

Maths Policy

November 2023

Our Values:



This policy should be read in conjunction with the National Curriculum, our Year Group Curriculum Overviews, Addition and Subtraction Calculation Policy and Multiplication and Division Calculation Policy. These set out the rationale for teaching each area of the Mathematics Curriculum and specify the skills that will be developed for pupils in each year group.

Intent

At Boney Hay Primary Academy, we value Mathematics and we want our children to understand that Maths is essential to everyday life. We want children to grow up with a deep understanding of Mathematics and we recognise that Maths teaches us how to make sense of the world around us, whether it be calculating the total amount of money we need to purchase items or weighing precise amounts of ingredients when following a recipe. Maths helps us to develop problem solving and reasoning skills that allow us to solve a variety of problems.

Our objectives in the teaching of mathematics are:

- To promote enjoyment of learning through practical activity, exploration and discussion
- To develop confidence and competence with numbers and the number system through rapid recall
- To develop conceptual understanding in order to solve problems through decision-making and reasoning in a range of contexts
- To develop a practical understanding of the ways in which information is gathered and presented
- To help children understand the importance of mathematics in everyday life

Implementation

We believe that the vast majority of children can succeed in learning mathematics in line with national expectations. Our key principles for maths lessons are:

- **It is achievable for all.** We have high expectations and encourage a positive 'can do' mind-set towards mathematics in all pupils, creating learning experiences which develop children's resilience in the face of a challenge and carefully scaffolding learning so everyone can make progress.
- **The whole class is taught mathematics together,** with the expectation that every child will master the key concept, whilst some will work more deeply on challenging tasks.
- **Deep and sustainable learning** – lessons are designed with careful small steps, questions and tasks in place.
- **Conceptual and Procedural Fluency** – teachers move mathematics from one context to another, using objects, pictorial representations, equations and word problems. There are high expectations for pupils to learn times

tables and key number facts and have a true sense of number. They are encouraged to think whether their method is appropriate, reliable and efficient.

- **Differentiation** is in the form of the amount of time that pupils will spend using concrete resources or pictorial representations to grasp concepts. It will be seen through targeted questioning and the feedback and scaffolding individual pupils receive in class as they work through problems.
- **Challenge through greater depth** – teachers set tasks to deepen knowledge and improve reasoning skills within the objectives of their year group.
- **The ability to reason about a concept and make connections** – pupils are encouraged to make connections and spot patterns between different concepts.
- **Precise mathematical language**, often used in ‘stem sentences’, is used by teachers so that mathematical ideas are conveyed with clarity and precision.
- **Sufficient time is spent on key concepts**, to ensure that learning is well developed and deeply embedded before moving on.

Our Curriculum



From Reception to Year 6, we follow the White Rose Mathematics scheme. This aligns with the National Curriculum for Mathematics, which aims to ensure that all pupils:

- Become fluent in the fundamentals of mathematics, including through varied and frequent practice, so that pupils develop conceptual understanding and recall and apply knowledge
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and using mathematical language
- Can solve problems by applying their mathematics to a variety of routine and non-routine problems

All children are encouraged to believe in their ability to master maths and are empowered to succeed through curiosity and resilience, while tackling the same concepts at the same time and progressing together as a whole class. The 'small step approach' used in the White Rose Scheme allows children to *keep up* not *catch up* as children are given the opportunity to build upon their prior knowledge. Each session includes questions designed to unpick the structure of the maths and deepen the children's understanding. When children talk about maths concepts, they develop the vital mathematical language that helps them explain their ideas.

Through the White Rose scheme, we follow the CPA (Concrete, Pictorial, Abstract) approach in Maths lessons, which is a highly effective approach to teaching that develops a deep and sustainable understanding of maths in pupils. This means that children are first introduced to new maths concepts using concrete materials, for example sharing out cubes to solve a division problem. This is then represented in pictorial form before being shown as an abstract number sentence.

In addition to our daily Maths lessons, each class from Reception to Year 6 hold a daily maths meeting in which they work on securing number facts. In Reception, Year 1 and Year 2 we follow the NCETM Mastering Number programme which exposes children to number facts in a variety of representations.



As children progress from KS1 into KS2, we focus on securing times table facts. We achieve this by introducing times tables through concrete and pictorial representations and practising counting using songs and chants daily. Children also take part in regular low stakes quizzes of their times table facts each week and access Times Table Rockstars to increase their speed of recall.

