Bishops Nympton Maths Intent, Implementation and Impact statement

Intent

At Bishops Nympton our aim is to create positive mathematical thinkers, not procedural calculators. As mathematicians, our children will develop a deep conceptual understanding through safe exploration, in which every child is expected to contribute and mistakes are genuinely valued. Regular collaboration with peers is seen as an integral part of the learning process. We aim to develop resilient and independent learners. Children are expected to reason and problem solve in all areas of the maths curriculum. We support our children to explain and articulate their understanding and become fluent in number so they can use known number facts to make efficient choices with calculations. They will make connections and discover patterns to develop a natural curiosity about the subject, understanding how this relates to everyday contexts and the world around them. Resources and representations are an integral part of lessons, enabling children to understand the structure of the mathematics being explored.

Child friendly intent:

As mathematicians, we will develop a deep understanding through exploring the mathematics together with my class and my partner, often using apparatus and drawing pictures. We know that there are always different ways to solve problems as we do them every day, so we are always willing to have a go. We expect to explain how we know something and are ready to prove and convince our friends and teachers. We practice our number facts, so they become automatic to us, and this supports us in all our maths learning, which we use in our everyday life.

Implementation – Our approach and rationale

At Bishops Nympton we use White Rose as the spine of our mathematics planning, to ensure that children are taught the range of mathematical concepts within their mixed age contexts. An example long-term plan of the curriculum sequence can be found [here](). The resources provided by White Rose maths cover the entire national curriculum for each key stage but are used as a starting point. Where appropriate, these resources are adapted and combined by class teachers to ensure different year groups in each class are taught simultaneously whilst still receiving the full coverage of curriculum specific to their year group and key stage. We are starting from this, alongside working with the Maths Hub, to develop a teaching for mastery approach. We use the [Jurassic Maths Hub teaching for mastery statement]() to support the development of our curriculum and pedagogy.

The school uses [the White Rose calculation policy]() to ensure a consistent and layered approach for learners. Teachers use their professional judgement to supplement the scheme with additional resources such as those from Nrich and Testbase to enhance the learning experience for the children.

Retrieval practice is a regular element of lessons, supporting children by reactivating prior knowledge, which is then built on in the subsequent lesson.

Children have regular opportunities to reason and problem solve through prompts such as: noticing what is the same or different; identifying or predicting mistakes, explaining, and correcting them; considering alternative approaches and methods to solving problems. Explicit modelling and worked examples are part of the teaching sequence and children have opportunities to practice approaches together, before applying these to new problems independently. Children are taught a range of methods and are given freedom to choose and use a method or strategy they prefer.

Children are encouraged to develop their Oracy skills by using full sentences when replying to questions and sentence stems when talking to peers. The use of subject- specific vocabulary is expected and modelled in classrooms. Opportunities to discuss, debate and explain mathematical reasoning are given high importance within each classroom.

Pre-teaching and other bespoke interventions are used to ensure that every child is reaching their full mathematical potential and varies between classes to meet the needs of individual learners.

The school has a systematic approach to the teaching of additive facts in EYFS and KS1, outlined in the NCETM Mastering Number materials. Children learn strategies to support them in deriving key number facts, such as doubles and near doubles, bridging through ten and from ten. The aim of these sessions is for children to use these strategies to calculate additive facts to automaticity, rather than relying on counting. In the main maths lesson and continued into KS2 children are expected to use these strategies when working with the formal written methods and calculating with larger numbers.

Impact

A curriculum based in discussion and reasoning will allow teachers to formatively assess children's understanding of mathematical concepts within the lesson is being taught. In addition to this, the impact of our maths delivery and progress made by children can be constantly monitored through reviews of past lessons and the individual unit and end of term assessments provided by White Rose.

Through White Rose, each mathematical concept is accompanied by example reasoning questions which can be used to assess children's abilities to explain their thought processes and answer multiple step questions.

Pupils should leave Bishops Nympton primary school having been taught the entire maths curriculum from Early Years to Upper Key Stage 2 and equipped with a wide range of related facts and strategies to solve maths problems in all these concepts. We hope to create confident, thoughtful and independent mathematicians who approach maths with positivity and flexibility.

The expected impact of our maths curriculum is that children will:

