BUTTSBURY
JUNIOR SCHOOL

AN ACADEMY SCHOOL

Maths Policy

Maximum Effort for Maximum Achievement

1. Aims and objectives

- To provide a broad and balanced mathematics curriculum, that enables children to gain a mastery understanding of mathematics, where children apply their mathematical skills and curriculum content across a wide range of contexts.
- Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and patterns in both number and space in their everyday lives.

The aims of mathematics are:

- To develop mathematical knowledge, skills and understanding to enable pupils to solve problems in a variety of contexts and apply them in new situations.
- To promote pupils' enjoyment of mathematics and develop confidence in their own abilities by developing a thorough understanding of numbers and the number system.
- To develop a logical thinking and reasoning approach to mathematics through investigations.
- To develop conceptual understanding of mathematics by using concrete materials, pictorial representations and abstract thinking.
- To use appropriate mathematical language with ease and understanding as a form of communication.
- To develop reasoning skills both verbally and written; demonstrating their understanding of a mathematical concept.
- To encourage pupils to think for themselves, develop an enquiring mind and communicate ideas to others.
- To develop the pupils' powers of concentration and perseverance through sustained activities.
- To enable pupils to acquire a thorough understanding of mathematical concepts and to develop the ability to work mentally.
- To explore features of shape and space, and develop measuring skills in a range of contexts.

2. Curriculum Intent

At Buttsbury Junior School the intent of our Maths curriculum is to ensure that all children are fluent in the fundamentals of Mathematics. From this they will be able to reason mathematically and apply their knowledge to solving problems. Our curriculum allows children to better make sense of the world around them, relating the patterns between mathematics and everyday life.

3. Curriculum Implementation

We have a broad and balanced Maths curriculum at Buttsbury Junior School, where children are given the opportunity to master their learning by 'applying what they have learnt to a new situation'.

Units of learning are blocked, well sequenced and build on previous learning. Lessons ensure that progress is achieved through small steps, allowing children to develop their subject knowledge, consolidate skills and apply this to their new learning. We encourage children to ask questions, investigate and have a 'trial and improvement' approach.

Strands in Maths include: Number and Place Value, Addition and Subtraction, Multiplication and Division, Fractions, Ratio and Proportion, Measurement, Geometry, Algebra and Statistics.

At Buttsbury Junior school, Maths lessons may include:

• Use of practical resources (CPA approach)
• Collaborative learning
• Investigations and word problems.
• Opportunities to practise key skills and apply their knowledge to problems.
• Reasoning opportunities
• Double Teaches and Mini-plenaries
• Fluid groupings

4. Curriculum Impact

Our curriculum encourages all children, regardless of ability, to think deeply and apply their skills to new, and increasingly complex situations. Children are able to select appropriate methods to solve problems and can explain their choices to others. As a result of this, children have the ability to demonstrate resilience when the task is challenging. They are not only able to apply their knowledge in other areas of the curriculum but also understand the relevance and importance of their learning in relation to real world concepts.

5. Teaching and learning style

- Our principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole class and group-direct teaching. The children are not taught in their usual classes but are set.
- In Years 6 and 3 an extra teacher is available to teach a 5th group. During these lessons we encourage children to ask, as well as, answer mathematical questions.
- The school teaches arithmetic and reasoning concepts using concrete, pictorial and abstract methods, that deepen number understanding. Children are able to independently use a range of techniques to calculate and reason problems.
- A wide range resources are available for the children to access, such as number lines, number squares, base 10, place value counters, digit cards and concrete apparatus to support their work. Children and teachers use ICT in mathematics lessons where it will enhance their learning, and to assist with modelling ideas and methods. Wherever possible, we encourage the children to use and apply their learning in everyday situations.
- In all classes/sets there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by allowing children to choose their challenge or the task. Throughout lessons a range of strategies are used to ensure appropriate levelled learning. Children are asked to undertake independent work but other strategies are also utilised. In some lessons, group work is undertaken, and in other lessons, children are organised to work in pairs on open-ended problems or games. We use teaching assistants and other adults to support and/or extend some children and to ensure that work is matched to the needs of individuals.

6. Mathematics curriculum planning

- Mathematics is a core subject in the 2014 National Curriculum. We use this as the basis for implementing the statutory requirements of the programme of study for mathematics.

