



## Edison Primary Mathematics Policy

Date	Review Date	Subject Leader	Nominated Governor
March 2022	March 2024	C Matharu	Standards Committee

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:

- The Education Inspection Framework (Ofsted 2019)
- An investigation into how to assess the quality of education through curriculum intent, implementation and impact (Ofsted 2018)
- Designing and Timetabling the Primary Curriculum - a practical guide for Key Stage 1 and 2 (Qualifications and Curriculum Authority 2002)
- Equality Act 2010: Advice for Schools (DfE)
- The National Curriculum in England Framework Document (DfE) 2014

The 2014 national curriculum for Maths aims to ensure that all children:

- Become fluent in the fundamentals of mathematics
- Are able to reason mathematically
- Can solve problems by applying their mathematics

At Edison Primary School, we use a mastery approach in order to deliver the three aims of the National Curriculum. Underpinning this is our vision that all children can achieve excellence. We are committed to ensuring that all children are challenged through a rich Maths curriculum, with a high emphasis on securing understanding by carefully sequencing learning and ensuring children have the opportunity to continually build on their prior knowledge.

We provide opportunities for children to work with concrete resources, pictorially and in an abstract form to both consolidate and deepen their mathematical knowledge. From early years, the children are fully immersed into Maths through a wide exposure to number and this is delivered by our staff in an engaging and creative way. This continues through the school where teachers are passionate about the delivery of Maths and exploring what children are capable of.

Annually we undertake a subject evaluation that is based on the following questions:



- How do we design and provide a curriculum that is broad and balanced for all pupils? (Curriculum Intent)
- How do we deliver our curriculum through teaching, assessment and feedback? (Curriculum Implementation)
- How do we assess pupil achievement through external tests/exam results and by our own school data? (Curriculum Impact)

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 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.

## Curriculum Aims

The aims of Edison Primary School reflect those of the 2014 National Curriculum for maths, which are that children:

- become **fluent** in the fundamentals of mathematics, including 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.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. The expectation for children to explain full sentences using the correct mathematical terminology is key.
- can **solve problems** by applying their mathematics to a variety of routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

## 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;
- ensure teachers:
  - 'have good knowledge of the subject(s) and courses they teach;
  - have effective support for those teaching outside their main areas of expertise;
  - present subject matter clearly, promoting appropriate discussion about the subject matter they are teaching;
  - check learners' understanding systematically, identify misconceptions accurately and provide clear, direct feedback and in doing so, they respond and adapt their teaching as necessary, without unnecessarily elaborate or differentiated approaches;



- design their teaching to help learners to remember in the long term the content they have been taught and to integrate new knowledge into larger concepts;
- use assessment well in order to help learners embed and use knowledge fluently or to check understanding and inform teaching;
- create an environment that allows the learner to focus on learning;
- develop a rigorous approach to the teaching of reading in order to develop learners' confidence and enjoyment in reading;
  
- use reading materials at the early stages of learning to read that are closely matched to learners' phonics knowledge'.

(Amended from the 'Education Inspection Framework' (Ofsted 2019))

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



- work in conjunction with the Headteacher, Senior Leadership Team, the Curriculum Leader, Subject Leaders, teaching and support personnel to provide statements on each of the following:

### Intent

When teaching mathematics at Edison Primary School, we intend to provide a curriculum that is ambitious and designed to give all learners the knowledge and cultural capital they need to succeed in life. We provide a curriculum that is coherently planned and sequenced towards cumulatively sufficient knowledge and skills for future learning and employment.

Pupils are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings. A wide range of mathematical resources are used and pupils are taught to show their workings in a concrete, pictorial and abstract for wherever suitable. They are taught to explain their choice of methods and develop their mathematical reasoning skills.

We intend to create a vocabulary rich environment where talk for maths is a key learning tool for all pupils. Pre-teaching key vocabulary is a driver for pupil understanding and develops the confidence of pupils to explain mathematically. The ongoing development of the use of stem sentences throughout school will help to achieve these intentions.

### Implementation

Teachers reinforce an expectation that all children are capable of achieving high standards in Mathematics. Lessons are planned and sequence so that new knowledge and skills build on what has been taught before. Children are taught through clear modelling and have the opportunity to develop their knowledge and understanding of mathematical concepts. The mastery approach incorporates using objects, pictures, words and numbers to help children explore and demonstrate mathematical ideas, enrich their learning experience and deepen understanding at all levels. Reasoning and problem solving are integral to the activities children are given to develop their mathematical thinking.

All children receive a daily maths lesson, although mathematical skills run through many other areas of the curriculum.

- Each lesson focusses on one clear learning objective which all children are expected to master; extension activities enable those children who grasp the objective rapidly to extend their learning by exploring it at greater depth
- Each lesson can include elements of: **fluency**, to practise skills; **reasoning**, to deepen understanding; and **problem solving**, to apply skills depending on the objective being taught and the understanding of the children.
- Whole class teaching is adopted and children work in mixed ability groups. We believe that all children should have the same standard of teaching and to ensure this we aim not to group children based on their ability. We therefore aim to differentiate via outcome rather than work set.
- Every classroom has a range of practical apparatus to support children's learning, with additional resources stored centrally. We aim to review this and add to it each year.



