KS4 Maths Long Term Plan

Brookvale Academy

Mathematics

Intent:

Our Key Stage 4 Mathematics curriculum provides pupils with the mathematical knowledge, skills and qualifications they need for their next stage of education, employment or training. Learning is carefully sequenced to build on prior knowledge, address gaps in understanding and develop pupils' confidence and fluency in using mathematics. Through the curriculum, pupils are encouraged to demonstrate our values of **curiosity, challenge and confidence** as they develop their ability to reason, solve problems and apply mathematics to everyday life.

Pupils follow a qualification pathway that is matched to their individual needs, starting points and future aspirations. Most pupils work towards **GCSE Mathematics**, while pupils requiring a more accessible and practical pathway study **Functional Skills Mathematics** at an appropriate level. There is flexibility within this model, allowing pupils to move between pathways where appropriate as their confidence, engagement and attainment develop, ensuring that all pupils have access to an appropriately ambitious and meaningful mathematics curriculum.

Across both pathways, pupils develop their understanding of key mathematical areas including **number, algebra, ratio and proportion, geometry and measures, statistics and probability**. They are taught to use mathematical procedures accurately while also developing their ability to reason, explain their thinking and apply their knowledge to unfamiliar problems. Regular opportunities to revisit and consolidate learning help pupils retain knowledge, build fluency and develop resilience when faced with mathematical challenge.

Mathematics is taught through a range of real-world contexts to help pupils understand the relevance and purpose of their learning. Pupils develop the skills needed to manage money, interpret information, use measures, understand percentages and make informed decisions in everyday situations. Functional Skills Mathematics places particular emphasis on applying mathematics to practical contexts, supporting pupils to use their skills confidently in further education, employment and independent living.

Alongside mathematical knowledge, the curriculum develops wider skills including **problem-solving, logical thinking, communication, resilience, independence and accuracy**. Pupils are encouraged to explain their methods, learn from mistakes and persevere when problems become challenging. The use of appropriate mathematical vocabulary, representations, calculators and digital tools supports pupils in communicating their thinking and selecting effective strategies.

The curriculum also supports pupils' wider employability and preparation for adulthood by developing the practical mathematics required in education, training, employment and everyday life. Pupils are encouraged to take pride in their progress and recognise that mathematical success can take different forms. Lessons are structured, inclusive and supportive, with appropriate scaffolding and challenge to ensure pupils can engage successfully with mathematics and make progress from their individual starting points.

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Pathway ONE

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

In **Pathway 1**, Maths is used to support pupils in re-engaging with education by prioritising attendance, positive relationships and the development of simple learning behaviours. Lessons are practical, highly structured and success-focused, helping pupils build confidence through participation, following routines, listening to others and completing achievable scientific tasks. Through regular encouragement and positive relationships with staff and peers, pupils develop the foundations for learning while working towards appropriate accredited outcomes, including functional skills and GCSE.

Pathway TWO

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

In Pathway 2, Mathematics supports pupils to improve attendance, engagement and participation through practical and relevant learning experiences. Lessons develop confidence, problem-solving, resilience and independence while encouraging pupils to work collaboratively and apply mathematics to real-life situations. Pupils strengthen numeracy through number, calculation, percentages, ratio, measure and data, while developing literacy through mathematical vocabulary and explaining their methods. Pupils work towards appropriate accredited qualifications, including **Functional Skills Mathematics and GCSE Mathematics**, preparing them for further education, training and employment.

Pathway THREE

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

In **Pathway 3**, Mathematics supports pupils to maintain high levels of attendance, engagement and participation while making strong academic progress. Lessons provide opportunities for pupils to think logically, work independently and collaboratively, and apply their mathematical knowledge to increasingly complex problems. Pupils are expected to demonstrate resilience, responsibility and positive social interactions in their learning. Through studying towards **GCSE Mathematics**, pupils develop the knowledge, skills and qualification needed for successful progression to further education, training and employment.

