



# Ruishton Church of England School

## Maths Policy

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## Intent

At Ruishton, we believe that all children deserve access to a high-quality maths curriculum that is both challenging and engaging (*Head*).

We aim to support children in acquiring mathematical skills and knowledge that they can confidently apply in a variety of real-life contexts (*Hand*).

Our curriculum is designed with a focus on building composite knowledge from smaller components, ensuring a clear progression of skills and understanding in mathematics (*Head*).

We strive to help children make meaningful connections across mathematical concepts, fostering fluency, mathematical reasoning, and competence in solving increasingly complex problems (*Head*).

We are dedicated to a mastery approach to mathematics, aiming to develop confident, independent mathematicians who embrace risk-taking and are committed to their own improvement (*Heart*).

Our approach to assessment ensures it drives innovation and adapts learning to meet the evolving needs of our children and cohorts (*Heart*).

# Implementation

We will achieve our aims by:

- Teaching maths on a daily basis
- Creating an environment where math is engaging, fun, and connected to the world around them
- Possessing a true understanding of the 'five big ideas'(Appendix 1) that underpin teaching for mastery - using this approach for the planning, delivery and engagement with mathematics to ensure that all learners have the relevant support, including those with additional needs
- Application of the White Rose schemes of learning (Early Years to 6) to ensure good subject knowledge and consistency of 'small step' teaching
- Application of recommended mastery maths (NCETM Curriculum Prioritisation /Maths Shed / White Rose Premium) resources to supplement planning resources and ensure structure and consistency of teaching practice
- Use of slide decks to incorporate activating prior knowledge, instruction, modelling, memorisation, practice and reflection within all maths lessons
- Application of Mastering Number in EYFS and Key Stage 1
- Streamlined KS2 times table programme to help improve fluency and recall of times tables facts
- Ensuring that a CPA approach is being implemented, including the use of heuristic models for problem solving
- Develop the use of mathematical vocabulary through teacher modelling, use of sentence stems to enable mathematical talk between children (Appendix 2)
- All classrooms have an evident maths 'culture' that includes appropriate display resources, a current learning wall and an area where children can freely access manipulatives
- Formative Assessment Books (FAB) used to track progress of children through lesson sequences and identify children who require further support in the future
- Embed effective questioning into all lessons as a platform for essential in-class formative assessment
- Monitor teaching and learning of maths, through Learning Review Weeks from which we will monitor the progress and effectiveness of maths teaching
- Use of quality mathematics resources to ensure that adaptations are made when needed and all children have the best chance of success
- Adhere to the school summative assessment schedule (NFER testing, SATS and teacher assessments)
- Ensure opportunities for teacher CPD through the Boolean Maths Hub, Trust Maths Domain and in school PDMs
- Mathematical engagement with the school's wider community

## Impact

- Children demonstrate a quick recall of facts and procedures including the fast recall of times tables
- Mathematical concepts or skills are mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations
- At least 80% of children should master each objective for each unit before progressing to the next
- Children show increased self-confidence and willingness to challenge themselves developing their resilience and ability to work collaboratively with others
- Children will be flexible and fluid to move between different contexts and representations of maths and have the chance to develop the ability to recognise relationships and make connections in maths lessons
- Children show a high level of pride in the presentation and understanding of the work
- Children are able to choose from a range of resources to help them understand mathematical concepts
- The exploration of mathematics should be interactive and engaging using real life contextualisation
- Teaching staff will feel supported by a rigorous programme of monitoring and review as well as CPD to enable them to deliver successful and engaging lessons
- Children enjoy maths

# Teaching and Learning

## Teaching For Mastery

The Five Big Ideas, used to develop Mastery Specialists, that underpin teaching for mastery are shown below (Appendix 1). A central component in the NCETM/Maths Hubs programmes to develop Mastery Specialists has been discussion of Five Big Ideas, drawn from research evidence, underpinning teaching for mastery. The diagram below is used to help bind these ideas together. A true understanding of these ideas will probably come about only after discussion with other teachers and by exploring how the ideas are reflected in day-to-day maths teaching, but here's a flavour of what lies behind them:

### Coherence

Lessons are broken down into small, connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.

### Representation and Structure

Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation.

