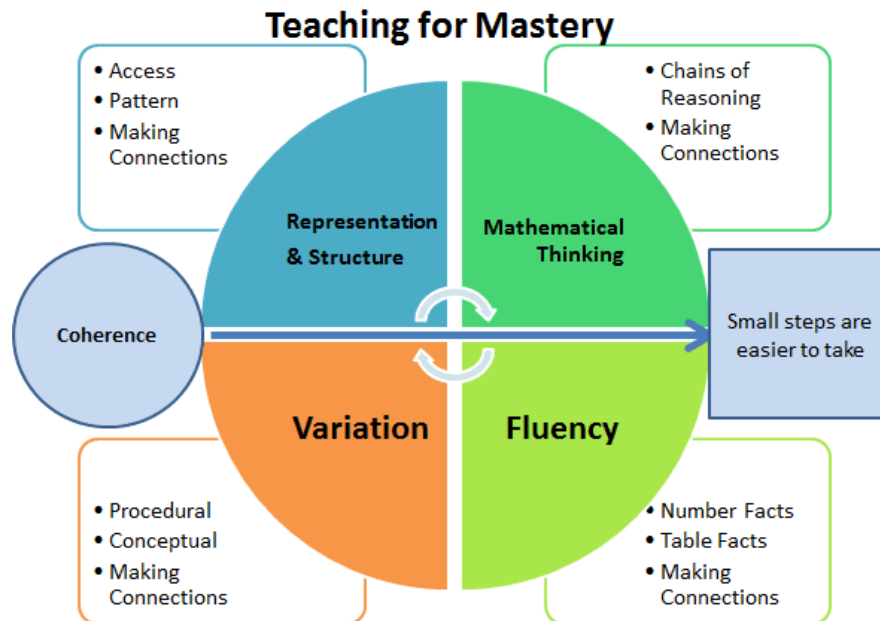
- develop and improve their skills in counting
- understand and use numbers
- calculate simple addition and subtraction problems
- describe shapes, spaces, and measures

## TEACHING AND LEARNING STRATEGIES

### MASTERY APPROACH

Mastery occurs when a child acquires a deep, long-term, secure and adaptable understanding of Maths. Achieving mastery means a child has a solid enough understanding of maths to enable them to move onto more advanced material.

The picture below illustrates the 'Five Big Ideas' which underpin the teaching of mastery in Maths.



### Coherence:

Connecting new ideas to concepts that have already been understood, and ensuring that, once understood and mastered, new ideas are used again in next steps of learning, all steps being small steps.

**Representation and Structure:**

Representation used in lessons expose the mathematical structure being taught.

**Mathematical Thinking:**

If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the child, thought about, reasoned and discussed with others.

**Fluency:**

Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of maths.

**Variations:**

Varying the way a concept is initially presented to the pupils. Careful varying practice questions so that mechanical repetition is avoided and thinking is encouraged.

**Lessons:**

In all mastery lessons, learning objectives and success criteria are clearly discussed. Lessons involve the following:

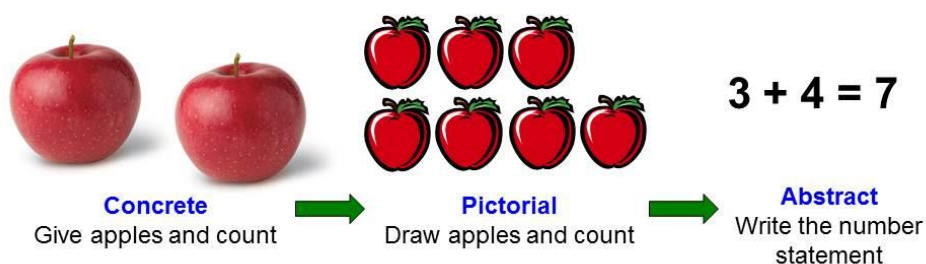
- Explorative question which allows the teacher to assess prior understanding and identify any misconceptions.
- Guided Teaching – showing, describing and modelling mathematics using appropriate resources and visual representations. Teaching will be broken into small key steps.
- STEM sentences are used to explain key concepts and teaching points for the lesson.
- Opportunities are given to the children to discuss their understanding and explain their methods.
- All lessons will involve reasoning opportunities. The teacher will model correct mathematical vocabulary to support the pupils reasoning.

