Madani Schools Federation – Mathematics (2021-2022)

2021/2022	AUTUMN		SPRING		SUMMER	
	HT1	HT2	HT3	HT4	HT5	HT6
Y7	**Area of study** ➢ Number and calculations **Key concepts** Place value Integer and decimal calculations Factors, multiples and primes Fractions and decimals Mental Calculations, Estimations Measures and measuring Calculating with fractions **Assessment method** ➢ AQA assessment	**Area of study** ➢ Number, Algebra, shape **Key concepts** Negative numbers Orders of operation Algebra Expressions, Substitution Formulae, functions, Equations Simplifying expressions Translating and rotating shapes Symmetry and tessellations **Assessment method** ➢ AQA assessment	**Area of study** ➢ percentages / Proportion **Key concepts** Percentages Ratio Proportional reasoning Compound measures **Assessment method** ➢ AQA assessment	**Area of study** ➢ Shape and space **Key concepts** Perimeter and area Triangles and parallelograms Trapeziums and compound shapes Problem solving with area and perimeter Plans, elevations, properties of 3d shapes Volume and surface area of cuboids Applying algebra to shape questions. **Assessment method** ➢ AQA assessment	**Area of study** ➢ Sequences **Key concepts** Sequences: linear and non-linear Term to term and position to term rule Nth term rule Co-ordinates, drawing straight line graphs Conversion graphs **Assessment method** ➢ AQA assessment	**Area of study** ➢ Angles and data **Key concepts** Estimating, drawing and measuring angles Angle reasoning (straight line/ around a point/complementary) Angles: parallel lines, triangles Pictograms, bar charts, line graphs, pie charts **Assessment method** ➢ AQA assessment
Y8	**Area of study** ➢ Number and algebra **Key concepts** Whole number/decimal calculations Estimations, Sig Figures, Rounding Bounds Powers, Roots and to Surds Index laws, indices Standard form Substitution and solving equations **Assessment method** ➢ AQA assessment	**Area of study** ➢ Algebra and shape **Key concepts** solving harder equations writing and rearranging Formulae representing and solving Inequalities Linear sequences: nth term straight line graphs, y = mx+ c distributive law: expanding and factorising brackets Enlargement and scale factor **Assessment method** ➢ AQA assessment	**Area of study** ➢ Ratio / Proportion **Key concepts** Ratio and Proportion Direct Proportion Percentages: reverse, percentage change Percentages, simple interest, Units of measurement and compound measures **Assessment method** ➢ AQA assessment	**Area of study** ➢ Data/probability **Key concepts** Mean, median, mode, range Averages problem solving Averages from tables Probability Experimental probability, relative frequency, expectation Probability problems, frequency trees, Venn diagrams **Assessment method** ➢ AQA assessment	**Area of study** ➢ Shape and space **Key concepts** Areas of rectangles, parallelograms, triangles Areas of trapeziums, compound shapes area and circumference of circles Volume and surface area of cuboids **Assessment method** ➢ AQA assessment	**Area of study** ➢ Proportion, scale and constructions **Key concepts** Pie charts Ratio and map Scales Angles and bearings Constructions and loci **Assessment method** ➢ AQA assessment
Y9	**Area of study** ➢ Number **Key concepts** Calculations: whole numbers, fractions, decimals Profit, financial maths, balance statements Rounding and bounds Powers, Roots, intro to surds, laws of indices Ratio, standard form Percentage multipliers, original, new and change Percentages: simple and compound interest **Assessment method** ➢ AQA assessment	**Area of study** ➢ Algebra **Key concepts** Formulae and rearrangement substituting and solving equations Adding and multiplying terms Expanding and factorising Adding algebraic fractions Expanding and factorising quadratics Enlargements including negative and fractional **Assessment method** ➢ AQA assessment	**Area of study** ➢ Probability and Data **Key concepts** Tree diagrams, combined probability Venn Diagrams Data: Averages, Spread, problems Mean and median from a table Cumulative frequency and box plots **Assessment method** ➢ AQA assessment	**Area of study** ➢ Data / angles **Key concepts** Histograms Scatter graphs, time series Angles on a straight line and around a point Angles in parallel lines Angles in polygons Similar polygons **Assessment method** ➢ AQA assessment	**Area of study** ➢ Proportion and shape **Key concepts** Proportion, pie charts Circle circumference and area Sector perimeter and area Volumes of and surface areas of prisms **Assessment method** ➢ AQA assessment	**Area of study** ➢ Sequences **Key concepts** Nth terms of linear sequences Linear sequences and graphs Gradient, y = mx +c Plotting non-linear graphs **Assessment method** ➢ AQA assessment

