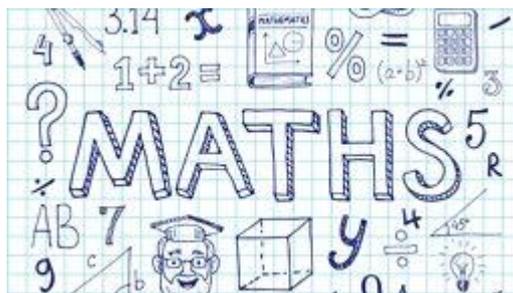


# SUBJECT CURRICULUM POLICY 2021



## CURRICULUM INTENT STATEMENT:

*At TWS the curriculum is designed so that it builds on children's prior learning, provides hands on and enriching experiences, allows the children to develop aspirations, resilience and independence and become articulate, creative individuals.*

*Every child is recognised as a unique individual. We celebrate and welcome differences within our school and the local and wider community. We are respectful of everyone. We provide a creative and linked curriculum that enables children to make connections, embed learning and build on their knowledge. Children are given opportunities outside of the National Curriculum that enhances and enriches their learning, giving them real life experiences and allowing them to think in enterprising ways.*

*We believe that childhood should be a happy, investigative and enquiring time where there are no limits to curiosity and there is a thirst for new experiences and knowledge.*

*Children will leave Thomas Willingale School and Nursery with high aspirations and a strong sense of belonging, they will have the confidence and skills to articulate themselves, make decisions, make connections and self-reflect enabling them to be lifelong learners.*

<b>Curriculum Drivers</b>			
<b><u>Oracy</u></b> To ensure all children have the skill set to be able to express and articulate themselves accurately, confidently and fluently so that they are able to take on any challenge.	<b><u>Environment/Community</u></b> Our children will play an active part in the local and wider community, utilising our rich surroundings within their learning and supporting how our community develops.	<b><u>Independence</u></b> Through engaging and inspiring learning that we provide, we want our children to become more independent learners, be proactive and strategic and transfer their skills to different areas of learning.	<b><u>Positive Growth</u></b> To instil a positive mindset which allows children to build aspirations, empathy towards others and opportunities for their future lives; it supports their resilience so that they take chances, learn from failures and deepen their skillset and understanding.



## Basic principles

- Learning is a change to long term memory
- Our aims are to ensure that our pupil experience a wide breadth of study and have, by the end of each Key stage, long- term memory of an ambitious body of procedural and semantic knowledge.

## Curriculum Intent Model

- **Curriculum drivers** shape our curriculum breadth. They are derived from an exploration of the background of our students, our beliefs about high quality education and values. They are used to ensure we give our students appropriate and ambitious curriculum opportunities.
- **Cultural capital** gives our children the vital background knowledge required to be informed and thoughtful members of our community who understand and believe in British Values.
- **Curriculum breadth** is shaped by our drivers, cultural capital, subject topics and our ambition for students to study the best of what has been thought and said by many generations of academic scholars.
- Our curriculum distinguishes between subject topics and threshold concepts. **Subject topics** are the specific aspect of subjects that are studied.
- **Threshold concepts** tie together the subject topics into meaningful schema. The same concepts are explored in a wide breadth of topics. Through this 'forwards and backwards engineering' of the curriculum, students return to the same concepts over and over and gradually build understanding on them.
- For each of the threshold concepts three **Milestones**, each of which include the procedural and semantic knowledge students need to understand the threshold concepts, provides a progression model.
- **Knowledge categories** in each subject give students a way of expressing their understanding of the threshold concepts.
- **Knowledge webs** help students to relate each topic to previously studied topics and to form strong, meaningful schema.
- **Cognitive science** tells us that working memory is limited and that cognitive load is too high is students are rushed through content. This limits the acquisition of long term memory. Cognitive science also tells us that in order for students to become creative thinkers, or have a greater depth of understanding they must first master the basics, which takes time.
- Within in each milestone, students gradually progress in their procedural fluency and semantic strength through three cognitive domains: basic, advancing and deep. The goal for students is to display sustained mastery at the 'advancing' stage of understanding by the end of each milestone and for the most able to have a greater depth of understanding at the deep stage. The time scale for sustained mastery or greater depth is, therefore two years of study.
- As part of our progression model we use a different pedagogical style in each of the cognitive domains of basic, advancing and deep. This is based on the research of Sweller, Kirscher and Rosenshine who argue for direct instruction in the early stages of learning, and discovery based approaches later. We use direct instruction in the basic domain and problem based discovery in the deep domain. This is called the reversal effect.

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- As part of our progression model we use tasks in curriculum books which shows our curriculum expectations. Teacher assessment is then recorded twice yearly.

## Maths

### Definition of Maths

**Mathematics** is the study of numbers, shapes and patterns.

**Maths** includes the study of numbers and how things can be counted.

It uses reason and usually a special system of symbols. It also looks at structure and how things are organised.

## Essential characteristics

As a result of our Maths teaching, we aim for our students to have...

