



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 incorporating the six strands from the programme of study for Years 3 to 6: Number, Ratio and Proportion, Algebra, Measurement, Geometry and Statistics.
- 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 pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many people to the development and application of mathematics.

The aims of mathematics are:

- To develop mathematical knowledge and 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 use appropriate mathematical language with ease and understanding as a form of communication
- 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 use new technologies
- To enable pupils to acquire a sound 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. Teaching and learning style

- The school uses a variety of teaching and learning styles in mathematics lessons. 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 5 and 6 an extra teacher is available to teach a 5th group. During these lessons we encourage children to ask, as well as, answer mathematical questions. A wide range resources are available for the children to access, such as number lines, number squares, digit cards and small 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 some children and to ensure that work is matched to the needs of individuals.

3. 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). The National Numeracy Strategy Framework for Teaching gives a detailed outline of what we teach in the long term, while our yearly teaching programme identifies the key objectives in mathematics that we teach in each year.
- 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. They ensure an appropriate balance and distribution of work across each term. These plans are kept by both the class teachers and accessible to the subject leader.
- It is the class teacher 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.

4. 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.

5. The teaching 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).

6. 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. From time to time they may also be accelerating the pace of their learning by working towards objectives chosen from the relevant progression strand from a later year. At times, some children will be offered the opportunity to attend a Masterclass that is held at a local secondary school.

7. 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

8. 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 optional national tests for children at the end of years 3, 4, and 5. We also make annual assessments of children's progress measured against the level descriptions of the National Curriculum.

9. Marking

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



Presentation in Maths Books

1. Write the short date

2. Write the 'Can I'

3. Write the challenge(s) where appropriate

4. Number your questions (Remember the rule of 6!)

01 / 01 / 17

Can I ? 😊 T or ~~X~~

Ch2

1. I will always try my hardest to present my work neatly
2. I will always use a pencil in my Maths book
3. I will write one number in each square
4. If I am going to underline, draw lines, diagrams or tables I will use a pencil and a ruler
5. If I make a mistake I will put one line through my mistake and write the correction next to it.
6. I will complete my 'Now Try This' (NTT) neatly in green pen
7. When I am explaining my thinking (reasoning) I will write in full sentences using the Reasoning prompts if needed
8. I will stick sheets in my book neatly

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5. At the end of the lesson smiley face the 'Can I'

6. On a Friday show whether you have met your target or not

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.

10. Homework

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

11. Mastery in Maths

Effective mastery curricula in mathematics are designed in relatively small carefully sequenced steps. The focus is on the development of deep structural knowledge and the ability to make connections independently.

Teaching methods

Precise questioning during lessons ensures that pupils develop fluent technical proficiency and think deeply about the underpinning mathematical concepts. They are able to justify through reasoning.

Taking a mastery approach, differentiation occurs in the *support and intervention provided* to different pupils, *not in the topics taught*, particularly at earlier stages.

At early stages, explicit learning of multiplication tables is important in the journey towards fluency and contributes to quick and efficient mental calculation.

Teaching resources

A coherent programme of high quality curriculum materials (including concrete and pictorial representations) is used to support classroom teaching to help build procedural and conceptual knowledge together.

Lessons include a variety of representations needed to introduce and explore a concept effectively and also set out related teacher explanations and questions to pupils.

12. 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

12. Review and Monitoring

Policy Date: Spring 2017

Review Date: Spring 2020