

# MARINA INTERNATIONAL SCHOOL

## MATHEMATICS SCHEME OF WORK

### FORM 1 - TERM 1

WEEK	TOPIC	TOPIC DETAILS
1.1	Place value and ordering	Consolidate the rapid recall of number facts, including positive integer compliments to 100
1.2	Place value and ordering	multiplication facts to $10 \times 10$ and associated division facts. Interpret decimal notation and place value
1.3	Place value and ordering	multiply and divide whole numbers and decimals by 10, 100 or 1000.
1.4	Place value and ordering	Order decimal including measurements, changing these to the same units
2.1	Rounding	Round whole numbers to the nearest 10, 100 or 1000
2.2	Rounding	Round decimals including measurements to the nearest whole number or 1 decimal place.
3.1	Multiplication and Divisibility rule	Use known facts and place value to multiply and divide two-digit numbers by a single digit number, e.g. $45 \times 6$ , $96 \div 6$ .
3.2	Multiplication rule	Use known facts, place value to multiply simple decimals by one-digit numbers e.g. $0.8 \times 6$
3.3	Divisibility rule	Know and apply tests of divisibility by 2, 3, 5, 6, 8, 9, 10 and 100
4.1	Fractions, decimals and percentages	Recognized the equivalence of simple fractions, decimals and percentages.
4.2	Fractions, decimals and percentages	Simplify fractions by cancelling common factors
4.3	Fractions, decimals and percentages	Identify equivalent fractions
4.4	Fractions, decimals and percentages	Change an improper fraction to a mixed number, and vice versa. Convert terminating decimals to fractions e.g. $0.23 = 23 \div 100$

WEEK	TOPIC	TOPIC DETAILS
5.1	Fractions	Compare two fractions by using diagrams,
5.2	Fractions	Compare two fractions by using a calculator to convert the fractions to decimals, e.g. $\frac{3}{5}$ and $\frac{13}{20}$
6.1	Directed number	Recognize negative numbers as positions on a number line,
6.2	Directed number	Add and subtract positive and negative numbers in context.
7.1	Expressions	Choose suitable units of measurement to estimate, measure, calculate and solve problems in everyday contexts.
7.2	Expressions	Use letters to represent unknown numbers or variables
7.3	Expressions	know the meanings of the words term, expression and equation.
7.4	Expressions	Know that algebraic operations follow the same order as arithmetic operations.
8.1	Expressions	Construct simple algebraic expressions by using letters to represent numbers.
8.2	Expressions	Simplify linear expressions e.g. collect like terms; multiply a constant over a bracket.
9.1	Sequences	Generate terms of an integer sequence
9.2	Sequences	Find a term given its position in the sequence Find simple term-to-term rules.
9.3	Sequences	Generate sequences from special patterns
9.4	Sequences	Describe the general term in simple cases.
10.1	Two-dimensional shapes	Identify 2D shapes in different orientations Describe 2D shapes in different orientations
10.2	Two-dimensional shapes	Visualize 2D shapes in different orientations Draw 2D shapes in different orientations.
10.3	Labelling of shapes, points, lines and angles	Use the notation and labelling conventions for points Use the notation and labelling conventions for lines,
10.4	Labelling of shapes, points, lines and angles	Use the notation and labelling conventions for angles Use the notation and labelling conventions for shapes
11.1	Triangle, Quadrilateral and polygon	Name and identify sides of special quadrilaterals and triangles and regular polygons with 5,6 and 8 sides

<b>WEEK</b>	<b>TOPIC</b>	<b>TOPIC DETAILS</b>
11.2	Triangle, Quadrilateral and polygon	Name and identify angles of special quadrilaterals and triangles and regular polygons with 5,6 and 8 sides
11.3	Triangle, Quadrilateral and polygon	Name and identify symmetry properties of special quadrilaterals and triangles, and regular polygons with 5, 6 and 8 sides.
12.1	Estimating angles	Estimate the size of acute angles to the nearest 10 degrees.
12.2	Estimating angles	Estimate the size of obtuse angles to the nearest 10 degrees.
12.3	Estimating angles	Estimate the size of reflex angles to the nearest 10 degrees.
13.1	Data collection and organisation	Decide which data would be relevant to an inquiry and collect and organise the data.
13.2	Data collection and organisation	Design and use a data collection sheet
13.3	Data collection and organisation	Design and use a questionnaire for a simple survey.
14.1	Probability	Use the language of probability to describe and interpret results involving likelihood and chance.
14.2	Probability	Understand and use the probability scale from 0 to 1.
14.3	Probability	Find probabilities based on equally likely outcomes in simple contexts.

