



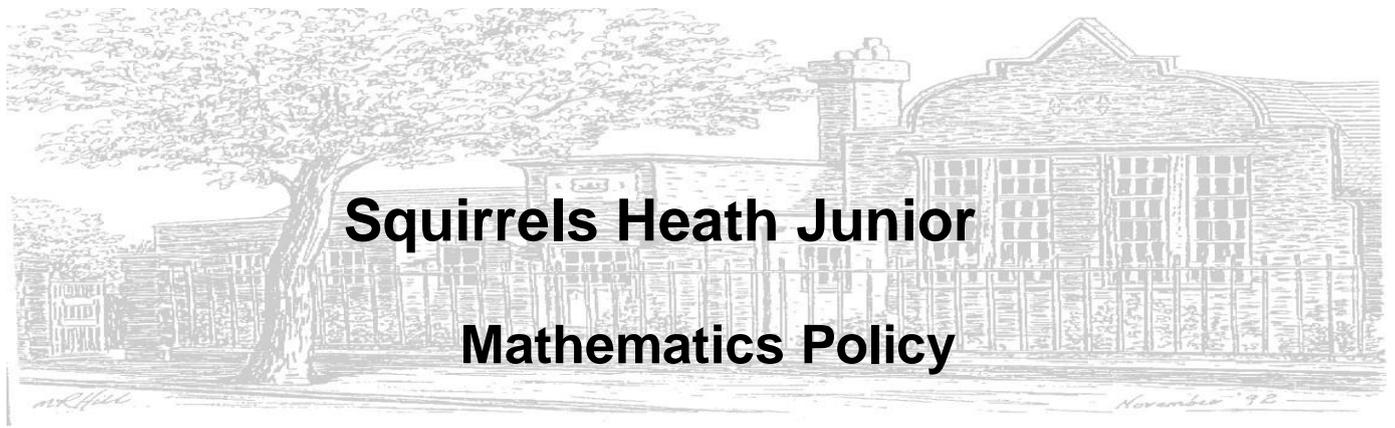
Mathematics Policy

Adoption by Governing Body

..... (Signature of Chair of Governors)

.....March 2020..... (Date)

To Be RevisedMarch 2021.....(Date)



Squirrels Heath Junior Mathematics Policy

Introduction

Our aims are simple; to provide the pupils with a Mathematics curriculum and high quality teaching that helps to develop individuals who are numerate, creative, independent, inquisitive, enquiring and confident. We also aim to provide a stimulating environment and adequate resources so that pupils can develop their mathematical skills to the full.

We aim to provide outstanding Mathematics provision:

- 1) Provide children with consistently good and outstanding teaching.
- 2) Enable children of all abilities to achieve well and make good progress.
- 3) Help children to enjoy and understand Mathematics, using and applying Mathematics to a wide range of interesting and challenging problems.
- 4) Ensure the connection between Mathematics and all other areas of life is fully developed through a STEM integrated teaching approach

Rationale

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways.

Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

This policy should not be taken on its own: the schools calculation policy sets out how we teach children to calculate and the Mathematics action plan set by the Mathematics leader provides more specific details as to how Mathematics improvement takes place.

Contents

- 1) Pupil Achievement
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Pupil Achievement in Mathematics

It is our aim to ensure that all pupils achieve well in Mathematics and make good or better progress. Achievement is defined as what the children achieve by the end of their time at Squirrels Heath Junior School and progress is defined as how far they come from their starting point. Our aim is for all children to achieve or exceed attainment targets by the end of year six.

Our pupils should:

- have a well-developed sense of the size of a number and where it fits into the number system
- know by heart number facts such as number bonds, multiplication tables, doubles and halves
- use what they know by heart to figure out numbers mentally
- calculate accurately and efficiently, both mentally and in writing and paper,
- drawing on a range of calculation strategies
- recognise when it is appropriate to use a calculator and be able to do so effectively
- make sense of number problems, including non-routine/'real' problems and identify the operations needed to solve them
- explain their methods and reasoning, using correct mathematical terms
- judge whether their answers are reasonable and have strategies for checking them where necessary
- suggest suitable units for measuring and make sensible estimates of measurements
- explain and make predictions from the numbers in graphs, diagrams, charts and tables
- develop spatial awareness and an understanding of the properties of 2d and 3d shapes

Groups of Children

We recognise that children come to the Mathematics curriculum with different starting points, different strengths and different attitudes. However, it is important that all children are helped to make good progress.