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GCSE Pathway

Year 10/11

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Place Value, Integers and Number Systems Four Operations and Calculation Fractions, Decimals and Percentages	Factors, Multiples, Primes and HCF/LCM Powers, Roots and Standard Form	Angles and Angle Properties Properties of 2D and 3D Shapes Perimeter, Area and Circles Volume, Surface Area	Algebraic Notation and Simplifying Equations Sequences and Coordinates	Ratio Proportion Rates, Speed, Distance, Time. Best Buys	Collecting and Representing Data Averages and Spread Probability
Assessment: Year 10: End of unit test. Year 11: End of unit test	**Assessment:** Year 10: End of unit test. Year 11: End of unit test	**Assessment:** Year 10: End of unit test. Year 11: Full mock exam	**Assessment:** Year 10: End of unit test. Year 11: Full mock exam	**Assessment:** Year 10: End of unit test. Year 11: Revision and GCSE Exam	**Assessment:** Year 10: Mock exam Year 11: GCSE Exam

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Functional Skills Maths Level 2 Pathway

Year 10/11

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number, Place Value and Negative Numbers Fractions, Decimals and Percentages Rounding, Estimation and Checking Money, Discounts and Budgeting	Ratio and Proportion Direct and Inverse Proportion Formulae and Numerical Expressions Order of Operations and Indices	Measures and Unit Conversions Compound Measures Speed, Distance and Time Rates of Pay and Other Rates Metric and Imperial Conversions	Perimeter and Area Circles, Triangles and Composite Shapes Volume and Surface Area Scale Drawings and Coordinates Angles, Plans and Elevations	Tables, Charts and Statistical Diagrams Mean, Median, Mode and Range Grouped Data and Estimated Mean Probability and Combined Events Scatter Diagrams and Correlation	Integrated Functional Maths Problem Solving Financial Maths and Real-Life Applications Reasoning, Checking and Interpreting Answers Revision and Assessment Preparation
Assessment: Year 10: End of unit assessment. Year 11: End of unit assessment.	**Assessment:** Year 10: End of unit assessment. Year 11: End of unit assessment.	**Assessment:** Year 10: End of unit assessment. Year 11: Non-calculator & calculator practice assessment.	**Assessment:** Year 10: End of unit assessment. Year 11: Final revision and Functional Skills assessment preparation.	**Assessment:** Year 10: End of unit assessment. Year 11: Non-calculator & calculator practice assessment.	**Assessment:** Year 10: Revision and end-of-year assessment. Year 11: Final revision and Functional Skills assessment preparation.

Content aligned to the Department for Education Functional Skills Mathematics Level 2 subject content (England).

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Functional Skills Maths Level 1 Pathway

Year 10/11

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Whole Numbers to One Million Positive and Negative Numbers Place Value and Ordering Multiplying and Dividing by 10, 100 and 1,000 Multiplication and Division Facts	Fractions, Decimals and Percentages Fractions of Quantities and Measurements Decimals to 3 Decimal Places Rounding, Estimation and Checking Simple Interest and Percentage Discounts	Ratio and Direct Proportion Simple Formulae Squares and Order of Operations Numerical and Spatial Patterns Money and Financial Calculations	Measures and Unit Conversions Time, Length, Weight and Capacity Scales, Maps and Drawings Perimeter and Area Volume of Cubes and Cuboids	2D and 3D Shapes Angles, Position and Direction Symmetry, Plans, Elevations and Nets Tables, Charts and Graphs Pie Charts, Bar Charts and Line Graphs	Mean and Range Probability and the Probability Scale Simple Probability as Fractions Integrated Functional Maths Problem Solving Revision and Assessment Preparation
Assessment: Year 10: End of unit assessment. Year 11: End of unit assessment.	**Assessment:** Year 10: End of unit assessment. Year 11: End of unit assessment.	**Assessment:** Year 10: End of unit assessment. Year 11: Non-calculator & calculator practice assessment.	**Assessment:** Year 10: End of unit assessment. Year 11: Final revision and Functional Skills assessment preparation.	**Assessment:** Year 10: End of unit assessment. Year 11: Non-calculator & calculator practice assessment.	**Assessment:** Year 10: Revision and end-of-year assessment. Year 11: Final revision and Functional Skills assessment preparation.

Content aligned to the Department for Education Functional Skills Mathematics Level 1 subject content (England).