# MATHEMATICS SCHEME OF WORK

## FORM 1 - TERM 2

WEEK	TOPIC	TOPIC DETAILS
1.1	Time	Know the relationships between units of time Understand and use the 12-hour and 24-hour clock systems
1.2	Time	Interpreting timetables Calculate time intervals
1.3	Factors and multiples	Recognize multiples, factors, common factors, primes (all less than 100) making use of simple tests of divisibility Find the lowest common multiple in simple cases
1.4	Factors and multiples	Use the "sieve" for generating primes developed by Eratosthenes
2.1	Square and square root	Recognize squares of whole numbers to at least 20 x 20 Recognize the corresponding square roots Use the notation $7^2$ and $\sqrt{49}$ .
2.2	Fractions	Add and subtract two simple fractions e.g. $\frac{1}{8} + \frac{9}{8}$ , $\frac{11}{12} - \frac{5}{8}$ Find fractions of quantities (whole number answers) Multiply a fraction by an integer.
2.3	Percentages	Understand percentages as the number of parts in every 100 Use fractions and percentages to describe parts of shapes, quantities and measures.
3.1	Fraction and percentage of quantities	Calculate simple fractions of quantities, e.g. one quarter of 64, 20% of 50kg. Calculate percentages of quantities, e.g. one quarter of 64, 20% of 50kg.
3.2	Bodmas	Use the laws of arithmetic and inverse operations to simplify calculations with whole numbers Use the laws of arithmetic and inverse operations to simplify calculations with decimals.
3.3	Rounding	Know when to round up or down after division when context requires a whole number answer.

<b>WEEK</b>	<b>TOPIC</b>	<b>TOPIC DETAILS</b>
4.1	Reading scales	Read the scales on a range of analogue and digital measuring instruments.
4.2	Reading scales	Know the abbreviations for square metres (m <sup>2</sup> ) square centimetres (cm <sup>2</sup> ) and square millimeters (mm <sup>2</sup> ).
4.3	Reading scales	know the relationships between square metres (m <sup>2</sup> ) square centimetres (cm <sup>2</sup> ) and square millimeters (mm <sup>2</sup> ).
5.1	Formulae	Derive and use simple formulae e.g. to change hours to minutes.
5.2	Substitution	Substitute positive integers into simple linear expressions/formulae
5.3	Functions	Represent simple functions using words, symbols and mappings.
6.1	Graph of linear function	Generate coordinate pairs that satisfy a linear equation, where y is given explicitly in terms of x,
6.2	Graph of linear function	Plot the corresponding graphs
6.3	Graph of linear function	Recognise straight-line graphs parallel to the x- or y- axis.
7.1	Area and Perimeter	Derive and use formulae for the area and perimeter of a rectangle
7.2	Area and Perimeter	Calculate the perimeter and area of compound shapes made from rectangles.
8.1	Metric unit conversion	Know and use abbreviations for and relationships between metric units; Kilo-centi-milli-
8.2	Metric unit conversion	Converting between; Kilometres Km, metres m, centimetres cm, millimetres mm;
8.3	Metric unit conversion	Converting between Tonnes t, kilograms km, and grams g
8.4	Metric unit conversion	Converting between Litres l, and millilitres ml.
9.1	Angles	Start to recognise the angular connections between parallel lines, perpendicular lines and transversals
9.2	Angles	Calculate the sum of angles at a point, Calculate the sum of angles on a straight line
9.3	Angles	Calculate the sum of angles in a triangle Prove that vertically opposite angles are equal

<b>WEEK</b>	<b>TOPIC</b>	<b>TOPIC DETAILS</b>
9.4	Angles	Derive and use the property that the angle sum of a quadrilateral is 360o.
10.1	Symmetry	Recognise line of symmetry in two-dimensional shapes and patterns
10.2	Symmetry	Recognise rotation symmetry in two-dimensional shapes and patterns
10.3	Symmetry	Draw lines of symmetry and complete patterns with two lines of symmetry
10.4	Symmetry	Identify the order of rotational symmetry
11.1	Averages	Find the mode (or modal class for grouped data), median and range. Calculate the mean including from a simple frequency table.
11.2	Presentation of data	Draw and interpret bar line graphs Draw and interpret and bar charts,
11.3	Presentation of data	Draw and interpret frequency diagrams for grouped discrete data,
11.4	Presentation of data	Draw and interpret simple pie charts, Draw and interpret pictograms.
12.1	Probability	Identify all the possible mutually exclusive outcomes of a single event.
12.2	Probability	Use experimental data to estimate probabilities.
12.3	Probability	Compare experimental and theoretical probabilities in simple contexts

