

BROOMFIELDS JUNIOR SCHOOL



Maths Policy

2023-2024

DOCUMENT STATUS

Version	Date	Action
1	January 2020	Updated policy
2	September 2022	Updated policy
3	September 2023	Updated policy

BROOMFIELDS MATHS POLICY

The Public Duty of the Equality Act 2010 Protected characteristics in the act include sex, sexual orientation and gender reassignment. Schools have due regard to:

- (a) "eliminate discrimination, harassment, victimisation"
- (b) "advance equality of opportunity"

(c) "foster good relations between persons who share a relevant protected characteristic and persons who do not share it"

This includes tackling prejudice and promoting understanding.

Introduction.

The National curriculum states that:

"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."

Intent

At Broomfields Junior School we recognise and value the importance of a well- rounded Maths curriculum which every child can access at their individual starting point. We fully embrace and understand that every child has differing learning styles and needs and within the subject of Maths it is imperative that every child is developed, enriched and challenged within the mathematics lesson.

We have designed our Maths curriculum to help each child throughout their learning journey through carefully planning the sequence of lessons year on year with a strong focus on the CPA approach. Our sequencing follows the White Rose Hub Planning scheme and in addition to this we envelop cross curricular mathematical learning opportunities for the children to help make their learning "stick."

The CPA approach has three stages:

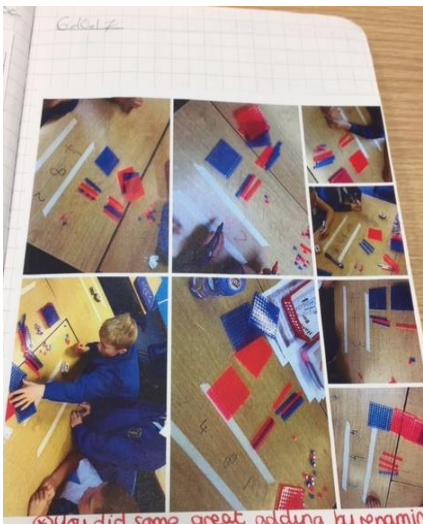
- **Concrete** is the 'doing' stage, using concrete objects to solve problems. It brings concepts to life by allowing children to handle physical objects themselves.
- **Pictorial** is the 'seeing' stage, using representations of the objects involved in maths problems. This stage encourages children to make a mental connection between the physical object and abstract levels of understanding.
- **Abstract** is the 'symbolic' stage, where children are able to use abstract symbols to model and solve maths problems.

We firmly believe that through teaching Mathematics in this way, it embeds a good and thorough understanding of all of the concepts taught. It allows the children to build upon their previous experiences and gives them opportunities to recall and build upon these facts and their own mathematical thoughts.

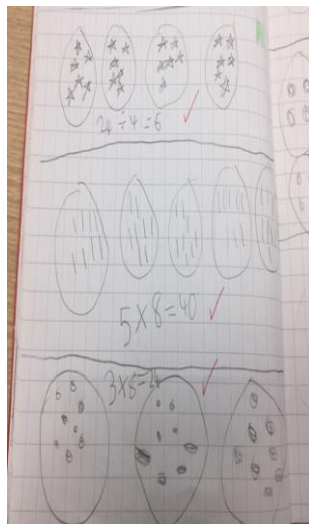
Through following this approach our pupils should:

- Learn using the CPA approach as outlined above.
- Have a sense of the size of a number and where it fits into the number system.

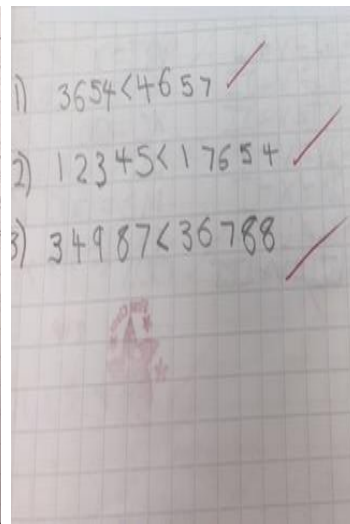
- Know by heart number facts.
- Develop a range of calculation strategies.
- Make sense of number problems, including non-routine problems, and recognise the operations needed to solve them.
- Explain their methods and reasoning using correct mathematical terms.
- Judge whether their answers are reasonable and have strategies for checking them where necessary.
- Suggest suitable units for measuring and make sensible estimates of measurements.
- Explain and make predictions from the numbers in graphs, diagrams, charts and tables.
- Develop spatial awareness and an understanding of the properties of 2D and 3D shapes.
- Demonstrate reasoning skills and good mental arithmetic skills.
- Have knowledge of and explore the importance of mathematical vocabulary.
- Demonstrate recall of previous learning.



