



Maths Policy

Approved	April 2022
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Rationale

The teaching of mathematics has changed along with the ever-changing needs of society. Children, in preparation for adult life, now need many and varied skills. Maths teaching and learning incorporates key life skills for our pupils; which underpins the school vision to ensure a focus on independence so that each child can excel and reach their unique potential.

We teach maths in an engaging, visual and functional way which is personalised to each pupil. Maths is split into two strands the first of which is Number, which encompasses counting, number knowledge, place value, calculation, fractions, data and problem solving. The second is Geometry and Measure and it covers a wide range of areas including shape, size, length, weight, height, position, direction, patterns, colour and time. This links closely to concepts needed for communication and skills for life.

Alongside these run the skills of Financial Education which are taught across the school to ensure that our pupils have opportunities to not only develop numerical confidence with money but also the skills needed to be successful with their finances. We recognise that maths skills can be utilised across the curriculum and provide many cross-curricular maths opportunities throughout the day in lessons such as Life Skills, PE, Music and PSHE.

By learning to communicate and apply mathematical ideas and concepts pupils become equipped with the tools to tackle a range of practical tasks and real-life problems with increasing confidence and independence.

Aims and Objectives

We aim to:

- promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion so that our pupils can develop a positive and enthusiastic approach towards acquiring mathematical skills.
- develop pupils' confidence and competence with numbers and the number system.
- provide experiences of the features of shape and space.
- develop pupils' measuring skills in a range of contexts.
- develop pupils' understanding of all aspects of time.
- equip pupils with the language and skills to communicate their mathematical ideas.
- improve pupils' ability to solve problems through decision-making and reasoning in a range of contexts and persevere in seeking solutions.
- develop pupils' fluency in the fundamentals of mathematics, through varied and frequent practice, and with increasing complexity over time.
- develop pupils' confidence in applying and explaining their mathematical thinking.
- be aspirational and promote the opportunity for all to experience Financial Education.
- develop a greater depth of understanding of mathematical concepts.
- provide appropriate accreditation and opportunities for life beyond school.
- develop an understanding of the importance of maths in everyday life, and apply mathematical skills in a meaningful way with increasing independence e.g. recognising the number to catch a bus, telling the time, making a snack, or buying an item from a shop.
- provide pupils with skills which they can adapt to an ever changing and developing world.
- provide pupils with opportunities to generalise their mathematical skills and understanding to a range of resources, situations and real life scenarios.

Planning

Maths is delivered as both a discrete subject and through a cross-curricular approach. There is a clear ladder of skills; both formative and summative assessment are used to support staff in planning appropriate next steps for the pupils. The ladder of skills (Small Steps) is a developmental sequence based on Development Matters, Derbyshire Small Steps, The VB-MAPP, The New National Curriculum, The Pre-Key Stage Standards, and Preparation for Adulthood. Small Steps is a bespoke developmental system that has been developed by senior leaders, subject leaders, teaching staff, Speech and Language Therapists, Occupational Therapists, and Behavioural Therapists employed by RPT (Rise Partnership Trust). It provides a developmental sequence of skills, demonstrating the prior knowledge pupils will need in order to be ready to learn new skills and concepts. Maths teaching is personalized for each pupil and specific PIP (Personal Intervention Plan) targets are set in Number and Geometry and Measure each half term for those pupils working on subject-specific learning. As well as specific targets for individuals, whole class teaching is based on whole school long term planners which map out how the strands of maths build upon each other. Cross-curricular links are also made between maths learning and the half termly themes, where appropriate. We value exposing pupils to concepts so that they can explore these in a range of situations even before they are ready to study them as targeted learning.

Stages of Learning

EYFS – Guided by Development Matters, focus on engagement and early maths skills through rhymes, songs and play.

B1-4 – Focus on engagement and pre-subject specific learning.

B5+ - Guided by the new National Curriculum and Pre-Key Stage Standards.