It is therefore the children's Mathematics teacher and the subject coordinator's role to identify challenging targets for children, enabling them to progress and achieve well throughout their time here. Children who are below age related expectations will be identified and provided with extra support in order to achieve well. This extra support may be targeted group work in lessons delivered by a teacher or a teaching assistant. It may be that children are taken in small groups out of class with children of similar abilities, to give them targeted support.

This support also applies to children who are above where they would be expected to be and exceeding expectations for their year group. These children will be identified and provided with extra opportunities to deepen their understanding of Mathematics where possible.

In some year groups, children may be set according to their ability to allow teaching to be targeted to specific needs. There will be a minimum of three sets across each year group, increasing where additional adults are allocated.

Targets for Children

Targets in Mathematics will be consistent throughout the school, and generated based on each child's individual assessment using the Compass assessment tool. Targets that show children how to achieve the next stage in their learning will be reviewed regularly by adults and the children themselves. Moderations sessions to agree standards and levels amongst staff and with other schools will also take place regularly.

Special Educational Needs (SEN)

If children have identified SEN needs in Mathematics specifically, the SEN coordinator will liaise with the Mathematics Lead, when required, to provide for their needs in this area. This may require ensuring a teaching assistant works with the child, or providing them with resources or small, targeted group work in Mathematics.

Teaching

Aims

We aim to provide consistently good or outstanding Mathematics teaching at Squirrels Heath Junior School. It will be the role of the subject leader, with the support of the Head teacher and other members of the Senior Leadership Team, to ensure this is happening.

Lesson Structure

It is important that there is consistency across the school in how Mathematics teaching is delivered. If there is consistency in approach, children will understand what is expected of them in lessons, and thrive on the best practice that is shared.

The agreed structure for a Mathematics lesson is below. There will be times when this is not appropriate, but this structure will be followed as a general rule.

- 1) Starter / Warm up – this may be one of a variety of activities, designed to revise key facts and/or prior learning.
- 2) Main Teacher input: There must be some teaching input so the children get the benefit of teacher's specialist knowledge. This should include questioning, interaction and modelling so the teacher can help the children to build conceptual understanding and prepare them for their independent working time.
- 3) Children's working time – children working in groups of ability, or mixed ability pairs or groups, according to the task. It may be that the children are working independently from the teacher or teaching assistant, or in a group being assisted by an adult.
- 4) Plenary – The plenary is an opportunity to bring the whole class together and reflect on and extend their learning. This could be at the end, but could also be at a different points in the lesson to address misconceptions or further understanding and progress. The plenary might include some kind of using and applying task: this might be a test question or a contextualised task, or an opportunity for children to extend their learning.

Pupils are provided with a variety of opportunities to develop and extend their Mathematical skills, including:

- Group work
- Paired work
- Whole class teaching
- Individual work including 1:1 tuition

Pupils engage in:

- the development of mental strategies
- written methods
- practical work
- investigational work
- problem solving
- mathematical discussion
- consolidation of basic skills and number facts
- Mathematics games

Challenge

All children are given opportunities to complete challenge activities to further deepen their knowledge once they have shown understanding of the main concept.

Cross-Curricular Links

It is clear that if Mathematics is embedded in a context and used to solve problems across the curriculum then children will understand that Mathematics isn't just about learning procedures and memorising facts, but is a vital component of everyday life.

Therefore, Mathematics skills will be embedded across subjects, and other subjects embedded in Mathematics. In medium term planning, teachers will endeavour to make explicit links between Mathematics and other subjects, and ensure that Mathematics skills are used in lessons other than Mathematics through a STEM approach, and using links identified in the Cornerstones curriculum.

Marking

It is important that Mathematics books are marked regularly, to enable children to make good progress. Marking must identify what the child did well, and provide them with regular next steps, which the child will respond to in green pen. It should also be in accordance with the school's marking policy.

Practical Resources/Models and Images

It is important that we provide children with models and images to help them understand mathematical concepts. To secure concepts, children move from the need to handle physical resources, to working with pictorial representations and diagrams. Once secure, children are able to complete work "in the abstract" ie without the need for additional resources. Every class has a set of appropriate Mathematics resources which the children will be able to access independently in order to select resources to support themselves with a task. Children choose when they are confident and ready to move beyond physical resources.