### Mathematical Thinking

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

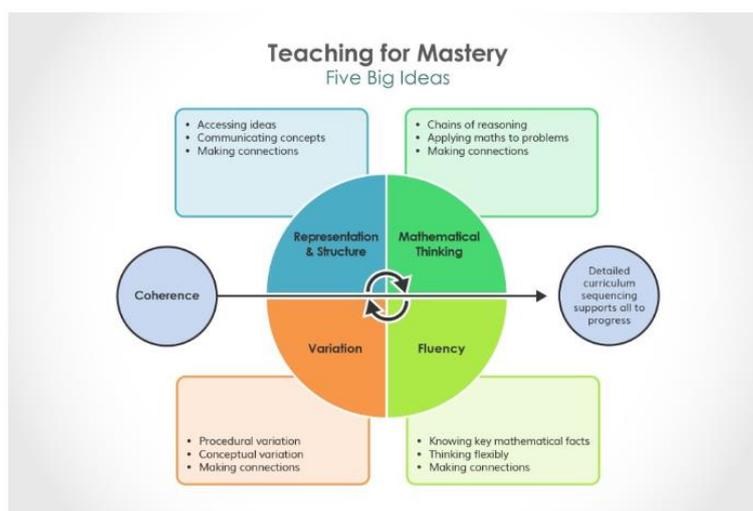
### Fluency

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

### Variation

Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

*The Five Big Ideas were first published by the NCETM in 2017*



# Lesson Design

Lessons are structured using a slide deck specifically designed to activate prior knowledge at the start of each session. Research highlights that prior knowledge is a critical factor in effective learning (Ausubel, 1968, cited in Hattie and Yates, 2014, p. 114).

This slide deck serves as a teaching guide, ensuring that essential elements of the learning process—such as instruction, modelling, memorisation, and guided/independent practice—are systematically addressed in every lesson.

Slide Deck pages:

1. L.G with this step/next step and vocabulary
2. Activating prior knowledge (Oracy 21)
3. Retrieval
4. Explicit strategy instruction / Assimilating knowledge
5. Independent practice
6. Consolidation

Maths      Fractions

L.G. Subtract mixed numbers

This step: Subtract mixed numbers

Vocabulary:  
Numerator, denominator, Fraction, whole, equivalent, simplify, Compare, order, Improper, mixed number

Next Step: Fractions – multi-step problems

Activating Prior Knowledge

Subtract mixed numbers

$$2\frac{1}{4} + 1\frac{7}{8} =$$

Pair  
Talk to a partner

Investigate  
Promote deep or open up to a new line of enquiry

Start by asking...  
- How did they do it?  
- How?  
- We haven't just talked about...

Challenge  
Challenge or present an alternative argument

Start by asking...  
- To challenge someone...  
- To challenge you? I think...  
- I understand your point of view, but here's my thought about it...

Retrieval

1) Convert these mixed numbers to improper fractions:

$$5\frac{3}{5} \qquad 3\frac{8}{9}$$

2) Convert these improper fractions to mixed numbers:

$$\frac{102}{10} \qquad \frac{124}{12}$$

Assimilating Knowledge / Understanding

L.G. Subtract mixed numbers

Success Criteria

1. Subtract the whole numbers
2. Find the common denominator (if you need to)
3. Subtract the fractions

OR

1. Convert the whole numbers to Improper fractions
2. Subtract the Improper fractions
3. Convert the Improper fraction back to a mixed number

Vocabulary

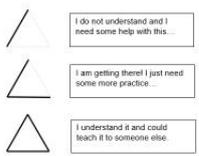
numerator, denominator, Fraction, whole, equivalent, simplify, compare, order, mixed number, improper

Independent Practice

Complete activities 1-8

Consolidation

- Please self-assess your work using the triangle



I do not understand and I need some help with this...

I am getting there! I just need some more practice...

I understand it and could teach it to someone else.

- Ensure that your date and LG are underlined

## Marking, Feedback and Assessment

At Ruishton School, we recognise the importance of feedback as an integral part of the teaching and learning cycle. Equally, we want to empower our teachers to use their professional judgement and not burden them with excessive marking expectations that are ineffective.

### Formative Assessment

The vast majority of feedback is given verbally in class. All pupil learning is reviewed and acknowledged with a tick. In maths, feedback is largely immediate as teachers can make quicker assessments by sharing answers and promoting self-marking as much as possible.

The use of marking codes, displayed on the High Quality Learning (HQL) document (Appendix 3), is stuck into the front of each child's book, is an integral part of feedback across the school. For example, a capital H indicates that child there has been a verbal discussion between a child and classroom adult.

