

**ST MARY'S COLLEGE**  
**FORM ONE COURSE OUTLINE**  
**MATHEMATICS**

**Term 1**

Proposed Date/Week	Unit/Section	Topic	Modules
1	1	<u>Arithmetic: Place Value</u>	Definition of number types and the relation to each other Place value for integers Number in words and vice versa Rounding to nearest 10, 100, 1000. Rounding in context Vocabulary: sum, difference Estimating measurement, length, weight, time reasonable answers in calculations
-	.	Place value and rounding	
		Addition and subtraction of whole numbers Estimation	Vocabulary: product Operation properties Commutative, associative and distributive laws Mental calculation
	2	Multiplication and division of whole numbers	Problems in context
		Problems involving operations	
2-3		<u>Directed numbers; Negative numbers</u>	Concept of negative number Use of number line for reference Brackets in calculation Number sequences
		Addition and subtraction	
		Multiplication and division	Basic calculations Two way table rules for justification
4	4	<u>Factors and Indices</u>	
		Factors and prime numbers	Multiplication and division facts Definition of prime number Simple test for divisibility i.e. 2, 3, 5, 10 Definition of prime factor Factor trees
		Prime factors	Express any number as a product of its prime factors Laws of indices not included
		Index notation	Finding HCF and LCM by observation and listing all prime factors
		Highest common multiple	Definition of composite number

5 -		(HCF) Lowest common multiple (LCM)  Composite number <u>Number Patterns and Sequences</u> Pictorial logic patterns  Multiples  Find the next term  Generating number sequence  Extended number Sequence	Simple patterns but with several variations Multiples of whole numbers Identify the pattern e.g. constant difference Describe in words a formulae to generate a number sequence Using a formulae to generate a number sequence.  Special sequences: triangular, square, cubic numbers Fibonacci sequence Sequence with geometrical shapes  Magic squares
Proposed Date/Week	Unit/Section	Topic	Modules
6-8	3	<u>Logic</u>  Logic puzzles  Set and Venn diagrams  Set notation	Identifying properties of sets Listing <b>elements</b> of a set Illustrating set in Venn Diagrams Finding the intersection and union of two sets and the complement of set Universal set Intersection Union Compliment Subset Empty set Number of members in a set
9-11 -	11	<u>Introduction to Geometry</u>  Geometric vocabulary  Classifying angles  Measuring angles  Constructing angles	Point, line, line segment, ray, angle, plane Acute, obtuse, reflex, right angle  Using a protractor  Using a protractor and ruler

## Term 2

Proposed Date/Week	Unit/Section	Topic	Modules
1-2 -	19	<u>Algebra : Linear Equations</u> Fundamental algebra skills	Simple coding and decoding  Simple substitution into expressions (no transformation of formulae)  Formulae into words and algebra (converting simple worded problems using algebra formulae)  Substituting into formulae with brackets (BODMAS)  Decoding output for a given input  Decoding input for a given output
3-4		<u>Function machine</u>	Solving equations unknown on one side  Worded problems leading to linear equations
		<u>Linear equations</u>	
5  6-7  8		<u>Further Geometry</u> Angles on a line and angles on a point  Constructing triangles  Finding angles in a triangle	Angle around a complete circle $360^\circ$  Angles round a point on a straight line $180^\circ$ Right angle triangle $90^\circ$ Complementary angles Supplementary angles Vertically opposite angles  Proper use of compass Given side and two angles Given all 3 sides  Sum of interior angles $180^\circ$  Classifying angles Isosceles, scalene, equilateral, right angle.

Proposed Date/Week	Unit/Section	Topic	Modules
9-10	5	<u>Arithmetic : Fractions</u> Fractions  Equivalent fractions  Fractions of quantities Mixed numbers and vulgar fractions  Addition and Subtraction	Numbers of the form $a/b$ ( $b \neq 0$ ) Identifying fractions Representing fractions  Diagrammatic representation of equivalent fractions Mental practice Ordering fractions  Numerically and in context Converting from mixed to improper Converting from improper to mixed Same denominator Different denominator  Mixed numbers Problems in context  Integer $\times$ fraction  Fraction $\times$ fraction  Mixed number $\times$ mixed number
	6	Multiplying fractions   Dividing fractions  Ratio and proportion	Problems in context  Fraction $\div$ integer integer $\div$ fraction Fraction $\div$ fraction  Problems in context  Problems in context
11		<u>Arithmetic: Decimals</u>	Converting fractions to decimal. Place value  Ordering decimal numbers Rounding off to the prescribed decimal place
12		<u>Relations and Functions</u>  Relation	Definition of relation and functions  Mapping and arrow diagrams Ordered pairs Tables Relation between all concepts

### Term 3

Proposed Date/Week	Unit/Section	Topic	Modules
1-3  4		Coordinates   Polygon	Plotting points in the four quadrants  Definition of a Polygon. Identify the characteristics of a polygon Regular (up to and including a decagon) and irregular polygon  Plotting polygons
5-7		Perimeter  Area  Area of rectangle and triangle  Area of compound shape	Definition of the perimeter of a shape Counting squares Estimation by squares Units needed including conversion between metric systems  Defining a compound shape  Finding area of compound shape by
8-9		Angles	Parallel and intersecting lines
10-11		Data collection and presentation  Collection of data	Types of Data   Using suitable data collection sheet: tally chart  Illustration of data: Pictogram Bar chart Pie chart