

Curriculum rationale, intent/aims and desired IMPACT

This subject plan is based on the programmes of study and high expectations of the National Curriculum, the AIMS of which are to ensure that pupils:

- become fluent in the fundamentals of mathematics, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

At Longthorpe, we strive to develop confident and curious learners who have a positive self-belief and are willing to take risks, understanding that mistakes contribute to learning opportunities and therefore success.

All of our staff aim to inspire and enthuse our learners and celebrate children's perseverance and positive growth mind-set. In class, our active learners are encouraged to collaborate through effective communication and exacting vocabulary, allowing them to reason and explain their systematic thinking. To create confident mathematicians we aim to develop children's number sense so that they can manipulate numbers, make links with new learning and spot patterns.

The purpose of study:

We recognise that in our local context, the PURPOSE OF STUDY elements of the National Curriculum for maths are vital for our children, in order to give them a successful start in their subject learning and in the acquisition of pertinent CULTURAL CAPITAL:

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.

Most children with SEND will be access the maths curriculum with their peers, utilising the mastery approach. The CPA method allows children to fully understand the concept using manipulatives and pictorial representations before being able to move into the abstract. A small number of children who are working significantly below their peers, have the benefit of working in a 'Roots' group. This allows the children to understand the foundations of maths in a small group with manipulatives and models and images embedded into all learning.

Curriculum implementation -

At Longthorpe we use the mastery approach to learning and teaching maths utilising the PAM tool. (Primary Advantage Maths - devised by specialist maths team in the borough of Hackney.) This backbone to our learning facilitates a spiralling of maths strands, where each revisit builds on prior learning in small but stretching steps (zone of proximal development Vygotsky) resulting in coherent learning that sticks.

The mastery approach is characterised by the belief that in working hard all children can succeed at maths and children are not split into PAGs. Some learning is scaffolded with concrete manipulatives or pictorial representations, pupils move into abstract recording if and when they are ready (e.g. standardised method of long division). Pupils who demonstrate a deep understanding of certain maths modules are used as experts in class.

We expect pupils to gain rapid accurate recall of number facts after explicit input from teachers and a variety of fluency practice.

Where possible maths units are linked to real life and purposeful processes and outcomes leading to conceptual and procedural fluency resulting in accuracy and the ability to use and adapt knowledge, skills and understanding flexibly.

In our classes learners feel safe to make mistakes and get stuck, the teachers pre teach potential misconceptions and advise on barriers to learning whilst explicitly teaching subject specific vocabulary.

The teachers scaffold learning and challenge pupils through whole class access to mastery opportunities; this enables "catch up" to Expected level for LPAG, alongside activities that provide deeper learning leading to Greater Depth understanding (HPA).

The teaching and learning expectations across each maths module include:

- *collaborative learning with frequent dedicated pupil talk time
- *conceptual variation through mathematical structures (concrete and pictorial)
- *procedural variation so that pupils use patterns and adjustments for efficient calculation
- *coherence and continuity

In EYFS pupils will:

- count reliably with numbers from one to 20
- place numbers in order and say which number is one more or one less than a given number.
- Us quantities and objects to add and subtract two single-digit numbers and count on or back to find the answer.
- solve problems, including doubling, halving and sharing.

In KS1 pupils will:

- develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources.
- develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary.
- describe and compare different quantities such as length, mass, capacity/volume, time and money.
- know the number bonds to 20 and be precise in using and understanding place value.

- read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

In Lower KS2 pupils will:

- become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value.
- develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.
- develop their ability to solve a range of problems, including with simple fractions and decimal place value.
- draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them.
- use measuring instruments with accuracy and make connections between measure and number.
- have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.
- read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

In Upper KS2 pupils will:

- extend their understanding of the number system and place value to include larger integers.
- develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.
- develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation.
- be introduced to the language of algebra as a means for solving a variety of problems.
- consolidate and extend knowledge developed in number and link to geometry and measures .
- classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.
- be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.
- read, spell and pronounce mathematical vocabulary correctly

As well as the content, describe any delivery/the BROAD SEQUENCE it follows to ensure PROGRESSION:

Do the same for EYFS, KS2...

(Also - What are the specific arrangements for pupils with SEND, where required?)

Leadership and staff development to support the implementation and improvement of teaching...

Place anything that is happening re with your role to support and develop your subject in the school
Record any elements of staff subject knowledge which the department is developing (in the key stages???)

Common planning and resourcing arrangements

KS1? KS2? Across the school as a whole?

Assessment arrangements for the subject - the mix of activities and approaches used and their links to NC aims for the subject at the school - HOW it will feed back into helping children improve and teaching adjust to findings - always linked to NC aims...

EYFS, KS1, KS2

(A well-planned comprehensive curriculum that is the progression model and delivered to the highest standard)

Subject leader arrangements for checking on the quality of the subject curriculum:

What is the approach to checking on how well the curriculum is designed, delivered and its impact?

How do we check on how well pupils KNOW more, REMEMBER more and can DO more?

How do we work with each other?

How do we work with senior leaders?

Include and expand on...

1. Discussions with teaching staff and senior leaders
2. Discussions with children
3. Looking at what children can do, what they know and what they remember in terms of the AIMS linked to pages XXXX and YYYY in the NC
4. Other...

Pertinent links to whole school improvement priorities, including links to other subjects:

- Literacy
- Numeracy
- Other

OVERVIEW	Autumn	Spring	Summer
EYFS			
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			
Year 6			

