**Maths Policy**

This Policy was written by Clare Smith

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Approved by

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There aims of this policy are:

* To ensure good attainment in maths from Early Years to Year 6;
* To outline a consistent approach and delivery of maths teaching;
* To establish expectations for teachers;
* To promote continuity and coherence across the school;
* To state the school’s approaches to maths in order to promote understanding of the curriculum in the wider environment.

**OVERARCHING VISION**

Our aim at Buckminster Primary School is for all children to enjoy mathematics and have a secure and deep understanding of fundamental mathematical concepts and procedures when they leave us to go to secondary school. We want children to see the mathematics that surrounds them every day and enjoy developing vital life skills in this subject.

**STATUTORY GUIDANCE**

**The aims of the 2014 National Curriculum are for our pupils to:**

* become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
* reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
* be able to solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

The National Curriculum sets out year-by-year programmes of study for key stages 1 and 2. This ensures continuity and progression in the teaching of mathematics. The EYFS Statutory Framework 2014 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the ‘Development matters’ non statutory guidance. The EYFS Framework in relation to mathematics aims for our pupils to:

* develop and improve their skills in counting
* understand and use numbers
* calculate simple addition and subtraction problems
* describe shapes, spaces, and measures

**Mastery**

The National Curriculum emphasises the importance of all pupils mastering the content taught each year and discourages the acceleration of pupils into content from subsequent years, which should only be considered as an option in exceptional circumstances and with approval of the head teacher. Buckminster Primary School follows the principles of mastery with the aim of enabling and extending all pupils to achieve their potential in maths and minimise the attainment gap.

*(‘To prevent struggling pupils from falling further behind their peers’ (Ofsted Research Review – Maths, May 2021)*

**INTENT**

The purpose of mathematics at Buckminster Primary is to develop:

* positive attitudes towards the subject and awareness of the relevance of mathematics in the real world
* competence and confidence in using and applying mathematical knowledge, methods and strategies

*(Declarative, Procedural and Conditional Knowledge – Ofsted Research Review – Maths, May 2021)*

* an ability to solve problems, to reason, to think logically and to work systematically and accurately
* initiative and motivation to work both independently and in cooperation with others
* confident communication of maths where pupils ask / answer questions using mathematical vocabulary
* a confidence to openly share work and learn from mistakes
* an ability to use and apply mathematics across the curriculum and in real life
* an understanding of mathematics through a process of enquiry and investigation
* fluency with number and an ability to use and apply key number facts

***We aim to provide a stimulating and exciting learning environment that takes account of different learning styles and uses appropriate resources to maximise teaching & learning.***

**IMPLEMENTATION**

**Lesson Design**

Careful planning and preparation ensures that throughout the school children engage in:

* purposeful practise where time is given to apply their learning
* problem solving to challenge thinking
* individual, paired, group and whole class learning and discussions
* open and closed tasks
* practical activities and games using a variety of manipulatives and representations
* a range of methods of calculating e.g. mental, pencil & paper and using a calculator
* working with computers as a mathematical tool

*(See EEF Improving Mathematics in KS2 & KS3 Guidance Report Sections 2-6)*

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas and spaces, including outdoors.

*(See recommendation in EEF Improving Mathematics in EY & KS1 Report – Section 2)*

**Planning and organisation**

**Long term planning**

The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long term planning for mathematics taught in the school.

**Medium term planning**

Years R-6 use the White Rose Maths Hub schemes of learning as their medium term planning documents. These schemes provide teachers with exemplification for maths objectives and are broken down into fluency, reasoning and problem solving, key aims of the National Curriculum. They support a mastery approach to teaching and learning and have number and number sense at their heart.

*(Teachers help pupils develop their automatic recall of core declarative knowledge, rather than rely on derivation, guesswork or casting around for clues– Ofsted Research Review – Maths, May 2021)*

They ensure teachers stay in the required key stage and support the ideal of depth before breadth.