# MATHEMATICS SCHEME OF WORK

## FORM 1 - TERM 3

WEEK	TOPIC	TOPIC DETAILS
1.1	Bodmas	Use the order of operations, including brackets, to work out simple calculations
1.2	Addition and Subtraction	Add and subtract integers and decimals, including numbers with different numbers of decimal places
1.3	Multiplication and Division	Multiply decimals with one and/or two places by single digit numbers, e.g. $13.7 \times 8$ , $4.35 \div 5$ . Divide decimals with one and/or two places by single digit numbers, e.g. $13.7 \times 8$ , $4.35 \div 5$ .
2.1	Fraction	Know that in any division where the dividend is not a multiple of the divisor; there will be a remainder, e.g. $157 \div 25 = 6$ remainder 7. The remainder can be expressed as a fraction of the divisor e.g. $157 \div 25 = 6 \frac{7}{25}$
3.1	Percentages	Calculate simple percentages of quantities (whole number answers)
3.2	Percentages	Express a smaller quantity as a fraction or percentage of a larger one.
3.3	Percentages	Use percentages to represent and compare different quantities.
4.1	Ratio	Use ratio notation, Simplify ratios
4.2	Ratio	Divide a quantity into two parts in a given ratio.
4.3	Proportion	Recognise the relationship between ratio and proportion. Use direct proportion in context
4.4	Proportion	Solve simple problems involving ratio and direct proportion
5.1	Fraction	Compare two fractions by using diagrams, Compare two fractions by using a calculator to convert the fractions to decimals, e.g. $\frac{3}{5}$ and $\frac{13}{20}$

<b>WEEK</b>	<b>TOPIC</b>	<b>TOPIC DETAILS</b>
5.2	Volumes of Cuboids	Derive and use formula for the volume of a cuboid Calculate volumes of cuboids.
6.1	Area of Cubes and Cuboid	Calculate the area of cubes from their nets
6.2	Area of Cubes and Cuboid	Calculate the area of cuboids from their nets.
7.1	Coordinates	Read coordinates of points determined by geometrical information in all four quadrants.
7.2	Coordinates	Plot coordinates of points determined by geometrical information in all four quadrants.
8.1	Travel Graphs	Draw graphs in real life context involving more than one stage e.g. travel graphs.
8.2	Travel Graphs	Interpret graphs in real life context involving more than one stage e.g. travel graphs.
9.1	Frequency Table	Construct frequency tables to gather discrete data, grouped where appropriate in equal class intervals.
9.2	Frequency Table	Use frequency tables to gather discrete data, grouped where appropriate in equal class intervals.
9.3	Frequency Table	Draw conclusions based on the shape of graphs and simple statistics.
9.4	Comparing Distribution	Compare two simple distributions using the range and the mode, Compare two simple distributions using the median or mean.
10.1	Transformation	Transform two-dimensional shapes by:
10.2	Transformation	Reflection in a given line,
10.3	Transformation	Rotation about a given point,
10.4	Transformation	Translation.
11.1	Geometrical problems	Solve simple geometrical problems by using side and angle properties to identify equal lengths and explain reasoning
11.2	Geometrical problems	Solve simple geometrical problems by using side and angle to calculate unknown angles and explain reasoning.

<b>WEEK</b>	<b>TOPIC</b>	<b>TOPIC DETAILS</b>
11.3	Properties of Solid	Recognise common solids and some of their properties, e.g. the number of faces, edges and vertices.
11.4	Properties of Solid	Describe common solids and some of their properties, e.g. the number of faces, edges and vertices.
12.1	Measurement	Use a ruler, setsquare and protractor to: <input type="checkbox"/> Measure and draw straight lines to the nearest millimetre. <input type="checkbox"/> Measure and draw acute, obtuse and reflex angles to the nearest degree.
12.2	Construction	Draw parallel and perpendicular lines. Construct a triangle given two sides and the included angle (SAS). Construct squares and rectangles. Construct regular polygons, given a side and internal angle.