



"Go down deep enough into anything and you will find Mathematics"

Dean Schlicter

Mathematics Vision and Values

Maths lessons are delivered as part of the curriculum offer, using Power Maths as a resource to support our planning and progression. The Objectives for the lessons are underpinned by the National Curriculum. Maths lessons at Thomas Bullock are well planned and structured to ensure that new skills are learnt and imparted through effectively teaching a sequence of lessons, therefore, developing pupils' fluency, problem solving and reasoning skills. Children learn and internalise key vocabulary for their lessons and are provided with a weekly growing list, specific to their lesson, that is displayed clearly on their working walls within their classroom. Children are encouraged to challenge themselves to apply what they know to trickier problems giving them ownership of their learning and building on their resilience and confidence to achieve. Lessons are taught in an interactive way providing children with a context that makes use of the children's experiences and links with their wider learning. Children have access to RMeasimaths to allow them to work on their maths objectives from home in a fun and engaging way. We strive to engage children with a range of different experiences that transcend across cultural divides and offer pupils a rich and deep experience of understanding the power of Maths.

The aims and objectives of Mathematics are in line with the National Curriculum and enable children to:

- Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, 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.
- 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.

Intent

Maths lessons are delivered as part of the curriculum offer, using Power Maths as a resource to support our planning and progression. The Objectives for the lessons are underpinned by the National Curriculum. Maths lessons at Thomas Bullock are well planned and structured to ensure that new skills are learnt and imparted through effectively teaching a sequence of lessons, therefore, developing pupils' fluency, problem solving and reasoning skills. Children learn and internalise key vocabulary for their lessons and are provided with a weekly growing list, specific to their lesson, that is displayed clearly on their working walls within their classroom. Children are encouraged to challenge themselves to apply what they know to trickier problems giving them ownership of their learning and building on their resilience and confidence to achieve. Lessons are taught in an interactive way providing children with a context that makes use of the children's experiences and links with their wider learning. We strive to engage children with a range of different experiences that transcend cultural divides and offer pupils a rich and deep experience of understanding the power of Maths.

Implementation

At Thomas Bullock our whole curriculum is shaped by our school vision which aims to enable all children, regardless of background, ability, additional needs, to flourish to become the very best version of themselves they can possibly be and to "let their light shine". We teach the National Curriculum through the Power Maths scheme as a resource supported by a clear skills and knowledge progression. This ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children.

In the Early Years pupils are taught to:

- 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.
- Use 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.
- Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.
- Recognise, create and describe patterns.
- Explore characteristics of everyday objects and shapes and use mathematical language to describe them.

In Key Stage 1 pupils are taught to:

- Develop confidence and mental fluency with whole numbers, counting and place value. This involves working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools].
- Develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary.
- Use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

- 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 Key Stage 2 pupils are taught to:

- 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. Memorise 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 Key Stage 2 pupils are taught to:

- 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.
- Use the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number.
- 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

Impact

At Thomas Bullock our approach to the mathematics curriculum enables children to show confidence in believing that they will achieve each lesson. They are able to become flexible and able to fluidly move between contexts and different representations of maths, as well as, develop the ability to recognise relationships and make connections between numbers. The children are able to move towards mastering mathematical concepts or skills by showing their working in a variety of ways, using the mathematical language taught to explain their ideas and independently apply the concept to new problems. The Power Maths programme used as a planning resource ensures that all children experience challenge and success in Mathematics by developing a growth mindset. Children are taught to have a high level of pride in the presentation and understanding of their work. At Thomas Bullock, we recognise that in all classes there are children of widely- different abilities in Maths and we seek to provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this by:

- setting common tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty that allows children to deepen their understanding
- providing resources of different complexity to suit the needs of the child
- allowing time for peer- to- peer discussion frequently
- class teacher making appropriate arrangements to accommodate any specific special educational needs.

Cultural Capital links

Cultural capital is the accumulation of knowledge, behaviours, and skills that a student can draw upon and which demonstrates their cultural awareness, knowledge and competence; it is one of the key ingredients a student will draw upon to be successful in society, their career and the world of work. Throughout their time at Thomas Bullock the children are given the opportunity to develop these skills in a variety of ways:

- Learning to read timetables
- Understanding and working out distances, proportion and scale on maps by doing orienteering activities.
- Understanding probability of events.
- Visiting local shops to put in use their skills of calculating and budgeting with money, including solving percentages for sales price, original costs and best buys.
- Learning and extending their knowledge of real-life jobs which use mathematics and the mathematicians that have had an impact on society such as Katherine Johnson, Isaac Newton, Albert Einstein etc through a maths whole school day and linking this to STEM.