



Maths Policy

Inspire – Impact – Independence

OAKWOOD ACADEMY MISSION STATEMENT

"Promoting learning excellence - Inclusion beyond the barriers".

Moral Purpose

"We are united in the belief that together we can inspire all learners to dream, persevere and achieve so that we can change lives for the better, now and for future generations to come"

Policy developed by:	J McQueen
Policy to be reviewed:	Summer 2020
Summary of changes	i.e. changes to the curriculum and SOW's

Approved by:

Headteacher:

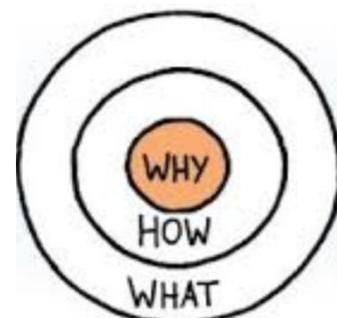
Chair of Governors:

Date:

Date:

Aims of Teaching and Learning at Oakwood: Inspire - Impact - Independence

The aim of Teaching and Learning at Oakwood is to provide high quality education which **inspires**, has a positive **impact** on all young people and results in fostering **independence**, preparing them for the future.



Oakwood's Maths Policy Intent (Why)

- To foster an **enduring love** of number.
- To support pupils to become **active** mathematicians.
- Develop an appreciation for the **functional and practical** uses of Maths .

Policy development (How)

This policy has been developed through:

- A SWOT analysis completed July 2019 during a department planning session.
- Review of Maths policy in Summer of 2019.
- RAG of action plan for academic year 2018 2019
- Consultation with pupils in Summer 2 2019 to collate pupil voice.

Oakwood Maths Policy implementation (What)

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The development of a comprehensive understanding of Mathematics is developed via five strands: conceptual understanding - comprehension of mathematical concepts, operations, and relations, procedural fluency - skill in carrying out procedures flexibility, accurately, efficiently, and appropriately. These strands are consistently embedded in all Maths lessons across the four key stages of Maths learning. It is very important to us as a department to ensure that all learners are given equal opportunities to develop social and practical skills which will benefit them in all facets of their lives outside of the classroom.

This is achieved through:

- Structured times tables lessons where pupils are given the opportunity to challenge themselves at the appropriate level. Pupils are expected to practice the relevant times tables at home as part of the Oakwood homework policy. They are also linked to the Times Table Rockstars app which allows them to regularly practice and challenge themselves. This all helps to promote times tables / multiplication for pleasure and parental engagement.
- A wide and varied curriculum that is well-planned to tailor to the needs of pupils, whilst embedding the skills necessary to achieve the best possible qualifications.
- A range of qualifications is available to pupils to ensure they leave Oakwood with the highest qualification they, as an individual, can achieve. These include Entry Level, Functional Skills and GCSE qualifications.
- In order to effectively foster an enduring love of Mathematics pupils engage in a range of specialised days such as My Money Week etc. These experiences provide pupils with the opportunity to engage with number work outside the classroom and learn in a different style which creates a lasting impact on their enjoyment of Mathematics.
- The department promotes Spoken language through a range of activities and literacy games linked to maths to prepare pupils for life outside of the classroom. This helps embed the literacy policy.

The subject of Maths:

The rationale of this Maths policy is to:

- introduce the key aims and objectives of the Maths department.
- to explain the curriculum design and coverage.
- to explain expectations for planning, assessment, reporting and evaluating and pupil progression.

At Oakwood, Mathematics is delivered to KS2 and 3 pupils as a core subject for 13.8% of their timetable. In KS4 all pupils take an appropriate external examination in the subject, either at GCSE Foundation tier or as an Entry Level Qualification both in number and Functional Skills and have maths lessons delivered for 17% of their timetable. Some pupils will also have a chance at sitting the Edexcel Awards in Number and Measure, as well as Statistics throughout their time in KS3. All classes are taught by skilled teachers and are supported by dedicated trained Teaching Assistants, together with 1:1 Teaching Assistant support where this is allocated to individual pupils. KS5 pupils have 13.8% of their timetable spent on Mathematics. All pupils take an appropriate external examination depending on the qualification they have come in to Post 16 with. These qualifications will range from Pearson Functional Skills Maths award Entry Level 2, 3, Level 1 or Level 2 or improving their existing GCSE grade to a grade C (equivalent to 4 / 5 in the new GCSE framework).

The purpose of Mathematics teaching at Oakwood is to develop curiosity, enjoyment, skills and a growing understanding of Mathematics knowledge through an approach in which pupils raise questions and investigate the world in which they live.

