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Mathematics

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Philosophy

In accordance with our school's philosophy, we seek to inspire all children with our positive attitude towards mathematics and the development of mathematical skills.

We want our children to gain enjoyment and satisfaction from the challenge of being a mathematician.

We want our children to be confident and competent users of mathematics, to make sense of the world around them through developing their ability to calculate, to reason and to solve problems. Our mathematics teaching will have an impact across the whole curriculum, offering children opportunities to develop their skills in other subjects.

Aims

At Berkeley Primary School we aim to:

1. Develop a positive attitude towards maths as an interesting and attractive subject in which all children gain success and pleasure;
2. Develop mathematical understanding through systematic direct teaching of appropriate learning objectives;
3. Encourage the effective use of maths as a tool in a wide range of activities within school and, subsequently, adult life;
4. Develop an ability in the children to express themselves fluently, to talk about the subject with assurance, using correct mathematical language and vocabulary.
5. Develop an appreciation of relationships within maths and the ability to explore problems using the appropriate strategies, predictions and deductions;
6. Develop the ability to think clearly and logically with independence of thought and flexibility of mind;
7. Develop an appreciation of creative aspects of maths and awareness of its aesthetic appeal, including beyond the classroom;
8. Develop mathematical skills and knowledge and quick recall of basic mathematical facts.
9. Provide equality of opportunity regardless of race, gender or ability.
10. To fulfil the requirements of the mathematics programmes of the National Curriculum in England and its aims.

Planning



We carry out the curriculum planning in mathematics to meet the statutory objectives outlined in the National Curriculum. We also use the non-statutory 'notes and guidance' to assist in achieving these objectives.

Our weekly plans list the specific learning objectives, WALTs, for each lesson and give details of how the lessons are to be taught and the outcomes expected, WILFs. There may be multiple WALTs and WILFs depending on the lesson and the differentiation involved (WALT – We Are Learning To : WILF – What I'm looking for).

We have also developed a comprehensive 'Calculation Policy' which sets out the order in which mathematical calculations should be taught. The update to this booklet includes a mathematical dictionary for children and also for adults. This was included to encourage understanding in mathematical language in pupils and staff members. The Headteacher and mathematics subject leader are responsible for monitoring the mathematics planning, delivery and learning within our school.

Teaching Styles and Strategies

Teaching and learning will be based on the objectives specified in the National Curriculum. Specific skills will be taught and practised as appropriate, each day. Opportunities to apply these skills, in context, will follow and be revisited frequently. All learning styles will be considered – kinaesthetic, audible and visual.

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

- practical activities and mathematical games
 - problem solving
 - individual, group and whole class discussions and activities
 - open and closed tasks
 - a range of methods of calculating e.g. mental, pencil and paper and using a calculator
 - working with computers and other IT equipment
 - activities to help cement knowledge of times tables, number bonds and doubling and halving
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Marking Guidance

Marking should be in line with the school marking policy and the following points are particularly relevant to mathematics:

where appropriate-

- opportunities should be given to children to self assess during lessons to inform their individual progress
- children are encouraged to write comments in their books about their learning, and respond to teachers comments accordingly
- if verbal feedback is given, the work should be annotated accordingly, but the details of the feedback are not necessarily required.

Resources

In September 2014 the mathematics curriculum changes. Although GlosMaths is based on the old curriculum, it is still relevant and can be used to target ability groups. There is also a range of mathematics text books throughout the school which are used when appropriate.

Each classroom has its own supply of practical mathematical equipment, relevant to the ability range taught. There is also a central bank of resources that support certain topics throughout the year.

Online resources such as MyMaths and Nrich supplement the curriculum where appropriate.

Assessment and Target setting

Assessment has two main purposes:

- Summative assessment
- Teacher assessment (Assessment for Learning AfL)

Summative assessment

Summative assessment is when learners are formally assessed at a given point in time – it provides a snapshot of what has been learned. Within Berkeley Primary School this manifests itself in Optional SATS, End of Key Stage SATS, and mid-term tests. Data is entered into Classroom Monitor (an online assessment package).



Teacher Assessment

In conjunction with summative assessment, teachers also use Classroom Monitor to assess children against specific criteria within mathematics topics. This reflects a child's learning within the learning environment and not a test situation. This data is stored on Classroom monitor and is used as a tool to assist with levels.

Assessment for learning (AfL) is also constantly used throughout lessons to:

- Making ongoing assessments and responding appropriately to pupils during 'day-to-day' teaching. These 'immediate' responses are mainly verbal and are not normally recorded;
- Using knowledge of pupils drawn from ongoing pupil tracking records and from the prior learning to guide planning and teaching;
- Sharing learning objectives (WALT - We Are Learning To) and success criteria (WILF- What I'm Looking For), ensuring that pupils know what they are going to learn and what their next steps are;
- Involving the children at all levels to enable them to reflect on learning and identify their personal learning goals.

Monitoring and Evaluation

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the headteacher and link governor supported by the subject leader.

The work of the subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. \

A named member of the school's governing body is briefed to overview the teaching of numeracy. This governor meets regularly with the mathematics subject leader to review progress.

Target Setting

Classroom Monitor is used to provide up-to-date information on where children are in their learning. This data, along with teachers' knowledge of every child, is used to set targets for children's progress. End of year targets are set in October and finalised in February for the end of the academic year.



Children are expected to make at least two levels of progress between the KS1 SATS and the KS2 SATS. Additionally, at Berkeley, we aim to achieve 2 sub-levels or 4 points progress each academic year, thus extending the.

EYFS

In the Foundation Stage, the cohort will be organised to promote social skills and the development of mathematical language and understanding. Teaching will be based on the 'Statutory Framework for the Early Years Foundation Stage'. This will prepare the children for starting the National Curriculum in Year 1.

Teaching Assistants

In mathematics lessons, teaching assistants are assigned to groups of children, not specific classes. They work very closely with teaching staff and know the children, their prior learning and relevant social information. They will be clear of the WALT and the expectations. They are encouraged to be independent, supporting learning and also to challenge children to achieve more. Their knowledge, skills and understanding is constantly updated through involvement in school-based CPD.

Use of ICT

ICT is used to support mathematical learning when appropriate. Various websites and software packages are used to support whole class teaching, mental maths and individual learning. ICT is a tool and used judiciously in conjunction with a wide range of other resources.

How we cater for differing abilities

Berkeley Primary School use ability streaming in years 1&2, 3&4 and 5&6 in order to give each and every child their full entitlement to a rich, varied and appropriate mathematics curriculum. At present this is structured in the following way:

- Eight mixed-age classes which are based on attainment of pupils.
 - Planning is based on the ability of the children, not the age range.
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- The improvements and progress made by individuals is then judged against other needs (ie social interactions with peers, need for adult support) and children are moved between the ability classes.
- Links are forged with local secondary and grammar schools to support and enhance the teaching of children, particularly those with above average ability.

Creative Curriculum (Topic-based themes)

In our creative curriculum themes, children have numerous opportunities to use mathematics. This may take the form of collecting data, counting and measuring, studying map coordinates, time lines etc.

Review

This policy will be reviewed by the Summer Term of 2017.
