

Maths Intent, Implementation and Impact

 Purpose and Pride	Through our curriculum, we intend to give each child the self-confidence and resilience to reach their full potential by ensuring that they have the tools to calculate fluently, reason logically, problem solve and think in abstract ways. Maths is an essential aspect of everyday life and we endeavour to ensure that our children develop an enthusiastic and determined attitude towards Mathematics that will stay with them throughout their life; skills they can be proud of.
 Respect	We believe that equity and equality are essential across our curriculum and we aim to ensure that maths is accessible to all and will maximise a development of every child's ability and academic achievement irrespective of their starting point.
 Enjoyment	In Maths, we aim for all children to enjoy and achieve together in mathematics and become confident mathematicians. We deliver an inspiring and engaging mathematics curriculum, taught by enthusiastic staff, which sparks curiosity and excitement and which nurtures confidence in maths. We want all pupils, through our "Can Do" approach, to experience the beauty, power and enjoyment of mathematics and develop a sense of inquisitiveness about the subject. Maths concepts are built over a series of lessons in manageable steps, which leads to success and enjoyment.
 Achieve & Aspire	We aim for all pupils to become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. Our pupils will be able to solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios; reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language and have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately.
 Community	We intend for our children to become rounded Mathematicians and to be able to interpret the numerical world around them. In line with our whole school curriculum intent, a structured, cohesive approach to teaching Maths, allows our children to develop basic life skills that allow them to achieve and succeed in later life.
 Health & Well-being	Mathematics is an important and creative discipline that helps us to understand and change the World. We aim to foster positive 'can do' attitudes. We believe all children can achieve in mathematics, and we teach for secure and deep understanding of mathematical concepts. We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems before acceleration through new content.

Mathematics Curriculum

Coney Hill has adopted a Teaching for Mastery approach to mathematics to ensure that our children have a deep, long-term, secure and adaptable understanding of the concepts they are taught.

Intent – What are we trying to achieve?

- Children become confident, competent and independent mathematicians
- Build a deep conceptual understanding of maths and its interrelated content so that children can apply their learning in different situations
- Develop children's ability to articulate, discuss and explain their thinking using appropriate mathematical vocabulary
- 'Mistake friendly' classrooms where children see mistakes as learning tools – there is an emphasis placed upon developing the power to 'think' rather than just the 'do'
- Instill the mind-set in every child and staff member that everyone can do maths and that maths is for everyone...EVERYONE CAN!
- Children develop into resilient and inquisitive learners – skills needed to become life-long mathematicians
- Deliver an inspiring and engaging mathematics curriculum

Implementation – How is our vision translated into practice?

- To ensure full topic coverage, the school uses 'Can Do Maths'. This is a whole-school primary maths curriculum that creates continuity and progression in the teaching of mathematics.
- Daily maths lessons include fluency, reasoning and problem solving.
- Concrete manipulatives and pictorial representations are used to support conceptual understanding and to make links across topics.

Mathematics Lessons

Children are taught through whole-class interactive teaching, where the focus is on all pupils working together on the same lesson content at the same time. Lesson design identifies the new mathematics that is to be taught, the key points, the difficult points and a carefully sequenced journey through the learning. It is recognised that practice is a vital part of learning, but the practice used is intelligent practice that both reinforces pupils' procedural fluency and develops their conceptual understanding. After developing fluency, children need to show that they can apply their knowledge in mathematics and then move on even further to prove they have mastered the concept. Using mistakes and misconceptions is an essential part of learning and challenge is provided through rich and sophisticated problems. Maths is taught every day for approximately 45 minutes. Each lesson focuses on a manageable step of new learning based on the NC statements.

Typical Lesson design:

- 1) Hook It: Generates discussion about the key learning point
- 2) Teach It: Live modelling of the new learning with explicit use of potential misunderstandings
- 3) Practise It: All children practise together
- 4) Do It: Up to 5 examples – 5 'what it is' or 'what it is/what it's also'
- 5) Secure It: 1 or 2 Misunderstandings (True/false, what do you notice?)
- 6) Deepen It: Apply understanding to solve new problems
- 7) Review It: Lesson Recap: Key Concept Statement and Key Vocabulary

MathsOnTrack (MOT) Meetings

In addition to maths lessons, our MOT sessions provide essential opportunities for:

- deliberate practice
- consolidation
- same day/same week 'close the gap' intervention
- deepening understanding

Day 1: Arithmetic

Day 2: Arithmetic

Day 3: Deliberate Practice: Past and Present

Day 4: Deliberate Practice: Past and Present

Day 5: Fact Friday

Mathematics road maps

Our road maps show the units of learning throughout the year and the terms that they are taught in.

