



Maths Policy

Date Policy Adopted: June 2017

	Date of Next Review	Signed
Head teacher/SLT	June 2018	
Governors	Curriculum and Standards	

Why do we learn Mathematics?

At Broseley we see Mathematics as an essential skill that we use and carry throughout our lives. We believe that through Maths, we can teach children how to make sense of the world around us through developing an ability to calculate, whether it is through working out change, timing an event or measuring the correct amount.

We encourage children to reason and to solve a variety of problems presented to them in a wide range of situations. We believe that Mathematics helps children to understand and appreciate relationships and pattern in both number and space in their everyday lives.

Through their growing knowledge and understanding, we want our children to appreciate the contribution made by other cultures to the development and application of mathematics.

At Broseley we aim to deliver a Maths Curriculum which:

- Promotes enjoyment and enthusiasm for learning through practical activity, exploration and discussion.
- Promotes confidence, competence and fluency with numbers and the number system.
- Develops the ability to solve problems through decision-making and reasoning in a range of context.
- Develops a practical understanding of the ways in which information is gathered and presented.
- Explores features of shape and space and develop measuring skills in a range of contexts.
- Understands the importance of mathematics in everyday life.
- Gives children the confidence to communicate ideas in written form and orally.
- Encourages children to work both independently and collaboratively in order to share ideas and solve problems together.
- Teaches a wide range of mathematical vocabulary to be modelled and used in the classroom environment.

Organisation

At Broseley Primary School we follow the National Curriculum objectives, which is supported by the White Rose Framework. We have adapted this, so that it can be effectively used by teachers and support staff throughout the school. EYFS planning is based on Development Matters and the Early Learning Goals (Number, Shape Space & Measure). In EYFS, Key Stage 1 and Key Stage 2 Maths is taught on a daily basis.

Breadth of Study

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- practical activities and mathematical games
- problem solving and reasoning opportunities
- individual, group and whole class discussions and activities
- open and closed tasks
- a range of methods of calculating eg. mental, pencil and paper
- working with computers as a mathematical tool

NEW CURRICULUM OUTLINE FOR EACH KEY STAGE

EYFS

Pupils are encouraged to develop their Problem Solving, Reasoning and Numeracy in a broad range of contexts in which they can explore, learn, enjoy, practise, discuss and extend their skills. Pupils are encouraged to exploit their mathematical potential in both indoor and outdoor enabling environments. They are provided with a wide range of activities that promote regular active participation, exploration of real life problems, development of imaginative play and early experience of mathematical language. All pupils are supported positively and encouraged to gain confidence and competence in their skills.

By the end of the Foundation Stage pupils should be able to count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number, using quantities and objects, add and subtract two single-digit numbers and count on or back to find the answer. Solve problems, including doubling, halving and sharing. The children should be able to use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. Recognise, create and describe patterns.

Key Stage 1

The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (e.g. concrete objects).

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of Year 2, pupils should recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. They should be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

Lower Key Stage 2 – Years 3-4

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of Year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2 – Years 5-6

The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

SPECIAL EDUCATIONAL NEEDS

The daily mathematics lessons are inclusive to pupils with special educational needs. Where required, children's Provision Maps incorporate suitable objectives from the New National Curriculum for Mathematics or Development Matters and teachers keep these objectives in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 basis outside the Mathematics lesson. Maths focused intervention programmes are available in school to help children with gaps in their learning and mathematical understanding. These are delivered in a small group by trained support staff and overseen by the class teacher.

Within the daily mathematics lesson teachers must not only provide differentiated activities to support children with special educational needs but also activities that provide appropriate challenges for children who are high achievers in mathematics. It is vital that all children are challenged at a level appropriate to their ability.

CALCULATION POLICY

At Broseley, with support of the LA maths advisor, we have a written calculation policy that was reviewed in November 2016. The policy is set out in subjects: addition, subtraction, multiplication and division. Within each specific area there is a progression of skills, knowledge and layout for written methods that has been agreed by all staff. The calculation strategies which will be used will reflect this ideology – moving from concrete to pictorial and then abstract recording leading to more formal written methods. Mental methods and strategies will work in partnership with these methods. The policy ensures that there is a consistent approach across the school so that pupils are competent in **fluency, reasoning and problem solving** and can make informed and appropriate choices about the methods they wish to use (mental or written) to solve mathematical problems efficiently and effectively.

