Madani Schools Federation - Mathematics (2023-2024)

| 2023/ | AUTUMN |  | SPRING |  | SUMMER |  |
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| 2024 | HT1 | HT2 | HT3 | HT4 | HT5 | HT6 |
| $\stackrel{N}{>}$ | Area of study <br> $>$ Number <br> Key concepts <br> Types of Numbers <br> Primes / Multiples / Factors <br> Place Value <br> Whole Numbers ( $+/-/ x / \div$ ) <br> Decimal Calculations ( $+/-/ x / \div$ ) <br> Order of Operations <br> Rounding to the nearest 10, 100, 1000 <br> and integer <br> Rounding to a given number of decimal places <br> Assessment method <br> $>$ End of Topic Test | Area of study <br> > Algebra / Graphs <br> Key concepts <br> Introduction to Sequences <br> Substitution <br> Simplifying <br> Expand (single) <br> Solving Equations using a function machine <br> Construct a formula from a worded problem <br> Coordinates ( $\mathrm{x}, \mathrm{y}$ ) - four quadrants Plotting a linear graph from a table of values <br> Assessment method <br> > End of Topic Test | Area of study <br> > Fractions / Percentages / Ratio <br> Key concepts <br> Fraction Basics (equivalent, simplify, convert) <br> F/D/P Conversions <br> Ordering fractions, decimals and percentages <br> Addition and Subtraction with Fractions <br> Fractions / Percentages of Amounts <br> Ratio Calculations (simplify, share, recipes) <br> Assessment method <br> > End of Topic Test | Area of study <br> > Geometry <br> Key concepts <br> Properties of 2D / 3D Shapes Perimeter \& Area (Square, rectangle, triangle, parallelogram, trapezium) Compound Shapes Plans \& Elevations | Area of study <br> > Angles \& Transformations <br> Key concepts <br> Angle Facts (line, point, triangle) Measuring \& Drawing Angles Constructions (perpendicular bisector, angle bisector, midpoint of a line, perpendicular from point to a line) Introduction to Transformations | Area of study <br> Probability \& Data <br> Key concepts <br> Introduction to Probability <br> Tally Charts / Pictograms / Bar Charts <br> / Frequency Tables <br> Mean, Mode, Median, Range <br> Best average to use <br> Assessment method <br> > End of Topic Test |
| $\underset{\sim}{\infty}$ | Area of study <br> $>$ Number <br> Key concepts <br> Revision of Four Operations (whole/ decimal) <br> Rounding (decimals places/significant figures) <br> Accuracy \& Estimating <br> Basic Power Rules/Square Root/Cube <br> Root <br> Revision of Prime Factor Trees/LCM/HCF Introduction to Standard Form <br> Assessment method <br> > End of Topic Test | Area of study <br> > Algebra / Graphs <br> Key concepts <br> Expand (double) / Factorise (quadratic) <br> Rearranging Formulae (simple) <br> Solving Equations (brackets / unknown both sides) <br> Introduction to Inequalities <br> Conversion Graphs / Real Life Graphs <br> Finding the equation of a straight line <br> Graph <br> Plotting a quadratic graph <br> Assessment method <br> $>$ End of Topic Test | Area of study <br> $>$ Fractions / Percentages / Ratio <br> Key concepts <br> F/D/P Conversions / Worded Problems <br> Increase /decrease an amount by a given fraction or percentage, including the use of a multiplier <br> Best Buy/Recipes/Reading Timetables Unit Conversions/Maps/Scale Drawings | Area of study <br> $>$ Geometry <br> Key concepts <br> Area and circumference of a circle Perimeter \& Area of Compound Shapes involving circles Surface Area \& Volume (triangular prism cylinder) | Area of study <br> > Angles \& Transformations <br> Key concepts <br> Parallel Lines <br> Angles in Polygons <br> Translation / Rotation / Reflection Positive and Fractional Enlargement of Shapes | Area of study <br> > Probability \& Data <br> Key concepts <br> Two-Way Tables \& Sample Space Diagrams <br> Time Series \& Line graphs <br> Pie charts <br> Grouped Frequency Tables (calculate <br> Averages including mean) <br> Assessment method <br> > End of Topic Test |
|  | Area of study <br> > Number | Area of study <br> > Algebra | Area of study <br> > Percentages | $\begin{array}{\|l\|l\|} \hline \text { Area of study } \\ > \\ > \end{array} \text { Geometry }$ | Area of study <br> > Constructions \& Transformations | Area of study <br> > Probability \& Data |
| $a$ | Key concepts <br> Standard Form <br> Calculations with standard form <br> Revision of F/D/P <br> Powers and roots (negative and <br> fractional) <br> Manipulating Surds (simplify and rationalise) | Key concepts <br> Simplifying / Expanding / Substitution <br> Factorising (linear / quadratic / D.O.T.S.) <br> Solve by using Quadratic Formula <br> Completing the Square / Turning Points <br> Rearranging Formulae (harder) <br> Algebraic Fractions ( $+/-/ \mathrm{x} / \div$ ) <br> Functions (composite, inverse, algebraic) | Key concepts <br> Percentage change and reverse percentages <br> Repeated percentage change <br> Simple and compound interest | Key concepts <br> Pythagoras' Theorem <br> Trigonometry <br> Exact trigonometric values Surface Area and Volume of cones and spheres | Key concepts <br> Triangle constructions <br> Loci <br> Bearings Negative Enlargement of shapes | Key concepts <br> Probability basics/ Experimental/ <br> Product rule <br> The AND / OR rule (dependent and Independent events) <br> Venn diagrams and set notation Scatter graphs |
|  | Assessment method <br> $>$ End of Topic Test | Assessment method <br> > End of Topic Test | Assessment method <br> > End of Topic Test | Assessment method <br> > End of Topic Test | Assessment method <br> > End of Topic Test | Assessment method <br> $>$ End of Topic Test |



KEY CONCEPTS
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.

ASSESSMENT METHOD
Assessments questions will be drawn from official AQA questions to ensure relevance to final GCSEs and for quality assurance purposes.

