

# Oakwood Primary Academy Mathematics Policy



## **Changes**

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Policy review due: October 2020

# Oakwood Primary Academy

## Mathematics Policy

### Introduction

Maths equips children with a uniquely powerful set of tools to understand and change the world. It provides a precise means of communication, using numbers, symbols and shapes. It is a powerful universal language used to explain, predict and represent events, think in abstract ways and tackle problems in everyday life.

### Aims

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Oakwood Primary Academy. This policy for mathematics is based on the National Curriculum 2014. The implementation of this policy is the responsibility of all teaching staff.

Staff use the objectives from the National Curriculum 2014 supported by the White Rose Maths Planning Resources and other resource banks including CITM@Plymouth.ac.uk and other NCETM resources. The teaching of mathematics should create:

- A positive attitude towards mathematic learning.
- Competence and confidence in mathematical knowledge, concepts and skills.
- An ability to **solve problems, to reason**, think logically and to work systematically and accurately.
- The initiative and ability to work both independently and in cooperation with others.
- An ability to communicate mathematics using a range of models and images.
- An ability to use and apply mathematics across the curriculum and in real life which shows a deeper understanding of the concepts of mathematics.
- An understanding of mathematics through a process of enquiry and experiment.
- **Fluency in the fundamentals** through varied and frequent practise with increased complexity over time.

### The Teaching of Mathematics

#### Mathematics Learning Environment

The mathematics learning environment is critical to create a positive culture that inspires children. Through interconnected subjects, children are encouraged to make rich connections across mathematical subjects, through the:

- Number Fluency Policy
- Mathematics working wall
- Clearly labelled and accessible maths resources
- Displays which are changed regularly
- Outdoor learning scrap books
- Number lines including negative number

## **Teaching and Learning Organisation**

Each class teacher usually delivers four daily maths lessons and one arithmetic lesson however some areas might be taught in longer blocks. A significant time commitment should be allocated to the four calculation methods. Lesson time may vary in length but usually lasts for 60 minutes. This includes a weekly mental maths test and ongoing multiplication practice feeding into the whole school Times Table Rock Stars programme.

Teachers of the foundation children base their teaching on the Development Matters Statements in the EYFS Curriculum. This ensures that they are working towards the 'Early Learning Goals for Mathematical Development'. Throughout the year children are introduced to key concepts including counting and understanding number, addition and subtraction and shape, space, pattern and measurement through child initiated activities, adult led tasks, continuous provision and group or class teaching sessions which allows them to enjoy, explore, practise and talk confidently about mathematics. By the end of the foundation stage, teachers aim to deliver a daily maths session to prepare children for their transition into year 1.

## **Planning and Delivery**

White Rose Medium term planning gives details of the main teaching description from the National Curriculum 2014 and provides the structure to the mastery approach to our curriculum design and organisation.

All children are initially taught in mixed ability groups. Point of need intervention is in place to ensure gaps are closed to secure skills before moving on. During mathematics lessons, there are opportunities for:

- Group learning
- Paired learning
- Whole class teaching
- Individual learning
- Peer teaching from 'masters'
- Challenge

Pupils engage in:

- The development of mental strategies
- Written methods
- Practical learning
- Investigational learning
- Problem solving
- Mathematical discussion
- Consolidation of basic skills and routines

Computing/ICT is used in mathematics lessons for modelling ideas and methods; software and iPads apps are used to present information visually, dynamically and interactively. Online programs such as Times Table Rock Stars, NCETM resources and Nrich are used to provide meaningful contexts for applying learning to real life situations.

Representations are used to consolidate understanding such as the Singapore Bar Model, alongside the use of manipulatives such as multilink, numercon, place value cards and bead bars etc.

The maintenance of the maths resources is the responsibility of the Mathematics Lead. The Mathematics Lead has the responsibility for the resourcing of this subject as prioritised in the School Improvement Plan.

At Oakwood Primary Academy, we recognise the importance of establishing a secure foundation in mental calculation and recall of number facts which will support standard written methods. All teaching and support staff follow the Number Fluency Policy to ensure a consistent delivery of the four calculation methods. Teachers are required to use the White Rose resources to support the planning process but do not have ownership of it. Teachers also refer to the descriptors on School Pupil Tracker On-line for gap analysis and trajectories towards meeting age related expectations (ARE). Teachers are encouraged to adapt and amend lessons according to needs of their class and in response to assessment for learning. We endeavour to set work that is challenging, motivating and encourages children to talk about what they have been doing and reflective of their successes and developments.

### **An Inclusive Approach**

Children are given full access to the mathematics curriculum matched to their ability and are supported by both adults and their peers where necessary. Appropriate support, pre-teaching and adjustments will be made if a child falls significantly below age related expectations. For SEN children; IEPs will include specific aspirational but achievable targets identifying pathways to their age related band.

When Teaching Assistants are timetabled to support groups or individual children, they work collaboratively with the class teacher. The Teaching Assistant provides feedback to the class teacher when appropriate to inform evaluations, assessment and future planning.

The National Curriculum 2014 specifies that children should rehearse and deepen their learnt skills in a variety of ways including problem solving and reasoning and through the use of different models and images. Links are made to external agencies and local expertise to provide further experiences for the children who have mastered their band. Children are encouraged to explore wrong answers in depth and questioned to uncover their reasoning.

### **Equality Statement**

We are committed to ensuring equality of education and opportunity for all children; irrespective of race, gender, disability, religion and belief, or socio-economic background. We aim to develop a culture of inclusion and diversity in which all those connected to the school feel proud of their identity and are able to participate fully in school life.

## **EAL**

For children whose home language is not English, we take reasonable steps to provide opportunities for children to develop and use their home language in play and learning, supporting their language development at home. We also aim to ensure that children have sufficient opportunities to learn and reach a good standard in English. When assessing communication, language and literacy skills, we assess children's skills in English.

## **Assessment and Monitoring**

Assessment is used to inform teaching and learning in a continuous cycle of planning, teaching and learning. Assessment for Learning is an informal part of every lesson. The teacher shares the objectives for the lesson with children, making sure they are clear about what is being expected of them to successfully achieve their objective; this enables children to take ownership of their own learning. Assessment for Learning is used to inform future planning.

School Pupil Tracker On-line (SPTO) is used for continuous assessment and to ensure coverage of the key descriptors highlighted in the Mathematics National Curriculum 2014. Teachers input this data regularly and use the gaps to inform any interventions or extra support that is needed. The outcome of the assessments from Assessment Week is recorded by the class teacher on a Year Group Pupil Profile three times a year.

Progress and attainment in Mathematics is reported to parents at the end of term 3 and term 6. Children in the Foundation Stage are assessed using the Early Learning Goals. Children in Year 2 are assessed using teacher assessment supported by the Mathematics SAT results. In Year 6 children take part in SATs and complete 3 Mathematics tests which are marked externally. Parents are informed of the test outcomes at the end of term 6.

Learning in books is moderated within our phase teams, across the whole school, across the Discovery Multi Academy Trust and across our Academic Council. The school has made links with local collaborative projects and National projects such as the NCETM Five Nations Project.

## **Home learning**

We aim to raise the profile and understanding of our approach to Mathematics with parents. They are actively encouraged to support their child's learning through organised Mathematics workshops and but accessing the Mathematics area of the website which links to useful documents and resources. Maths home learning is set on a weekly basis and usually links to an area of the curriculum that has just been covered or key skills like times tables, number bonds or word problems. Times Table learning is a key aspect to keep practising at home as it is a fundamental basis for mathematical understanding. All children have access to the online resource Times Table Rock Stars.