Key aims and objectives:

The key aim for Maths delivered at Oakwood Academy is to promote high standards of numeracy, enabling pupils to reach their full potential whilst at the Academy equipping them for later life. This aim can be broken down into smaller objectives:

1. exposition by the teacher
2. discussion between teachers and pupils and between pupils themselves
3. appropriate practical work, including use of calculators, iPads and computers, (note that the use of practical equipment can also be used to develop the pupil's understanding of mathematical concepts)
4. consolidation and practise of fundamental skills and routines, particularly mental skills
5. problem solving and decision making, including the application of mathematics to everyday situations and to the world of work

6. investigational work, including work which affords opportunities for extension by the pupils themselves
7. activities where pupils are involved with making choices about which equipment and/or materials or other resources to use, including ICT, and also about what mathematics is needed to solve a particular problem or complete a particular task
8. to work with others, in group activities, and also to talk about their mathematical ideas, either with other individuals, or in a larger group

Teaching and Learning

Teaching and learning within the Maths department is derived from the Oakwood Academy Teaching and Learning Policy.

The following documents can be found on the staff shared area in the Maths folder:

- Maths Action Plan 2018 - 2019
- Maths Curriculum overview 2018 - 2019
- Maths SOW 2018 - 2019

Curriculum organisation:

See Maths curriculum overview and curriculum maps for outline of National Curriculum coverage. Oakwood Academy follows the National Curriculum as set out by the Government from Key Stages 2 to 4.

As Oakwood is a Special Educational Needs school many elements of the programmes of study are revisited or adapted across Key Stages to consolidate knowledge and address gaps in pupil knowledge.

Foundation Learning (KS2 and Year 7):

Pupils in Key Stage 2 have 4 Maths lessons per week with each lesson lasting for 50 minutes. One of these lessons is dedicated to developing times tables and pupils will have access to a number of games and activities. The remaining lessons are used as topic lessons, this includes developing key skills in basic number operations as well as gaining knowledge in Shape, Space and Measure, Handling Data, Algebra and Using and Applying.

Key Stage 3:

Pupils in Key Stage 3 have 4 Maths lessons per week with each lesson lasting for 50 minutes. One of these lessons is dedicated to developing times tables and pupils will have access to a number of games and activities. The remaining lessons are used as topic lessons, this includes developing key skills in basic number operations as well as gaining knowledge in Shape, Space and Measure, Handling Data, Algebra and Using and Applying.

Key Stage 4:

Pupils in Key Stage 4 have 5 Maths lessons per week with each lesson lasting for 50 minutes. One of these lessons is dedicated to developing times tables and pupils will have access to a number of games and activities. The remaining lessons are used as topic lessons, this includes developing key skills in basic number operations as well as gaining knowledge in Shape, Space and Measure, Handling Data, Algebra and Using and Applying.

Key Stage 5:

At Key Stage 5 pupils numeracy skills are assessed and students are entered for a suitable national qualification that meets their needs, building on from where they left Key Stage 4. It is this pathway that defines their programme of study.

Pupils in Key stage 5 have 2 Maths lessons per week lasting for 90 minutes each. These lessons are used to prepare for the requirements of their designated qualification.

This year we have a dedicated Maths specialist at KS5 who will make the transition from Year 11 as seamless as possible. This will allow students to build from where they finished in KS4 more easily.

National Curriculum Coverage:

The programmes of study for Maths cover:

1. Developing fluency
2. Reasoning mathematically
3. Solving problems

Developing fluency is developed by:

- consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots
- select and use appropriate calculation strategies to solve increasingly complex problems
- use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships
- substitute values in expressions, rearrange and simplify expressions, and solve equations
- move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs]
- develop algebraic and graphical fluency, including understanding linear and simple quadratic functions
- use language and properties precisely to analyse numbers, algebraic expressions, 2-D and 3-D shapes, probability and statistics

Reasoning mathematically is developed through:

- extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations
- extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically
- identify variables and express relations between variables algebraically and graphically
- make and test conjectures about patterns and relationships; look for proofs or counter-examples
- begin to reason deductively in geometry, number and algebra, including using geometrical constructions
- interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning
- explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally

Solving problems is developed through:

- develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems
- develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics
- begin to model situations mathematically and express the results using a range of formal mathematical representations
- select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems

Planning:

Planning begins with subject overviews detailing unit titles. This is then broken down into key topic focuses on curriculum maps. Medium Term plans are developed from these which in turn inform teachers own individual planning. Further information can be found in the Academy's Teaching and Learning Policy.

