

# **MATHS POLICY**

**Approved by: SLT  
Effective From: December 2015  
Review Date: September 2022  
Next review Date: September 2023**

## **What is our Philosophy in Mathematics?**



*Article 28: Every child has the right to learn and to go to school*

In the Heathland Whitefriars Federation, we aim to provide pupils with a secure understanding of every area of the maths curriculum which will give them the confidence and ability to use their knowledge in their daily lives. We believe that secure mathematical understanding is critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. Pupils should therefore, be equipped with these life-long skills, as they leave primary school, with enthusiasm and enjoyment for the subject which they will take with them into adult life and apply to real life settings.

## **What is our aim?**

We aim for every child to reach their highest potential in their understanding and use of mathematical skills, ensuring that they are fluent in number and can use their knowledge to develop critical thinking. Fluency of mathematical fundamentals is accomplished through varied practise and increasingly complex problems. We believe that mathematical learning should encourage pupils to enquire, question, build on prior learning, create systems and strategies, and communicate ideas so that they can develop how to argue and justify their reasoning.

We aim to provide all pupils with the same high level of mathematical experience and teaching that will ensure that every pupil achieves their full potential.



*Article 29: Your right to be the best that you can be*

## **What is our approach to teaching and learning?**

We believe that teaching should be objective driven through next steps learning which is an integral part of every maths lesson. As each child learns a new concept, they are challenged to embed this new skill by applying it in a range of different contexts. To ensure that skills are embedded, each child is given opportunities to extend their understanding through reasoning and problem solving. Once a skill is secured, they are moved to the next step thereby enabling them to make rapid progress in their learning. Each new step offers an opportunity for new mathematical skills to be practised, secured and deepened, ensuring that pupils have an embedded understanding of concepts before moving on to their next step.

We believe that mathematical learning should include multi-sensory experiences which will support the range of learning needs of all pupils. Pupils should have activities which combine the mental maths skills needed for mathematical calculations with the practical tasks which build a deeper understanding of mathematical concepts and shapes their abstract thinking of number.

Maths is taught as a discrete subject and is timetabled each day. Maths learning is also set as part of Home Learning activities each week and is relevant to the topic

and skills learned each week. Maths home learning is often enquiry based and provides an opportunity for pupils to apply their knowledge to an open-ended task.

### **Protocols**

As a core subject, maths has a high priority within the curriculum and requires high quality teaching, programmed learning time and well-resourced lessons that provide the children with the opportunity to acquire mathematical knowledge and understanding of mathematical concepts. To ensure mathematical skills are embedded, we follow a whole school approach where children are taught a new skill, they apply the new concept in a range of contexts and explain and justify their understanding by reasoning and problem solving.

### **Resources**

Maths is extensively resourced with the provision of equipment for all areas of maths learning. Equipment to support the learning of calculation skills includes Numicon, a variety of cubes, dice and counters, base 10, number fans, digit cards, place value counters, dominoes and number lines and squares. Also available are resources for weighing, measuring length, shape, time and capacity. Each classroom is equipped with resources for use on a daily basis and the centrally placed resource room has equipment for specific areas of maths.

In addition, there are a variety of on-line programmes, such as Deepening Understanding, Whiterose Maths and Master the Curriculum to support the teaching and planning of high-quality lessons.

Pupils are encouraged to freely make use of any manipulatives that may support their learning but are encouraged to move away from concrete support when they become more confident in abstract thinking of number.

### **How do we teach maths?**

In EYFS, we aim to develop a positive attitude to mathematics as an interesting and attractive subject in which all children gain success and pleasure. We do this by introducing mathematical concepts through whole class adult led teaching and small focus group activities during the week. The classroom setting allows for child-initiated learning and enables children to practise their mathematical knowledge and skills (counting and number recognition) more independently. Working with an adult, they will also learn how to apply what they know for example, by adding or subtracting numbers using equipment such as cubes, numicons, rekenreks or tactile resources before moving on to visual representations. They also begin to build an understanding of weighing (light, heavy), measuring (long, short) and capacity (full, empty) through organised play activities, and the concept of time by using specific mathematical vocabulary (o'clock, half past).