Concrete



Pictorial



Abstract

Implementation

During the academic year 2017-2018 we introduced the White Rose Planning scheme into every year group, and we are continuing to build on using the 'Mastery' approach to the children's learning. We have since continued to use this approach within our teaching throughout the school and more recently (academic year September 2023-2024) we have transitioned to using the most recent versions of this scheme.

An important part of this scheme is the daily flashback sessions that enable teachers to assess if the children can recall previous learning alongside current topics and indeed some more challenging questions.

Planning

The carefully planned sequences of lessons ensure that the pupils cover the national curriculum but in addition to this the whole approach is designed to develop resilient, efficient and logical learners who thrive on tackling problems and applying their knowledge and skills in a range of contexts.

The Mastery approach enables all learners to extend and push their own understanding without setting a 'ceiling' on their learning. Through the use of carefully planned questioning and activities the children are given the opportunity to develop further and also where necessary consolidate previous learning.

The small steps progression documents from the White rose enable teachers to develop an all-inclusive maths curriculum which helps to create concrete understanding of the concepts and thus give opportunities to thoroughly cement the key mathematical content.

Class Structure

In years 3, 4, 5 and 6 the children are taught by the class teacher in mixed ability groupings. The children will experience differing models and images to represent the same topic, this helps them to explore the mathematical content in a variety of ways and helps them to make mathematical links.

Maths beyond the 'Maths Lesson.'

Mathematics contributes to many subjects, and it is important that our children are given opportunities to apply mathematics and use mathematics in real contexts. Each year group makes sure that they make their links to mathematics explicit in other lessons. The year groups work together to ensure that they have opportunities for maths across the year outside of and in addition to the standalone Maths lesson. The children also take part in maths enrichment days such as World Maths Day, Primary Maths Challenge (Y5/6), first maths challenge (Y4/5), Mathematical elements of school trips, our annual Maths through stories focus & inter schools' competitions (with other TCAT schools) and there is a regular focus throughout the school of the enjoyment of Maths through reading.

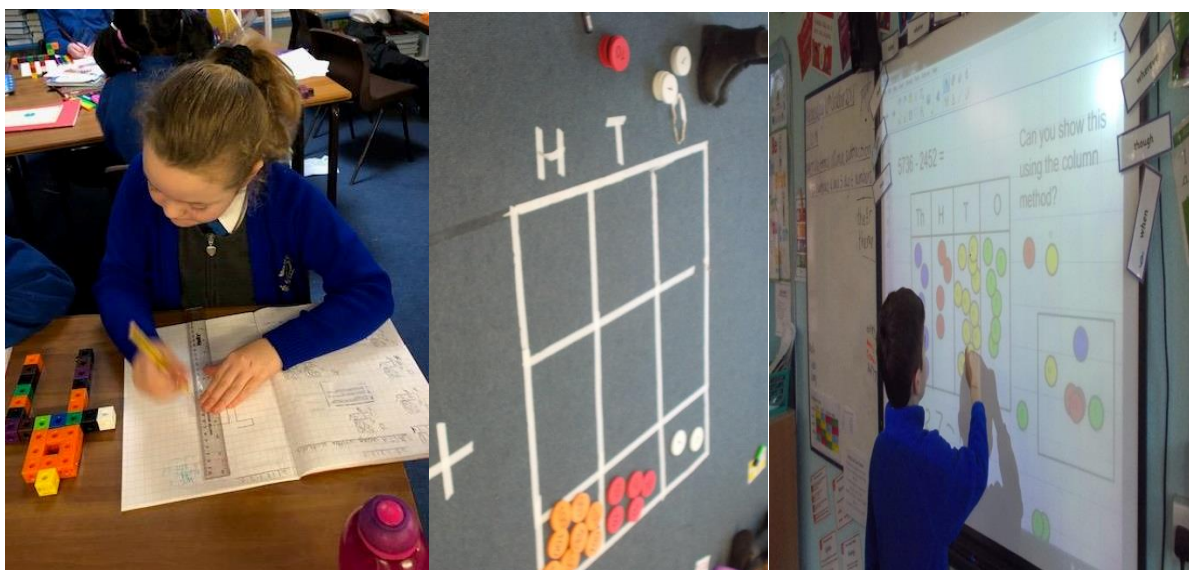
The school grounds give the children the opportunity to work on Maths trails and problem-solving work and teachers incorporate these ideas into their plans.