Assessment:

Pupils are assessed throughout each half term and progress is recorded using SIMS online recording system.

Formative forms of assessment are used throughout the year through the use of pink highlighter questioning, peer and self assessment in line with the academy's Marking Policy. It also takes place at the end of each topic, based on teacher assessments.

Summative assessments include the Hodder Maths Age Test. These are carried out 2 times per year during Autumn 1 and Summer 1. Pupils completing qualifications that have exam

based elements have opportunities to practise papers in mock exam conditions throughout the year prior to their final exam.

Progression:

In order to monitor progression, Oakwood Academy track progress using the CASPA system. This looks at their main need and tracks their flight path accordingly. This is used for all pupils in KS2 and 3. As for KS4 and 5 their progression is tracked against the criteria for the qualification they are working towards.

Reporting and evaluation:

All subject teachers must have pupil data in the SIMS system by the school set deadlines (detailed on the school calendar). Data will be scrutinised and evaluated and actions developed to ensure continued pupil progression. This information will be collated and reported to the SLT team during the KPI meeting. Any anomalies in the data will be reported to the SLT team along with the reasons for such. Pupil progress will be evaluated and actions reported back to departmental teams.

Student progress will be reported to parents 3 times per year when the pupil progress reports are sent home. Maths targets will be shared with parents during annual reviews.

Information on Maths observations and findings of the termly whole school book scrutiny are available for the subject co-ordinator from performance managers.

Writing Expectations:

Oakwood has a whole school policy for writing. Writing is a key life skill which enables pupils to express themselves, communicate with others and access other areas of the curriculum. It is a complex process which requires a command of sentence and text structure, grammar and punctuation, and an ability to edit and evaluate both their own and others writing. It involves a competency in spelling and handwriting which is every department's responsibility.

As part of the whole school writing policy at Oakwood Academy teachers are expected to:

- Ensure that writing is always purposeful and contributes to the learning of the pupils.
- Ensure that pupils only engage in writing when necessary
- Make sure ICT is used by pupils to help meet individual needs by allowing them to edit, redraft and present their writing in a variety of ways, allowing them to capture their learning outcomes.
- Make sure that the spell checker on their computer is set to English UK rather than English US.
- Refer back to the teaching and learning policy with regards to marking and correcting work.
- Ensure spelling on displays, handouts, presentations and marking is correct.

Pupil recording:

Pupil's work will be presented in a variety of ways and account will be taken of the varied abilities and strengths of the pupils when deciding upon modes of presentation. Work will be presented in books, files, pictures, worksheets and a range of media formats. Full advantage will be taken where applicable, of ICT equipment e.g. interactive whiteboards, Prowise televisions, videos, cameras, computers, and the immersive space.

Differentiation:

Work will be differentiated in order to cater for the needs and abilities of all pupils. Work set will be differentiated by task, outcome, time and process. As suggested earlier, recorded work will also be differentiated according to the individual's abilities and needs. All work will aim to stretch pupils to their full potential. Target setting will be used to break tasks down into smaller, more attainable steps, creating a personalised learning programme for pupils in Maths.

Gifted and Talented:

Gifted pupils are identified as performing significantly above their expected points target trajectory. These pupils are encouraged to take part in earlier qualifications such as Edexcel Awards. Pupils are also encouraged to take part in Maths booster sessions after school pushing them to achieve their full potential.

Use of Teaching Assistants:

Teaching assistants will be deployed effectively dependent upon the purpose of the lesson to support and strengthen the quality of teaching. Teaching assistants will be an integral part of all lessons, who are clear about the objectives and outcomes. Where pupils are expected to work on an independent level, teaching assistants will support administrative tasks, display work and create resources that will support the teacher in providing a high quality environment.

Displays:

Work displayed in and around the classroom will clearly reflect pupils' work and pupils will be encouraged to assist in the preparation and maintenance of displays as a tool for learning and as a reinforcement of skills. Display boards will not be overcrowded and work will be placed flat against the board in line with the Academies display guidelines.

Homework:

Homework is given on a regular basis. All pupils will be expected to complete a mental arithmetic test at home on a weekly basis and evidence of this will be marked in their logbook. Pupils will be given weekly times table practice and a subsequent test. Homework will be monitored and opportunity given to those children finding homework difficult to discuss it again with the member of teaching staff who gave it to them. Opportunity will also be given to those struggling to find the time or a quiet place to do their homework by allowing them to work in the classroom during AT time.