Pupils in Key Stages 1 and 2 are taught maths on a daily basis with emphasis on mastering all areas of the curriculum. This includes addition, subtraction, multiplication and division, how to halve and double numbers, use fractions and decimals, solve algebraic equations and collect, record and use data. In addition, pupils learn how to accurately use standard measures for length, weight, capacity

and time. Pupils learn to recognise and describe 2D and 3D shapes and build an understanding of position and direction. Each new topic is taught through the CPA (concrete, pictorial, abstract) approach. The CPA approach builds on children's existing knowledge by introducing abstract concepts in a concrete and tangible way. This approach provides a platform for everything pupils will encounter as they move through education and beyond. When learning or reinforcing a skill, pupils are introduced to the topic using physical and visual aids to build understanding of abstract concepts. This helps bring maths to life. As they progress in understanding of a skill, pupils are encouraged to use pictorial representations alongside the abstract which enables them to make a meaningful link to more abstract mathematical thinking. While pupils are securing a skill, they are taught and encouraged to use and apply their understanding in a range of contexts. Using and applying maths is taught through problem solving, deepening knowledge and seeing similar problem represented in various ways. Along with this, maths skills are used in topic work and other curriculum areas. For example, in Science when studying force children will use cm to measure the distance travelled by an object. History will involve the measurement of time and in Geography, data handling can be used to compare different temperatures and rainfall.

All pupils improve their mental mathematical skills by working through the Fluency Passport programme featuring the solar system which begins in Reception. Pupils are taught key number facts and how to make connections to other known facts in their fluency lessons. Fluency targets within the passport are based on calculation facts. When a child achieves 12 targets, they receive a certificate and move onto the next planet eventually reaching the sun.



*Article 3: Everyone who works with children should always do what is best for each child.*

Class teachers lead the maths lessons with Teaching Assistants providing support for small groups or individual children. Each lesson is tailored to suit the needs of the maths targets for that day and TAs are fully briefed on their role in supporting the pupils.

### **How do we assess pupils?**

In the Early Years, pupils are assessed against the Early Learning Goals, a series of detailed targets covering the first steps in maths.

In Key Stage 1 and 2, there is rigorous assessment of pupil progress through all areas of the maths curriculum and this is recorded using Pupil Asset. Questions for Learning for the session are shared with the pupils and teachers monitor pupil progress through discussion, observations and recorded work. Children are provided with opportunities for self and peer assessment and improvement using a blue pen. Marking provides children with an understanding of what they have achieved and what their next step in learning will be when applicable. Feedback is provided using purple pen. Pupils are given positive feedback on mathematical skills learned followed by an actionable comment to embed or challenge pupils in their understanding by using the same skill in another way. During lessons, purple pen is utilised to scaffold, intervene, challenge and accelerate learning. After the lesson, pupils are expected to respond to teacher's comments with a blue pen when

necessary and to show an understanding of what they need to learn next and to amend any errors made to show learning from misconceptions.

Next step learning is an integral part of every maths lesson with pupils working on differentiated targets according to their level of learning. As each child learns a new skill, they are encouraged to secure and deepen that skill by applying it in a different way and investigating their own understanding of the mathematical skill taught. Pupils are then moved to the next step higher level target thereby enabling them to make rapid progress in their learning. In the maths lessons, pupils work in groups with pupils who share the same current learning objective. This promotes talk for learning, independence and collaborative learning.

### **How do we support pupils?**

All learning is tailored to suit the individual needs of each child and intervention programmes are in place to support children with additional learning needs. In addition, there are after school maths clubs and support groups which help pupils achieve their full potential.

Parents are encouraged to support their children's learning at home through parent workshops, home learning activities and the schools' websites where the calculation policy is made available for parents to refer when supporting their children at home. Parents are also informed about how they can help at home during parents evening and on termly reports.

Maths lessons make use of the latest technology in interactive displays and lessons are resourced from a variety of programmes. This allows the staff to choose the best and most appropriate activities to meet the needs of all.

INSET sessions and bespoke year group workshops provide staff with updated information and training in the use of new resources and the opportunity to share ideas and information.

Signed \_\_\_\_\_ Date \_\_\_\_\_  
(Maths Faculty Leader)

Signed \_\_\_\_\_ Date \_\_\_\_\_  
(Head Teacher)

Signed \_\_\_\_\_ Date \_\_\_\_\_  
(Chair of Directors)