- Have confidence using related facts and reasoning skills to solve a maths problem ranging across the maths curriculum.
- Possess fluency with number and place value when reading, writing, ordering, comparing and rounding numbers up to 10,000,000 and negative numbers.
- Be able to use their knowledge to solve out addition, subtraction, multiplication and division problems at an age appropriate level.
- Have an ability to compare, order, simplify and find equivalent fractions.
- Be confident working with fractions using the four operations as outlined in the national curriculum.
- Solve problems relating to ratio and proportion.
- Be introduced to algebraic concepts such as using simple formulae and expressing missing number problems algebraically.
- Understand measurement and use this knowledge to solve problems involving the calculation and conversion of units of measure
- Be able to use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit.
- Feel confident calculating, estimating and comparing volume of cubes and cuboids using standard units.
- Possess knowledge of 2D and 3D shape, including the ability to draw and build 2D and 3D shapes; compare and classify geometric shapes; find, measure and classify unknown angles and illustrate and name parts of circles.
- Be able to describe positions on a four-quadrant coordinate grid and draw, reflect and translate simple shapes on a coordinate grid.
- Have the confidence to interpret and construct pie charts and line graphs and use these to solve problems.
- Understand how to calculate and interpret the mean as an average.
- Through end of unit and term assessments, class discussions and completed work within lessons, children will demonstrate progress in the key mathematical concepts. In this fashion teachers will be able to accurately assess and evidence the delivery and learning of the maths curriculum.
- Maths will be assessed on end of year reports for pupils to take home and in termly parent consultations. Maths data will be collected by teachers and discussed in termly pupil progress meetings.
- Meet the maths Early Learning Goals at the end of EYFS, and the end of key stage expectations outlined in the National curriculum for maths by the end of Year 2 and Year 6.
- Possess the, age appropriate, subject specific vocabulary required to access and explore maths throughout their school experience.

Jurassic Maths Hub Teaching for Mastery Statement

Principle: The intention of teaching for mastery is to give **all** pupils (including those with SEND) access to **equitable** classrooms; classrooms where pupils can all participate and be influential, and classrooms where pupils are encouraged and supported to develop a deep connected and sustained understanding of the mathematics being explored.

The following may indicate that a teacher is aiming to provide an environment and experiences in line with teaching for mastery:

- All pupils working on the same focus with different support[1] provided to enable all pupils to access the mathematics independently
- Pupils behaving as mathematicians as part of a mathematics community, including:
  - Making decisions both independently and collaboratively[2]
  - Working flexibly to answer questions, reflecting on the efficiency and simplicity of their chosen methods
  - Making conjectures and generalisations and applying and testing these
  - Having a go, willing to share even when unsure and understanding that this is when learning is taking place
  - Being comfortable with **not** getting everything 'right', embracing purposeful struggle[3]
  - Talking mathematics[4]:
    - Articulating their thinking
    - Taking responsibility for asking questions of others to clarify understanding
    - Agreeing and disagreeing and justifying their thinking
    - Responding in full sentences with the intention that everyone understands them
  - Exploring the mathematics guided by the teacher
  - Working and learning collaboratively[5]
- The use of subject-specific vocabulary by all adults and pupils in the school from EYFS onwards
- The use of different, appropriate representations, by both adults and pupils, for making sense of the mathematics (exposing structure) and demonstrating understanding
- The use of questioning to develop understanding
- Books show pupils **working on** the same mathematics representing their thinking and understanding in different ways (including with diagrams, models, symbols and writing) rather than pupils **working through** many different examples. This may result in less in the books (especially for younger pupils and pupils with SEND) and no obvious differentiation by task.

The most effective way to find out what pupils understand about their mathematics will be to talk them. Pupils really understand a mathematical concept, idea or technique if they can:

- Describe it in their own words;
- Represent it in a variety of ways (e.g. using concrete materials, pictures and symbols)
- Explain it to someone else;
- Make up their own examples (and non-examples) of it;
- See mathematical connections between it and other facts or ideas;
- Recognise it in new situations and contexts;
- Make use of it in various ways, including in new situations*

Adapted from NCETM adapted from John Holt 'How Children Fail' 1964.

[1] Support might not necessarily involve a teaching assistant. Support should be appropriate to the needs of the pupil i.e. as specified on their EHCP or In-school Plan. It may include the use of a cycle of modelling, scaffolding, prompting, independent activity for any new learning/experience and/or pre-teaching to enable pupils to access the class learning.

[2] For pupils with SEND, this may include choice-making, initially adult-led leading to making choices independently.

[3] At a level in line with their needs, supported to do so by adults with whom they are working.

[4] For pupils with SEND this may include appropriate modelling, scaffolding and pre-teaching.

[5] For pupils with SEND, this may involve collaborating with an adult rather than another pupil.

Reception

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Getting to know you		Match, sort and compare FREE TRIAL VIEW		Talk about measure and patterns VIEW		It's me 1, 2, 3 VIEW		Circles and triangles VIEW	1, 2, 3, 4, 5 VIEW		Shapes with 4 sides VIEW
Spring term	Alive in 5 VIEW		Mass and capacity VIEW	Growing 6, 7, 8 VIEW		Length, height and time VIEW		Building 9 and 10 VIEW			Explore 3-D shapes VIEW	
Summer term	To 20 and beyond VIEW		How many now? VIEW	Manipulate, compose and decompose VIEW		Sharing and grouping VIEW		Visualise, build and map VIEW			Make connections VIEW	Consolidation

EYFS Mastering Number:

Autumn 1	Week 1	Week 2	Week 3	Week 4	Week 5
Focus	Subitising	Counting, ordinality and cardinality	Composition	Subitising	Comparison
Set 1	Subitising within 3	Focus on counting skills	Explore how all numbers are made of 1s Focus on composition of 3 and 4	Subitise objects and sounds	Comparison of sets - 'just by looking' Use the language of comparison: *more than* and *fewer than*