MARKING

Marking of children's work is essential to ensure they make further progress. All work is marked against success criteria, in line with the school marking policy, and includes next steps, opportunities to share mathematical thinking and a platform to promote reasoning skills.

Work is to be marked once completed before a child starts the next piece of work in accordance with the school marking policy. Children are encouraged to self-assess their work and given time to read teachers' comments and make corrections.

For further information see the school marking and feedback policy.

ASSESSMENT AND RECORD KEEPING

Teachers make regular assessments of each pupil's progress and record these systematically. A record of each child's attainment against the key objectives for the appropriate year group is recorded in a school proforma at the front of each pupil's book.

Short term

Children's class work is assessed frequently through

- regular marking
- analysing errors
- questioning
- discussion
- plenaries

This is used to inform future planning and teaching. Lessons are adapted readily and short term planning is evaluated in light of these assessments.

Medium term

Termly assessments are to be carried out across the school using the White rose assessment materials for each year group. These materials are to be used alongside judgements from class work to form a teacher assessment for each child. These judgements are then passed onto the assessment leader to be fed into the whole school tracking system. Class Teachers analyse these assessments to inform future planning and interventions.

Long term

Y2 and Y6 to complete SATs assessments every May. These are analysed and helps to inform the next Academic Year's Action Plan for the development of the subject

RESOURCES

All teachers should organise an area within the classroom dedicated to mathematics resources. This area is easily accessible to all children and allows them to become familiar with all resources. There should also be a working wall area within every classroom that the children can access. This needs to be updated regularly in accordance with the area of maths being taught at the time.

Working wall will contain:

- **Vocabulary**
In each classroom there should also be a working maths wall with maths vocabulary and enquiry questions.
- **Models and Images**
In each classroom we also display models and images to stimulate mathematical thinking, whether they are of children's work, teachers' modelled examples or of materials that support mathematical processes.
- **Key conversion tables for measures and time**
- **Examples of written strategies, appropriate to year group and ability**

HOMEWORK

It is our school policy to provide parents and carers with opportunities to work with their children at home. These activities may only be brief, but are valuable in promoting children's learning in mathematics. Activities are pre-dominantly based on fluency and can take the form of games, activities or quick written tasks.

All children have access to Mathletics which enables the class teacher to set homework which relates closely to areas covered in class or an area for development for individual children.

STAFF RESPONSIBILITIES

Mathematics Subject leader

- Assist the headteacher/deputy headteacher in carrying out the audit, reviewing and amending of the action plan
- Prepare, organise and provide school based INSET meetings, workshops and staff meetings.

- Assist with the monitoring of teaching and planning and the analysis of SATs results.
- Preparation, review and implementation of school policy documents and guidelines taking into account the recommendations of the New National Curriculum and EYFSP.
- Liaison with staff in school – working alongside them giving guidance and support.
- Introduce, organise and maintain the school's mathematics resources.
- Take responsibility for own professional development by attending courses and keeping up-to-date with current developments within mathematics education.
- Liaison with mathematics subject leaders in other schools through attendance of local network meetings.
- To provide an example to the school by taking a lead in teaching mathematics and classroom organisation.
- Maintaining contacts beyond school with numeracy consultants, advisory staff and other outside agencies.
- Ensuring equality of opportunity for all pupils.

Class Teachers

Class teachers are responsible for the planning, teaching and assessment of the daily mathematics lesson and the organisation of additional adults in the classroom. They are also responsible for implementing the contents of this policy within their classroom.

Support Staff

HLTAs and TAs that work with the children support the teaching of mathematics under the direction of the class teacher.

Governing Body

We have an identified maths governor Mrs Alison Edwards. She is invited to attend relevant school training. The maths governor visits school termly to talk with the subject leader and when possible, observes some daily maths lessons. The maths governor reports back to the curriculum committee on a regular basis.

STAFF DEVELOPMENT

All staff are encouraged to develop, assess and improve their teaching of mathematics. Whenever possible we:

- encourage staff to attend mathematics courses
- make provision for the mathematics subject leader to work alongside colleagues in the classroom or shared areas
- provide school based CPD
- involve staff with policy and decision making
- provide the opportunity to learn from colleagues expertise
- encourage parental involvement at home.