Teachers assess pupils' understanding systematically, identify misconceptions accurately and provide clear, direct feedback. Teachers respond and adapt their teaching as necessary, without unnecessarily elaborate or differentiated approaches.

Assessment informs the teaching and learning sequence, and children work on the objectives they are assessed at being at. Children who are not making the required progress are given extra support through interventions and support in class.

### **Impact**

A mathematical concept or skills has been *mastered* when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.

- Children demonstrate quick recall of facts and procedures. This includes the recollection of the times tables.
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in mathematics.
- Children show confidence in believing that they will achieve.
- Children show a high level of pride in the presentation and understanding of the work.

### **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;
- 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 Procedure

### Teaching and Learning Style

We employ a variety of teaching styles and opportunities for children to learn and develop their Mathematical skills and competencies, both individually and collaboratively. The main aim of all lessons is develop children's knowledge, understanding and skills, applying these to a variety of contexts.

Teaching sequences are based on small steps to ensure a good level of coherence, understanding, application of understanding and transference of skills to a range of mathematic problems and concepts.





## Curriculum Planning and Organisation

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

### 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
- All classes have a daily mathematics lesson. Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom.

## Links with ICT

The use of information and communication technology will promote, enhance and support the teaching of Mathematics. 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.

## 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 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**

Teaching maths for mastery is different because it offers all pupils access to the full maths curriculum. This inclusive approach, and its emphasis on promoting multiple methods of solving a problem, builds self-confidence and resilience in pupils. Though the whole class goes through the same content at the same pace, there is still plenty of opportunity for differentiation.

Taking a mastery approach, differentiation occurs in the support and intervention provided to different pupils, not in the topics taught, particularly at earlier stages. There is no differentiation in content taught, but the questioning and scaffolding individual pupils receive in class as they work through problems will differ, with higher attaining children, or those pupils who grasp concepts quickly, challenged through more demanding problems which deepen their knowledge of the same content.



Those children who are not sufficiently fluent are provided additional support to consolidate their understanding before moving on. Pupils' difficulties and misconceptions are identified through immediate formative assessment and addressed with intervention – commonly through individual or small group support later the same day where possible.

## Special Educational Needs & Disabilities (SEND)

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.

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, children's individual learning plans incorporate suitable objectives from the National Curriculum and teachers keep these in mind when planning work. These targets may be worked upon within the lesson. Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. These are delivered by trained support staff and/or the class teacher.

## 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;
- administer national tests and assessment in Y2 and Y6;
- carry out tests at the end of Y1, Y3, Y4 and Y5;
- 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 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:

1. Lesson observations and feedback;
2. Learning walks and pupil voice conversations;
3. Planning scrutiny followed by support where necessary;
4. Book scrutiny;
5. Termly data analysis;
6. Internal and external moderation
7. Termly pupil progress meetings



## 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

We:

- have in place appropriate training for this policy that is undertaken by a registered training provider that covers:
  - All aspects of this policy
  - National Curriculum programmes of study and attainment targets for all subjects
  - Curriculum
  - Teaching and learning
  - Planning
  - Differentiation
  - Assessment
  - Monitoring and Evaluation
  - Special Educational Needs



- Academically More Able, Gifted and Talented Pupils
- Key skills
- Equal opportunities
- Inclusion

- ensure the content of all training is correct, delivered well and engages staff as we believe that the more engaging training is, the better the outcomes that we need to measure;
- can provide data that evidences staff understanding by using a simple short multiple-choice test through one of the following applications such as Google Forms, Microsoft Forms, Kahoot or SurveyMonkey;
- have in place evidence for all staff:
  - that highlights the knowledge gaps in the training;
  - that shows how those knowledge gaps were corrected

### 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.

### Race Disparity Audit

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.

### 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

- Assessment
- Calculation Policy
- Self-Evaluation and School Improvement



- Special Educational Needs
- Teaching and Learning

We believe this school policy:

- is an essential part of the school;
- supports staff in managing certain situations;
- forms an important framework that will ensure consistency in applying values and principles throughout the establishment;
- provides guidance, consistency, accountability, efficiency, and clarity on how the school operates;
- provides a roadmap for day-to-day operations;
- ensures compliance with laws and regulations, gives guidance for decision-making, and streamlining internal processes;
- is designed to influence and determine all major decisions, actions and all activities taking place within the boundaries set by them;
- stems from the school's vision and objectives which are formed in strategic management meetings

<b>Headteacher:</b>	Amrit Dokal	<b>Date:</b>	March 2022
<b>Chair of Governing Body:</b>	Suvir Rai	<b>Date:</b>	March 2022