Equal opportunities and inclusion:

We aim to provide for all children so that they achieve as highly as they can in Maths according to their individual abilities. We will identify which pupils or groups of pupils are under-achieving and take steps to improve their attainment.

In order to engage all children, cultural diversity, home languages, gender and religious beliefs are all celebrated our curriculum endeavours to includes a wide range of topics and other resources which represent the diversity and backgrounds of our pupils.

Resources:

Resources take the form of physical, to aid learning; textbooks, to reinforce concepts; a bank of worksheets, which allow revision and reinforcement as well as extension; interactive activities and games; software and songs.

Maths resources will be stored in the Year 7 base and individual classrooms and store cupboards. Resources are available for any staff member but **MUST BE RETURNED** to the relevant storage area after use. Computer programme resources can be found on the shared area on the network under Resources / Maths.

ICT:

Both main maths classrooms have their own bank of laptops that can be easily used as and when needed. The remaining maths staff have access to a bank of laptops within their base. Programs are available on all PC's via the network with software available in the resources folder in the staff shared drive located on the network that we can call upon to enhance lessons and learning. Interactive activities will be used to enhance interest and learning through Interactive white boards or Prowise televisions. Pupils will create a range of work using ICT.

Cross-curricular links

Communication between teachers is important. Numeracy is vital to all subjects and an appreciation of and confidence with basic number is important for pupils to be successful in other subjects. This will involve pupils working with numbers in Maths lessons that have cross-curricular subject matter. Teachers from other subject areas have access to pupils' progress records via SIMS in order to provide relevant differentiation.

SMSC/Radicalisation Statement:

All subject teachers in the Maths department are familiar with the indicators of vulnerability to extremism and radicalisation and the procedures for dealing with concerns. When delivering lessons, we look out for indicators and report any concerns. We work to prevent pupils from developing extreme and radical views by embedding SMSC principles throughout the Maths curriculum.

During lessons in Maths we strive to create a learning environment which promotes respect, diversity and self awareness and equips all of our pupils with the knowledge, skills, attitudes and values they will need to succeed in their future lives.

Spiritual development focuses on an individual's own personal beliefs and values and their resulting behaviours. Through spiritual development, children are able to understand their own feelings and emotions and this enables them to reflect and to learn. In Maths we deliver spiritual development through encouraging pupils to reflect and learn from their mistakes.

Moral development means exploring, understanding and recognising shared values and considering the issues of right and wrong. In maths we deliver moral development through developing an open and safe learning environment in which pupils can express their views and practise moral decision making. We also provide a clear moral code as a basis for behaviour which is promoted consistently throughout maths.

Social development involves learners working effectively together and participating successfully in the school community as a whole. During a pupil's social development they gain interpersonal skills that allow them to form successful relationships and to become a positive team member. In maths we deliver social development through many group activities within school as well as trips out. We therefore actively encourage pupils to work co-operatively and to recognise and respect social differences and similarities.

Cultural development enables learners to develop an understanding of their own culture and of other cultures locally, nationally and internationally. It also means learning to feel comfortable in a variety of cultures and valuing cultural diversity. In maths we deliver cultural development through recognising and nurturing particular gifts and talents. We also develop partnerships with outside agencies and individuals to extend pupils' cultural awareness.

Health and safety / Safeguarding:

This school is committed to safeguarding and promoting the welfare of children and young people and expects all staff and volunteers to share this commitment. All staff believe that our school should provide a caring, positive, safe and stimulating environment that promotes the social, physical and moral development of the individual child and strive to provide this within their classrooms. Please see the Safeguarding Policy for more details.

Oakwood Maths Policy Impact (What)

This section of the policy is a working document and will be updated with evidence of impact as and when it is collated.

How has the policy implementation impacted on the initial intent of the policy?

Policy intent:	Policy impact:
To foster an enduring love of mathematics.	
To support pupils to become active mathematicians.	
Develop an appreciation for the functional and practical uses of Mathematics.	

Role of the Subject co-ordinator:

The Subject co-ordinator is responsible for improving the standards of teaching and learning in Maths through:

- monitoring and evaluating Numeracy:
 - pupil progress
 - provision of Numeracy
 - the quality of the Learning Environment
- taking the lead in policy development
- developing action plans to set clear focuses for the year

- setting agendas for department meetings and leading department meetings
- purchasing and organising resources
- keeping up to date with recent Numeracy developments

Agreement to Policy

Head of Department Date

Policies are reviewed every 2 years or as necessary depending on new course criteria or legislation.