

## Mathematics Policy

Date	Review Date	Subject Leaders	Nominated Governor
01/09/2017	01/09/2019	Aoife O'Grady / Josh Rook	Nick Brennan

We believe this policy should be a working document that is fit for purpose, represents the school ethos, enables consistency and quality across the school and is related to the following legislation:

- Education Act 1996
- Education Act 1997
- Standards and Framework Act 1998
- Education (National Curriculum) (Temporary Exceptions for Individual Pupils) (England) Regulations 2000
- Education Act 2003
- Equality Act 2010

The following documentation is also related to this policy:

- Designing and Timetabling the Primary Curriculum - a practical guide for Key Stage 1 and 2 (Qualifications and Curriculum Authority 2002)
- National Curriculum in England: Mathematics programmes of study (DfE)
- Equality Act 2010: Advice for Schools (DfE)
- Race Disparity Audit - Summary Findings from the Ethnicity Facts and Figures Website (Cabinet Office)

We believe mathematics is 'a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.' (The National Curriculum in England Framework Document (DfE))

We have a duty to ensure compliance with the revised National Curriculum and with the application of the new programmes of study and attainment targets. We understand that 'the National Curriculum provides pupils with an introduction to the core knowledge that they need to be educated citizens.'

Our well-balanced curriculum promotes the spiritual, moral, cultural, cultural, mental and physical development of pupils and prepares them for the opportunities, responsibilities and experiences of later life. We will develop pupils' spoken language, reading and writing in all subjects and will develop pupils' mathematical fluency.

We strive to provide a curriculum that all pupils will find enjoyable with them understanding the relevance of their lessons. This can only be achieved by using the experience, enthusiasm and specialism of individual teachers who provide interesting, relevant, purposeful and differentiated

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lessons based on real-life experiences, wherever possible, in a structured well ordered classroom environment.

We wish to work closely with the School Council and to hear their views and opinions as we acknowledge and support Article 12 of the United Nations Convention on the Rights of the Child that children should be encouraged to form and to express their views.

We as a school community have a commitment to promote equality. Therefore, an equality impact assessment has been undertaken and we believe this policy is in line with the Equality Act 2010.

We all have a responsibility to ensure equality permeates in to all aspects of school life and that everyone is treated equally irrespective of age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation. We want everyone connected with this school to feel safe, secure, valued and of equal worth.

We acknowledge the findings of the Race Disparity Audit that clearly shows how people of different ethnicities are treated across the public services of health, education, employment and the criminal justice system.

The educational section of the audit that covers: differences by region; attainment and economic disadvantage; exclusions and abuse; and destinations, has a significant importance for the strategic planning of this school.

We believe it is essential that this policy clearly identifies and outlines the roles and responsibilities of all those involved in the procedures and arrangements that is connected with this policy.

### **Aims**

- To ensure that all pupils 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.
- To ensure that all pupils reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- To ensure that all pupils 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.

(The National Curriculum in England Framework Document (DfE) 2014)

- To develop an enthusiasm for and fascination with mathematics.
- To increase the confidence of each pupil in mathematics to enable them to apply the knowledge and skills with assurance.
- To promote the teaching of numeracy and literacy within all subjects.
- To share good practice within the school.

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- To ensure compliance with all relevant legislation connected to this policy.
- To work with other schools and the local authority to share good practice in order to improve this policy.

### Roles and Responsibility for the Policy

#### Role of the Governing Body

The Governing Body has:

- appointed a member of staff to be responsible for the curriculum leadership of Mathematics;
- delegated powers and responsibilities to the Headteacher to ensure all school personnel and stakeholders are aware of and comply with this policy;
- responsibility for ensuring compliance with the legal requirements of the National Curriculum;
- responsibility for ensuring that the school complies with all equalities legislation;
- nominated a designated Equalities governor to ensure that appropriate action will be taken to deal with all prejudice related incidents or incidents which are a breach of this policy;
- responsibility for ensuring funding is in place to support this policy;
- responsibility for ensuring this policy and all linked policies are maintained and updated regularly;
- responsibility for ensuring all policies are made available to parents;
- the responsibility of involving the School Council in:
  - determining this policy with the Governing Body;
  - discussing improvements to this policy during the school year;
  - organising surveys to gauge the thoughts of all pupils;
  - reviewing the effectiveness of this policy with the Governing Body
- nominated a link governor to:
  - visit the school regularly;
  - work closely with the Headteacher and the coordinator;
  - ensure this policy and other linked policies are up to date;
  - ensure that everyone connected with the school is aware of this policy;
  - attend training related to this policy;
  - report to the Governing Body every term;
  - annually report to the Governing Body on the success and development of this policy.
- responsibility for the effective implementation, monitoring and evaluation of this policy.

