



Streetsbrook Infant & Early Years Academy



Curriculum Policy for Maths

Streetsbrook Infant & Early Years Academy

'Learning for Life'

At Streetsbrook, we strive to provide an equal chance for all to become responsible and caring citizens who lead happy and fulfilled lives, and are equipped with the skills and abilities to shape the world they live in.

Our Values are:

- **Self-Belief**
- **Belonging**
- **Respect**

These are embedded into our Nurturing Principles



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INTENT

Subject Statement

At Streetsbrook, we believe that every child matters and every child matters equally. We aim for all our children, including those with SEND, to have fun, to develop positive relationships, achieve good outcomes and be prepared for their next steps in learning. We achieve this by ensuring our provision is well planned and delivered by highly skilled staff in partnership with parents and external professionals who are all committed to putting the children's needs at the heart of everything they do.

Our broad and balanced curriculum celebrates the diverse nature of our society and encourages adherence with the fundamental British values. We do not tolerate discrimination of any kind. Through quality first teaching practices we support, guide and inspire our children educationally and promote their spiritual, moral, social, cultural, mental and physical development.

Aims

At Streetsbrook we aim to make mathematical learning practical, relevant and fun and to ensure children acquire the necessary knowledge, skills and confidence to be successful mathematicians now, and into their future. Our aims in teaching mathematics are that children will:

- enjoy the subject
- develop and apply a growth mind-set in relation to their mathematical learning
- gain a sound understanding of the number system
- become fluent in the fundamentals of mathematics
- reason mathematically and be able to communicate their thinking using accurate mathematical vocabulary
- solve problems by applying their mathematical knowledge
- make rich connections across mathematical ideas, including applying their mathematical knowledge in other curriculum areas

Our curriculum leader for Maths is Miss Neeve Cartwright.

Cultural Capital

Proficiency in using mathematics, reasoning and problem solving is vital for children's success. Through our curriculum we maximise opportunities for children to learn about society and the world around them and offer enrichment opportunities that are accessible to all. We foster curiosity and encourage children to engage in the world around them. Our maths curriculum has a strong ethos of reasoning and problem solving, developing key transferable skills such as creativity, resilience and a growth mind-set.

At Streetsbrook we actively raise awareness of the role maths plays in everyday life and have implemented a framework of Financial Education for Nursery to Year 2 and hold annual 'Money and Careers' events across the school. Maths Wow days ensure children have exposure to maths in a wide range of contexts, including the Arts, STEM and PHSE. As a result, children know about maths beyond the classroom and are building key skills to enable them to be successful citizens.

Embedding Ambition

We believe that all children can learn to be mathematicians, regardless of their background, needs and abilities, and we are determined to make this happen. We promote a culture of a growth mind-set in mathematics, ensuring that the desire to 'achieve and do' is at the core of our curriculum and believe this gives the best springboard for promoting mathematics. We monitor and evaluate our provision regularly and make sure all children are making sufficient progress, including those who need the most support. We have a team of expert teachers who know and understand the processes that underpin mathematics and draw on expert practice and training to achieve this. We make sure all children have access to engaging lessons and a range of wider opportunities and fully involve families in supporting their children.

IMPLEMENTATION

Learning Environment and Resources

The staff at Streetsbrook provide safe, secure and stimulating environments that allow learning to flourish. We ensure we have access to high quality resources that fully support teaching and learning for all children. This includes all resources required to implement the NCETM Mastering Number Programme and the provision of maths resources which engage, inspire and promote equality, diversity and inclusion.

Curriculum

We base our curriculum on the DfE's statutory Early Years Foundation Stage Framework and the National Curriculum for Maths. This is supported by the NCETM Mastering Number Programme.

How is the curriculum taught?

Children in EYFS are taught Maths daily. This includes the NCETM Mastering Number Programme and additional maths sessions covering wider aspects of mathematics. Maths in EYFS includes adult led sessions and child initiated continuous provision. All provision is planned and resourced precisely and effectively.

Children in KS1 are taught Maths daily. This includes teacher led sessions following our own mathematical curriculum and four additional NCETM Mastering Number Programme sessions per week.

Throughout the school, concrete manipulatives are used to support children in understanding abstract mathematical ideas and processes and to provide a common language with which children can communicate mathematical thinking to teachers and others.

NCETM Mastering Number Programme

The aim of the programme is to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. The programme places emphasis on the use of appropriate manipulatives to support the teaching of mathematical structures.

EYFS

In EYFS our curriculum is built around the seven areas of learning and development outlined in the 'Early years foundation stage statutory framework'.

