



Policy: Mathematics

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1. Introduction

This policy outlines what Hilderthorpe Primary School is aiming to achieve in respect of pupils' mathematical education. It also describes our agreed approach of the planning, delivery and assessment of the curriculum. The maths taught and the methods use reflect the recommendations outlines in the guidance contained in the following documents:

- National Curriculum: Mathematics Programmes of Study (2013)
- Mathematics Non-Statutory Guidance for the National Curriculum (2020)
- Pearson Abacus and White Rose planning

2. Curriculum Intent

At Hilderthorpe Primary School, we recognise that Mathematics is both a key skill within school, and also a vital life skill. It helps children to make sense of the world around them through developing their ability to calculate, to reason and to solve problems. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics. We believe that by fostering resilience and a love of challenge and enquiry, children will develop an enthusiasm and love of maths that they will carry forward with them. We seek to dispel the myth that some people can 'do' maths while others 'can't' and instil in the children a 'can do' attitude of growth and development.

We aim to:

- Develop a mathematical understanding through systematic direct teaching of appropriate learning objectives;
- develop a positive attitude towards maths and an awareness of the relevance of maths in the real world;
- encourage the effective use of maths as a tool in a wide range of activities within school and subsequently adult life;
- develop an ability in the children to express themselves fluently, to talk about the subject with confidence, using correct mathematical language and vocabulary;
- develop an ability to think clearly and logically with independence of thought and flexibility of mind;
- develop an appreciation of creative aspects of maths and awareness of its aesthetic appeal.

The National Curriculum for Mathematics aims to ensure that all pupils:

- Reason mathematically by following a line of enquiry, understanding relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can solve problems by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- Become fluent in the fundamentals of mathematics, including the varied and regular practice of increasingly complex problems over time.

3. Curriculum Implementation

3.1 Nurture Curriculum

As a result of the Covid-19 outbreak, Hilderthorpe Primary School has devised a recovery curriculum (Nurture Curriculum). The work to get back to our Nurture curriculum is based both on knowledge of academic research and the unique needs of our individual setting. The curriculum is based on the work of Carpenter (2020) using the 5 levers of approach to rebuild our school curriculum and the Nurture Principles.

Using the Mathematics Non-Statutory Guidance for the National Curriculum (2020), staff will be aware of the 'ready-to-progress' criteria. This aims to:

- Bring greater coherence to the national curriculum by exposing core concepts in the national curriculum and demonstrating progression from year 1 to year 6
- summarise the most important knowledge and understanding within each year group and important connections between these mathematical topics

Each teacher will be provided with a chapter relevant to their year group. This begins with a table that shows how each ready-to-progress criterion for that year group links to pupils' prior knowledge and future applications. Each year-group chapter then provides:

- **teaching guidance** for each ready-to-progress criterion, including core mathematical representations, language structures and discussion of connections to other criteria
- **example assessment questions** for each ready-to-progress criterion
- guidance on the development of **calculation and fluency**

Towards the end of Autumn Term 2020, a baseline NFER test will be conducted in a relaxed, supportive manner.

3.2 Mathematics Curriculum Planning

At Hilderthorpe, we have the expectation that the majority of pupils will move through the programmes of study at broadly the same pace. However, timely intervention and continuous assessment of children's grasp of concepts and readiness to move on, will determine the decisions about when to progress to the next stage. Pupils who grasp concepts rapidly will be challenged through being offered opportunities to deepen their understanding and knowledge before any acceleration through new content. Those who are not sufficiently fluent with earlier material will consolidate their understanding, including additional practice, before moving on. By continuously using both class and self-marking, our aim is that misconceptions are addressed in the lesson before they are allowed to take hold and embed themselves into the children's thought process.

Hilderthorpe Primary School is committed to ensuring all aspects of mathematics are taught, with appropriate age and ability progression. We follow the National Curriculum for Mathematics, using the Pearson Abacus scheme of work.

Abacus is a unique maths toolkit that's carefully crafted to inspire a genuine love of maths and help every child master mathematical concepts. It's built on research into successful teaching in the UK by a team of expert authors and teaching practitioners to help you ensure mastery of skills for all.

3.4 Teaching and Learning Style

The school uses a variety of teaching styles to cater for the variety of learning styles of pupils in mathematics lessons. Our principle aim is to develop children's knowledge, skills, reasoning, fluency and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole-class and group-direct teaching. During these lessons, we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources such as number lines, number squares, numicon, and small apparatus to support their work.

3.5 Differentiation

In the revised National Curriculum (2014) it is suggested that:

Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.'

