



CHARLESWORTH SCHOOL

...from tiny acorns great oaks grow

Mathematics Policy



Rationale:

"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 New national curriculum in England framework document, July 2013

Aims and Objectives:

Charlesworth mathematics curriculum aims to ensure that all children are well prepared for the next stage of their education and to achieve the aims outlined in our Curriculum Vision so that our pupils:

- Develop a sense of awe and wonder for the world around them
- Become articulate in communicating their ideas and in listening to and considering the ideas of those around them
- Are able to make informed risks in their learning
- Develop the wisdom to constructively challenge perceptions, opinions and actions in order to embed their learning

We want all of our children to be strong mathematicians so that they:

- Have a strong conceptual understanding of maths; its structures and its relationships
- Can recall and apply their knowledge confidently and efficiently
- Are secure in using written methods for which they have a clear understanding
- Can all wrestle with and respond to challenges with resilience and reasoning.

Roles and Responsibilities:

Headteacher

The Headteacher retain overall responsibility for the implementation of this policy across the school. They will also ensure that high quality teaching and learning is provided in line with then Teaching and Learning Policy (available for download from the school website). They will, in discussion with the Subject Leader and the link governor ensure that this policy is reviewed according to the governor policy review schedule.

Subject Leader

The role of the Subject Leader is to provide professional leadership and management in order to secure high quality teaching and learning, effective use of resources and high standards of achievement for all pupils. They will regularly monitor various aspects of

the Mathematics curriculum being taught within the school, e.g., planning, assessments, marking and pupil interviews.

Teachers

The teacher is responsible for delivering learning opportunities across the Mathematics curriculum, including developing those skills through cross-curricular tasks where ever possible, in line with this policy. They will ensure that ongoing (formative assessments) and half termly (summative assessments) are used to identify gaps in pupils learning to inform future planning.

Governors

Governors, with the support of the Headteacher, are responsible for ensuring that the Mathematics National Curriculum is delivered across the school and that pupils make good progress in the different aspects of Mathematics. They are also responsible for ensuring the monitoring and review of the Mathematics Policy occurs in line with the governor policy review schedule.

The designated link governor will meet with the curriculum Subject Leader at least once a year to discuss how the policy is implemented, how resources are allocated and how well the pupils achieve. The will also help to promote and support the positive involvement of parents in the children's development of Mathematics skills.

Parents

Parents are key partners in the development of good Mathematics skills for the pupils at Charlesworth School. They will be encouraged to be active participants in home learning through homework tasks, dialogue with teachers and parent information open evenings. Mathematics is a subject that requires consistency and practice to secure achievements and parents can ensure that they support the aims of this policy and the practices of the school at all possible occasions.

Teaching and Learning:

All teaching must be at least good and in many cases outstanding (see Teaching and Learning Policy). All staff will demonstrate expertise and sound subject knowledge and be guided by clear policies, detailed guidance and regular professional development from a range of sources in order to:

- Deliver the school's curriculum thoroughly and consistently
- Enhance staff subject knowledge
- Weave mathematical ideas into a coherent whole
- Choose practical resources, visual images and information and communication technology that promote inclusive teaching and a deeper understanding for all
- Use good Assessment for Learning techniques to listen flexibly to children and to check and probe their understanding throughout.

Teachers plan daily maths lessons that include teaching, practising, applying, and reviewing and cater for a variety of learning styles. Additional opportunities are also planned during the week to develop mental maths skills. All children have the age appropriate learning objectives in the front of their book which is regularly referred to by teacher and pupil as well as being a recording method for assessment and progress.

Planning includes a clear Learning Objective taken from the Year Group Objectives and will include opportunities for

- Practical activities and mathematical games
- Problem solving
- individual, small group and whole class discussions
- open and closed tasks
- a range of methods of calculating e.g. mental, paper and pencil and calculator
- working with ICT
- outdoor learning

Curriculum:

Charlesworth School follows the Early Year Foundation Stage and the National Curriculum Programme of Study for Maths to meet the individual needs of each cohort. The school's curriculum places an emphasis on rich, applied mathematical tasks which allow the children many opportunities to persevere with problem solving. While some maths needs to be taught discretely, there is an emphasis on giving the maths a context so there is purpose for learning.

A good understanding of place value, key number facts and calculation strategies is extremely important for pupils to become proficient mathematicians. These can only be developed through early concrete experiences. Therefore, we encourage use of a wide range of practical equipment to support this conceptual development including Numicon, Base Ten, Counting Sticks, Cuisenaire Rods, number lines, one hundred squares and much more. The development of these strategies and the practical equipment that supports it are described in detail in the *Progression in Calculation Policy* (Appendix A and available from the school website).

