

## Key Stage 4 Long Term Planning

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

Curriculum Area: Mathematics (Accelerated)

(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>	Surds <i>Statistical measures</i> <i>Indices</i> <i>Simultaneous equations</i>	Histograms and Cumulative frequency <i>Algebra recap and review</i> <i>Linear inequalities</i> <i>Further quadratics rearranging formulae and identities</i>	Further equations and graphs <i>Construction and loci</i> <i>Congruence and similarity</i>	Pythagoras Theorem' and Trigonometry <i>Trigonometry extension</i> <i>Sine and cosine rule</i>	Number recap and review <i>Direct and inverse proportion</i> <i>Algebraic fractions</i>	Geometry and measures recap and review
<b>Skills</b>	Calculate exactly with surds including simplifying, rationalizing and expanding brackets <i>Mean, mode, median and range</i> <i>Positive integer powers. Calculate with powers.</i> <i>Solve simultaneous equations.</i>	Construct and interpret histograms, cumulative frequency graphs and box plots. <i>Equation of a straight line, perpendicular lines, reciprocal and exponential graphs. Distance speed and acceleration. Solve linear equations with unknowns on both sides. Solve linear inequalities in one and two variables. Represent it on a number line.</i> <i>Expand and factorise quadratics. Simplify expressions. Use mathematical formula and change the subject. Show that algebraic expressions are equivalent.</i>	Solve linear and quadratic equations, by factorizing, completing the square and quadratic formula. Find approximations using graphs. Recognize sketch and interpret graphs of linear and quadratic functions. Turning points using completing the square.  <i>Use the standard ruler and compass constructions: perpendicular bisector of a line segment, constructing a perpendicular to a given line from / at a given point bisecting a given angle</i> <i>Know that the perpendicular distance from a point to a line is the shortest distance to the line</i>  <i>Identify congruent triangles (SSS, SAS, ASA, RHS)</i>	Know and use Pythagoras' theorem. Know the trigonometric ratio. Use them to find sides and angles.  <i>Know the exact values of sin, co and tan 0,30,45,60 and 90. Apply angle facts, triangle congruence, similarity and properties of quadrilaterals.</i>  <i>Know and apply the sine rule and cosine rule to find unknown lengths and angles. Know and apply ½ absinc to calculate the area, sides or angles of any triangles</i>	Changing recurring decimals into their corresponding fractions and vice versa. Upper and lower bounds, linear and quadratic sequences, surds and negative/fractional indices.  <i>Solve problems involving direct and inverse proportion, including graphical and algebraic representations</i>  <i>Simplify and manipulate algebraic expressions involving algebraic fractions</i>	Transformations including negative and fractional scale factors. Invariant points. Surface area, volume, arc length and area of sectors.

# MOOR PARK HIGH SCHOOL: CURRICULUM

<b>Connection to previous learning</b>	Year 8 Autumn Term 1 Working with powers Year 7 Autumn Term 1 Analysing and displaying data Year 8 Autumn Term 1 Working with powers	Year 9 Autumn Term 2 Collecting and representing data Year 8 Autumn Term 1 Working with powers Year 7 Spring Term 2 Rearranging formulae	Year 9 Summer Term 1 Linear and quadratic equations and their graphs Year 8 Spring Term 2 Construction and loci Year 8 Summer Term 1 Scale drawings and measurements	Year 8 Autumn Term 1 2D Shapes and 3D solids (ALL)	Year 7 Autumn Term 1 Number skills Year 9 Spring Term 1 Ratio and proportion Year 8 Autumn Term 1 Working with powers	Year 9 Spring Term 1 Volume, Circumference and area
<b>Assessment</b>	Skills check at the end of each unit (4 during this term)	Skills check at the end of each unit (4 during this term) CAP1	Skills check at the end of each unit (3 during this term)	Skills check at the end of each unit (3 during this term)	Skills check at the end of each unit (3 during this term) CAP2	Skills check at the end of each unit (1 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>						
<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=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/TWGgqmQAfvM">https://youtu.be/TWGgqmQAfvM</a>	

## Key Stage 4 Long Term Planning

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

Curriculum Area: Mathematics (Accelerated)

(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>	Vectors Equation of a circle Functions, composite and inverse Further sketching graphs	Transforming functions Recap sine and cosine rule Quadratic inequalities Circle theorems	Numerical methods Growth and Decay	Gradients and rate of change Pre calculus and area under a curve	Revise
<b>Skills</b>	Apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representation of vectors. Use vectors to construct geometric arguments and proofs.  Recognise and use the equation of a circle with centre at the origin. Find the equation of a tangent to a circle at a given point.  Where appropriate, interpret simple expressions as functions with inputs and outputs. Interpret the reverse process as the 'inverse function'. Interpret the succession of two functions as a 'composite function'  Recognise, sketch and interpret graphs of linear functions, quadratic functions, simple cubic functions and the reciprocal graphs	Sketch translations and reflections of a given function  Know and apply the sine rule and cosine rule to find unknown lengths and angles. Know and apply $\frac{1}{2}$ absinc to calculate the area, sides or angles of any triangles  Solve quadratic inequalities  Apply and prove the standard circle theorems concerning angles, radii, tangents and chords and use them to prove related results	Find approximate solutions to equations numerically using iteration  Set up, solve and interpret the answers in growth and decay problems, including compound interest and work with general iterative processes	Interpret the gradient at a point on a curve as the instantaneous rate of change. Apply the concepts of average and instantaneous rates of change. Interpret the gradient of a straight-line graph as a rate of change  Calculate or estimate gradients of graphs and areas under graphs (including quadratic and other non-linear graphs). Interpret the results in cases such as distance-time graphs, velocity-time graphs and graphs in financial contexts	
<b>Connection to previous learning</b>	Year 9 Summer Term 2 Transformations Year 9 Autumn Term 2 Coordinates and linear graphs Year 10 Spring Term 1 Further equations and graphs Year 9 Summer Term 2 Transformations	Year 10 Spring Term 2 Sine and cosine rule Year 10 Autumn Term 2 Linear inequalities Year 10 Summer Term 2 Geometry	Year 10 Spring Term 1 Further equations and graphs Year 9 Autumn Term 1 Calculating with percentages	Year 9 Autumn Term 2 Coordinates and linear graphs Year 9 Spring Term 1 Measures	

# MOOR PARK HIGH SCHOOL: CURRICULUM

<b>Assessment</b>	Skills check at the end of each unit (4 during this term)	Skills check at the end of each unit (4 during this term) Mock 1 CAP1	Skills check at the end of each unit (2 during this term)	Skills check at the end of each unit (2 during this term) Mock 2 CAP2	GCSE Examinations
<b>Homework</b>	Revision/numeracy booklet	Revision/numeracy booklet	Revision/numeracy booklet	Revision plan	Revision plan
<b>Cultural Capital</b>					
<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
<b>CIAG</b>	Data Analysts - <a href="https://www.youtube.com/watch?v=yqyYh4bKKo">https://www.youtube.com/watch?v=yqyYh4bKKo</a>	Software Engineer - <a href="https://youtu.be/Q9tUUP-phCw">https://youtu.be/Q9tUUP-phCw</a>	Film Maker - <a href="https://www.youtube.com/watch?v=C7tQW5ieGHg">https://www.youtube.com/watch?v=C7tQW5ieGHg</a>	Climate Scientist - <a href="https://youtu.be/HZND8Fas8Uw">https://youtu.be/HZND8Fas8Uw</a> Mathematics KS5 taster sessions	