

BARNS GREEN PRIMARY SCHOOL

Mathematics Policy

OUR SCHOOL VISION

We will help our pupils
We will
We will allow them to
We will help them

Learn
Inspire them,
Flourish and
Excel

These are the building blocks for a successful **LIFE**.

We are a child-centred school. Every decision we make is in the child's interest.

We encourage pupils to become confident learners.

We are all members of a Learning Family and we speak and listen to each other honestly.

We listen especially carefully to our pupils.

We recognise the value of individuality.

We make sure every child can achieve excellence.

We celebrate everyone's success and learn from our mistakes.

Ours is a safe, caring and happy school.

2014

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Rationale

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

The National Curriculum for mathematics (2014) describes in detail what pupils must learn in each year group. Combined with our Calculation Policy, this ensures continuity, progression and high expectations for attainment in mathematics.

Our Aim

At Barns Green Primary School (BGPS) we believe that every child will build a sound knowledge of mathematical facts and be able to apply them in the real world.

We want our children:

- To foster a positive attitude to mathematics.
- To develop the ability to think clearly and logically, with confidence, flexibility and independence of thought.
- To develop a deeper understanding of mathematics through a process of enquiry and investigation.
- To develop an understanding of the connectivity of patterns and relationships within mathematics.
- To develop the ability to apply knowledge, skills and ideas in real life contexts outside the classroom, and become aware of the uses of mathematics in the wider world.
- To develop an ability and inclination to work both alone and cooperatively to solve mathematical problems.
- To develop personal qualities such as perseverance, independent thinking, cooperation and self-confidence through a sense of achievement and success.
- Explain their mathematical thinking

Planning

We teach the Programmes of Study published in the National Curriculum in England. Teachers follow the 2 year planning cycle published on our school website to ensure coverage of the National Curriculum. Medium term planning will outline the areas of mathematics

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that will be taught and will follow the White Rose Mixed age medium term planning scheme*.

Short term planning will include the learning objective for each lesson and success criteria. Short term planning will take into account the different abilities of individual children. Activities, where possible, should involve real life contexts for maths.

Teachers will plan at least one investigation per half term to practice different elements of problem solving, including: finding all possibilities, logic problems, finding rules and describing patterns, diagram/visual problems and exploring different aspects of number. During these investigations, there should be a honing in on specific problem solving skills that are transferable to other contexts.

Class teachers should regularly plan for opportunities for children to apply their maths skills to different problems within maths lessons and across the curriculum. This will also allow children to revisit, practice and consolidate different areas of maths and apply them within different contexts. When looking at children's work for moderation, there should be some evidence in other subject's books.

When teaching written methods, teachers must follow the calculation policy to ensure progression throughout the school.

At BGPS teachers will teach a times table thusly:

$1 \times 3 =$
 $2 \times 3 =$
 $3 \times 3 =$

and not:

$3 \times 1 =$
 $3 \times 2 =$
 $3 \times 3 =$

Teaching

Mathematics lessons at BGPS are daily and last approximately one hour. A Typical lesson in Year 1 to 6 will often have the following components:

- Oral and mental work across the range of mathematics. This will involve work to rehearse, sharpen and develop mental and oral skills.

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- **Main teaching session**
This will include both teaching input and pupil activities and a balance between whole class, guided grouped and independent work, (groups, pairs and individual work) effectively differentiated and offering appropriate challenge. Sometimes the focus for this session is new learning, at other times pupils may be practising, to master the application of a concept they have learned earlier. Variation is one of the techniques that can be used to draw the children's attention to patterns in maths. The focus of this session may vary for different children depending on their learning needs.
- **Plenary**
This will involve work with the whole class to sort out misconceptions, identify progress, to summarise key facts and ideas and what to remember, to make links to other work and to discuss next steps.

At BGPS we recognise that children learn from hands on experiences. Therefore teachers use concrete materials to support learning, as this helps learners to visualise patterns in number. All teachers will use Numicon to support learning in maths.

Teachers encourage children to represent numbers in different ways, including Tens Frame, Part-Part-Whole and Bar Model.