#### Role of the Headteacher

The Headteacher will:

- work in conjunction with the Senior Leadership Team to ensure all school personnel, pupils and parents are aware of and comply with this policy;

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- work closely with the curriculum leader, subject leaders and the link governor;
- ensure compliance with the legal requirements of the National Curriculum;
- consider disapplying a pupil from all or part of the National Curriculum for a period of time if this will benefit the child;
- encourage parents to take an active role in curriculum development;
- provide leadership and vision in respect of equality;
- provide guidance, support and training to all staff;
- monitor the effectiveness of this policy by:
  - observing teaching and learning
  - planning scrutinies and work trawls
  - discussions with pupils and members of the school council
- annually report to the Governing Body on the success and development of this policy.

### Role of the Curriculum Leaders

The Curriculum Leaders will:

- provide strategic leadership and direction;
- provide a curriculum that provides pupils with the essential knowledge they need to be educated citizens in democratic Britain;
- coordinate a number of working parties in order to explore ways of improving the curriculum and the way in which we deliver it with a view of ensuring the highest standards of delivery and consistency in pupil's learning and teaching experiences and opportunities throughout the school;
- provide an environment that is fun, stimulating and challenging to all pupils;
- promote an awareness of and respect for a diversity of cultures, values, beliefs and abilities;
- equip children with a range of skills and a desire for lifelong learning;
- ensure appropriate coverage of the curriculum;
- provide support and advice;
- monitor pupil progress;
- ensure sufficient and up to date resources are in place.

### Role of the Subject Leader

The Subject Leader will:

- lead the development of this policy throughout the school;
- work closely with the Headteacher, curriculum leader, the nominated governor and SENCO;
- promote the teaching of numeracy and literacy within all subjects;
- be accountable for standards in this subject area;
- monitor standards by:
  - auditing the subject area
  - review of the scheme of work
  - monitoring teachers planning

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- lesson observations
- scrutinising children's work
- discussions with pupils

- ensure continuity and progression throughout the school;
- devise a subject improvement plan;
- provide guidance and support to all staff;
- provide training for all staff on induction and when the need arises regarding;
- attend appropriate and relevant INSET;
- keep up to date with new developments;
- undertake an annual audit and stock take of resources;
- purchase new resources when required and in preparation for the new academic year;
- manage the subject budget effectively;
- undertake risk assessments when required;
- review and monitor;
- annually report to the Governing Body on the success and development of this policy.

### Role of Teachers

Teachers will:

- comply with all aspects of this policy;
- work closely with the subject leader to develop this policy;
- devise medium and short term planning;
- develop mathematical fluency, numeracy and mathematical understanding in all subjects;
- develop pupils' spoken language, reading, writing and vocabulary in all subjects;
- plan and deliver good to outstanding lessons;
- plan differentiated lessons which are interactive, engaging, of a good pace and have a three part structure;
- have high expectations for all children and will provide work that will extend them;
- assess, record and report on the development, progress and attainment of pupils;
- achieve high standards;
- celebrate the success of pupils in lessons
- implement the school's equalities policy and schemes;
- report and deal with all incidents of discrimination;
- attend appropriate training sessions on equality;
- report any concerns they have on any aspect of the school community.

### Role of Pupils

Pupils will:

- be aware of and comply with this policy;
- be encouraged to work in partnership with the school by making decisions and exercising choice in relation to their educational programme;
- listen carefully to all instructions given by the teacher;
- ask for further help if they do not understand;
- participate fully in all lessons;

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- participate in discussions concerning progress and attainment;
- treat others, their work and equipment with respect;
- support the school Code of Conduct and guidance necessary to ensure the smooth running of the school;
- liaise with the school council;
- take part in questionnaires and surveys.

