

OAKDENE PRIMARY SCHOOL

MATHEMATICS POLICY



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This document is a statement of the aims, principles and strategies for the teaching and learning of Mathematics at Oakdene Primary School.

Introduction

Mathematics is a creative and highly inter-connected subject that has been developed over centuries. It is essential to everyday life, critical to science, technology and engineering and necessary in most forms of employment. A high-quality mathematics education, therefore, provides a foundation for understanding the world, the ability to reason mathematically and a sense of enjoyment and curiosity about the subject.

A child's experience of mathematics does not start at school but begins at home. Mathematics is an integral part of our daily routine and rituals. Children come to school with very varied mathematical backgrounds based on experiences that have arisen naturally in their day-to-day lives inside and outside the home. They have already begun accumulating knowledge of number, shape and space.

At Oakdene teachers are required to teach a body of material by using the Early Years Foundation Stage Framework for Nursery and Reception pupils and The National Curriculum for Year 1 to Year 6.

Aims

1. To provide quality first teaching that ensures all learners attain success in mathematics.
2. To make mathematics an accessible, enjoyable and attainable subject that all children can study with confidence and gain a sense of achievement.
3. To teach children to become **fluent** in the fundamentals of mathematics.
4. To teach children to **reason** mathematically by following lines of enquiry, conjecturing relationships and generalisations, developing an argument, justification or proof using mathematical language.
5. To teach children to **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
6. To develop the personal skills required to learn in a co-operative and collaborative manner.

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7. To encourage, through the exploration of patterns and relationships within mathematics, a systematic approach to examining the world about us.
8. To encourage fascination and curiosity for mathematics.

Pupils' Mathematical Experiences

1. Each child enters Oakdene Primary School with a range of experiences built up in the home and in the environment. The school recognises that children learn in different ways, and at different rates. We respond to different needs and provide opportunities for all children to achieve high personal standards of mathematical understanding.
2. In Early Years mathematics is a Specific Area of Learning and will be a visible part of the indoor and outdoor learning environment.
3. From Year 1 to Year 6 children will be taught a dedicated Mathematics lesson every day. Mathematics in Year 1 to Year 6 will also be part of our Learning Outside the Classroom approach.
4. There will be a balance direct teaching and interactive oral work with the whole class, groups and individuals.
5. There will be controlled differentiation, with all pupils engaged in mathematics relating to a common mathematics theme or a personal target.
6. Computing is a way to support and motivate teaching. Computer software in the daily mathematics lesson will be used if it is the most efficient and effective way to meet the lesson objectives.

The Role of the Teacher

1. All class teachers are responsible for the planning, preparation, teaching and assessment of mathematics.
2. Children with Special Educational Needs will have their specific needs met through differentiated work in conjunction with targets set out in their SEND Support Plan.

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3. The style of classroom organisation and management should ensure a positive learning environment. Teachers should consider the appropriateness of methods employed given the requirements of the Early Years Framework or the National Curriculum.
4. The curriculum is of a spiral nature, where new experiences build on and reinforce earlier concepts. Teachers, therefore, use records, data, discussion with colleagues and careful questioning of pupils to inform themselves of likely starting points or springboards for planning further learning.
5. The teacher promotes children's self-confidence and sense of achievement through praise, rewards and positive reinforcement in line with the whole school marking and feedback policy.
6. Mathematics teaching, at all levels should include:
 - Exposition by the teacher (directing, instructing, demonstrating, explaining, questioning, evaluating).
 - Discussion between teacher and pupils and between pupils.
 - Appropriate practical work.
 - Consolidation and practice of fundamental skills and routines.
 - Problem solving.
 - Investigative work.
 - Practice of mental maths.
 - Validation of a child's personal methodology alongside teaching of conventional methods.
 - Assessment for Learning strategies and feedback that moves learners on.
7. The class teacher will also:-
 - Mark children's work on a regular basis, in accordance with the agreed marking policy.
 - Ensure high quality presentation of work.
 - Assess outcomes of activities and learning objectives.
 - Be aware of available resources, ensuring ready access to resources in the classroom for all children.
 - Think carefully about vocabulary used within maths lessons and about the style and nature of questions.
 - Consider the development and pace of lessons.
 - Involve parents in children's learning.
 - Organise and monitor the work of support staff.
 - Set appropriate homework tasks within the school homework policy.