**Short term planning**

The White Rose Maths schemes of learning provide lesson resources for each small step which are adapted by teachers to deliver the specific teaching and learning needed by the children in their class based on ongoing formative assessment information.

*(See recommendation in EEF Improving Mathematics in KS3 & KS3 Report – Section 1)*

**EYFS** **planning** is based on the medium term plans and delivered as appropriate to individual children with thought to where the children are now and what steps they need to take next. Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach.

All classes have a minimum of 4 mathematics lessons every week plus ‘Mastering Number’ Sessions designed by NCETM to support early numbersense. These lessons are monitored at intervals by the mathematics subject leader and head teacher.

*(Teachers help pupils develop their automatic recall of core declarative knowledge, rather than rely on derivation, guesswork or casting around for clues– Ofsted Research Review – Maths, May 2021)*

**Homework** is sent home for all children from Year 1 upwards. Maths homework (paper based or online) is aligned to the topics currently being taught in class. Additionally, children will be expected to learn their times tables from Year 2 onwards, with knowledge of all tables to 12 times expected by the end of Year 4 in preparation for the Multiplication Tables Check.

**Presentation of maths work**

The expectation is for children and staff to take pride in all their maths work and as such any working out or calculations should be presented in such a way to reflect that expectation.

As a minimum:

* Pencils should be used in maths books
* Margins, lines and underlining in books and on paper should be drawn with a pencil and ruler
* Numbers to be recorded as one digit one square
* Any worksheets to be trimmed and stuck in neatly with no overlapping edges
* Previous worked ruled off if required
* All work to have a date and learning objective

**Mathematics within the school community**

**Staff Professional Development**

Regular staff meetings and online training are used to deliver and share the latest understanding and teaching requirements for mathematics in a primary school context. Maths lead teacher is part of the East Midlands Maths Hub training and NCETM Mastering Number Programme

*(See recommendation in EEF Improving Mathematics in EY & KS1 Report – Section 1)*

*(‘School-wide approaches to providing time and resources for teachers to develop subject knowledge and to learn valuable ways of teaching from each other’ – Ofsted Research Review Maths, May 2021)*

**Parent & Carer Involvement.**

At Buckminster Primary School we encourage parents and carers to be involved by:

* Sharing information online as well as running in-school events to ensure they are aware of current maths practice and policy which enables families to support their children when learning maths at home
* Inviting them to parents’ evenings to discuss the progress of their child.
* Providing weekly homework to consolidate classroom learning and to inform parents of their children’s learning.

**The Governing Body**

Governors are updated at least termly with maths data by year group. Any issues are identified and action plans communicated. Governors are invited to attend any maths workshops or training. The maths subject leader meets at least annually for a monitoring review with the head teacher and a governor.

**Classrooms and resources**

Each classroom will be resourced with materials to support the teaching and learning of maths; such items might include number lines, multiplication tables, 100 squares, multilink cubes, dice and other smaller items. Larger materials such as scales, 2D and 3D shapes, trundle wheels and measuring cylinders, will be held centrally in the store cupboard in the Attenborough Classroom.

Children should be encouraged to use whatever resources are available to them in the classroom and which they feel would be beneficial to help them when completing maths work.

*(See recommendation in EEF Improving Mathematics in EY & KS1 Report – Section 3)*

Each classroom should have a display dedicated to maths; this could be in the form of a working wall, strategy board or problem solving area. This board should be regularly changed to reflect the teaching and learning activities happening in the classroom. This display should include materials to support children in accessing their learning independently.

**IMPACT**

At the end of each year we expect the children to be working at the Age Related Expectations (ARE) for their year group. Some children will have progressed further and achieved greater depth (GD). Children who have gaps in their knowledge receive appropriate support and intervention.

Through discussion and feedback, children talk enthusiastically about their maths lessons and speak about how they love learning about maths. Children demonstrate confidence and believe they can learn about a new maths area and apply the knowledge and skills they already have.

 The impact of maths teaching and learning will be established via robust assessment, feedback and marking practices.

