St. Mary's College

Form 3

Subject- Mathematics

Course Outline: 2014-2015

TERM 1

Proposed Date /Week	Unit Section / Chapter	Topic	Modules
1-2	1 and 2	Review number concepts	Mental and written work Addition subtraction multiplication division with whole numbers, directed numbers , decimal and fractions. Standard form
3-4	4 3	Equations Formulae Inequalities	Substitution replacing variables with values (positive and negative) in formulae Change the subject of formulae Deriving formulae from problems in context Linear equation Review solving algebraic equations with more than one operation Review simplifying algebraic expression and equations Using number lines to find illustrate solutions Solving linear inequalities of the form $ax + b > c$
5		Calculator use	Use and understanding calculator display
6-7	24	Pythagoras Theorem	Calculating the length of hypotenuse Calculating the length of other sides Problem in context
8-10	25	Trigonometry	Sine, cosine and tangent ratios Definition of right angled triangle common values Trigonometric functions Calculating sides Calculating angle Angles of elevation and depression
11	21	Basic Arithmetic	Binary numbers Adding and subtracting binary numbers Multiplying binary numbers Other base numbers

TERM 2

Proposed Date /Week	Unit Section / Chapter	Topic	Modules
1-2	20	Polygons	Angle facts Definition of a polygon Angle properties of a polygon Symmetry Quadrilaterals
3-4	25	Sets Set notation Logic problems and Venn diagram	Review identifying properties of sets Illustrating set in Venn diagrams Finding intersection, union and complement of two and three sets Review set notation Universal Intersection, union Compliment Subset Empty set Number of elements in a set Solving with 2 and 3 subset using Venn diagram
5	26	Functions and Relations	Definition of relation and function Types of relations Function notation Finding domain and range of a function Inverse of a function
6-10	13 14	Algebraic Manipulation Algebraic products Algebraic factors	Multiplying brackets by a single term Multiplying two brackets Perfect square Difference between two squares Single term factorization Finding common factors Factorizing quadratic expressions Factorizing difference between two squares Solving problems in context

TERM 3

Proposed Date /Week	Unit Section / Chapter	Topic	Modules
1-3	6	Simultaneous Equations	Solving linear simultaneous equations Solutions by elimination Multiplication of equation by a factor before elimination Solutions by substitution Graphical solutions
4-5	11 Resource	Area, volume and perimeter 2-D shapes Area of special shapes Perimeter of special shapes Surface area and Volume of 3D shapes	Review common shapes names and properties of 2D shapes Area of square, rectangle, triangle, circle, parallelogram, trapezium and compound shapes Finding the perimeter of the shapes above. Using an algebraic formulae Recap common 3-d shapes cube, cuboids, cylinder, prism Volume and surface area of these shapes
6-7		Similarity Enlargement Similar shapes Line, Area and Volume Ratio Congruency	Recognize enlarged shapes Line ratio Calculation of unknown lengths Implication of parallel lines Area ratio = (line ratio)^2 Volume ratio = (line ratio)^3 Definition for congruent shapes. Conditions for triangles to be congruent SSS, SAS, AAS, RHS.
7-10	18	Algebraic Fractions	Simplification of fractions Factorizing numerator and denominator Multiplication and division by algebraic expressions Addition and subtraction of algebraic fractions Solving simple algebraic fraction equations(equations that do not result into a quadratic equation)