### Role of Parents/Carers

Parents/carers will:

- be aware of and comply with this policy;
- be encouraged to take an active role in the life of the school by attending:
  - parents and open evenings
  - parent-teacher consultations
  - curriculum development workshops
- be encouraged to work in school as volunteers;
- be encouraged to respond to curriculum information newsletter;
- be informed via termly newsletters of their child's topics;
- asked to provide suggestions and ideas for improving this subject;
- be asked to take part periodic surveys conducted by the school on curriculum development;
- be invited to make presentations to pupils on aspects of this subject area;
- encourage effort and achievement;
- encourage completion of homework and return it to school;
- provide the right conditions for homework to take place;
- expect their child to hand in homework on time;
- join the school in celebrating success of their child's learning.

### Policy Procedures and Protocols

#### Teaching and Learning

We use a variety of teaching and learning styles in order to develop children's knowledge, skills and understanding.

CPA approach: Children are taught using concrete objects, before moving on to pictorial and abstract methods. This is a three-part strategy in which each part builds on the previous instruction, encouraging pupils to create meaningful connections between concrete, pictorial and abstract levels of thinking and understanding.

#### Curriculum Planning and Organisation

Teachers collaborate on the planning of the subject to ensure parity in provision and to share expertise. Curriculum planning (see above) is managed in three phases namely:

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### Long Term Planning

- details what is to be taught over the year
- provides teaching guidelines and overall objectives for each year group for the whole year

### Medium Term Planning

- organises the subject into termly or half-termly sections
- is more detailed and the objectives are more specific in nature
- is developed by the teachers, who respond to the needs of their pupils
- ensures a balanced distribution of work is undertaken across each term

### Short Term Planning

- details the subject curriculum over the week
- plans lessons in detail with specific class objectives
- sets individual learning goals for each pupil

#### Planning and resources:

Combination of Rising Stars and Hamilton, supplemented with Twinkl resources and 'Maths on Target' for differentiated activities. We use the NCTEM 'Teaching for Mastery' document to provide consolidation, building fluency and understanding of underlying concepts.

Assessment: There is a focus on active assessment strategies/assessment for learning to encourage pupils to be more active and collaborative in their learning and assessment. Children are assessed in each mathematical area using 'Rising Stars' tests. 'Target Tracker' is used to track pupil progress half termly. Pupil information is moderated and discussed during pupil progress meetings and gap analysis and early intervention ensures pupils receive appropriate support.

### Links with ICT

The use of information and communication technology will promote, enhance and support the teaching of this subject area. However, calculators 'will not be used as a substitute for good written and mental arithmetic but will be 'introduced near the end of KS2 to support pupils' conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure.'

We are aware that it is often said that calculators can harm pupils arithmetic skills but recent research has found that when taught properly calculators can help pupils become better at problem solving. Calculators are a useful tool and pupils need to be shown how to use them correctly.

We acknowledge that calculators, when used regularly but not every day, can actually boost pupils' fluency and understanding of maths. We will endeavour to show pupils how they can use them to check if calculations are correct and how to tackle tricky number problems.

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We know that employers really value numeracy but they do not want prospective employees to just recite their multiplication tables but people who can work out something in the real world.

### **Inclusion**

We believe that we are an educationally inclusive school as we are concerned about the teaching and learning, achievements, attitudes and well-being of all our pupils. We aim to provide places for all pupils who express a preference to join this school.

We work hard to offer equality of opportunity and diversity to all groups of pupils within school such as children:

- from both sexes;
- who have Special Educational Needs;
- who are looked after;
- from minority faiths, ethnicities, travelers, asylum seekers, refugees;
- who are gifted and talented;
- who are at risk of disaffection;
- who are young carers;
- who are sick;
- who have behavioural, emotional and social needs;
- from families who are under stress

We believe we have a duty to ensure that all children have equal rights to the opportunities offered by education and that all children will be encouraged to fulfil their potential in their academic, physical and creative achievements.

We want to give all children the right to access high quality educational experiences, to take part in a broad and balanced curriculum and to be part of the social life of the school.

We recognise that within the school we have more able, gifted and talented children. We believe that:

- more able children demonstrate a higher ability than average for the class and often require differentiated tasks and opportunities to learn through challenges;
- gifted children are those who have the ability to do well in more than one subject;
- talented children demonstrate an innate talent or skill in creative, cultural or sporting fields

We have an even greater obligation to plan and deliver well-structured lessons with appropriate assessment plus ambitious targets for pupils who have low levels of prior attainment or come from disadvantaged backgrounds.

Also, we have a duty to cater for pupils whose first language is not English by planning teaching opportunities to help them develop their English and to gain full access to the National Curriculum.