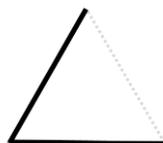
Teachers consistently review the work completed by children during lessons, using this formative assessment to adapt their teaching both within the current lesson and in subsequent lessons or sequences. Typically, the "next step" is incorporated into the next lesson. To support this process, teachers utilise a Formative Assessment Book (FAB) to identify and plan for next steps, highlighting children who may benefit from pre-teaching, scaffolding during the lesson, or same-day interventions.

### Self Assessment

To ensure consistency across the school, self-assessment triangles are used by the children to express their understanding in each lesson.



I do not understand and I need some help with this...



I am getting there! I just need some more practice...



I understand it and could teach it to someone else.

## Summative Assessment

Children are assessed against the National Curriculum programmes of study and expectations for their year group. Each year group is assessed against their age related expectations as:

- Working Towards
- Expected
- Greater Depth

A child working at age related expectations are expected to be working within the Expected Standard. Ongoing assessments take place through the use of NFER tests undertaken termly.

Staff record test data on the school assessment database (Insight) and use this to support their teacher judgement. This then generates a class overview where cohort strengths and weaknesses are identified. This is then used to inform planning and delivery.

## Book Presentation

Book presentation requirements (detailed on the HQL form Appendix 5) are progressive and encourage children to develop presentation skills as they move through the school. All children write using a pencil.

### Books

Year group	Squared paper
Reception	1cm <sup>2</sup>
Years 1,2,3	1cm <sup>2</sup>
Years 4,5,6	7mm <sup>2</sup>

### Margins

In Years 4, 5 and 6 rulers are used to draw a margin, three to four squares in, down the left hand side of the page. Task or activity numbers should be written inside the margin where possible.

### Date and Learning Goals (LG)

Each piece of work is dated using the short date form. A LG is used for each piece of work to clearly set out the lesson's learning objective. Dates and LGs are either written or printed out and stuck in to books neatly. If a LG is handwritten it should be aligned to the margin on the left-hand side of the page.

### Self-marking and corrections

Where appropriate, children self-mark and correct their work using a red pen.

## Daily Maths timings

All year groups are taught a main maths lesson and a fluency session each day.

<b>Session</b>	<b>Time per day</b>
Main maths lesson	45mins – 1 hour
Fluency (Mastering Number / KS2 Times Tables programme)	10-15 minutes

## Learning Environment

All classrooms have a dedicated maths learning space. Within this space is an area where children know that they can access a range of age-appropriate concrete resources (Appendix 4) to help them with their maths learning. The use of CPA is integral and is evident in all lessons.

All classrooms have a learning wall that includes mathematical vocabulary, working examples of the CPA approach with opportunities for reasoning and the learning journey for the current unit of work.

# Fluency

## Mastering Number

Children in EYFS and KS1 partake in the *Mastering Number* programme to secure firm foundations in the development of good number sense. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Attention will be given to key knowledge and understanding needed in EYFS classes, and progression through KS1 to support success in the future. Mastering Number is taught in EYFS and Years 1 and 2 four times per week

## KS2 Multiplication Programme

The KS2 multiplication programme is streamed to best target the children's needs and backfill knowledge gaps. Children take part in the programme twice a day, three times per week. Sessions are generally 10-15 minutes in length. In each session, children attempt to complete 40 targeted times table equations in 2 minutes.

## Number Sense

Number Sense is used as a catch up intervention programme with children who are significantly behind age-related expectations.