- We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term).
- Our medium-term mathematics plans, which are adopted from the National Curriculum, give details of the main teaching objectives for each term and define what we teach. Our topics are sequenced according to White Rose Maths and ensure an appropriate balance and distribution of work across each term.
- As a school, we use White Rose Maths teaching and learning resources, which we adapt for our pupils learning needs. We teach pupils the topic content in-line with White Rose Maths; however, Year Groups adapt the teaching sequence, which are documented in the Long-term plans.
- It is the class teacher (for each set) who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. The class teacher keeps these individual plans, and the class teacher and subject leader can discuss these on an informal basis.
- Daily lessons include a '5 in 5' arithmetic activity for children to complete whilst the children are moving to their maths classroom. To consolidate and recall previous learning, children are asked four questions in 'Flashback 4', which relates to something learnt in their previous lesson, previous week, previous topic and previous year's learning. Children then engage in a Times table task which combines Daily 10 and Times Tables Rockstars (Year 3 and 4).

7. Cross curricular links

English
Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. There is also opportunity for children to justify and explain their reasoning, both verbally and written, throughout the lesson, in the plenary and in their 'Now Try This' (NTT).

Science
During science lessons, children are able to use and apply their data handling skills when creating tables and graphs of scientific measurements. Whole class discussion of data also highlights the importance of clear recording of information. Children are also able to use a wide range of measuring devices in a real-life context. Children are required to read the scales on Newton meters, measuring cylinders, weighing scales and a variety of other instruments.

Computing
Children use and apply mathematics in a variety of ways when solving problems using technology. Younger children use technology to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships.

8. The teaching of mathematics to children with special needs

It is part of the school curriculum policy to provide a broad and balanced education to all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Work in mathematics takes into account the targets set for individual children in their Individual Education Plans (IEPs).

9. Pupils who are academically more able

Children who are working well above the overall level of their class or group will be engaging with a range of experiences designed to broaden or deepen their learning, while working on the same learning objectives as their peers. A select number of the most able mathematicians are chosen to participate in enrichment lessons and at times, some children will be offered the opportunity to attend a Masterclass that is held at a local secondary school.

10. Differentiation

In all year groups the children are grouped according to ability. These ability groups are flexible and can be altered. A variety of resources are used to both support and challenge children.

These include:

- commercial schemes
- teacher ideas
- practical resources
- adult-led guided groups