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Role of the Maths Subject Leader

1. To take the lead in policy development and the implementation of Early Years Framework and The National Curriculum to ensure progression and continuity throughout the school.
2. To monitor progress in mathematics to ensure consistency of approach and the quality of teaching and learning.
3. To take responsibility for the purchase and organisation of resources and classroom resources.
4. To keep up-to-date with developments in mathematics education.
5. To disseminate information to colleagues as appropriate.
6. To identify individual and whole school professional development needs and opportunities. To deliver staff training in related to Mathematics.
7. To identify long term goals in the school improvement plan.
8. To work closely with the SENCO on special educational needs provision.

Role of Parents and Carers

1. Attending open days, parent teacher consultations etc. so they stay informed about the mathematics work of the school.
2. Encouraging children's use of maths games both digital and non-digital involving varying degrees of mathematical skill.
3. Supporting the efforts of teachers in classrooms by offering to help at home if difficulties arise.
4. Assisting children in completion any mathematical homework tasks, such as the use of Times Tables Rock Stars, set within current homework policy,

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Resources

1. Each classroom has a range of maths resources with which children are familiar and to which they have ready access to make informed choices. Mathematics should be 'visible' in all classrooms. This is the class teacher's responsibility.
2. Each year group has ready access to commercially produced maths materials. Abacus Evolve, Numicon, Cuisenaire, Espresso Maths, Times Tables Rock Stars, Classroom Secrets, Twinkl and many more.
3. Monthly newsletters from National Centre for Excellence in the Teaching of Mathematics (NCETM) are electronically distributed.
4. Class teachers will liaise with Team Leaders and Mathematics Subject Leader if the need for new resources is identified.

Planning

Planning in Mathematics is a process in which all teachers are involved. The Early Years Foundation Stage Framework is followed in Early Years and the National Curriculum for Mathematics for Key Stage 1 and Key Stage 2. Teachers plan lessons based on this and based on pupil assessment and next steps.

More recently, the content of the June 2020, DfE Non-Statutory guidance for the National Curriculum in Key Stage 1 and 2 is beginning to be woven into the planning process.

Evaluation and Monitoring

The subject leader and senior leadership team are involved in a system of regular review which:

- examines policy and practice
- monitors the quality of teaching
- scrutinises work
- monitors and evaluates the effective use of pupil records
- enables adjustments to be made, where necessary
- advises and informs planning

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The monitoring process will include searching questions such as;

- Can children apply their knowledge and skills?
- Are the lesson intentions and the lesson objectives being achieved?
- Are accurate and up-to-date records being kept and acted upon?
- Does planning reflect balanced activities and experiences?
- Is quality first teaching always evident?
- Is pupil progress good or better?
- Is the standard of pupil achievement acceptable?

Assessment

1. Formative assessment is used to guide the progress of individual pupils in mathematics. It involves identifying each child's progress in each aspect of the subject, determining what has been taught, what has been learned and what, therefore, should be the next stage in the learning process. Formative assessment is carried out by teachers in the course of teaching and at the end of modules of work. Target Tracker software is the system that Oakdene use for this in Year 1 to Year 6. STEPS in early Years. (STEPS will be replaced when the New Statutory Early Years Curriculum is implemented in September 2021)

2. Criteria used in assessing mathematical activities will include:

(a) Using Mathematics

Selecting and using materials, estimating, checking, planning and working methodically, reviewing and justifying.

(b) Communicating in Mathematics

Talking, asking questions, explaining, recording, presenting findings in oral, written or visual form.

(c) Developing ideas, arguments and proof

Making predictions, responding to questions, testing predictions, using examples, generalising, defining, evaluating.

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3. Suitable tasks for assessment include:-

Small group discussion, perhaps in the context of a practical task.
Teacher observations.
Short tests in which the teacher gives questions orally.
Short tests/tasks in recorded format.
Specific assignments for group and individuals.
NFER tests for Year 3 to Year 6 can be used for gap analysis as well as end of term summative assessment.

4. Formal summative assessment is carried out at the end of KS1 in Year 2 and at the end of KS2 in Year 6 through the use of National SAT's and Teacher assessment.

5. Year 4 will take part in the National Multiplication Check.

6. Reception will complete the Profile at the end of the summer term and preparations are underway for the National Reception Baseline in September 2021.