Y 10	Area of study ➢ Number Key concepts Ratio, percentages, multipliers Compound interest and growth Reverse pecentage and percentage change Measurements and compound measures Bounds problem solving and Compound measures Product rule for counting Surds Assessment method ➢ AQA assessment	Area of study ➢ Algebra Key concepts Equations and rearranging formulae Solving simultaneous equations (elimination) Factorising quadratics, expanding Double and triple brackets Factorising and solving quadratics Simultaneous equations (substitution) Sketching quadratic graphs Transformations Assessment method ➢ AQA assessment	Area of study ➢ algebra/ Proportion Key concepts Solving identities Ratio: combining, difference given, problems Direct and Inverse Proportion Direct/inverse equations Direct/inverse equations with exponents Assessment method ➢ AQA assessment	Area of study ➢ Sequences and Graphs Key concepts Nth term of linear and quadratic graphs Y = mx + c, finding gradient Line segments, midpoints, perpendicular lines Graphs of direct and inverse proportion Solving equations graphically Shading inequalities Assessment method ➢ AQA assessment	Area of study ➢ Shape and graphs Key concepts Volume of prisms and cuboids Volumes of cones, pyramids and frustums Areas of 2d shapes - exam problems Distance, time and Kinematic graphs Areas under curves Assessment method ➢ AQA assessment	Area of study ➢ Probability/Shape Key concepts Relative frequency and probability Probability of combined events Venn diagrams and Venn notation Exploring circle theorems Assessment method ➢ AQA assessment
Y 11	Area of study ➢ Number and formulae Key concepts Understanding and rearranging formula Compound change, growth and decay Surds Pythagoras Negative and fractional indices The product rule for counting Solving equations revision Recursive sequences and iteration Assessment method ➢ AQA assessment	Area of study ➢ Shape Key concepts 3D Pythagoras Similarity, ASF and VSF Right angled trigonometry Non right angled trig Volumes and surface areas of 3d solids Inverse and direct proportion Transformations Assessment method ➢ AQA assessment	Area of study ➢ Functions, graphs and algebra Key concepts Linear functions and graphs Non-linear functions and graphs: cub Exponential, reciprocal Circle theorems Circle graphs and tangents Algebraic proof Assessment method ➢ AQA assessment	Area of study ➢ Exam preparation Key concepts Solving algebraic fractions Inverse and composite functions Vectors Probability revision Data revision Proportion revision Assessment method ➢ AQA assessment	Area of study ➢ Past Papers and revision Key concepts Exam technique Combining different areas of Maths for exam-style questions Assessment method ➢ Past exam Papers	Area of study ➢ Examinations Key concepts Exam Revision Assessment method ➢ Past exam Papers

	AREAS OF STUDY	KEY CONCEPTS	ASSESSMENT METHOD
NOTES	Areas of study may overlap and build upon what has gone before. For example, shape in year 7 will contain questions including algebra that was learnt earlier in the year.	Classes might move more slowly or more quickly through the key concepts, depending on whether they are ready to move onto the next stage of their learning.	Assessments questions will be drawn from official AQA questions to ensure relevance to final GCSEs and for quality assurance purposes.