

Hill Avenue Academy

In Association with:

Hill Avenue Multi-Academy Trust



Mathematics Policy

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Maths at Hill Avenue academy

At Hill Avenue Academy our aim is to educate all children to the highest levels of academic and personal achievement developing confident, happy and compassionate members of society through our bespoke, high quality Mathematics curriculum which is built upon, Exploring together; Succeeding together, in conjunction with our school values: Happiness, Respect, Teamwork, Achieve.

The Mathematics curriculum is supported and underpinned by our Learning Behaviours: Resilience, Curiosity, Collaboration, Reflection and Metacognition. They are embedded within our maths curriculum delivery to enable and empower the children to become independent learners who are self-motivated and want to continuously learn and grow, now and in the future.

At Hill Avenue Academy, our vision is to create confident mathematicians who become fluent in all areas of maths. Our aim is to enable pupils to develop a deep and connected understanding of mathematics through a curriculum that is broad, balanced and engaging and allows depth to the children's skills and knowledge. We firmly believe in developing an environment that promotes a love of learning whereby pupils develop a positive and resilient attitude towards mathematics, so they become life-long learners. We expose children to a range of learning opportunities that provide pupils with an ability to solve problems, to reason, to think logically and to work systematically and accurately. Whenever possible, we want to explore mathematics in various ways with our pupils, so they fully understand and remember what they have been taught. We aim to develop competence in mathematical knowledge and skills so that our pupils identify the 'bigger picture' of maths and fully grasp how key concepts are important in every-day life. Our aim is to create independent learners who are able to talk openly and confidently about maths and explain how they have solved problems. We encourage pupils to communicate their ideas using precise mathematical language and explain their reasoning. We want to encourage success and a sense of achievement so that the pupils here at Hill Avenue Academy want to learn maths and thrive in doing so.

Our Maths curriculum

Our curriculum is designed with key elements of a mastery-based curriculum in mind so that smaller steps are taught which allows for deep and sustainable learning. Our small steps support the sequence of lessons and allow for coherence across the maths curriculum while also ensuring a clearer learning journey where key fundamental skills are taught in different ways. Long-term overviews outline the learning content to ensure clear coverage and progression throughout the school in relation to The National Curriculum. WhiteRose maths is used as a guide to support Hill Avenue Academy's small

steps progression documents for all year groups so that pupils of all ages acquire a deep, long-term, secure and adaptable understanding of the subject.

When planning the delivery of lessons, teachers at Hill Avenue Academy use the small steps progression documents to guide their short-term planning so that learning is correctly pitched, links specifically to the year group aims set out within the National Curriculum and provides opportunities for mastery. A Small Step does not equate to a lesson, it is a series of progressive steps Short term planning identifies the learning intention (which is taken from the small steps) and provides staff with a brief content outline for each small step.

EYFS

In the Early Years Foundation stage all the children are given ample opportunity to develop their understanding of number, pattern, shape, space and measure through varied learning opportunities (teacher-led and continuous provision) that allow them to enjoy, explore and talk confidently about mathematics. We believe that maths is an essential life-skill so it is vital that a maths curriculum begins in nursery, where the fundamentals are taught providing strong foundations for the children. Introducing maths to children from an early age helps to develop their understanding of all elements of maths, problem-solving and reasoning in a broad range of contexts. We encourage the use of the outdoor and indoor areas for maths learning opportunities and believe that the use of every-day objects are great tools for supporting concrete maths. Vocabulary is a fundamental key within EYFS so maths talk and adult-child conversations are promoted in different aspects of the school day. Routines throughout the day play a huge role in shaping maths at a young age so we encourage teachers to take every opportunity to point out these meaningful maths moments wherever possible.

Our small steps begin in nursery so there is a consistent approach to maths across the whole school. Teachers use the overview for nursery as a guide to ensure coverage linked to 'Birth to five matters' for maths. Although specific weeks are not outlined, teachers follow the learning journey and prioritise time given to areas they feel need more focus and also going with the interests of the children along the way. Small steps are progressional and build on the key skills needed for maths in both nursery and in reception. For both nursery and reception, the small steps break down fundamental skills for adult-led learning opportunities but also outline opportunities for continuous provision, story links and possible songs and rhymes that support the teaching and learning of early maths.

Key Stage One and Two

It is our aim to provide the children of Hill Avenue Academy with an excellent mathematics curriculum that promotes deep and sustained knowledge through daily sixty minute lessons. From EYFS up to year 6, children are taught to become fluent in the basics of mathematics so they can then apply their fluency skills to more problem-solving contexts within a lesson. We ensure that children develop their fluency throughout the different mathematical domains before being challenged with a range of problems to deepen their understanding and provide further challenge. Oracy and reasoning are evident throughout lessons and allow children to articulate their conceptual understanding.