1. Communication and language: listening, attention and understanding; and speaking
2. Personal, social and emotional development: self-regulation, managing self, and building relationships
3. Physical development: gross motor skills and fine motor skills
4. Literacy: comprehension, word reading, and writing
5. Mathematics: number and numerical patterns
6. Understanding the world: past and present; people, culture and communities; and the natural world
7. Expressive arts and design: creating with materials; and being imaginative and expressive

At Streetsbrook mathematical teaching and learning is focused around six key areas of early mathematics learning, these provide a platform for everything children will encounter as they progress through their maths learning at primary school, and beyond.

- **Cardinality and Counting.** Understanding that the cardinal value of a number refers to the quantity, or 'howmanyness' of things it represents.
- **Comparison.** Understanding that comparing numbers involves knowing which numbers are worth more or less than each other
- **Composition.** Understanding that one number can be made up from (composed from) two or more smaller numbers
- **Pattern.** Looking for and finding patterns helps children notice and understand mathematical relationship
- **Shape and Space.** Understanding what happens when shapes move, or combine with other shapes, helps develop wider mathematical thinking

- **Measures.** Comparing different aspects such as length, weight and volume, as a preliminary to using units to compare later

Our EYFS curriculum provides activities and experiences which enable children to establish links between the different areas of learning and to develop their mathematic skills. Children are supported to meet the expected level of development for mathematics (Early Learning Goal) before Year 1.

Children who are assessed to be at the expected level will:

- have a deep understanding of number to 10, including the composition of each number
- subitise (recognise quantities without counting) up to 5
- automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts
- verbally count beyond 20, recognising the pattern of the counting system
- compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity
- explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

In the EYFS children are encouraged to develop their mathematical awareness, problem solving, reasoning and numeracy skills in a broad range of context where they are supported to explore, play, learn, practise, discuss and deepen their understanding. All children are encouraged to exploit their mathematical potential in both the indoor and outdoor environments.

Key Stage 1

All children in KS1 are taught mathematics in line with the statutory requirements of the English national curriculum for mathematics.

Our Maths curriculum comprises lessons and activities relating to the following areas:

- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions
- Measurement
- Geometry
- Geometry- position and direction
- Statistics (Year 2)

Children also encounter Maths opportunities across a range of other curriculum areas.

Year 1

Building on their EYFS learning, children will be taught:

Number - number and place value

- count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
- given a number, identify one more and one less
- identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- read and write numbers from 1 to 20 in numerals and words.

Number - addition and subtraction

- read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- add and subtract one-digit and two-digit numbers to 20, including zero

- solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$.

Number - multiplication and division

- solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

Number - fractions

- recognise, find and name a half as one of two equal parts of an object, shape or quantity
- recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Measurement

- compare, describe and solve practical problems for:
 - lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
 - mass/weight [for example, heavy/light, heavier than, lighter than]
 - capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]
 - time [for example, quicker, slower, earlier, later]
- measure and begin to record the following:
 - lengths and heights
 - mass/weight
 - capacity and volume
 - time (hours, minutes, seconds)
- recognise and know the value of different denominations of coins and notes
- sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
- recognise and use language relating to dates, including days of the week, weeks, months and years
- tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

Geometry

- recognise and name common 2-D and 3-D shapes, including:
 - 2-D shapes [for example, rectangles (including squares), circles and triangles]
 - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].

Geometry - position and direction

- describe position, direction and movement, including whole, half, quarter and three quarter turns.

Year 2

Build upon their learning in Year 1 children will be taught:

Number - number and place value

- count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
- recognise the place value of each digit in a two-digit number (tens, ones)
- identify, represent and estimate numbers using different representations, including the number line
- compare and order numbers from 0 up to 100; use $<$ and $=$ signs
- read and write numbers to at least 100 in numerals and in words
- use place value and number facts to solve problem

Number - addition and subtraction

- solve problems with addition and subtraction:
 - using concrete objects and pictorial representations, including those involving numbers, quantities and measures
 - applying their increasing knowledge of mental and written methods
- recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
 - a two-digit number and ones

- a two-digit number and tens
- two two-digit numbers
- adding three one-digit numbers
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Number - multiplication and division

- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ($\times$), division ($\div$) and equals ($=$) signs
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Number - fractions

- recognise, find, name and write fractions $\frac{3}{4}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity
- write simple fractions for example, $\frac{2}{6} = \frac{1}{3}$ and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

Measurement

- choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$
- recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
- find different combinations of coins that equal the same amounts of money
- solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
- compare and sequence intervals of time
- tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
- know the number of minutes in an hour and the number of hours in a day.