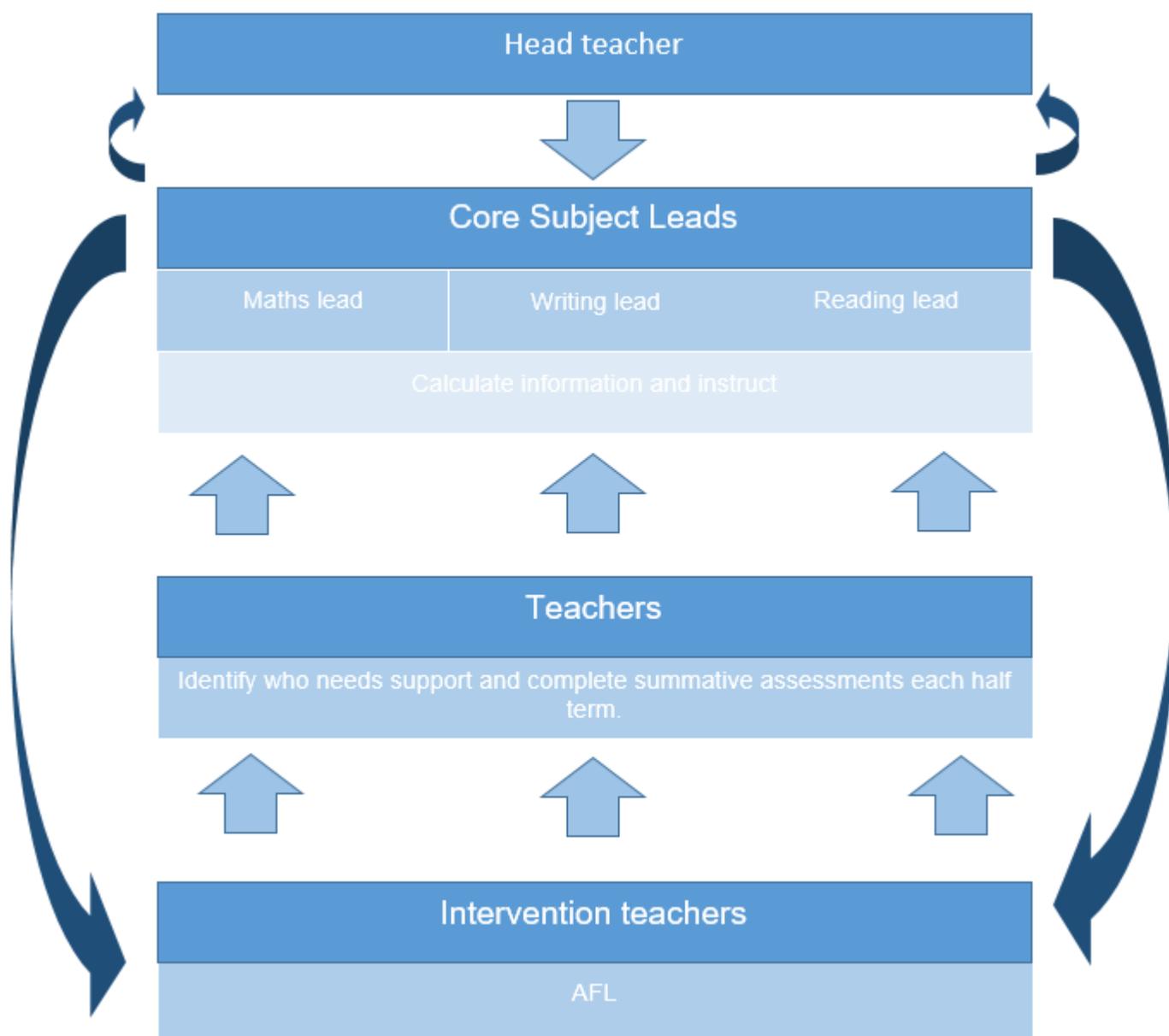
## Interventions

Interventions are overseen by the Maths lead who is responsible for collecting and evaluating data to feed into interventions.

Teachers are responsible for identifying individuals who may need additional support through summative assessments and communicating this to the relevant lead half termly. Teachers are accountable for the progression of individuals before, during and after the intervention takes place, therefore are required to maintain communication with intervention teachers.

Intervention teachers are responsible for formatively assessing individuals each session and recording feedback on the intervention forms.