[Coney WholeYearRoadMapsY1_6.pdf](#)

Learning Environment

The school environment will reflect our commitment to attainment in Maths for all pupils.

- Maths is embedded in EYFS through mathematical resources in all areas of continuous provision, including capacity, mass, equipment in our sand and water areas and through role play
- Outdoor and indoor environments are led by the children's interests and support our children's independence in Maths.
- Number formation cards and rhymes, Numicon tiles, tens frames and counting fingers are displayed to support children's learning of number.
- Year appropriate number lines, Math terminology prompts and age-related definitions are displayed in every classroom and regularly referred to.
- All classrooms have a Maths 'working wall', which is used in daily maths teaching.
- Modelling of work is displayed here, as well as strategies and visual prompts. These are regularly discussed, adapted and improved as part of daily teaching.
- Word walls are used to support children's knowledge of maths vocabulary and spelling development.
- Maths unit stem sentences will be displayed and updated inline with units.
- Manipulatives and resources relevant to the lesson are readily available to children.

Times Table Rock Stars

Times tables are recognised as essential to access many mathematical concepts and knowledge will be assessed at the end of Year 4, by a National test.

- By the end of Year 2, children are expected to recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.
- By the end of Year 3, children are expected to recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- By the end of Year 4, children are expected to recall and use multiplication and division facts for multiplication tables up to 12×12 .
- In Years 5 and 6, children are expected to revise all times tables and division facts up to 12×12 . When it comes to times tables, speed and accuracy are important – the more facts children remember, the easier it is for them to solve harder calculations. Times Table Rock Stars is a fun and challenging platform designed to help children master the times tables.

Numbots

This game comes from the innovators of Times Tables Rock Stars. It's an engaging platform for learning to add and subtract aimed predominately at EYFS and KS1. Children are exposed to a variety of representations and question styles for each concept, from pseudo-concrete, to pictorial, to abstract. This depth-before-breadth approach allows children to build up connections between key concepts and ideas, while the visual representations help to create mental models for more advanced questions. Minimal

changes are made to questions from one level to the next, slightly shifting what children are concentrating on and gradually increasing the level of demand. The sequenced, unlockable levels prevent children from moving ahead until they have fully understood the current concept and grasped the skills they need to confidently tackle the next challenge. Within a level they keep the majority of each question the same, only varying a single element to focus on. By fixing certain common elements this reveals the underlying structure, helping children to recognise what is fundamental in order to select an efficient mental strategy.

Home Learning

We work in partnership with parents and aim to encourage all areas of Math and times table and calculation practice at home linked to their learning in school.

- All children are expected to complete weekly mathematics homework. The mathematics homework focuses upon the four standard methods of addition, subtraction, multiplication and division so that children retain, through regular practice, the key operations required for them to successfully solve problems that are more complex.
- Maths challenges are set to encourage engagement of all pupils, through use of social media and school website.
- Children can access TT Rock Stars at home which supports their times tables knowledge
- Theme-based home learning maps are sent home once a term. Many of the activities encourage children to practice their Maths skills in a cross-curricular approach to produce exciting outcomes to share with their peers.

Impact -What is the impact of our curriculum?

The Hiller Mathematician is a happy learner who can talk enthusiastically about their learning and is eager to further their progress in maths.

- The impact of 'Can Do' and the emphasis on accurate use of mathematical language is evident during class/pupil discussions.
- Children's fluency in number is evident in our proven track record of high success in arithmetic.
- More consistent teaching practices that are well-known to be more effective for pupil progress long term, are evident across the school.
- Cross-school moderation highlights the high level of challenge for all ability groups, evident throughout units through reasoning and problem solving activities.
- Teacher assessment of the depth of learning is also increasingly accurate.
- These factors ensure that we are able to achieve high standards, with achievement at the end of KS2 in-line with that of the national average, as well as an increasing proportion of children demonstrating greater depth, at the end of each phase.

Assessment

- Assessment is monitored through Target Tracker, informed by daily assessment for learning which is then reinforced in MOT maths.
- Remember it tests are used at the end of each unit to analyse learning for gaps and next steps which staff will address in MOT maths or intervention.
- Monitoring will include: regular book looks, learning walks, gathering evidence of good practice, pupil voice interviews and regular learning walks.