Geometry - properties of shapes

- identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
- identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
- identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid]
- compare and sort common 2-D and 3-D shapes and everyday objects

Geometry - position and direction

- order and arrange combinations of mathematical objects in patterns and sequences
- use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).

Statistics

- interpret and construct simple pictograms, tally charts, block diagrams and simple tables
- ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
- ask and answer questions about totalling and comparing categorical data.

Vocabulary Development

At Streetsbrook, we are acutely aware of the link between spoken language and the development of mathematics. To this end we provide language rich environments and ensure ample opportunities to explore maths through stories, rhymes and mathematical discussion.

A child's vocabulary knowledge can have a huge impact on their ability to discuss and reason about their mathematical understanding. To support this, we have identified a progression of key vocabulary across each mathematical area. Children are supported to embed their understanding of key vocabulary over time.

We aim to help children with this by:

- Clarifying and modelling new vocabulary
- Practising using the correct vocabulary orally and in context
- Creating displays of key words linked to specific topics and subjects
- The use of high quality resources to support learning

Planning

At Streetsbrook the EYFS framework, English National Curriculum for Mathematics and the NCETM Mastering Number Programme underpin our maths curriculum and lesson planning. Supported by this documentation we have created a Maths Curriculum Overview for each year group and a Curriculum Progression document, mapping the progression of mathematical learning at Streetsbrook. In line with this, staff plan for each maths session ensuring they identify clear learning expectations, strong links to prior learning and clear progression across learning strands and from year to year. Lesson planning includes opportunities to revisit and consolidate prior learning and provides a balance of practical experiences, discussion and recording, that considers the needs of all learners.

Parental Engagement

At Streetsbrook we believe working in partnership with parents is invaluable. We provide supporting resources for Maths, via our website and organise workshops to engage and inform our families. We provide weekly maths homework for children to share with their family and provide parents with resources to support learning of Key Instant Recall Facts (KIRFS) via our website, helping to develop a child's fluency and mental maths skills.

Inclusion

We utilise the principles of Adaptive Teaching, as outlined in our Curriculum Policy, to ensure teaching and learning meets the needs of all children. Where required, children with SEND are supported to access the Maths curriculum. In line with individual learning plans, interventions or additional teaching opportunities may be required to ensure they are able to access the curriculum in a way that is appropriate to them.

Health and Safety

Health and safety is maintained to a high standard at Streetsbrook to ensure children and staff are protected from harm whenever possible. This includes both their physical and mental health, ensuring we comply with the Health and Safety at Work Act 1974. As necessary, risk assessments will be conducted to ensure that all potential risks and harms have been identified and that staff understand how to respond should an unexpected risk occur.

Remote Learning

In the case of remote learning being necessary we will provide learning opportunities through a combination of live on line lessons and by facilitating access to lesson content and resources to support independent home learning.

IMPACT

Assessment, Marking and Feedback

At Streetsbrook there are three, broad overarching forms of assessment, each with a different purpose. These are:

- Day-to-day formative assessment – to inform teaching on an ongoing basis, sometimes referred to as Assessment for Learning (AfL)
- In-school summative assessment – to understand each child's performance at the end of a period of teaching
- Statutory summative assessment – to understand each child's performance in relation to national expectations

Marking and Feedback

Whenever possible staff provide children with 'live feedback' to allow for interaction and dialogue. Age appropriate written feedback may also be provided.

Please see our Assessment and Marking policy for full details.

Pupil Voice

The views of children on our Maths provision are gathered at least annually through small group discussion sessions involving the Subject Leader and KS1 representatives on our Curriculum Focus groups.

Governors

We work in partnership with Governors to ensure our curriculum is inclusive and accessible and fulfils the requirements of the EYFS statutory framework and the English National Curriculum. Governors monitor statutory assessment arrangements and receive regular updates on progress and attainment in Maths, as part of termly Governor' meetings.

Monitoring and Review

Our Maths curriculum is monitored and reviewed regularly to ensure its on-going effectiveness. This is done in several ways including:

- Monitoring and moderation
- Learning walks
- Lesson observations
- Work scrutinies
- Displays scrutinies
- Pupil progress reviews
- Pupil voice
- Staff voice
- Attainment tracking and data analysis
- Through staff CPD opportunities
- Planning scrutinies
- Curriculum progression scrutinies

POLICY REVIEW

All members of staff are required to familiarise themselves with this policy as part of their induction programme. The Subject Leader will review this policy every three years and will make any changes necessary, in consultation with all stakeholders.

The next scheduled review date is Autumn Term 2028

N. Cartwright

Neeve Cartwright
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