**Assessment**

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of children daily through;

* regular marking of work
* analysing errors and identifying misconceptions
* asking questions and listening to answers
* facilitating and listening to discussions
* making observations
* regular ‘Maths Minute’ quizzes to asses KIRF

*‘Lessons incorporate timed testing to help pupils learn maths facts to automaticity’,*

*‘Teachers plan frequent, low-stakes testing to help pupils to remember content’ – Ofsted Research Review Maths, May 2021)*

**Marking**

Marking of children’s work is essential to ensure they make further progress. Children are provided with feedback either verbally or through written marking in line with the school’s Marking Policy. Children are encouraged to self-assess their work and are given time to read teachers’ comments and make corrections or improvements. Responses to marking are made ideally at the start of the next lesson. Some pieces of work in mathematics can be marked by children themselves, with support and guidance from the teacher – particularly in KS2.

When a teacher feels it necessary a topic may be repeated with a small group to ensure deeper understanding or to clarify misconceptions. Such interventions will be implemented as soon as possible following the lesson.

*(See recommendation in EEF Improving Mathematics in EY & KS1 Report – Section 5)*

**Termly Assessments**

Termly assessments are carried out across the school using a variety of assessment materials for each year group including those provided by the White Rose Maths in line with the schemes of learning. These materials, used alongside judgements made from class work, support teachers in making a WTS/ARE/GD assessment for each child which, in line with the assessment policy, are discussed with the Head teacher at a termly pupil progress meeting and recorded on a central tracking document. Progress of pupils is discussed and appropriate intervention considered and put in place where appropriate. Such assessments will also inform future planning.

**Long term**

Y2 and Y6 complete the national tests (SATs) in May. Yrs.’ 3, 4 and 5 complete optional SATs papers if individual teachers feel this is relevant – any formative information informs teacher summative judgements in the summer term.

Y4 pupils complete the Multiplication Tables Check in the summer term (not in 2021 due to COVID pandemic)

*‘Pupils are well prepared for assessments through having learned all the facts, methods and strategies that are likely to be tested’ – Ofsted Research Review Maths, May 2021)*

**GENERAL**

**Teaching Maths to Children with Special Educational Needs**

Maths lessons, tasks and materials are differentiated by the class teacher to meet the needs of individual children. Children identified as having Special Educational Needs may need greater differentiation of materials and tasks consistent with that child’s support plan. (See SEN and Inclusion policy)

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children’s IEP’s incorporate suitable objectives from the National Curriculum for Mathematics or Development Matters and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 or small group basis outside the mathematics lesson. Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. These are delivered by trained staff and overseen by the SENCO and/or the class teacher. Within the daily mathematics lesson teachers have a responsibility to not only provide differentiated activities to support children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers’ responsibility to ensure that all children are challenged at a level appropriate to their ability.

**Equal Opportunities**

All pupils are entitled to Maths regardless of race, creed, gender, physical abilities, special needs or where English is a second language. Where a child requires help in accessing the subject, assistance will be given via adult intervention, scribes, ICT or resources. More able children will be challenged and motivated by greater differentiation of materials and tasks. Children who are considered high achievers in maths will be provided with appropriate learning opportunities and challenges.

**Role of the Maths Subject Leader**

• To lead in the development of maths throughout the school.

• To monitor the planning, teaching and learning of mathematics throughout the school.

• To help raise standards in maths.

• To provide teachers with support in the teaching of mathematics.

• To provide staff with CPD opportunities in relation to maths within the confines of the budget and the School Improvement Plan

• To monitor and maintain high quality resources.

• To keep up to date with new developments in the area of mathematics

**Linked Policies**

* Marking Policy
* SEND Policy
* Assessment policy
* Calculation policy

**See Also**

* Education Endowment Foundation - Improving Mathematics in EY & KS1 Report
* Education Endowment Foundation - Improving Mathematics in KS2 & KS3 Report
* Ofsted Research Review Maths – May 2021