Hillborough Junior School

Mathematics Policy

Adopted: October 2025 Review: Annually

Rationale:
Our school ethos is built on a spirit of celebration, self-esteem and respect for others. The school and governing body wish to provide opportunities which encourage individuals to become good citizens striving for excellence in all aspects of their lives. Children are encouraged to develop independent skills and celebrate their own and each other's achievements.

At Hillborough Junior School we believe the point of mathematics is to be able to understand, engage with, and solve problems. Problem solving is confronting a novel situation, formulating connections between given facts and exploring possibilities using different strategies to reach the goal. We also encourage the idea that all pupils experience some form of challenge and success in all lessons, thus fuelling their desire to want to learn and continue to experience success.

In the context of our multi-cultural school, children learn the value of teamwork and community spirit, developing a recognition and respect of the unique and special contribution of everyone.

Mathematics is a way of communicating, being able to describe, to illustrate, to interpret, to predict and to explain. It is a creative subject in which pupils have the chance to explore for themselves, and to create beautiful and elegant objects, patterns and arguments. It develops the essential numerical skills that enable pupils to understand both contextually and using arithmetic, communicate with the modern technological world and the ability to think in abstract ways and solve problems.

Mathematics provides the chance to prove beyond doubt, using logical argument.

National Developments

This policy has been written in accordance with the New National Curriculum (published 2016). As the framework continues to evolve and further guidance is developed reviewing this policy will be necessary.

Aims

At Hillborough Junior School we aim, in mathematics, to enable pupils to:

1. Learn the facts and techniques that they will need to study the subject further and for everyday life.
2. Think logically.
3. Solve problems using the most appropriate method.
4. Reach the highest standard possible and to think for themselves within the subject.
5. Be creative and imaginative, to appreciate the power and beauty of mathematics.
6. To enable children to communicate concrete and abstract ideas using a range of written and verbal methods.
7. To encourage analytical thought processes in all areas of the curriculum and where they encounter maths in any form.

Organisation

We teach mathematics through units of work, in line with the New National Curriculum (and will revisit and revise units regularly to ensure mastery). The use of retrieval strategies and techniques in lessons also ensures that pupils are often revisiting topics previously taught to them.

Mathematics is taught/revised in some way every day. In Key Stage 2 we expect mathematics to take up a minimum of five hours of the academic week. The year's overview for each year group shows how we divide this between units and areas of the programmes of study. These hours include arithmetic based lessons though they can be taught as a standalone or combined with a specific unit.

Our most recent work updating our Medium Term Plans (MTPs) for each year group is considered a working and adaptable document. This means all teachers know that though there are topics that need to be covered, there is a possibility that they could revisit points of learning later in the year to ensure a deeper understanding has occurred.

Teaching

Pupils will receive targeted feedback from the teaching staff within their class. In each year we have groups that are identified as mixed ability and more able. These groups are fluid in their transition with all pupils being challenged to meet the Learning Objectives each lesson holds. We lay great stress on pupils talking about their mathematics to learn by; articulating their thoughts and articulating concepts they may misinterpret; listening to the views of other people; and from the teacher discussing their thinking. We teach maths sticking to the same motto on our badge, 'Aspire to Excellence'. We believe that all of the pupils we teach have the opportunity for that everyday.

As a school we deliberately use resources from a range of providers to ensure that pupils have access to a wide range of learning tools. In order to ensure that all content is covered from the New National Curriculum each member of staff helped create and develop their medium term plan, ensuring all topics are taught with a suitable allocated amount of time. This is then adapted where necessary to suit each learner's needs. This will often provide the paired or individual work for pupils, following the whole-class teaching. Teachers tailor their planning and teaching to the pupils' needs in every year group, deciding on what are the next best steps through formal and informal assessment.

We use a wide mix of games, puzzles, investigations as well as these schemes. In each unit of work every pupil should experience mathematics through a varied range of approaches.

Careful planning and adaptation ensure that all children are included in maths teaching, and are subject to the teacher's high expectations for progress. Quality provision is made for all children, no matter what their barriers to learning or special educational needs (SEND) are.

Progress is monitored by careful assessment, and our high expectations mean we constantly strive for excellent progress for all children.

Promoting Key Skills through Mathematics

Mathematics provides opportunities for pupils to develop the skills of:

- *Communication*, through learning to express ideas and methods precisely, unambiguously and concisely.
- *Application of number*, through using and applying the knowledge, skills and understanding of mathematics.
- *ICT,* through developing logical thinking; using graphic packages and spreadsheets to solve numerical, algebraic and graphical problems; using dynamic geometry packages to manipulate geometrical configurations and using databases and spreadsheets to present and analyse data (see section on ICT).
- *Working with others*, through group activities and discussions of mathematical ideas.
- *Improving own learning and performance*, through developing logical thinking, powers of concentration, analytical skills and reviewing approaches to solve problems.
- *Problem solving*, through selecting and using methods and techniques, developing strategic thinking and reflecting on whether the approach taken to a problem was appropriate.

Mental work/recording

We want pupils to calculate mentally whenever possible (and still be able to explain what they have done to gain an answer). We teach pupils to choose a suitable paper and pencil method (both formal and informal). Though a calculator paper is no longer part of national statutory requirement, the use and understanding of a calculator is still taught.

