

MARINA INTERNATIONAL SCHOOL

EXTENDED MATHEMATICS SCHEME OF WORK

FORM 5 - TERM 1

WEEK	TOPIC	TOPIC DETAILS
1.1	SYMMETRY	Use the basic congruence criteria for triangles (SSS, ASA, SAS, RHS).
1.2	SYMMETRY	Recognise rotational and line symmetry (including order of rotational symmetry) in two dimensions.
1.3	SYMMETRY	Recognise symmetry properties of the prism (including cylinder) and the pyramid (including cone).
1.4	SYMMETRY	Use the following symmetry properties of circles: <ul style="list-style-type: none">• equal chords are equidistant from the centre• the perpendicular bisector of a chord passes through the centre• tangents from an external point are equal in length.
2.1	ANGLE PROPERTIES	Calculate unknown angles using the following geometrical properties: <ul style="list-style-type: none">• angles at a point• angles at a point on a straight line and intersecting straight lines
2.2	ANGLE PROPERTIES	Calculate unknown angles using the following geometrical properties: <ul style="list-style-type: none">• angles formed within parallel lines• angle properties of triangles and quadrilaterals
2.3	ANGLE PROPERTIES	Calculate unknown angles using angle properties of regular polygons
2.4	ANGLE PROPERTIES	Calculate unknown angles using angle in a semicircle
3.1	ANGLE PROPERTIES	Calculate unknown angles using the following geometrical properties: <ul style="list-style-type: none">-angle between tangent and radius of a circle-angle properties of irregular polygons
3.2	ANGLE PROPERTIES	Calculate unknown angles using the following geometrical properties: <ul style="list-style-type: none">• angle at the centre of a circle is twice the angle at the circumference• angles in the same segment are equal

WEEK	TOPIC	TOPIC DETAILS
3.3	ANGLE PROPERTIES	Calculate unknown angles using angles in opposite segments are supplementary; cyclic quadrilaterals
3.4	ANGLE PROPERTIES	Calculate unknown angles using alternate segment theorem.
4.1	MENSURATION	Use current units of mass, length, area, volume and capacity in practical situations and express quantities in terms of larger or smaller units.
4.2	MENSURATION	Carry out calculations involving the perimeter and area of a rectangle, triangle, parallelogram and trapezium and compound shapes derived from these.
4.3	MENSURATION	Carry out calculations involving the circumference and area of a circle.
4.4	MENSURATION	Solve simple problems involving the arc length and sector area as fractions of the circumference and area of a circle.
5.1	MENSURATION	Carry out calculations involving the surface area and volume of a cuboid, prism and cylinder.
5.2	MENSURATION	Carry out calculations involving the surface area and volume of a sphere, pyramid and cone.
5.3	MENSURATION	Carry out calculations involving the areas and volumes of compound shapes.
5.4	MENSURATION	Solve simple trigonometrical problems in three dimensions including angle between a line and a plane.
6.1	VECTORS	Add and subtract vectors.
6.2	VECTORS	Multiply a vector by a scalar
6.3	VECTORS	Represent vectors by directed line segments.
7.1	VECTORS	Use the sum and difference of two vectors to express given vectors in terms of two coplanar vectors.
7.2	VECTORS	Use position vectors.
7.3	VECTORS	Calculate the magnitude of a vector

WEEK	TOPIC	TOPIC DETAILS
8.1	TRANSFORMATION	Describe a translation by using a vector
8.2	TRANSFORMATION	Reflect simple plane figures.
8.3	TRANSFORMATION	Rotate simple plane figures through multiples of 90° .
9.1	TRANSFORMATION	Construct given translations and enlargements of simple plane figures.
9.2	TRANSFORMATION	Recognise and describe reflections, rotations, translations and enlargements.
10.1	GRAPHS OF FUNCTIONS	Construct tables of values for functions of the form $ax + b$, $\pm x^2 + ax + b$, x/a ($x \neq 0$), where a and b are integer constants.
10.2	GRAPHS OF FUNCTIONS	Draw and interpret these graphs.
10.3	GRAPHS OF FUNCTIONS	Solve linear and quadratic equations approximately, including finding and interpreting roots by graphical methods.
10.4	GRAPHS OF FUNCTIONS	Recognise, sketch and interpret graphs of Functions
11.1	GRAPHS OF FUNCTIONS	Construct tables of values and draw graphs for functions of the form ax^n (and simple sums of these) and functions of the form $abx + c$. Solve associated equations approximately, including finding and interpreting roots by graphical methods.
11.2	GRAPHS OF FUNCTIONS	Draw and interpret graphs representing exponential growth and decay problems. Recognise, sketch and interpret graphs of functions.
11.3	GRAPHS OF FUNCTIONS	Find turning points of quadratics by completing the square Knowledge of turning points and asymptotes is Required Estimate gradients of curves by drawing tangents
12.1	DIFFERENTIATION	Understand the idea of a derived function.
12.2	DIFFERENTIATION	Use the derivatives of functions of the form ax^n , and simple sums of not more than three of these.
12.3	DIFFERENTIATION	Apply differentiation to gradients and turning points (stationary points).
12.4	DIFFERENTIATION	Discriminate between maxima and minima by any method

EXTENDED MATHEMATICS SCHEME OF WORK

FORM 5 - TERM 2

WEEK	TOPIC	TOPIC DETAILS
1.1	STATISTICS	Collect, classify and tabulate statistical data.
1.2	STATISTICS	Read, interpret and draw inferences from tables and statistical diagrams.
1.3	STATISTICS	Compare sets of data using tables, graphs and statistical measures.
1.4	STATISTICS	Appreciate restrictions on drawing conclusions from given data.
2.1	STATISTICS	Construct and interpret bar charts, pie charts, pictograms, stem-and-leaf diagrams, simple frequency distributions, histograms with equal and unequal intervals
2.2	STATISTICS	Construct and use cumulative frequency diagrams.
2.3	STATISTICS	Estimate and interpret the median, percentiles, quartiles and interquartile range.
2.4	STATISTICS	Construct and interpret box-and-whisker plots.
3.1	CORRELATION	Scatter diagrams
3.2	CORRELATION	Understand what is meant by positive, negative and zero correlation with reference to a scatter diagram.
3.3	CORRELATION	Draw, interpret and use lines of best fit by eye
4.1	SEQUENCE & PATTERNS	Continue a given number sequence.
4.2	SEQUENCE & PATTERNS	Recognise patterns in sequences including the term to term rule and relationships between different sequences.
4.3	SEQUENCE & PATTERNS	Find and use the nth term of sequences. Linear, quadratic, cubic and exponential sequences and simple combinations of these

WEEK	TOPIC	TOPIC DETAILS
5.1	GENERAL REVISION	PAST PAPERS

EXTENDED MATHEMATICS SCHEME OF WORK

FORM 5 - TERM 3

WEEK	TOPIC	TOPIC DETAILS
-------------	--------------	----------------------