### **Differentiation**

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Differentiation is best defined as 'the process by which differences between learners are accommodated so that all students in a group have the best possible chance of learning.'  
(Geoff Petty)

The main purpose of differentiation is to challenge and raise standards of learning by ensuring that curriculum objectives are accessible to all our children despite their backgrounds or abilities. We see differentiation as a form of integration and not exclusion.

Differentiation must reflect the learning objective and can be achieved in a variety of ways either by task, by support or by outcome and should be chosen by fitness for purpose.

We want all children to achieve success, therefore we will ensure they are given differentiated tasks that are matched to their level of attainment so that they can demonstrate successfully what they know, understand and can do.

The main feature of effective differentiation is good planning resulting in effective teaching and learning with children making good progress. Also we expect to see in all classes interested well motivated children responding to challenges, children working productively on task and being aware of their own progression.

### **Special Educational Needs**

We want pupils with identified special educational needs to have full access to all subjects of the National Curriculum with teachers planning lessons that have no barriers to pupils achieving and with appropriate targets relating to the subject.

### **Assessment for Learning**

Teachers will:

- carry out continuous assessment;
- use short-term assessments matched to the teaching objectives to adjust their planning;
- make comments in pupil's books related to the teaching objective;
- carry out medium-term assessments to measure progress against key objectives to adjust planning;
- carry out long-term assessment to assess progress against school and national targets;
- regular mental maths tests
- administer national tests and assessment in Y2 and Y6;
- carry out regular tests in KS2;
- use long-term assessments to help them plan for the next academic year;
- inform parents and carers of their child's progress and targets.

### **Monitoring and and Review of the Subject**

Monitoring of standards of children's work and the quality of teaching is the responsibility of the subject coordinator supported by the Headteacher and the SLT.

Standards will be monitored by:

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- looking at pupils work
- subject observations
- pupil discussions
- audit of subjects
- scrutiny of planning
- general curriculum discussions

### Contribution of the Subject to other Areas of the Curriculum

Mathematics contributes to many subjects within the primary curriculum and opportunities will be sought to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts.

### Resources

The school has a full range of resources to support the teaching of this subject throughout all year groups. Resources are upgraded and replenished when the need arises. An annual stock take and audit is undertaken by the subject coordinator in the summer term in preparation for the next academic year.

### Raising Awareness of this Policy

We will raise awareness of this policy via:

- School Handbook/Prospectus;
- School website;
- Staff Handbook;
- Meetings with parents such as introductory, transition, parent-teacher consultations and periodic curriculum workshops;
- School events;
- Meetings with school personnel;
- Written communications with home such as weekly newsletters and of end of half term newsletters;
- Annual report to parents;
- Headteacher reports to the Governing Body;
- Information displays in the main school entrance;
- Text messages
- Email

### Training

All school personnel:

- have equal chances of training, career development and promotion
- receive training on this policy on induction which specifically covers:
  - National Curriculum programmes of study and attainment targets for all subjects
  - Curriculum

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- Teaching and learning
- Planning
- Differentiation
- Assessment
- Monitoring and Evaluation
- Special Educational Needs
- Academically More Able, Gifted and Talented Pupils
- Key skills

- receive periodic training so that they are kept up to date with new information
- receive equal opportunities training on induction

### Equality Impact Assessment

Under the Equality Act 2010 we have a duty not to discriminate against people on the basis of their age, disability, gender, gender identity, pregnancy or maternity, race, religion or belief and sexual orientation.

This policy has been equality impact assessed and we believe that it is in line with the Equality Act 2010 as it is fair, it does not prioritise or disadvantage any pupil and it helps to promote equality at this school.

### Monitoring the Implementation and Effectiveness of the Policy

The practical application of this policy will be reviewed annually or when the need arises by the coordinator, the Headteacher and the nominated governor.

A statement of the policy's effectiveness and the necessary recommendations for improvement will be presented to the Governing Body for further discussion and endorsement.

### Linked Policies

- Academically More Able, Gifted and Talented Pupils
- Assessment
- Curriculum
- Differentiation
- English as an Additional Language (EAL)
- Monitoring and Evaluation
- Self-Evaluation and School Improvement
- Special Educational Needs
- Teaching and Learning

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<b>Headteacher:</b>	Sean Flood	<b>Date:</b>	01/09/2017
<b>Chair of Governing Body:</b>	Derek Vitali	<b>Date:</b>	01/09/2017