All pupils at the Avenue have an EHCP - Pupils are usually granted an EHCP because they have a SEND diagnosis and are working below age related expectations and need additional support to learn. The stage at which they are learning and therefore progress through KS1, 2,3 and 4 and post-16 education are dependent on assessment and the appropriate approach. Pupils may work towards appropriate accreditation including Entry Level Qualifications, Unit Award Certification and ASDAN Qualifications.

Teaching and Learning

Maths is taught using a variety of approaches as appropriate for the individual needs of the pupil and/or class (concrete, pictorial and abstract). Using this method pupils are introduced to an idea or a skill with concrete resources. This “hands on” component using real objects is the foundation for conceptual understanding. It is crucial to our school approach that concrete resources are used at all stages throughout the school. We view ourselves as a Numicon school and every class has a full set of Numicon resources to help provide a concrete image for numbers although we encourage the use of a range of different resources and visuals to help engage pupils. The concrete stage is closely supported by our Occupational Therapists; practical and real-life learning opportunities are embedded into class sessions. For our more complex learners this stage is often extended into problem solving for life skills in order to prepare our pupils for adulthood; for example, when preparing a bowl of cereal choosing an appropriately sized bowl, spoon and pouring a suitable amount of milk. Pupils will be engaged in their learning by using motivating real life scenarios, such as learning to measure and weigh by following a recipe to make their favourite cake.

Once a concept/skill has been embedded, pictorial representation is introduced. At this stage, learners relate their previous understanding to diagrams and pictures of mathematical concepts. Non-identical matching skills are very important to help develop pictorial understanding. Speech and Language Therapy input supports pupils to develop the understanding of the language required to move on to a more abstract approach particularly in relation to conceptual understanding including size, position, and direction. When the pictorial stage has been mastered, learners begin to represent their ideas in an abstract way using mathematical notation and symbols.

Number

We believe that visual, physical and real-life opportunities are the best ways to help our pupils develop a secure understanding of number. Numeracy lessons are designed to be highly motivating and are personalised to the pupils, ensuring optimal pupil engagement. Number skills start with an understanding of 1:1 correspondence and develop to include counting and recognition of quantities. We recognise that having a secure grasp of quantity is crucial to developing a secure understanding of number and consequently emphasis is placed on a breadth of experiences within the range 0-5 and 0-10. Numicon resources are used throughout the school to help make number and quantity accessible to all our pupils and to provide a tangible and visual frame of reference. Pupils are exposed to a wide variety of counting rhymes, numerals in the environment and lots of practical experiences including counting fruit at snack time, pupils in the class, physical activities, tokens, and points on reward charts. Data handling is introduced at an early stage of number as pupils are encouraged to record preference through picture

selection and to count pictograms.

As pupils become more confident with quantity, early calculation (addition and subtraction) is introduced. Pupils are given lots of opportunities to explore different types of calculation through number rhymes and practical games and activities before any formal recording or use of mathematical symbols are introduced. The same approach of practical exploration is also used when more challenging calculations are introduced (multiplication and division). As pupils become exposed to 2 and 3-digit numbers they are again encouraged to be secure in their understanding of quantity with lots of exposure to place value and continued use of Numicon to represent much larger numbers. Pupils' learning is extended by exploring problem solving and fractions.

Geometry and Measure

Geometry and Measure encompasses a wide range of different skills which we feel are necessary for our pupils to excel in life and to develop independence. As well as understanding of shapes and patterns Geometry and Measure lessons also introduce pupils to the concept of measure. Different types of measurement are explored including size, height, length, weight, capacity, temperature, and time. Concepts of position and direction are also key elements of Geometry and Measure teaching. Geometry and Measure has a significant overlap with Communication and includes many of the concepts which our pupils will need to in order to develop their independence. These concepts are introduced slowly through play and exploration. Pupils are encouraged to understand terms as receptive instructions and then to be able use them expressively. Concepts are understood to be very challenging for our pupils as they can be fluid and are often made in comparison to other items e.g. big, bigger, biggest. Some elements of money, particularly coin recognition, are taught through the Geometry and Measure curriculum but much of this is incorporated into our Financial Education learning.