Each classroom will have:

- Place Value Counters
- Numicon shapes
- Cuisenaire Rods
- Coloured Pegs
- A Maths workstation for children to choose resources
- A Challenge area within the workstation
- Key vocabulary on display (using guidance from the vocabulary policy)
- A Mathematics working wall with “How to” guides and examples of strategies and methods.

Other mathematical resources will be kept in the Mathematics area beside the library, and are updated regularly and replaced where necessary. It is the teachers’ responsibility to use these resources and keep them in good condition, and also to ask the subject leader for any new resources required. The Mathematics Lead must approve the order of resources before submitting them, and must endeavour to ensure all purchases are cost-effective.

Lesson Outcomes

Evidence of lesson outcomes are recorded through written pieces in Mathematics books. Lessons that have no written outcome, e.g. practical lessons, should have detailed annotation on teacher’s planning and accompanied by pictures where suitable.

Curriculum

Approach

From September 2014 the new national curriculum has been followed. A curriculum map has been devised to ensure effective progression across the school.

The new curriculum framework (2014) has been organised into topics;

KS1 – Number and Place Value, Addition and Subtraction, Multiplication and Division, Measures, Geometry (Properties of Shapes, Position, Direction, Motion), Fractions, Data.

KS2 – Number, Place Value and Rounding, Addition and Subtraction, Multiplication and Division, Measures, Geometry (Properties of Shapes, Position, Direction, Motion), Fractions, Decimals, Percentages, Data (Year 6 – Ratio and proportion and Algebra)

At Squirrels Heath Junior School, we have developed a tailored Mathematics curriculum that is adapted to meet the changing needs of the children. We teach topics in blocks, and ensure sufficient time is provided for children to ensure key concepts. These concepts are then revisited at various intervals to help children to commit them to long term memory.

The teaching will be based on teaching assessment and on-going Assessment for Learning, providing children with work that will match their needs. In order to be consistent, the subject coordinator has set a half-termly timetable across the school for when the topics will be completed, although teachers have the autonomy to decide how long should be spent on each target.

In order to support children’s learning in Mathematics, the school has invested in a variety of online programmes, including:

- Sumdog
- Times Tables Rockstars
- My Maths

These provide a variety of learning opportunities for children. In order to access these programmes, parents / carers must sign a consent form to enable us to share their child's information in accordance with GDPR regulations.

Relationships within the community

The school will pursue all possible links with other agencies and the wider community to improve children's mathematical experience in school. The Mathematics leader will liaise with agencies and other schools to ensure that best practice is shared and developed continuously.

As part of our efforts to build relationships, we aim to develop relationships with parents / carers by providing Open Mornings and Mathematics Workshops. Through these, we hope to upskill parents / carers to better empower them to support their children at home.

All ideas and suggestions from parents / carers to improve the teaching of Mathematics in school is welcomed. We will give out regular surveys, but parents / carers are welcome to contact the subject lead or the office to share suggestions with us.

Subject Leadership

Subject Leader Responsibilities

The main responsibility of the Mathematics subject leader, with the support of the head teacher, will be to ensure that 'Best practice is spread effectively in a drive for continuous improvement'. The specific responsibilities are detailed below:

1) Share good/outstanding practice

When the subject coordinator completes (at least once a half-term) learning walks, with an agreed purpose, the feedback will share good and outstanding practice, ensuring that everyone learns from everyone else.

2) Review and maintain the Mathematics action plan

The Mathematics action plan will be formally reviewed termly, and the previous term's action plan will inform the next action plan. The Mathematics Lead provides a termly report to the Headteacher and governors to evaluate the impact of actions being taken and to identify further actions for the next term.

3) Provide outstanding support for all staff, both subject knowledge and pedagogy The Mathematics leader will attend meetings, and engage in private reading/research to ensure they can answer questions from all staff and their subject knowledge is up to date. They will attend courses in order to support staff and disseminate relevant information. Monitoring and observations will feed into the CPD package for staff which will include general and bespoke provision.

4) Monitor the effectiveness of the Mathematics policy and action plans

The Mathematics leader will monitor the subject in a variety of ways. They will undertake learning walks specifically focused on Mathematics improvement. They will monitor books and plans termly, with a specific improvement focus.

5) Ensure staff have up to date knowledge of Mathematics education

The subject leader will provide, or know how to secure provision, for outstanding CPD, which is focused on the needs of the whole staff, or the needs of specific staff members.

Procedures for review and evaluation

Our mathematics policy is a living policy. It is monitored, reviewed and evaluated annually.

Last reviewed – March 2020