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Functional Skills Maths – Entry Levels 1, 2 and 3 Pathway

Year 10/11

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Level 1 • Numbers to 20 • Counting and Ordering • Addition and Subtraction to 20 • Using +, – and = • Recognising Coins and Notes **Level 2** • Numbers to 200 • Counting Reliably to 100 • Odd and Even Numbers • Addition and Subtraction of 2-Digit Numbers • Multiplication Facts to 12 × 12 **Level 3** • Numbers to 1,000 • Addition and Subtraction with 3-Digit Numbers • Multiplication with 2-Digit Numbers • Division with 3-Digit Numbers • Rounding to the Nearest 10 and 100	**Level 1** • Money up to £20 • 12-Hour Digital and Analogue Clocks • Days, Months and Seasons • Comparing Size, Length, Width and Height • Weight and Capacity **Level 2** • Division of 2-Digit Numbers • Remainders • Rounding to the Nearest 10 • Halves, Quarters and Tenths • Decimals to 1 Decimal Place **Level 3** • Linear Number Sequences • Fractions: Thirds, Quarters, Fifths and Tenths • Equivalent Fractions • Decimals to 2 Decimal Places • Decimal Number Sequences	**Level 1** • Common 2-D Shapes • Common 3-D Shapes • Position and Direction • Left, Right, Above, Below and Behind • Simple Everyday Problem Solving **Level 2** • Money, Coins and Notes • Reading and Comparing Amounts • Time: Hours, Days and Weeks • Common Measures and Simple Conversions • Position and Direction Vocabulary **Level 3** • Money Using Decimal Notation • Time and Calendar Calculations • Common Units of Measure • Scales, Maps and Simple Drawings • Everyday Measures	**Level 1** • Reading Information from Lists • Sorting and Classifying Objects • One-Criterion Sorting • Tally Charts • Block Diagrams and Simple Graphs **Level 2** • Common 2-D and 3-D Shapes • Perimeter of Simple Shapes • Simple Area • Sorting by Two Criteria • Tables, Lists and Diagrams **Level 3** • Perimeter and Area of Simple Shapes • Volume of Cubes and Cuboids • 2-D and 3-D Shapes • Angles and Direction • Symmetry and Position	**Level 1** • Using Numbers in Everyday Situations • Money and Shopping Tasks • Time and Calendar Activities • Measures in Familiar Contexts • Simple One-Step Problems **Level 2** • Reading and Comparing Bar Charts • Creating Simple Bar Charts • Taking Information from One Format to Another • Simple Data Comparisons • Everyday One-Step Problems **Level 3** • Frequency Tables • Reading Information from Tables and Charts • Bar Charts and Simple Line Graphs • Comparing Data and Recording Change • Organising and Representing Information	**Level 1** • Integrated Entry Level 1 Tasks • Number, Measure and Shape Review • Information and Data Review • Practical Mathematical Problem Solving • Revision and Assessment Preparation **Level 2** • Integrated Entry Level 2 Tasks • Number and Calculation Review • Measures, Shape and Space Review • Information and Data Review • Revision and Assessment Preparation **Level 3** • Integrated Entry Level 3 Tasks • Number, Fractions and Decimals Review • Measures, Shape and Space Review • Information and Data Review • Revision and Assessment Preparation
Level 1: End of unit assessment. **Level 2:** End of unit assessment. **Level 3:** End of unit assessment.	**Level 1:** End of unit assessment. **Level 2:** End of unit assessment. **Level 3:** End of unit assessment.	**Level 1:** Practice assessment. **Level 2:** Practice assessment. **Level 3:** Practice assessment.	**Level 1:** Practice assessment. **Level 2:** Practice assessment. **Level 3:** Practice assessment.	**Level 1:** Practice assessment. **Level 2:** Practice assessment. **Level 3:** Practice assessment.	**Level 1:** Final revision / assessment preparation.

					Level 2: Final revision / assessment preparation. **Level 3:** Final revision / assessment preparation.

Colour key: Level 1 = blue | Level 2 = green | Level 3 = orange. Topics are editable and can be amended to match your centre's scheme of work.