Autumn 2	Week 6	Week 7	Week 8	Week 9	Week 10
Focus	Counting, ordinality and cardinality	Comparison	Composition	Composition	Counting, ordinality and cardinality
Set 2	Focus on counting skills Focus on the 'five-ness of 5' using one hand and the die pattern for 5	Comparison of sets - by matching Use the language of comparison: *more than, fewer than, an equal number*	Explore the concept of 'whole' and 'part'	Focus on the composition of 3, 4 and 5	Practise object counting skills Match numerals to quantities within 10 Verbal counting beyond 20

Spring 1	Week 11	Week 12	Week 13	Week 14	Week 15
Focus	Subitising	Counting, ordinality and cardinality	Composition	Composition	Composition
Set 3	Subitise within 5 focusing on die patterns Match numerals to quantities within 5	Counting – focus on ordinality and the 'staircase' pattern See that each number is one more than the previous number	Focus on 5	Focus on 6 and 7 as '5 and a bit'	Compare sets and use language of comparison: *more than, fewer than, an equal number to* Make unequal sets equal

Spring 2	Week 16	Week 17	Week 18	Week 19	Week 20
Focus	Counting, ordinality and cardinality	Comparison	Composition	Composition	Composition
Set 4	Focus on the 'staircase' pattern and ordering numbers	Focus on ordering of numbers to 8 Use language of *less than*	Focus on 7	Doubles – explore how some numbers can be made with 2 equal parts	Sorting numbers according to attributes - odd and even numbers

Summer 1	Week 21	Week 22	Week 23	Week 24	Week 25	
Focus	Counting, ordinality and cardinality	Subitising	Composition	Composition	Comparison	
Set 3	Counting – larger sets and things that cannot be seen	Subitising – to 6, including in structured arrangements	Composition – '5 and a bit'	Composition - of 10	Comparison – linked to ordinality Play track games	

Summer 2	Week 26	Review and assess	Review and assess	Review and assess	Review and assess	Review and assess
Set 4	Subitise to 5 Introduce the rekenrek	Automatic recall of bonds to 5	Composition of numbers to 10	Comparison	Number patterns	Counting

Key Stage 1

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12

Autumn term

Number — **Place value** (within 10) — VIEW

Number — **Addition and subtraction** (within 10) — VIEW

Geometry — Shape — VIEW

Consolidation

Autumn term

Number — **Place value** — VIEW

Number — **Addition and subtraction** — VIEW

Geometry — **Shape** — VIEW

Spring term

Number — **Place value** (within 20) — VIEW

Number — **Addition and subtraction** (within 20) — VIEW

Number — **Place value** (within 50) — VIEW

Measurement — **Length and height** — VIEW

Measurement — **Mass and volume** — VIEW

Spring term

Measurement — **Money** — VIEW

Number — **Multiplication and division** — VIEW

Measurement — **Length and height** — VIEW

Measurement — **Mass, capacity and temperature** — VIEW

Summer term

Number — **Multiplication and division** — VIEW

Number — **Fractions** — VIEW

Geometry — Position and direction — VIEW

Number — **Place value** (within 100) — VIEW

Measurement — Money — VIEW

Measurement — **Time** — VIEW

Consolidation

Summer term

Number — **Fractions** — VIEW

Measurement — **Time** — VIEW

Statistics — VIEW

Geometry — **Position and direction** — VIEW

Problem solving

Key Stage 2
Y3 and 4

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number Place value			Number Addition and subtraction					Number Multiplication and division A			
Autumn term	Number Place value			Number Addition and subtraction			Measurement Area	Number Multiplication and division A			Consolidation	
Spring term	Number Multiplication and division B		Measurement Length and perimeter		Number Fractions		Measurement Mass and capacity					
Spring term	Number Multiplication and division B		Measurement Length and perimeter	Number Fractions				Number Decimals				
Summer term	Number Fractions		Measurement Money	Measurement Time		Geometry Shape		Statistics			Consolidation	
Summer term	Number Decimals		Measurement Money	Measurement Time		Consolidation	Geometry Shape	Statistics	Geometry Position and direction			

Year 5 and 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number Place value			Number Addition and subtraction		Number Multiplication and division A			Number Fractions A			
Autumn term	Number Place value		Number Four operations					Number Fractions A		Number Fractions B		Measurement Converting units
Spring term	Number Multiplication and division B		Number Fractions B		Number Decimals and percentages		Measurement Perimeter and area		Statistics			
Spring term	Number Ratio		Number Algebra		Number Decimals		Number Fractions, decimals and percentages		Measurement Area, perimeter and volume		Statistics	
Summer term	Geometry Shape			Geometry Position and direction		Number Decimals		Number Negative numbers	Measurement Converting units		Measurement Volume	
Summer term	Geometry Shape		Geometry Position and direction	Themed projects, consolidation and problem solving								