7. Criteria used in assessing mathematical activities will include:

(a) Using Mathematics

Selecting and using materials, estimating, checking, planning and working methodically, reviewing and justifying.

(b) Communicating in Mathematics

Talking, asking questions, explaining, recording, presenting findings in oral, written or visual form.

(c) Developing ideas, arguments and proof

Making predictions, responding to questions, testing predictions, using examples, generalising, defining, evaluating.

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Pupil's work, presentation and communication

Children are asked to record their work for a variety of reasons:-

- to help clarify thinking
- to record steps when solving a problem
- for future reference
- to communicate meaning accurately
- to provide evidence of attainment
- as a basis for assessment
- to recognise pattern
- to make generalisations
- to make hypotheses and predictions
- to set out findings which can then be evaluated
- to visualise concepts
- to learn conventions

The method of recording will take different forms depending on the nature of the mathematical activity and the purposes of the record. Methods include:-

- (a) algorithms
- (b) diagrams, graphical and pictorial representation
- (c) verbal responses
- (d) construction (models)
- (e) written outcomes and photographic evidence
- (f) pictures
- (g) written calculations
- (h) whiteboard jottings

Mathematics is a means of communication. Therefore, at all stages of mathematical understanding, precise mathematical language should be used. Children must be given relevant language so that they have an opportunity to express themselves precisely and to achieve clear mathematical thinking.

Marking Policy

Feedback to pupils about their own progress in mathematics is achieved through discussion and through the marking of work. Refer to whole school marking and feedback policy for more detail.

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Special Educational Needs

All children are entitled to first quality teaching and class teachers must ensure that children who are considered SEND for mathematics have an entitlement to personalised teaching from the class teacher. Some children also have the benefit of a Teaching Assistant for extra support to allow for accurately pitched work in small groups, this is considered in addition to first quality teaching.

A child may have identified Special Educational Needs in relationship to the Mathematics Curriculum. Once identified they will have a SEND support plan with specific, achievable maths targets. The Support Plan will be shared with parents and reviewed termly.

A child can have identified Special Educational Needs that do not relate directly to their mathematical ability but those needs may affect a child's access to the curriculum. Therefore, the teaching and learning environment created by the class teacher must be adapted to ensure that expectations remain high and the child is able to progress and achieve age related expectations or above within mathematics.

Pupils may be SEND in Literacy and not in Maths so these pupils will not appear in the SEND maths groups but should be given support to read questions etc.

Parents are always consulted and encouraged to contribute and support where issues of special educational needs arise.

Opportunities exist for liaison with colleagues at KS3 in respect of the needs of children for whom mathematics is extremely challenging or who are gifted and talented mathematicians.

Gifted and Talented Pupils.

Children who show exceptional mathematical ability will be identified. The Mastery level for New National Curriculum can be explored. Teachers can liaise with KS3 and discuss G&T mathematicians as part of the transition guarantee.

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Reporting to Parents

Annual written reports are made to parents in the summer term. Reporting in mathematics focuses on attitudes to mathematics, achievements in all the aspects of Early Years Mathematics or achievements in all areas of National Curriculum Mathematics. At the end of Reception, Year 2 and Year 6 results of statutory assessment form part of the reports to parents.

Parents' consultations take place in the Autumn term and in the Summer term. The annual report to parents is sent home during July.

The class teacher will contact parents where there is concern about a child's progress. The SENCO will also be informed. Parents can also liaise with class teachers at any time during the school year to discuss their child's progress.

Homework

Parents should always have information as to the aims and objectives of any homework and the expectations for the child; this will be in line with the current homework policy.

Homework can be used to support mathematics through such tasks as:-

- The learning of tables

Evaluation and Development

The successful delivery of mathematics and its development throughout the school will be seen in the following criteria...

1. A higher level of child progression and attainment (e.g. Foundation Stage Profile results, termly assessments, SATs results and teacher assessment).
2. An increase in confidence and enthusiasm in, and for the subject both by children and staff.
3. Successful implementation of the EYFS and the National Curriculum for Mathematics.

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4. Visual evidence of mathematical work around the school.
5. Positive feedback from parents, children, governors, visitors, School Improvement Partners, external validation, Ofsted etc.
6. **Rights Respecting Schools** Article 29 states that education must develop every child's personality, talents and abilities to the full. This adheres to our approach to the teaching of mathematics.