Parental Involvement

We recognise that parents/carers can make a significant difference to a child's progress in Maths. We encourage parents to be actively involved by:

- Providing parent's evenings, which give information on their child's progress and their targets for the future
- Updating parents on their child's learning via our class dojo year group pages
- Providing an end of year report, which outlines progress and attainment
- Providing additional information, guidance and support via the school website
- Providing updates on individual year group and whole school events linked to Maths via class dojo
- Providing log in details for Times Table Rockstars for every child in KS1 and KS2 to practise their times table facts at home
- Including maths tasks to complete together at home in our half termly Family Learning Projects

Inclusion

All children have equal access to the Mathematics curriculum, regardless of race, religion, ability or gender. Teaching maths for mastery through the Mastering Number and White Rose schemes offers all pupils access to the full maths curriculum. This inclusive approach, and its emphasis on promoting multiple methods of solving a problem, builds self-confidence and resilience in pupils. Though the whole class goes through the same content at the same pace, there is still plenty of opportunity for differentiation through the support and intervention provided to different pupils. There is no differentiation in content taught, but the questioning and scaffolding individual pupils receive in class as they work through problems will differ, with those pupils who grasp concepts quickly being challenged through more demanding problems which deepen their knowledge of the same content. Those children who are not sufficiently fluent are provided additional support to consolidate their understanding before moving on. Pupils' difficulties and misconceptions are identified through immediate formative assessment and addressed with intervention – commonly through individual or small group support later the same day where possible.

Where there are significant gaps in a child's learning, Individual Learning Plans plans will incorporate relevant maths objectives from the National Curriculum from a previous year group and the class teacher will be responsible for identifying and planning for those needs, with help from the Maths Subject Leader and/or SENDCO.

When support staff are available to support groups or individual children, they work collaboratively with the class teacher and provide daily feedback to inform evaluations, assessment and future planning.

Maths across the Curriculum

It is important for pupils to develop and apply their Mathematical skills across other subjects in the curriculum and to real life experiences, appropriate to their learning needs and development. Opportunities for developing their maths skills across other subject areas and to real life experiences are planned for through the school year through our Bee Curriculum and special whole school event days focussed on Mathematics, for example NSPCC Number Day.

Impact

Feedback and Marking

Marking of mathematics books should be completed in line with the school Feedback for Learning Policy. It is essential that all marking picks up and addresses any misconceptions/mistakes and thorough questioning ensures children have clarified their thinking clearly. Teachers and support staff are expected to use appropriate feedback methods during the lesson. Feedback should be effective in ensuring pupil progress throughout a lesson or unit of work. It is recognised that live marking is the most effective method of addressing errors and misconceptions.

Assessment

Formative assessment for learning should occur throughout the entire maths lesson, enabling teachers to adjust their teaching/input to address the needs of the children. Teachers assess children daily through:

- Regular marking of work
- Analysing errors and picking up on misconceptions
- Asking questions and listening to answers
- Facilitating and listening to discussions
- Making observations

These ongoing assessments inform future planning and teaching of daily maths lessons and maths meetings.

Summative assessments take place at the end of each block taught in the White Rose scheme through the White Rose end of block assessments in which pupils are assessed against their year group objectives at the end of a unit. These assessments help inform planning, teaching, interventions and guided support. In addition to this, at the end of each term, pupils in years 1-6 complete NFER assessments and number fact/times table assessments and the outcomes of these are analysed by class teachers to ensure gaps in knowledge are addressed before moving on. The table below outlines our school end of year expectations for each year group, showing the number fact and times table knowledge we expect our children to have at the end of each year.

End of Year Expectations

	Number Facts	Times Tables
Reception	-Fluent within 5 -Doubles within 10	
Year 1	-Fluent within 10 -Composition of 11-19 as '10 and a bit'	
Year 2	-Fluent within 20	-2x, 5x, 10x
Year 3		-3x, 6x, 4x, 8x
Year 4		-7x, 9x, 11x, 12x
Year 5		-Consolidation and related facts up to 12x
Year 6		-Consolidation and related facts up to 12x

Teachers talk through the progress of their pupils at termly pupil progress meetings: this ensures targeted support can be given to those who need it.

Statutory assessments for maths take place through the Baseline assessments completed in Reception, SATs in year 6 and Multiplication Tables Check completed in June.

Mathematics Subject Leader

The subject leader's role is to empower colleagues to teach maths to a high standard and support staff in the following ways:

- Ensuring that long and short term planning is designed to ensure progression and continuity in mathematics throughout the school
- Keeping up to date on current issues; disseminating relevant information and providing training for staff members (either directly or through other professionals)
- Leading by example/modelling lessons or styles of teaching
- Having a knowledge of the quality of mathematics provision across the school

- Identifying and acting on development needs of staff members
- Monitoring expectations, provision and attainment across the school and providing feedback to develop practice further in order to raise standards
- Providing necessary equipment and taking responsibility for maintaining it to a high standard
- Keeping parents and governors informed about mathematical developments, including ensuring the school website is up to date
- Working in partnership with the school's SENDCo to ensure the learning needs of all pupils in mathematics are met effectively

Monitoring and Evaluation

The monitoring of maths teaching and pupil progress is the shared responsibility of teachers, the subject leader and the senior leadership team. The quality of teaching and learning is monitored through learning walks, pupil interviews, work sampling and attainment towards end of year targets.

In addition, continuity and progression across the school is monitored by the maths subject leader as is the implementation and impact of Assessment for Learning. Actions identified in the SIP and ADP, intended to raise standards, are also monitored for implementation and, when appropriate, impact.