Intervention flowchart



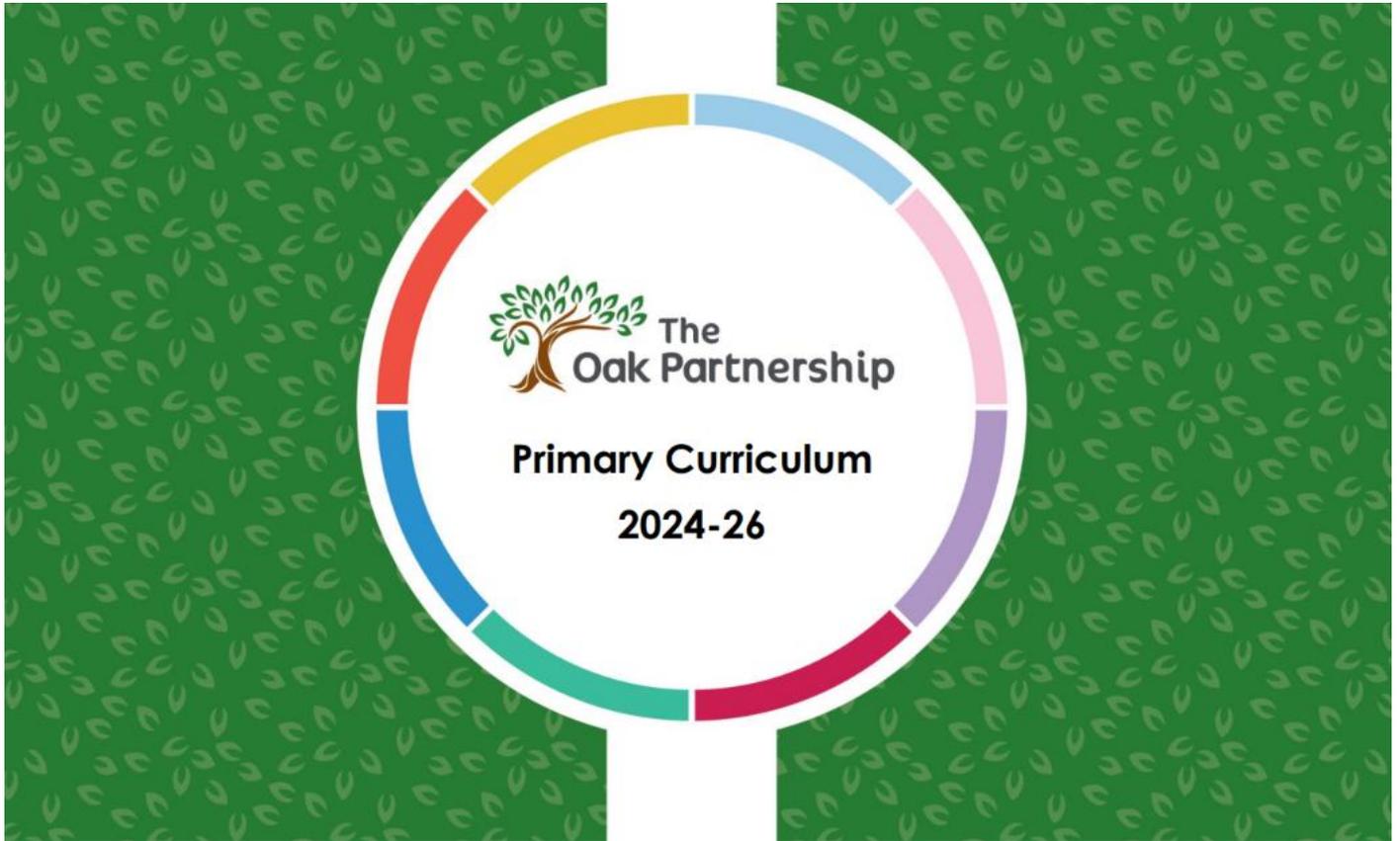
## Home Learning

All children are set weekly home learning tasks. Teachers use their discretion to choose tasks that are appropriate for each child within their class. Homework tasks should develop fluency and times tables and embed previously learnt skills or alternatively be set as a pre-teaching activity.

All children from Year 2 upwards have access to Times Tables Rock Stars and this is encouraged to be used at home to improve times tables fluency.

## Progression of Skills

We teach the skills outlined in The Oak Partnership Curriculum Publication, a document that was produced collaboratively between domain leaders across our primary schools. This is available as a printed publication and available on the TOP website: [TOPS Curriculum Maths](#)



## Monitoring / roles and responsibilities

SLT/Maths Lead will:

- Implement this policy consistently throughout the school by reaffirming the expected standard and supporting staff in the implementation of the policy through Learning Review Weeks
- Communicate to all staff key dates for training days throughout the academic year, giving prior notice each term to enable staff to schedule them accordingly
- Report to Governors, when requested, on the effectiveness of the policy

The Governing Body will:

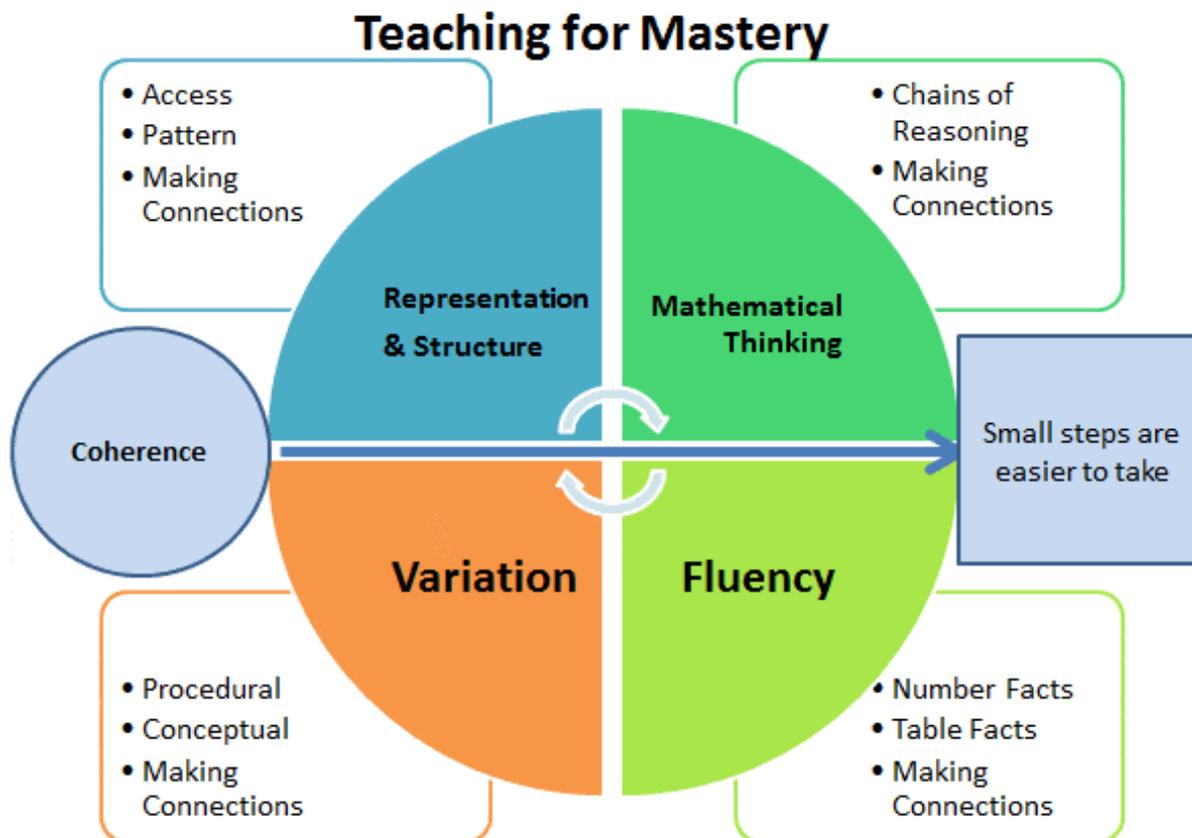
- Support the school in the implementation of the policy
- Review the effectiveness of the policy as required

Parents, Carers and Families will be encouraged to:

- Promote positive behaviours at home with regards to completion of any home learning set and regular practice on TT Rockstars and other online resources
- Raise any concerns regarding their child's maths progress at parent consultations
- Support maths based family learning events at the school

## Appendix 1

**The 5 Big Ideas of Mastery:** coherence, fluency, variation, representation and structure and mathematical thinking



## Appendix 2

 <b>RUISHTON MATHEMATICIANS SAY...</b> 	
<b>Reasoning sentence starters:</b> <ul style="list-style-type: none"><li>○ I solved the problem by...</li><li>○ The strategy I used was...</li><li>○ I discovered that...</li><li>○ I noticed that...</li><li>○ Another strategy that you could use is...</li><li>○ The first thing I did was...</li></ul>	<b>Comparing sentence starters:</b> <ul style="list-style-type: none"><li>○ I agree with _____ because...</li><li>○ I disagree with _____ because...</li><li>○ That's a good answer because...</li><li>○ I got a different answer because...</li><li>○ My strategy is like yours because...</li><li>○ I made a connection with what _____ said...</li></ul>
<b>Questions that I can ask my partner:</b> <ul style="list-style-type: none"><li>○ How did you work out your answer?</li><li>○ Why did you....?</li><li>○ Could you have....?</li><li>○ What if...?</li><li>○ What steps did you take to work out your answer?</li><li>○ Can you prove that your answer is correct?</li><li>○ Why did you choose that operation/method?</li><li>○ Can you explain this to me?</li></ul>	<b>Good talk partners:</b> <ul style="list-style-type: none"><li>○ Disagree respectfully</li><li>○ Explain or elaborate on their ideas</li><li>○ Listen carefully</li><li>○ Share their thinking</li><li>○ Work together to solve problems</li><li>○ Ask questions when they don't understand</li></ul>