In all classes, there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. Children are given the opportunity in lessons to decide how they feel about their learning, leading to a choice of differing challenges that are related to the intended learning. We use teaching assistants to provide appropriate challenge or support to individuals or groups of pupils.

3.6 Attainment Targets

By the end of each Key Stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. Hilderthorpe aims to provide opportunities for children to develop these skills but for those children who are exceeding the appropriate relevant programme of study, they are not to move onto the next programme of study. They are to master their current one with an emphasis on depth and challenge, rather than accelerating through the content.

3.7 Assessment

The children's learning is assessed regularly through teacher observation, questioning and marking. O-Track is used as a way of tracking formative assessment on a daily basis. The use of NFER tests termly will support judgement.

Relationships with parents and carers are of paramount importance to staff at Hilderthorpe Primary School. Teachers are keen to ensure carers are informed of their child's mathematical abilities, successes and struggles. Reporting is achieved in the following ways:

- Parent interviews/evenings
- Written reports
- Additional parent/teacher contact over specific issues

3.8 Presentation

Children at Hilderthorpe Primary School are taught to take pride in their learning. High quality teacher modelling will support children with their presentation. There is an expectation that the short date will be written e.g. 10.9.20 and children in KS2 are also expected to include the Roman Numeral date e.g. X.IX.XX

Pencils will always be used in maths (unless there is a specific requirement for a child to use a pen). Colouring must be done in pencil crayon. Mistakes will be crossed out with one straight line.

New pieces of work will generally begin on a new page.

3.9 Cross Curricular Links

Teachers will look to provide opportunities to utilise and develop appropriate links between mathematics and other curriculum areas. These are discussed and applied during the planning stages of topics but may naturally evolve during teaching sessions. All teachers are actively encouraged to develop cross curricular links in their teaching.

4. Roles and Responsibilities

4.1 SLT

The Head teacher and the Senior Leadership Team will:

- Ensure all school personnel are aware of and comply with this policy;
- Work closely with the subject leader 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 and executing scrutinies
 - discussions with pupils and members of the school council
- Report to the Governing Body on the success and development of this policy.

4.2 Subject Leader

The Subject Leader will:

- Lead the development of this policy throughout the school;
- Work closely with the Head teacher, the nominated governor and SENCO;
- Be accountable for standards in this subject area;
- Monitor standards by:
 - auditing the subject area

- review of the scheme of work
- conducting regular learning walks
- scrutinising children's work
- holding discussions with pupils
- Ensure continuity and progression throughout the school;
- Devise an action plan;
- Provide guidance and support to all staff;
- Provide training for all staff on induction and when the need arises;
- Attend appropriate and relevant CPD training;
- Keep up to date with new developments;
- Undertake an annual audit of resources;
- Purchase new resources when required and in preparation for the new academic year;
- Manage the subject budget effectively;
- Annually report to the Governing Body on the success and development of this policy.

4.3 Governor

The Nominated Governor will:

- Work closely with the head teacher and the subject leader;
- 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.

4.4 Teachers

Teachers will:

- Comply with all aspects of this policy;
- Work closely with the subject leader to develop this policy;
- 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 and maintain pace;

- Adopt a mastery approach to their teaching
- Have high expectations for all children and 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.

5. British Values

We accept our duty "to create and enforce a clear and rigorous expectation on all schools to promote the fundamental British values of:

- Democracy
- The rule of law
- Individual liberty
- Mutual respect and tolerance of those with different faiths and beliefs."

The government set out its definition of British values in the 2011 Prevent Strategy. At Hilderthorpe Primary School these values are reinforced regularly in assemblies, Investors in Pupils, curriculum time (SEAL, PSHCE, RE, History, Geography, Numeracy etc.), in the ways in which we tackle incidents and individual issues.

6. Curriculum Impact

The pupils of Hilderthorpe Primary School are passionate about maths. This is evident when talking to our children about their experiences and learning. The high-quality learning in their books is evidence of the progress the children make from their starting points. This is celebrated throughout school.

In maths, we expect children to have a greater conceptual understanding of number and calculation and in turn have:

- Quick recall of facts and procedures
- The flexibility and fluidity to move between different contexts and representations of mathematics (CPA approach)
- The ability to recognise relationships and to make connections in mathematics

- The ability to show a mathematical concept or skill in multiple ways, using the correct language to articulate their ideas.
- The ability to independently apply a concept to new problems in unfamiliar situations.

7. Additional Related Policies

[Mathematics National Curriculum](#)

[Mathematics Non-Statutory Guidance](#)

[Mathematics Visual Calculation Policy](#)

[Mathematics Skills Progression](#)