

## Key Stage 4 Long Term Planning

### Year 10 2024-2025 SYLLABUS: AQA GCSE Mathematics 8300

Curriculum Area: Mathematics (core) – Higher

**(Please note that knowledge, related skills and connections to previous learning are linked by colour coding)**

Year 10	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Knowledge</b>	Calculating with percentages <b>Measures</b> Surds	Statistical measures <b>Indices</b> Properties of polygons	Number – recap and review <b>Congruence and similarity</b> Pythagoras Theorem' and Trigonometry	Simultaneous equations <b>Probability</b> Statistics recap and review	Quadratics, rearranging formula and identities <b>Volume</b>	Algebra recap and review <b>Sketching graphs</b> Quadratic equations and their graphs Geometry and measures recap and review
<b>Skills</b>	Percentage problems including increase/decrease, original value problems and simple interest. <b>Limits of accuracy. Metric units to solve problems including conversions.</b> <b>Density and speed.</b> Calculate exactly with surds including simplifying, rationalizing and expanding brackets	Mean, mode, median and range <b>Positive integer powers. Calculate with powers.</b> Know the properties of polygons. Calculate interior and exterior angles of polygons.	Change between fractions and recurring decimals. Upper and lower bounds Surds and fractional indices. <b>Identify congruent triangles (SSS, SAS, ASA, RHS)</b> Know and use Pythagoras' theorem Know the trigonometric ratio. Use them to find sides and angles.	Solve simultaneous equations. <b>Understand the probability scale. Work out probabilities and solve problems. Use tree diagrams.</b> Construct and interpret histograms and box plots.	Expand and factorise quadratics. Simplify expressions. Use mathematical formula and change the subject. Show that algebraic expressions are equivalent. <b>Calculate the volume of cubes, cuboids and prisms.</b>	Use $y=mx+c$ to find parallel and perpendicular lines. Plot reciprocal and exponential graphs <b>Recognise graphs if linear, quadratic, cubic and reciprocal functions</b> Solve linear and quadratic equations. Find approximations using graphs. Identify, describe and construct congruent shapes Find surface area and volume of sphere, cones, frustums and composite shapes
<b>Connection to previous learning</b>	Year 9 Spring 1 Basic percentages <b>Year 7 Autumn 1 Decimals and measure. Year 8 Autumn 1 Area and volume</b> Year 7 Autumn Term 1 Number Skills	Year 8 Autumn 2 Statistics, graphs and charts <b>Year 9 Factors and multiples</b> Year 9 Autumn 1 Angles	Year 9 Autumn 2 Decimals Year 10 Autumn 1 Surds Year 10 Autumn 2 Indices <b>Year 7 Summer 2 Transformations</b> Year 8 Autumn 1 Number	Year 9 Summer 1 Equations <b>Year 9 Spring 2 Basic probability</b> Year 7 Autumn 1 Analysing and displaying data	Year 9 Autumn 1 Basic Algebra <b>Year 10 Spring 2 Perimeter and area</b>	Year 9 Spring 2 Equations <b>Year 9 Spring 1 Real life graphs</b> Year 10 Summer 1 Quadratics, rearranging formula and identities Year 10 Summer 1 Volume Year 9 Spring 1 Perimeter and area
<b>Assessment</b>	Skills check at the end of each unit (3 during this term)	Skills check at the end of each unit (3 during this term) CAP1	Skills check at the end of each unit (3 during this term)	Skills check at the end of each unit (2 during this term)	Skills check at the end of each unit (2 during this term)	Skills check at the end of each unit (4 during this term) End of year exam
<b>Homework</b>	Revision/numeracy booklet	Revision/numeracy booklet	Revision/numeracy booklet	Revision/numeracy booklet	Revision/numeracy booklet	Revision/numeracy booklet
<b>Cultural Capital</b>	Aspiring Astronaut - <a href="https://www.youtube.com/watch?v=Boi-FMB4-vs">https://www.youtube.com/watch?v=Boi-FMB4-vs</a>		Business Owner - <a href="https://www.youtube.com/watch?v=C7tQW5ieGHg">https://www.youtube.com/watch?v=C7tQW5ieGHg</a>		digital tech engineer - <a href="https://youtu.be/TWGgmQAfvM">https://youtu.be/TWGgmQAfvM</a>	

# MOOR PARK HIGH SCHOOL: CURRICULUM

<b>Literacy</b>	Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions	Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions	Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions	Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions	Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions	Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions
<b>CIAG</b>	Aspiring Astronaut - <a href="https://www.youtube.com/watch?v=Boj-FMB4-vs">https://www.youtube.com/watch?v=Boj-FMB4-vs</a>		Business Owner - <a href="https://www.youtube.com/watch?v=C7tQW5ieGHg">https://www.youtube.com/watch?v=C7tQW5ieGHg</a>		digital tech engineer - <a href="https://youtu.be/TWGgqmQAfvM">https://youtu.be/TWGgqmQAfvM</a>	