- Independent practise where the pupils work through examples to demonstrate their understanding.
- Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points;
- Summarising – reviewing mathematics that has been taught enabling children to focus on next steps

CPA Approach	
Stage	Characteristics
Concrete	Refers to the use of manipulatives, measuring tools or objects that the student handles.
Pictorial	Refers to the use of drawings, diagrams, charts or graphs that the student draws
Abstract	Refers to abstract representations such as numbers and letters that the student writes

Example:

Tom had 3 apples. His mother gave him 4 more apples. How many apples did he have altogether?



The mastery approach is based on the belief that all children can succeed in Maths. The children are taught as a whole class and individual children are supported through appropriate scaffolding and use of concrete resources. Children are given the opportunity to show greater depth in their understanding through carefully planned activities.

Where possible same day intervention is used to support the children and ensure that they have grasped key concepts before moving on.

### Links with other subjects

Mathematics can be linked to all subjects across the curriculum and suitable opportunities to do so should be exploited. Guidance on this can be found via

Nrich or NCETM. The children will receive opportunities to use ICT as a learning tool, via the pc, laptops, iPads and available software (Times Table Rockstars). All year groups will have access to an interactive white board to help develop the key ICT skills they require.

## **OUTDOOR LEARNING**

Where appropriate teachers are encouraged to plan opportunities for outdoor learning. Photographic evidence of outdoor learning will be put onto the school website.

## **MONITORING AND EVALUATION**

Staff will be continually evaluating the mathematics content and activities against the learning outcomes of the medium term and daily plans. The teachers' will evaluate the previous week's plans, in year group meetings, before they plan the work for the following week. Each year group should save their plans weekly onto the school server; this is the teachers' responsibility. The Maths leader will evaluate it against the content of the Curriculum and discuss the outcome with the year group leader and with individual class teachers as the need arises. The leader will also visit individual classes regularly to observe the daily mathematics lesson in progress. She will also continue to conduct regular scrutinises.

Mathematics will be reviewed as a curriculum audit, and will take into account pupil progress against National standards, teacher effectiveness and the effective use of resources to support the daily mathematics lesson. The mathematics leader will work with the Head teacher and SLT to analyse and use the comparative results from the Foundation Profile, and teacher assessments in each year group to make judgements as to the effectiveness of the curriculum and teaching in both Key Stages. The analysis of results in this way will enable the mathematics leader along with the Senior Leadership Team to set mathematical targets to encourage the raising of standards in mathematics at Hazeldene School.



## **ASSESSMENT**

Assessment is an integral part of teaching and learning and is a continuous process.

### **Short Term**

Teachers make assessments of children daily through;

- regular marking of work
- use of explorative question at the start of each lesson
- analysing errors and picking up on misconceptions
- asking questions and listening to answers
- facilitating and listening to discussions
- making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated in light of these assessments. Children should have daily opportunities to assess their own understanding of their learning by using the traffic light system.

### **Medium Term**

- end of block assessments (White Rose) are used in Years 2-6
- Termly assessments are carried out across the school using the assessment materials for each year group provided by the White Rose Maths .These materials used alongside judgements made from class work support teachers in making a steps (half termly) assessment for each child on Target Tracker.
- In Key Stage 2 termly 'Rising star PUMA' tests are used to monitor standards against key objectives. These tests provide an age standardised score to ensure progress from KS1 through to KS2.

### **Long Term**

At the end of Years 2 & 6 the children undertake SATs which are reported alongside the teacher assessments to the borough.

## **INSET**

The Mathematics leader will ensure that the staff are well informed and will provide school-based INSET when needed. Mathematics is a main part of the School Development Plan this year and it will indicate where any INSET may be necessary. Individual staff may indicate their own needs through the Performance Appraisal Cycle.

## **RESOURCES**

Throughout the school, teachers will use the National Curriculum to support the planning. All classes have a well stocked and clearly labelled maths area. All children have access to a wide range of manipulatives to use during both the oral / mental starter and the main part of the lesson. The children also have whiteboards and pens, which are used as appropriate within the lesson. Across both Key stages all the teachers use the interactive white board with good affect to improve the teaching and learning.

## **REVIEWING THE POLICY**

This policy is related to the teaching of Mathematics although other areas of the curriculum are also involved. This is a reference document which defines real approaches to our school and which underpins practice. We will use this policy in conjunction with National guidance to ensure continuity and progression and the raising of standards in our school. It will be reviewed annually.

This policy will be reviewed biannually

Date: September 2019