At Hill Avenue Academy, we promote a CPA approach to maths and view it as 'a doing stage' 'a seeing stage' and 'a symbolic stage' which all work together to allow children to make connections through the interconnectedness of concepts. As a school, we believe in the importance of carefully selecting representations of mathematics so that pupils are exposed to varying mathematical structures. A CPA approach to maths is integral in our everyday practice because eventually, the representations become mental images which children of all ages can use to achieve a deeper understanding. A range of resources support teachers in allowing children to explore their own mathematical representations for themselves alongside pictorial representations before moving on to more abstract structures.

At Hill Avenue, we believe it is important to maintain a well-defined structure of a maths lesson where all teachers use a consistent approach in delivery. Teachers will model concepts using concrete and visual representations alongside abstract methods to develop children's conceptual understanding. Children are then given opportunities to rehearse their skills working collaboratively with their peers.

Independent learning opportunities then follow which allows pupils children to practice and rehearse their skills through varying fluency questions. Children who have shown a strong understanding of the mathematical concepts, will have opportunities to apply their knowledge to a range of problems to further deepen their understanding.

Resources

The children are introduced to resources that offer practical, hands on experiences that provide the children with the representation and structure needed to reveal the mathematical concepts. They have the opportunity to use a wide range of resources to support their number- based conceptual understanding such as number lines, number squares, digit cards, ten frames, place value discs, Numicon and base ten. Children have access to digital manipulatives through online software and allow teachers to model the use of resources effectively on the interactive whiteboard. Manipulatives are represented on our calculation policy to ensure there is progression throughout the school.

Special Educational Needs and disabilities

In all classes, there are children of differing mathematical ability. We recognise this and provide suitable learning opportunities or scaffolds that are carefully planned for the children's relevant starting points. We promote adaptive strategies within a maths lesson so that teachers adjust learning where possible for those children who need it. For children with SEND (cognition and learning), we tailor learning based on the Wakefield Progressions steps and their provision will be noted on their Individual Education Plan. Split teaching is used to ensure that individual groups of learners access mathematical modelling that is matched to their relevant starting points. Concrete resources and pictorial representations are used to offer further modelling for children who need to be exposed to further representations to grasp conceptual understanding.

Greater depth

When challenging more able/rapid graspers with, we highlight the importance of more open-ended, enquiry-based problems. This forces children to think analytically, follow a general line of enquiry by hypothesizing and working systematically. We ensure that they are able to explain in depth their mathematical thinking.

Assessment

Learning involves a lasting change in pupils' capabilities or understanding. Learning cannot be observed directly, but we can make inferences about learning based on pupil performance. This is why assessment is an integral part of high-quality teaching and learning. We believe that effective assessment is the foundation for strong progress and attainment. Assessment opportunities are planned into every lesson and are integral in delivering an effective curriculum.

We use three broad overarching forms of assessment: day-to-day in-school formative assessment, in-school summative assessment and nationally standardised summative assessment.

Formative Assessment

We understand the importance that formative assessment can have upon our children. Dylan William and his work on assessment showed that assessment 'for' learning not 'of' learning produces substantial improvements in student outcomes.

Formative assessment is used to inform future planning and lessons and teaching and learning and to identify pupils' gaps and misconceptions. Learning can then be tailored and personalised to meet the needs of each child allowing teachers to be responsive to meet the current needs of all learners. Teachers provide regular feedback throughout lessons in the form of live marking and verbal feedback.

Summative Assessment

Summative assessment enables school leaders to monitor the performance of pupil cohorts, identify where interventions may be required, and work with teachers to ensure pupils are supported to achieve sufficient progress and attainment. When using assessments for summative purposes, it is important that the inferences being drawn from the data are 'valid' and 'reliable.' The term validity refers to the accuracy of our inferences. 'Reliability' refers to the consistency of our judgements. We ensure to triangulate data across multiple sources and hold regular moderation meetings to support the reliability of staff's judgements.

Teachers evaluate learning and the impact of their teaching at the end of a unit.

Summative assessment support both teachers and pupils to understand how what has been learnt.

Summative assessments enables parents to stay informed about the achievement, progress and wider outcomes of their child.

Monitoring

The mathematics leader will monitor the subject across the whole school regularly. This monitoring will include; learning walks, book trawls, planning trawls, pupil voice, staff voice and data analysis so that the subject lead can gain a clear picture of the teaching, learning and outcomes of mathematics across the school. SIP priorities are shared with leaders and the maths lead will work towards targets that have been agreed for maths, ensuring they remain a key focus. The mathematics leader will offer feedback to teachers on monitoring findings and offer CPD to members of staff where it is needed. They will also work alongside other staff within the trust.

This policy will be used in line with other school policies and should be read in conjunction with:

Curriculum policy
Teaching and Learning Policy
Marking and Feedback policy
Assessment policy
SEND policy

Review of policy

The CEO reviews this policy annually with the school and reports to the board of Directors.