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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 recognise that mathematics is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment.

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 possibilities.
 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.
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Planning

We follow the specific learning objectives (Kites) from CanDoMaths curriculum, which focuses on specific steps, which break the national curriculum objectives into small bite size steps. The kite is shared with the children and displayed so it can be referred to throughout that topic of learning.

Our plans consist of Learning possibilities, which are the specific learning objectives taken from the CanDoMaths termly plan for each year group. The lessons are structured so that each lesson builds on the previous skill learnt. Children have 5 'do it,' questions which refer to fluency style questions based on the skill being taught in that lesson. The next question after that is the 'prove it,' which highlights a misconception and the children are required to explain a mistake and provide the correct method to solve the problem. Children have the 'Use it,' section, which is a problem solving activity. This allows children to use the skills they have learnt in the lesson effectively. Finally, when the Use it does not provide an open ended question, the children have an opportunity to explore Ace it, which allows children to access and explore open ended problems to solve.

We have also follow a comprehensive CanDoMaths 'Calculation Policy' which sets out the order in which mathematical calculations should be taught and how they could be taught.

Within the planning of lessons, are timetabled problem solving lessons usually completed at the end of a unit of work. These allow children to use the skills learnt in a variety of contexts.

In addition to the Maths lesson. Children will also have a 10 minutes Mental maths session focusing purely on mental maths strategies. This will be planned from Teacher Assessment.

Maths on Track sessions will be taught after lunch. These is a 20 minute session where the children can practice further what has been taught in lesson or focus on any other area of Maths. This is guided by the teacher's assessment for learning and planned accordingly.

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. A range of activities 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
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- 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
- Mental Maths activities to help cement knowledge of times tables, number bonds and doubling and halving

Marking Guidance

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

where appropriate-

- Children are to have worked their worked marked live in the lesson, to allow for instant feedback.
- Opportunities are given to children to self assess during lessons to inform their individual progress
- Children are asked at the end of the lesson to assess their own progress by highlighting the LP: green if they have achieved understanding of the Kite for that lesson.

Resources

The school uses CanDoMaths resources and planning to supplement learning. Planning is provided within this resource and teachers adapt accordingly.

Online resources such as 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, Remember it tests (Provided by CanDoMaths based on the terms learning) and Ready to Progress tests (Provided by CanDoMaths based on half Year's learning).



Teacher Assessment

In conjunction with summative assessment, teachers also use Insight tracking to assess children against specific criteria within mathematics topics. This reflects a child's learning within the learning environment and not a test situation. The LP for that day is marked on Insight Tracking, as either 1. Not understood at all, 2. some understanding but not secure, 3. objective secured, or 4. working at greater depth. This is based on the learning for that lesson.

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

- To allow for planning of Maths on Track sessions.
- 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;
- Involving the children at all levels to enable them to reflect on learning and identify their personal learning goals.

To inform what a child is working at with regards to Age related expectations, all the above assessments are triangulated to allow the teacher to assess the child and inform their professional judgement against Age related expectations.

Monitoring and Evaluation

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the head teacher 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 Mathematics. This governor meets regularly with the mathematics subject leader to review progress.

Target Setting

Insights 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.

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 is supported with the CanDoMaths Early Years curriculum. This will prepare the children for starting the National Curriculum in Year 1.

Teaching Partners

In mathematics lessons, teaching assistants are assigned to groups of children or individual 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 LP 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

Maths lessons at Berkeley Primary allow for progression within the lesson. Teacher's do not have pre-conceived ideas about what a child can do and so everybody has the same starting point. Every child has the chance to succeed and move at their own pace with the day's specified LP.

- Children who have Educational Health Care Plans (EHCP's) can have specially catered lessons if specified on their EHCP that they need to be working on a different level with their peers.
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- 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 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.

This policy should be read alongside our Maths Approach which can be found under the curriculum section on our website.

Review

This policy will be reviewed by the Autumn Term of 2022.