Oakfield Academy

Maths

Policy

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Change Log

Contents

1. Introduction

1.1. This document provides a statement of the aims, principles and strategies for the teaching and learning of Mathematics at Oakfield Primary School.

2. Aims

2.1. Our aims in the teaching and learning of Mathematics are that all children will:

2.1.1. Enjoy the subject and study it with confidence and a sense of achievement.
2.1.2. Be taught in small steps that promote conceptual understanding.
2.1.3. Use concrete resources and multi-representations to support understanding.
2.1.4. Develop increasing fluency through the practise of key skills.
2.1.5. Apply their skills and understanding confidently within a problem solving context.
2.1.6. Be able to talk about the mathematics they study and reason coherently, using correct mathematical vocabulary
2.1.7. Solve problems systematically
2.1.8. Develop mastery throughout all areas of the Mathematics curriculum

3. National Curriculum Aims

3.1. The national curriculum for mathematics aims to ensure that all pupils:

3.1.1. become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately

3.1.2. reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

3.1.3. can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

4. Principles behind the teaching and learning of mathematics

4.1. Mathematics is important because:
4.1.1. It is a skill that is used in everyday situations as well as in the workplace.
4.1.2. It is a powerful tool for the communication of ideas as well as prediction and verification of results.
4.1.3. It helps develop logical thinking and problem solving skills.

4.2. Mathematics is a core subject within the National Curriculum. The fundamental skills, knowledge and concepts are set out in the following domains:

4.2.1. Number - place value
4.2.2. Number-addition and subtraction, multiplication and division
4.2.3. Number- fractions
4.2.4. Measurement
4.2.5. Geometry
4.2.6. Statistics
4.2.7. Algebra

4.3. The emphasis in number is to develop and maintain children's recall of key facts and mental strategies as well as to encourage increasingly efficient approaches to calculation.

4.4. All domains are underpinned by a strong emphasis on using and applying skills within real-life contexts and problem solving opportunities.

5. Strategies for teaching and learning mathematics

5.1. The Mathematics curriculum is organised following the guidelines set out in the National Curriculum. It is taught in extended blocks and real life problems and investigations are used where possible within the units of work.

5.2. At Oakfield, we use the CPA (Concrete, Pictorial, Abstract) approach to support the teaching of mathematics. Multi-representations of number are used to develop children's understanding and promote mastery in Mathematics. We also ensure that all children have access to activities that develop their fluency, problem solving and reasoning skills as often as possible. In addition, children are taught rhymes, songs and stem sentences to scaffold their thinking and explanations when reasoning.

6. Equal opportunities

6.1. Equal access to the curriculum as well as targeting of individuals' needs is ensured in accordance with the Teaching, Learning and Equal Opportunities policies.

6.2. Our aim is that all children are taught the same content when possible and with differing levels of scaffolding and support. Where this is not possible, the teacher will design an individual curriculum to address the child's current needs. Maths based interventions also take place both inside and outside the classroom, throughout the school, targeting specific areas of Mathematics and number facts which children may find challenging.

7. Rapid graspers

7.1. To reflect the multidisciplinary nature of mathematics, careful planning of tasks will facilitate opportunities for all children to demonstrate their capabilities in all areas of the subject.

7.2. Children are given ownership over their learning and where possible, encouraged to select the challenge they feel is appropriate during each lesson. Teachers often support and stretch children with their choices, to ensure the work is neither too easy nor too challenging.

8. Special Educational Needs

8.1. Teachers will aim to include all pupils fully in their daily mathematics lessons. Children will be supported and challenged through the use of scaffolds, resources and extensions. All children benefit from the emphasis on oral and mental work and participation in watching and listening to other children demonstrating and explaining their methods. However, a pupil whose difficulties are severe or complex may need to be supported with an individualised programme in the main part of the lesson or through intervention programmes outside the main lesson, as outlined above.

8.2. Further guidance can be found in the Special Educational Needs policy.

9. Planning

9.1. Teachers plan for their own year group following the Oakfield long term plan. This is then adapted for the individual classes in light of assessment for learning. This approach is a 'blocked unit' approach rather than a 'spiral' approach. This allows our children to spend longer learning new concepts, building on existing knowledge and developing the breadth of their understanding and mastery. This also allows children to make links and apply their understanding to different contexts that they have already experienced and understand (for example, money and measurement).

9.2. The Ready To Progress criteria (NCETM) are also used to ensure that children are taught the most important content for their year group thoroughly. Teachers make sure that each objective has been taught and will inform their next teacher of any remaining gaps in understanding.

9.3. Short term plans follow the school's use of Rosenshine's principles and use the following learning cycle:

- 9.3.1. Recap
- 9.3.2. Introduce new learning
- 9.3.3. Guided practice and check for understanding
- 9.3.4. Independent task
- 9.3.5. Assess for understanding
- 9.3.6. Feedback

9.4. In addition to the main maths lessons, there is also a shorter fluency session daily planned to support the learning of key instant recall facts (KIRFS) and to develop calculation skills and number sense. KIRFS are set specifically to each year group. Each half term, a new set of KIRFs are focused on. Children are encouraged to learn and practise KIRFs at home as well as during fluency sessions. Where a child is working significantly below their Age Related Expectation, KIRFs for lower stages are set. All children take part in a KIRFs quiz at the end of each week and are encouraged to select 2-3 facts to practise and improve upon each week. The data from these quizzes is recorded on a whole school spreadsheet and analysed by teachers to inform their next steps. Scores are also shared with parents.

10. Assessment

10.1. Assessment in Mathematics is carried out according to the aims and principles set out in the Assessment policy.

10.2. Formative assessment is ongoing in classes at all times and informs future lessons as well as direction and support within lessons. Annotations are made on daily / weekly term plans in response to timely and regular marking so that individual children's needs can be considered, and planning adjusted (as appropriate) on a daily basis.

10.3. Summative assessment is carried out throughout the school in a number of ways:

10.3.1. Teachers in Year R make teacher assessments and report them termly.
10.3.2. Teachers in Years 1 – 6 assess their children at six points throughout the year.
10.3.3. Star assessment is used to support teachers every half term.
10.3.4. White Rose Hub end of block assessments are used to assess understanding of different strands of mathematics.
10.3.5. Weekly KIRF quizzes
10.3.6. Monitoring of Timestable Rock stars (Year 3-6)

11. The role of the mathematics subject leader

11.1. Improve the quality of Mathematics provision based on the monitoring and evaluation of the quality of teaching and learning, data analysis, self-evaluation and auditing.

11.2. Drive Maths Mastery forward across all year groups of the school. This will be supported by the Solent Maths Hub and the Mastery workgroup and mentor.

11.3. Take the lead in policy development; ensure progression and continuity throughout the school.

11.4. Support colleagues in the planning, teaching and assessment of Mathematics.

11.5. Monitor planning, teaching and children's progress in mathematics and advise the Head Teacher and staff on action needed.

11.6. Take responsibility for the purchase and organisation of Maths resources.

11.7. Keep up to date with developments in mathematics education and disseminate information to colleagues as appropriate.

11.8. Lead and direct staff to appropriate CPD as well as demonstrate good practice.