EYFS

Maths is all about understanding and using shape, space, measures and numbers to solve everyday problems like how much sticky tape to use to wrap a parcel or the number of red balloons that would need to be bought so that there were enough for all the children attending a party. Helping children to enjoy Mathematics is probably one of the most important things that adults can do so that children realise that mathematics is a way of finding things out and solving problems.

Therefore, maths in EYFS is integral to adult-initiated and independent learning activities related to the theme. Full use of indoor and outdoor spaces is required to ensure a wealth of practical hand-on real life exploration and problems.

Key Stage 1 and Key Stage 2

Charlesworth School follows the *Abacus Scheme of Work* that identifies which skills are taught across the year and across the school to ensure progression and coverage of the National Curriculum Programme of Study. It also provides the opportunity to revisit aspects to enable retention and application of skills. This is based on a clear set of learning objectives for each year group. The Scheme of Work is supplemented by a wide range of practical resources. We also have access to a wealth of online resources and Mobile Apps via registration to *Purple Mash* and *Espresso*.

Throughout all stages, children play with numbers, measures, shapes and patterns to develop numerical awareness and explore the idea of 'proof.' We promote mathematical games that involve point scoring and personal bests (both electronic, and 'hands on') as we know that if managed properly this is highly motivating.

Mental Maths (especially rapid recall of multiplication and division) is a crucial part of mathematical development, enabling the pupil to develop rapid mental recall and therefore be able to approach more complicated mathematical problems with increased confidence. In addition, we also use a range of timed tests (oral and written) as well as challenging them to 'beat the time' and develop their own time targets for rapid mental maths recall.

Assessment:

On-going formative assessment is used to identify children's understanding in order to overcome misconceptions and address gaps in learning (see Assessment Policy available for download from the school website). Summative assessment records progress towards expected standards defined by the National Curriculum.

At Charlesworth School, we assess children in maths by a number of mechanisms:

- **Assessment for learning** through continuous feedback and dialogue with the pupils to guide their learning and quickly address misconceptions.
- **Peer and self-assessment** to ensure that the pupils are clear about their achievements and their targets for future progress.
- **Pupil Conferencing** when the pupils are given the opportunity to discuss their work and identify individual learning targets for reading and writing. Here the teacher will also be able to identify specific gaps that are causing barriers to the pupils' learning and plan to address them in future teaching.
- Written comments through the **Marking and Feedback** Policy (see website to download the Policy for Marking and Feedback) in order to celebrate achievements and to encourage pupils to identify ways to improve their work.

This is directly linked to the year group objectives that are displayed in the front of Maths books.

- Termly **teacher assessment** through the assessment tracker grids that demonstrate retention and application of year group skills
- Termly **formal tests** using the Headstart termly maths tests that indicate progress towards the expected standards and enable analysis of gaps in attainment.
- End of Key Stage **SATs** in Y2 and Y6
- **EYFS baseline and profile** that tracks progress of children towards being ready for the National Curriculum.

The progress of children is discussed at termly Pupil Progress meetings to identify those children that may need additional support/intervention in order to make good progress. This information is then reported to parents each term and to the child's next teacher on transition.

At Charlesworth School, we believe moderation is the key to accurate assessment judgements and several staff meetings each term are allocated to this process involving all teachers. In addition, the school collaborates with the local cluster of primary schools to moderate work on a wider basis. End of Key Stage judgements are moderated by the LA who evaluate the work of a child and the assessments to support or challenge the teachers' judgement.

Use of IT and Digital Resources:

At Charlesworth, we recognise the importance of Digital resources as resources to enhance and support our mathematics curriculum and to motivate and engage children. Therefore, following the school Computing Policy (available for download from the school website), children have access to a range of on line resources and Mobile Apps for independent work and to support the development of confidence in handling numbers. This is planned into lessons where appropriate when the children have access to iPads. In addition, pupils use calculators as tools to check accuracy of calculation and estimation.

Equal Opportunities/Inclusion:

As a school we strive to teach Mathematics within contexts which are meaningful and engaging for all learners, regardless of race, religion, gender or socio-economic background. We challenge all children regardless of ability reach their potential. We meet the needs of SEN children, by providing targeted, focussed support with areas of the Mathematics curriculum which they are finding challenging. We also meet the needs of our Gifted and Talented children, by providing focused challenges that will extend and reinforce their Mathematics skills across a range of subjects and contexts.

Monitoring and Review

The Headteacher and Governing Body will review the implementation of the Mathematics Policy in line with the agreed schedule for policy review.

Staff and governors will be involved and asked to contribute to the review and all staff will be informed of the outcome of the review.

Appendices