Financial Education

Financial Education is crucial to meeting our vision of developing the independence of our pupils so that each child can reach their unique potential. It also compliments our school aims in Preparing for Adulthood. Following the Young Money approach, the school has developed our own Hierarchy of Financial Education which incorporates different cross-curricular skills related to money, these are: how to manage money, becoming a critical consumer, managing risks and emotions associated with money and understanding the important role money plays in our lives. Every medium-term plan, from KS1 upwards, includes suggestions for progression of skills in Financial Education. All pupils are supported to develop their shopping skills through a weekly session in the School Shop. All classes undertake off site shopping trips to ensure pupils also have the opportunity to generalise their shopping skills in the local community.

Pre- Subject Specific Maths Skills

Pupils working below subject specific learning will encounter mathematics in a mixture of adult-led and child-initiated activities, along with free flow provision of mathematical experiences. Learning at this level covers the pre-skills which pupils need in order to access early maths learning. These skills include building engagement, requesting, labelling, following simple instructions, matching, and imitating. We believe that these skills are essential to prepare pupils to access subject-specific learning. Maths activities allow pupils to hold, explore and encounter sensory items and stimuli in order to gain independence and enable opportunities for communication and cognitive development. Their mathematical understanding is also developed through stories, songs and games.

Pupils' engagement in activities which include mathematical content is assessed and a progression of skills is introduced as the pupils travel through this early stage of development in preparation for subject-specific learning. We ensure consistent mathematical vocabulary is used by all staff to ensure

coherent learning for the children. Pupils at this level are also assessed on our small steps assessment system at levels B1-4.

Recording, assessing and recognising progress

Progress is monitored by careful assessment, and our high expectations mean we constantly strive for excellent progress for all. Targets are set for all strands of mathematics within the first half term of entry to a new class or transition to an RPT school. Teacher targets will inform a trajectory of aspirational outcomes for individual learners at the end of the academic year.

Learners are regularly assessed against their half termly PIP targets. Pupils are also assessed on RPT's bespoke Small Step assessment system of I can statements. This system recognises and celebrates small steps of progress and helps to identify gaps in pupil knowledge which need to be filled in order for progress to be made. Where appropriate their progress and next steps are shared with pupils. Evidence of progress is recorded half termly on Evidence for Learning (an iPad application), where staff upload photos or video of pupils working on their targets and comment on their progress. A sample of these entries are internally moderated and externally moderated by members of the Brent, Harrow and Hertfordshire Assessment Group for Maths. Pupils who are identified as underachieving or exceeding in their maths progress will be discussed at Pupil Progress Meetings and considered for additional intervention.

Maths Lead Teacher

Daniel Alvarez is the Maths Lead Teacher for our school. His role, with support from SLT, is:

- to provide guidance, support and training to staff in implementing the mathematics curriculum
- undertake lesson observations and provide constructive feedback to class teams
- to devise and implement a yearly Maths Action Plan, which links to whole school improvement priorities
- to attend any relevant courses on new developments and communicate these developments back to colleagues
- to lead a Maths Team with colleagues across the school- this team will organised events such as Maths Day
- to organise, review and maintain an inventory of policies and resources
- to ensure staff use best practice in the teaching of mathematics and attend courses relevant to their mathematical needs
- to ensure continuity and progression throughout the school including monitoring medium term plans and short term plans
- to evaluate data and pupil progress across all strands of mathematics including Financial Education
- to oversee internal moderation and attend external moderation

Equal Opportunities

All pupils and students will work at a level appropriate to their own needs and level of ability. At The Avenue School we support the right of all our pupils to equal access and opportunities regardless of age, culture, religion, gender, ability, disability, or sexuality. We promote an ethos of respect for everyone.