Intervention

Where children need additional support, this is used through pre and post teaching activities which are designed around individual learners' needs and capabilities and this takes place in addition to the Maths lesson.

Intervention programmes will be monitored closely for effectiveness and where applicable altered and renewed to suit the individual needs of all SEND and Pupil Premium children. In most cases children will receive the quality first teaching from the class teacher and the assistant will support the children based on their personalised needs and in line with any intervention and behaviour plans.

More able children in all years are given opportunities to challenge their understanding through carefully planned enrichment Maths challenges within the school's cluster. Furthermore, Years 3 & 4 take part in the Mathematical Association's first maths challenge & Year 5 and 6 children are invited to take part in the Primary Maths Challenge. This challenge allows children to use their thinking skills and mental strategies to answer complex problems. There is also an opportunity for these children to undertake Maths projects with Bridgewater High school.



Impact

Every classroom in the school celebrates the Maths Learning Journey on the classroom displays. Key vocabulary for the topic will be present and referred to in each lesson and displays will also be used to celebrate the children's work, current topics, previous learning and interactive opportunities for children to further develop their learning.

We are passionate about the children becoming resilient, independent and inquisitive mathematical learners and this is evident within their books, pupil voice and teacher discussion.

When speaking to our children, it is clear that they feel positive towards the concrete, pictorial, abstract approach because it gives them the time and confidence to fully grasp and apply new mathematical concepts. Children are starting to become much more willing to tackle higher level problem solving and reasoning questions.

We always endeavour to set work that is challenging, motivating and encourages the pupils to talk about what they have been doing but we also endeavour to support all children in making sure that they have the correct understanding to progress further. Every day the children are given the opportunity to 'Warm up' and they are given calculations which will involve recall of previous learning as another opportunity to help their learning 'stick.'

Assessment

Assessment is regarded as an integral part of teaching and learning and is a continuous process. In our school we are continually assessing our pupils and making judgments against age related expectations. Alongside our formal testing methods, teachers are constantly making informal judgements and assessments regarding the learning taking place. These judgements inform daily planning, how to best utilise support staff and the regular verbal feedback which is given directly to the children. In addition, the children also use self and peer assessment strategies in lessons. In every lesson the children are asked to use a traffic light system to indicate how they have personally felt that they have performed against the learning intentions of the session.

The NFER tests are used as an end of term summative assessment and teachers pay close attention to pupil progress through formal meetings with the SLT. Lessons are adapted and tailored in response to outcomes.

Times tables.

All children will be encouraged to learn their tables up to the 12x table by the end of the Spring term in Y4. However, we endeavour to go beyond this.

In September 2023, we launched the 'Number sense' times tables programme. This fully envelops & complements the CPA approach we use to teach all our maths, with a key focus on securing facts, identifying patterns & recognising the commutativity of times tables. Children need to regularly learn their times tables, and this is a journey that is continuous and needs regular attention. Therefore, all children will have a weekly times tables lesson followed by daily fluency practice of the facts and patterns learnt. The tables will be taught through following the programme which focuses on learning 36 key facts. A variety of strategies will be used, from the lessons outlined in our planning, regular rote learning, times tables games, the daily fluency sessions & indeed the focus on times tables within our daily white rose lessons.

We ask parents and guardians to support us with this and we provide links to supporting websites on our school homepage. The Y4 children will sit the statutory Y4 times tables test in school by the end of June.

Research

The maths lead meets termly with TCAT primary schools, sharing best practice, reviewing and implementing the latest research and EEF findings into all partner schools where applicable. Working in partnership with these schools ensures that every pupil receives a broad and balanced maths curriculum.