We set aside approximately ten minutes every day to work with pupils on their mental arithmetic methods (this is often seamlessly incorporated into the lesson itself). This helps them to learn number bonds and tables as well as developing their fluency and confidence with numbers. We hope through this that pupils master number patterns and bonds.

We aim to help pupils develop written methods that reflect their mental processes.

Teachers decide for individuals and groups how far to encourage them to develop these methods into formal approaches. We look carefully at the work of each individual to understand their thinking in order to decide how to help them develop their methods. As a school we encourage pupils to explain their methods whether this be recorded on paper or verbally. This is then developed onto pupils applying their understanding, demonstrating mastery of a concept. We believe this strengthens mental understanding and confidence.
We test number facts regularly, with pupils competing against their previous scores and times rather than against other pupils. This can be differentiated so the facts tested will be different for different groups of pupils.

ICT, Calculators and other resources

Mathematics contributes greatly to the development of ICT skills and competencies.

Each class room has an interactive whiteboard which is now an integral part of the daily maths lesson.

As a school we teach pupils how to use calculators and the purpose of them.

Most resources are kept in classrooms, accessible to pupils. There is also a maths resource area in the upper school. We teach pupils how to use the resources so they can make appropriate choices of equipment.

Assessment

Regular assessments of pupils' progress are essential aspects of maintaining good teaching to allow for differentiation. There are several aspects to assessing mathematics, these are:

1. *Informal tests* of mental arithmetic.
2. *Specified Target Setting* - Individual target setting of up to 10 minutes should take place with pupils during the course of each term. This could take place outside of the maths lessons. While some pupils will need individual feedback, others could be seen in pairs or small groups. During this process each child should be discussed and success praised. Pupils' achievements are highlighted in their books on 'I can' statement sheets which they can refer to.
3. *Assessment activities*- These should be based on their individual targets and at the end of units (AFL).
4. *Next Step Tasks/Activities* – These can take place at the teachers' discretion in line with the Assessment Policy.
5. *The evaluation of the termly plan* will show what has been taught and what has yet to be learned. While this serves as a record of progress, teachers might wish to record individual progress where it differs markedly from the rest of the class.
6. *End of Term Assessments* – These have been altered and made appropriate to the new form of assessment with the National Curriculum.

We assess what pupils have achieved against what we would have expected them to. This enables us to plan what they should do next. We prepare pupils for the Key Stage 2 End of Year Assessments so that they can achieve and reach the high expectations we have as a school.

Learning across the curriculum

As teachers we need to ensure that mathematics contributes to learning across the curriculum in the following areas: key skills, spiritual, moral, social and cultural as well as thinking skills, financial capability, enterprise and work-related learning. We will do this by ensuring that these areas are addressed in our planning and teaching in a variety of ways. In particular the key skills of communication, application of number, ICT, working with others, improving one's own learning and performance as well as problem solving are aspects that mathematics contributes to in major ways.

Monitoring

The teachers, the mathematics coordinator, assessment coordinator and the Headteacher will monitor the approaches detailed in this policy, in line with the school policy.

Marking

In line with the school marking policy all work will be marked. We will achieve this using a variety of strategies including self-assessment, peer-assessment, discussion in groups and marking for a purpose. The classteacher will monitor by work sampling any work not directly marked by them. Individual whiteboards are used in many year groups and occasionally the work will be conducted on them rather than in the exercise books. Pupils' understanding of topics can still be assessed via this method. The school follows a marking policy based on highlighting elements of pupils' work which should be praised. These are made clear to pupils alongside corrections or elements that should be improved. For selected marked pieces of work there is a next step task which should be completed in the next lesson at the teachers' discretion. This allows pupils to continue learning while addressing any misconceptions that may be apparent.

Homework

Every child will be given homework. Homework will be set and monitored by set teachers and TAs. The amount of homework will vary through the school, with the maximum amount given in Year 6 in preparation for the Key Stage 2 End of Year Assessments and secondary school (see school policy).

Special Educational Needs and Disabilities

In line with the school policy on Special Educational Needs and Disabilities, the SEND co-ordinator, mathematics co-ordinator and the set teacher will be involved ensuring that pupils will have work planned to meet their needs. TAs will also provide additional support in class. Those pupils with significant needs in mathematics should have specific mathematical targets set when we produce their IEPs. A further small set, Class 14, runs daily for pupils that struggle to access the standard of year group learning.

Equal Opportunities

All the mathematics we work on shows positive images of the various groups in society. We seek to celebrate the mathematical heritage of all the cultures in the school and to recognise that the mathematics that we do comes from all over the world.

Promoting pupils' spiritual, moral, social and cultural development through mathematics

For example, mathematics provides opportunities to promote:

- *Spiritual development,* through helping pupils obtain an insight into the infinite, and through explaining the underlying mathematical principles behind some of the beautiful natural forms and patterns in the world around us
- *Moral development,* helping pupils recognise how logical reasoning can be used to consider consequences of particular decisions and choices and helping them learn the value of mathematical truth
- *Social development,* through helping pupils work together productively on complex mathematical tasks and helping them see that the result is often better than any of them could achieve separately
- *Cultural development,* through helping pupils appreciate that mathematical thought contributes to the development of our culture and is becoming increasingly central to our highly technological future, and through recognising that mathematicians from many cultures have contributed to the development of modern day mathematics.

This policy is due to be reviewed in the Autumn Term 2023.

See also:

- School assessment and marking policy.
- School equal opportunities' policy.
- School monitoring and evaluation policy.
- School SEND policy.