- An understanding of the important concepts and an ability to make connections within mathematics.
- A broad range of skills in using and applying mathematics.
- Fluent knowledge and recall of number facts and the number system.
- The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual.
- The ability to think independently and to persevere when faced with challenges, showing a confidence of success.
- The ability to embrace the value of learning from mistakes and false starts.
- The ability to reason, generalise and make sense of solutions.
- Fluency in performing written and mental calculations and mathematical techniques.
- A wide range of mathematical vocabulary.
- A commitment to and passion for the subject.

## Threshold Concepts for Maths in the Curriculum

The children undertake a broad and balanced programme that takes account of abilities, aptitudes and physical, emotional and intellectual development. Through maths, the children learn a range of skills, concepts, attitudes and methods of working. They will...

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## **Know and use numbers**

This concept involves understanding the number system and how they are used in a wide variety of mathematical ways.

## **Add and subtract**

This concept involves understanding both the concepts and processes of addition and subtraction.

## **Multiply and divide**

This concept involves understanding both the concepts and processes of multiplication and division.

## **Use fractions**

This concept involves understanding the concept of part and whole and ways of calculating using it.

## **Understand the properties of shapes**

This concept involves recognising the names and properties of geometric shapes and angles.

## **Describe position, direction and movement**

This concept involves recognising various types of mathematical movements.

## **Use measures**

This concept involves becoming familiar with a range of measures, devices used for measuring and calculations.

## **Use statistics**

This concept involves interpreting, manipulating and presenting data in various ways.

## **Use algebra**

This concept involves recognising mathematical properties and relationships using symbolic representations.

## **Early Years**

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

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## **By the end of Reception, children should be able to...**

- Uses some number names and number language spontaneously.
- Uses some number names accurately in play.
- Recites numbers in order to 10.
- Knows that numbers identify how many objects are in a set.
- Beginning to represent numbers using fingers, marks on paper or pictures.
- Sometimes matches numeral and quantity correctly.
- Shows curiosity about numbers by offering comments or asking questions.
- Compares two groups of objects, saying when they have the same number.
- Shows an interest in number problems.
- Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same.
- Shows an interest in numerals in the environment.
- Shows an interest in representing numbers.
- Realises not only objects, but anything can be counted, including steps, claps or jumps.

## **Key Stage 1**

### **By the end of Year 2, children should be able to...**

- Count and calculate in a range of practical contexts.
- Use and apply mathematics in everyday activities and across the curriculum.
- Repeat key concepts in many different practical ways to secure retention.
- Explore numbers and place value up to at least 100.
- Add and subtract using mental and formal written methods in practical contexts.
- Multiply and divide using mental and formal written methods in practical contexts.
- Explore the properties of shapes.
- Use language to describe position, direction and movement.
- Use and apply in practical contexts a range of measures, including time.

Handle data in practical contexts.

## **Key Stage 2**

### **By the end of Year 6, children should be able to...**

- Count and calculate in increasingly complex contexts, including those that cannot be experienced first-hand.
- Rigorously apply mathematical knowledge across the curriculum, in particular in science, technology and computing.

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- Deepen conceptual understanding of mathematics by frequent repetition and extension of key concepts in a range of engaging and purposeful contexts.
- Explore numbers and place value so as to read and understand the value of all numbers.
- Add and subtract using efficient mental and formal written methods.
- Multiply and divide using efficient mental and formal written methods.
- Use the properties of shapes and angles in increasingly complex and practical contexts, including in construction and engineering contexts.
- Describe position, direction and movement in increasingly precise ways.
- Use and apply measures to increasingly complex contexts.
- Gather, organise and interrogate data.
- Understand the practical value of using algebra.

## Maths Curriculum Planning

- Our teaching is based on current National Curriculum Programmes of Study and the Chris Quigley Essentials program. It is implemented through a cross-curricular themed approach (where possible). In the foundation stage, we follow the Mathematics area of learning from the Early Years Foundation Stage.
- Themes are included in the long term planning for each year group.
- Teachers are expected to complete medium term planning which outlines key aspects of learning.
- Medium term plans are subject specific, or may be more cross curricular, where possible.

## Assessment and Recording

Staff are expected to gather evidence of what individual pupils know, understand and can do in maths by observing them at work, listening to and discussing with them, and evaluating any work they produce.

- Maths is assessed at the end of a unit, usually twice a year, using:

The Early Years Outcomes (EYFS)

The Statutory Framework (Y2 and Y6)

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White Rose testing and Progress Tests in Maths at the end of the academic year (for all other year groups).

- The maths subject leader analyses data twice a year.
- All work should be marked following the school's marking policy and subsequent lessons adapted as necessary.

## **Roles and Responsibilities**

The subject is led by the maths subject leader as a whole, working closely with the STEM working party and with class teachers. Throughout the year, time is set aside to review standards and monitor curriculum provision and ensure resources are up to date.

## **Monitoring**

Monitoring takes place regularly through:

- pupil perception questionnaires
- sampling children's work
- teacher planning
- book scrutinies