# Appendix 3

## High Quality Learning (HQL)

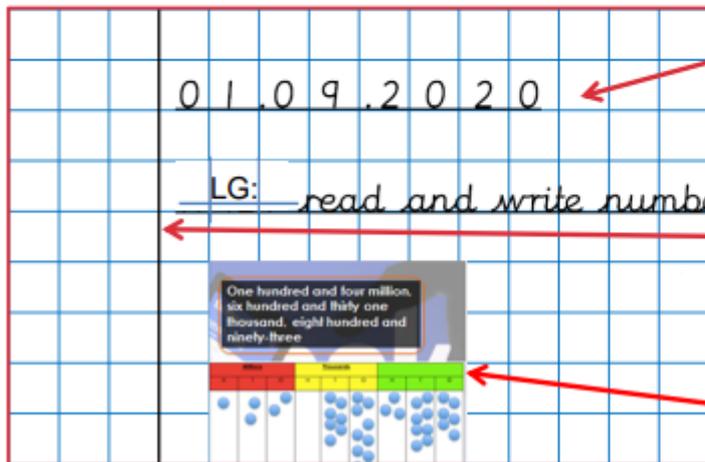


### High Quality Learning: Maths Book

We respond to feedback that we are given and edit writing in red pen.



We take pride in the presentation of our learning.



Date and Learning Goal (LG) hand written or stuck in neatly.

Years 4, 5 & 6 use a ruler to draw a margin down the left of each page.

Maths activities stuck in neatly

All learning is assumed to be independent unless otherwise indicated.

Where appropriate, children are encouraged to self-mark and correct their work using a red pen.

I completed this independently.	I worked with my learning partner.	I had help or worked with an adult / in a guided group.	This indicates a correct answer.	This indicates an incorrect answer.

Classroom adults use a green pen when writing in my book.	
I write in pencil.	I self-assess my learning to show my level of understanding.

## Appendix 4

### Whole School Maths Resources

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	General/ whole school resources
small toys, toy vehicles, play people,	counters	1-100 number line	base 10	base 10	100 squares	place value grids	stopwatches
counters	multilink cubes	100 square	counters	multilink cubes	2D and 3D shapes	place value counters	clocks
five frames	ten frames	base 10	number line	number line	base 10	100 squares	fraction strips
digit cards	bead strings	bead strings	place value grids	part-whole models	counters	base 10	fraction tiles
dice	number cards	blank addition and subtraction calculation scaffolds	multi-link cubes	place value grids	multilink cubes	bead strings	metre sticks
real life objects for counting	number tracks	counters	place value counters	counters	digit cards	counters	geoboards and bands
2D and 3D shapes	number lines	multilink cubes	place value cards	dice	metre sticks	digit cards	2D and 3D shapes
sorting hoops	2D and 3D shapes	coins and notes	bead strings	multiplicatio n squares	place value counters	multilink cubes	weighing scales and weights
number tracks	6 sided dice	number cards	digit cards	place value cards	bead strings	multiplicatio n grids	mirrors
multilink cubes	part whole models	part whole models	100 squares	rulers	multiplicatio n grids	multiplicatio n squares	capacity measuring equipment
part whole models	real life counting objects	place value cards	10 frame	2D shapes	number lines	number lines	arrays
bead strings	sorting hoops	place value grids	dice	10 frames	place value cards	number lines with fractional divisions	fraction cards
ten frames	magnetic numbers	10 frames	coins and notes	digit cards	place value counters	place value cards	calculators
balance scales	balancing scales	number tracks	ruler		place value grid	money	base 10
board games (dominoes , playing cards)	rulers	multiplicatio n grids	blank bar model		money	10 frames	
	100 squares	dice	blank part whole model		Roman numeral cards	10 sided counters	
	base 10/diene s	sorting objects	double sided counters		thousandths grids	protractors	
	coins	real life counting objects	multiplicatio n square		number cards	pair of compasses	
			fraction walls		protractors		