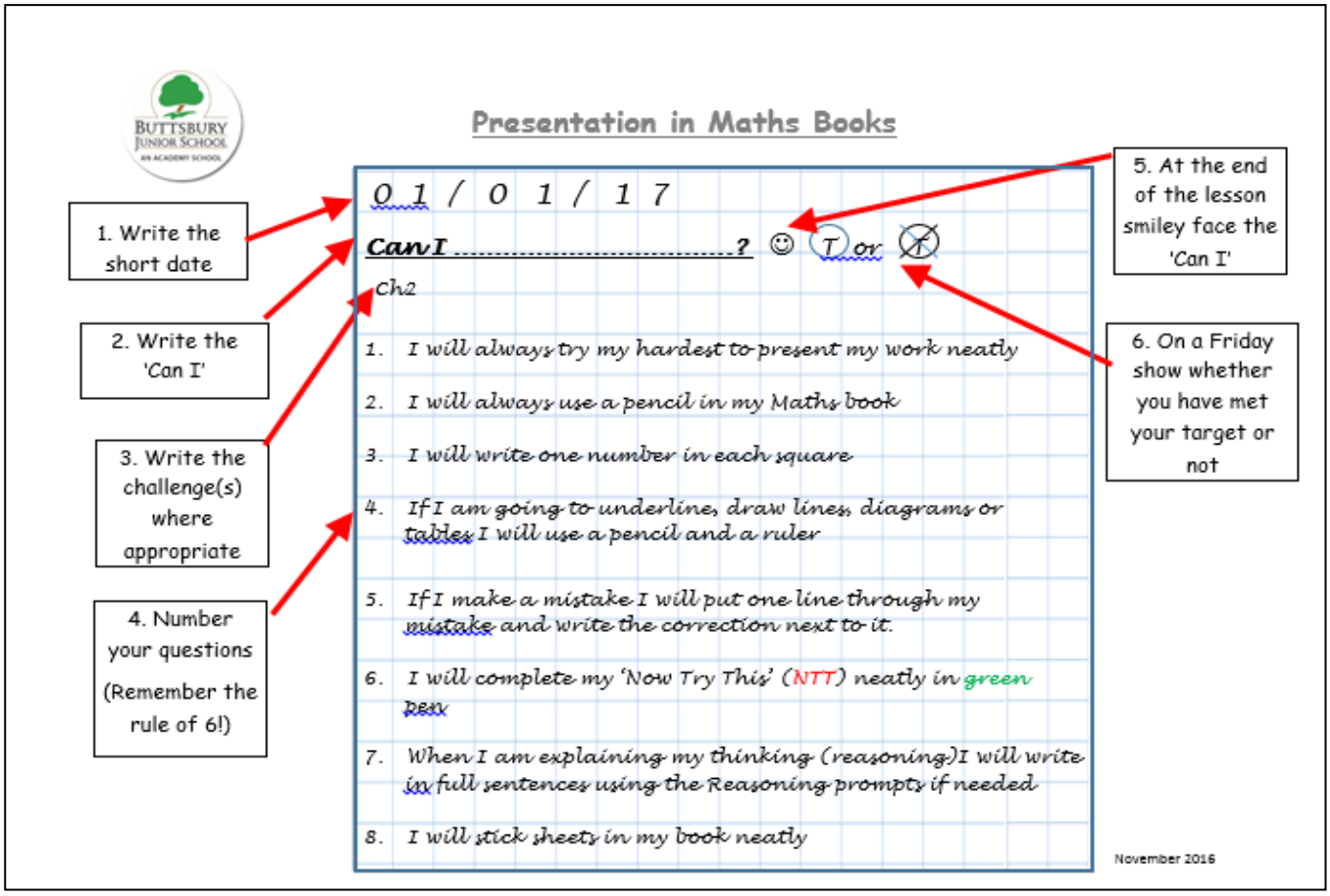
11. Assessment and recording

We assess children's work in mathematics from three aspects (long-term, short-term and medium-term). We make short-term assessments which we use to help us adjust our daily plans. These short-term assessments are closely matched to the teaching objectives.

- We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work. We use termly assessments as a way of recording children's progress in objectives covered across that specific term.
- We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We can then set targets for the next school year and make a summary of each child's progress before discussing it with parents. We pass this information on to the next teacher at the end of the year, so that s/he can plan for the new school year. We make the long-term assessments with the help of end-of-year tests and teacher assessments. We use the national tests for children in year 6, plus the End of Term, White Rose Math tests for years 3, 4, and 5. We also make annual assessments of children's progress measured against the level descriptions of the National Curriculum.

12. Marking

The formal aspects of presentation in exercise books is outlined in the front of each child's book (see below):



Children will be encouraged at all times to write down the process they carried out in order to obtain an answer. This is a useful diagnostic assessment for the teacher.

Marking will follow the school's policy. Further details can be found in the Marking Policy.

13. Homework

- Children are set weekly mathematics homework. Details of the expectations in terms of time allocation can be found in the Homework Policy document.

14. Mastery in Maths

Effective mastery in Mathematics encourages all pupils, regardless of ability, to think deeply and apply their skills to new, and increasingly complex situations.

Precise questioning during lessons ensures that pupils develop fluent reasoning skills and provide opportunities to think critically about the underpinning mathematical concepts. They are also able to justify through reasoning.

Pupils who are demonstrating mastery in Mathematics are able to select appropriate methods to solve problems efficiently and can explain their choices to others. Children can then represent their calculations in a variety of ways, using pictorials, physical manipulatives and abstract methods to further deepen their knowledge of concepts. They are able to identify and explain mistakes using mathematical vocabulary. Additionally, pupils are able to prove and explain their reasoning both verbally and in full written sentences.
Investigations and word problems during lessons ensure that pupils can develop problem-solving skills and logical thinking. They are able to apply their skills and knowledge that they have learnt within different contexts.

As a result of this, pupils have the ability to demonstrate resilience when the task is demanding and apply their knowledge in other areas of the curriculum.

15. Reporting

Reporting to parents will adhere to the following guidelines:

- Set out what the children have been taught and what they have learned
- Be written with the reader in mind
- Summarise the pupil's performance since the last report
- Highlight positive achievement and progress made
- Identify weaknesses and suggest positive future action

16. Review and Monitoring

Policy Date: Spring 2023

Review Date: Spring 2026