## Key Stage 4 Long Term Planning

### Year 11 2024-2025 SYLLABUS: AQA GCSE Mathematics 8300

Curriculum Area: Mathematics (core) – Higher

**(Please note that knowledge, related skills and connections to previous learning are linked by colour coding)**

Year 11	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
<b>Knowledge</b>	Further quadratics, rearranging formulae and identities Trigonometry recap and extension Growth and decay	Equations of a circle Further equations and graphs Direct and inverse proportion	Inequalities Vectors Further sketching graphs	Sine and cosine rules Transforming functions Numerical methods Circle theorems	Gradients and rate of change Pre-Calculus and area under a curve Algebraic fractions Exam preparation - Revision
<b>Skills</b>	Factorise quadratics with coefficient greater than 1. Understand difference between equation and identity Construct algebraical arguments and proof Interpret inverse and composite functions Know the Pythagoras and trigonometric ratios. Use trigonometric ratios to find sides and angles. Know the exact values for 0, 30, 45, 60 and 90 degrees. Solve growth and decay problems including compound interest.	Recognise and use the equations of a circle with the center as the origin. Find the equation of a tangent to a circle Using the quadratic formula to solve quadratics, including competing the square to find solutions to graphs and turning points Recognise and sketch linear and quadratic functions Solve problems using direct and inverse proportion. Interpret equations for direct and inverse proportion. Use graphs for proportion problems	Solve linear and quadratic inequalities including set notation and on a graph. Add and subtract vectors. Multiply a vector by a scalar. Use diagrams and column representation of vectors. Use vectors to construct geometric arguments and proof Recognise, sketch and interpret linear, quadratic and reciprocal functions, including exponential and trigonometric functions	Know and apply the sine and cosine rule Know and apply the area of a triangle to find area, sides and angles Sketch translations and reflections of a given function Find approximate solutions to equations numerically using iteration Apply and prove circle theorems including angles, radii, tangents and chords	Identify gradient on a point of a curve Apply concepts of average and instantaneous rates of change in numerical, algebraic and graphical context Calculate gradients of graphs and area under a graph including quadratic and non-linear graphs
<b>Connection to previous learning</b>	Year 10 Summer 1 Quadratics, rearranging formula and identities Year 9 Summer 2 Pythagoras' Year 10 Spring 1 Year 10 Autumn 2 indices Year 10 Autumn 1 Calculating with percentages	Year 10 Summer 1 Algebra recap and review Year 9 Autumn 2 Coordinates and line graphs Year 9 Spring 1 Area and perimeter Year 10 Summer 1 Quadratics, rearranging formula and identities Year 11 Autumn 1 Further Quadratics, rearranging formula and identities	Year 9 Spring 2 Equations Year 9 summer 2 Transformations Year 10 Summer 2 Quadratic equations and graphs	Year 10 Spring 1 Pythagoras Theorem' and Trigonometry Year 9 Spring 2 Circumference and area	Year 9 Autumn 2 Coordinates and Line graphs
<b>Assessment</b>	Skills check at the end of each unit (3 during this term)	Skills check at the end of each unit (3 during this term) Mock 1 CAP1	Skills check at the end of each unit (3 during this term)	Skills check at the end of each unit (4 during this term) Mock 2 CAP2	Skills check at the end of each unit (3 during this term)
<b>Homework</b>	Revision/numeracy booklet	Revision/numeracy booklet	Revision/numeracy booklet	Revision plan	Revision plan

# MOOR PARK HIGH SCHOOL: CURRICULUM

<b>Cultural Capital</b>					
<b>Literacy</b>	<p>Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions</p>	<p>Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions</p>	<p>Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions</p>	<p>Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions</p>	<p>Mathematical key terms for each unit. Correct terminology used when answering questions (using standard English and full sentences) Read and understand written questions</p>
<b>CIAG</b>	<p>Data Analysts - <a href="https://www.youtube.com/watch?v=yqyIYh4bKKo">https://www.youtube.com/watch?v=yqyIYh4bKKo</a></p>	<p>Software Engineer - <a href="https://youtu.be/Q9tUUP-phCw">https://youtu.be/Q9tUUP-phCw</a></p>	<p>Film Maker - <a href="https://www.youtube.com/watch?v=C7tQW5ieGHg">https://www.youtube.com/watch?v=C7tQW5ieGHg</a></p>	<p>Climate Scientist - <a href="https://youtu.be/HZND8Fas8Uw">https://youtu.be/HZND8Fas8Uw</a></p> <p>Mathematics KS5 taster sessions</p>	