Additional maths sessions

At BGPS we develop children's fluency and confidence through Number Gym (Key Stage 1) and Knobbly Number (Key Stage 2) sessions. These are daily 10 - 15 minute sessions outside the main lesson. These are teacher led, short, oral sessions which are non-threatening and focus on enjoyment. Daily repetitive practice of counting, number facts and time tables help to secure fluency. Activities may include register activities, calendar questions, number of the day, spotting patterns, odd one out and problem of the day. Discussion and talk about number is encouraged between pupils.

Resources

A bank of essential mathematics resources are kept in each classroom tray drawers and cupboards. Further resources are kept in the General resources cupboard for all to share, such as the large Numicon packs. Teacher's reference and resource books are kept in the PPA room. There is also a published scheme available – Abacus children workbooks are kept in the relevant year group classrooms. However, teachers should use resources which best fits the success criteria –

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these might come from the published schemes but might come from elsewhere such as resources from the Internet, Numicon handbooks and other teacher guides.

Display

In the classrooms there will be mathematical vocabulary displayed so that children use this in the communication of their understanding. There will be maths work on display in classrooms and/or in other areas of the school in order to encourage a positive attitude and enthusiasm towards mathematics for all groups of children. All classrooms will display a selection of stem sentences*

Maths Subject Leader

Role of Subject Leader:

- Ensures teachers understand the requirements of the National Curriculum and help them develop their planning strategies.
- Prepares, organises and leads CPD and joint professional development.
- Works with the SEND Co-ordinator to plan appropriate interventions
- Observes colleagues with a view to identifying the support they need.
- Discusses regularly with the Headteacher and the Teaching & Learning Committee the progress of implementing National Curriculum for Mathematics in school.
- Monitors and evaluates mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis.
- Lead parent meetings to encourage maths at home and inform parents of how maths is taught at BGPS.

Monitoring happens through examination of work in books, pupil interviews, analysis of assessment results and the assessments used, and through other means depending on what is information needs to be gleaned.

Following monitoring activities, feedback is given to staff about how they can strengthen their practice and CPD (professional development) opportunities built in where it would be deemed valuable. These might take the shape of inputs during staff meetings or by a variety of other means.

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Teachers plan learning that is differentiated to meet the needs of all pupils, whether they have a specific learning difficulty in maths or whether they are particularly able. When scrutinising work in maths books, the Subject Leader for Mathematics expects to see work from any one lesson on a similar theme, differentiated for high attaining, middle attaining and low attaining pupils – possibly with individual work for an SEN pupil at one end of the achievement spectrum, to individual work for a gifted pupil at the other.

Interventions

Interventions in maths should be based on developing key number skills that are appropriate for the children involved.

Intervention provided to boost children's progression in maths should be tightly planned, with success criteria set and assessments made frequently to ensure progress is being made. Whilst interventions could be carried out by Teaching Assistants, for example, what is being taught and how it is delivered is the class teacher's responsibility and communication is essential. Interventions should be in sync with the child's current learning in class.

Examples:

- Numicon books – Breaking Barriers
- Snap Maths
- Wave 3 Maths
- Puzzles and Problems for More Able Pupils Year 1 – 6
- Mastery Booklets

Assessment

This section details the various assessment methods and practices used in Barns Green through which we ensure that children are making appropriate progress and that the activities they take part in are suitably matched to their ability and level of development.

Formative Assessment - (monitoring children's learning)

Assessment is an integral and continuous part of the teaching and learning process at Barns Green and much of it is done informally as part of each teacher's day to day work. Teachers integrate the use of formative assessment strategies such as: effective questioning, clear learning objectives, the use of success criteria, effective feedback and response in their teaching and marking and observing children

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participating in activities. Findings from these types of assessment are used to inform future planning.

Summative Assessment – (evaluating children’s learning)

More formal methods will be used to determine the children’s attainment at various times during the school year.

At BGPS we use the White Rose Assessments – Arithmetic and Reasoning papers and an Oral test every term. The teacher’s assessments informed by these test results are used to monitor individual’s progress.

Appendix

**White Rose Planning – This is a scheme of work produced by the Maths Hub (a group of leading maths teachers). The overview planning documents provide guidance on the length of time that should be dedicated to each mathematical concept and the order in which they should be delivered.*

**Stem sentences – These are sentence starters that allow the children to explain their mathematical thinking. E.g. ‘If I know..., then I know...’*

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