KS3 Mathematics Long Term Plan

Brookvale Academy

At Brookvale Academy, the intent of the KS3 Mathematics curriculum is to re-ignite a love of learning through a creative, engaging and ambitious curriculum that develops the mathematical knowledge and skills pupils need for everyday life, future education and employment. Our curriculum is designed to build confidence, resilience and curiosity while ensuring pupils develop secure mathematical understanding and the ability to apply their learning in a range of real-life contexts.

The curriculum builds upon the foundations established at Key Stage 2 and follows a carefully sequenced programme that broadly reflects the progression of topics taught within mainstream education. Pupils develop fluency in number, calculation and proportional reasoning, strengthen their understanding of algebra, explore shape and space through geometry and measures, and learn to collect, represent, interpret and analyse data. Throughout the curriculum, pupils are encouraged to think logically, identify patterns, reason mathematically and apply their knowledge to solve increasingly complex problems.

Recognising the varied starting points of our pupils, the curriculum is adapted to meet individual needs whilst maintaining high expectations. Baseline assessments and ongoing formative assessment enable teachers to identify prior learning, address misconceptions and plan appropriately challenging learning experiences. Key concepts are revisited regularly to strengthen retention, address gaps in knowledge and ensure pupils can make meaningful connections between different areas of mathematics.

Mathematics is taught through practical, relevant and real-life scenarios wherever possible. Pupils apply their learning to contexts such as budgeting, finance, interpreting information, measuring, planning and problem solving, helping them understand the value and purpose of mathematics beyond the classroom. This approach also supports the development of confidence, perseverance and independent thinking.

By the end of KS3, pupils will have developed the mathematical fluency, reasoning and problem-solving skills needed to access appropriate KS4 qualifications and future pathways. They will be equipped with the knowledge, confidence and resilience required to succeed in further study, employment and everyday life.

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Pathway ONE

Priorities: Increased attendance, develop positive relationships, Develop simple learning behaviours

In mathematics, students are actively working towards improving their attendance by recognising the importance of consistent classroom participation in building a stronger understanding of key concepts. Increased attendance supports the development of confidence, as students engage more regularly in lessons, ask questions, and contribute to discussions without fear of making mistakes. To address gaps in learning, students are utilising targeted interventions, and individualised support to revisit and strengthen foundational skills.

Pathway TWO

Priorities: Increased attendance, improved engagement and participation in lessons, develop wider relationships, progress in literacy/numeracy

In mathematics, students are actively working towards improving their attendance by recognising the importance of consistent classroom participation in building a stronger understanding of key concepts. Increased attendance supports the development of confidence, as students engage more regularly in lessons, ask questions, and contribute to discussions without fear of making mistakes. To address gaps in learning, students are utilising targeted interventions, individualized support to revisit and strengthen foundational skills. Additionally, there is a focused effort on increasing the amount of written work in lessons and preparing them for the next steps in their mathematics education.

Pathway THREE

Priorities: consistently high attendance, consistently positive engagement and participation in lessons, appropriate positive social interactions, Academic progress.

Students working towards a return to mainstream school are making strong progress in mathematics by demonstrating consistent high attendance, ensuring they do not miss valuable learning opportunities. Their sustained high engagement in lessons is helping to build confidence, as they participate actively, tackle challenges with a positive mindset, and seek help when needed. Students work towards rebuilding foundational knowledge and progress towards age-related expectations. A key area of development is the production of high-quality written work, with students increasingly showing clear, structured working out that demonstrates strong learning habits.

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Autumn		Spring		Summer	
Number	**Number**	**Shape**	**Algebra**	**Ratio and proportion**	**Data**
1. Pupils will be able to identify factors, multiples, prime numbers, and square numbers. 2. Pupils will be able to find the lowest common multiple (LCM) of two or more numbers. 3. Pupils will be able to find the highest common factor (HCF) of two or more numbers. 4. Pupils will be able to express	1. Pupils will be able to add, subtract, multiply, and divide with negative numbers. 2. Pupils will be able to work confidently with fractions, decimals, and percentages. 3. Pupils will be able to convert between fractions, decimals, and percentages. 4. Pupils will be able to round numbers to the nearest 10,	1. Pupils will be able to identify shapes and use their properties. 2. Pupils will be able to accurately measure angles using a protractor. 3. Pupils will be able to accurately measure using a ruler 4. Pupils will be able to solve problems	1. Pupils will be able to use algebraic notation and symbols correctly. 2. Pupils will be able to interpret simple expressions as functions with inputs and outputs. 3. Pupils will be able to simplify expressions by collecting like terms.	1. Pupils will be able to use and understand ratio notation. 2. Pupils will be able to divide an amount into a given ratio. 3. Pupils will be able to solve problems using ratios. 4. Pupils will be able to use conversion graphs. 5. Pupils will be able to identify	1. Pupils will be able to read and draw bar charts and pictograms. 2. Pupils will be able to plot scatter graphs and use them to make a prediction. 3. Pupils will be able to calculate and use the mean, median and mode.

a number as a product of its prime factors. 5. Pupils will be able to use the correct order of operations to carry out calculations.	100, or given number of decimal places. 5. Pupils will be able to round numbers to 1 significant figure to make sensible estimations.	involving length, area and volume. 5. Pupils will be able to convert between metric and imperial measurements.	4. Pupils will be able to expand a single bracket. 5. Pupils will be able to solve linear equations.	the best value for money (best buy deals).	4. Pupils will be able to calculate the mean from a frequency table. 5. Pupils will be able to explain the pros and cons of different averages and choose the correct one for different situations.

Core Key stage end Points

To reinforce basic numeracy skills and ensure that pupils have a confident written method for the four rules as this is essential moving forward throughout the curriculum.

1. Pupils will be able to add and subtract whole numbers and decimals.
2. Pupils will be able to multiply and divide whole numbers and decimals.
3. Pupils will be able to show their working clearly.
4. Pupils will be able to use fractions decimals and percentages to solve problems.
5. Pupils will be able to choose the best method (mental, written, or calculator) to solve a problem.

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