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|  | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| Year 7 | Sequences  Algebraic Notation  Equality and Equivalence | Place Value  Integers & Decimals  Fractions, Decimals and Percentages | Addition & Subtraction Problems  Solving Problems with Multiplication and Division  Fractions & Percentages of Amounts | Four Operations with Directed Numbers  Addition & Subtraction with Fractions | Constructing, measuring and using geometric progression  Developing Geometric reasoning | Developing Number Sense  Sets and Probability  Prime Numbers and Proof |
| **Catholic Social Teaching** | Care for God’s creation  Dignity of work and participation  Solidarity | Dignity of work and participation  The common good | Common good  Care for God’s creation  Dignity of work and participation | Solidarity  The option for the poor and vulnerable  Care for God’s creation | Care for God’s creation | The common good  Dignity  Solidarity |
| Year 8 | Ratio and Scale  Multiplicative change  Multiplying and dividing fractions | Working in the Cartesian plane  Representing data  Tables and probability | Brackets, equations and inequalities  Sequences  Indices | Fractions and percentages  Standard Index Form  Number sense | Angles in parallel lines and polygons  Area of trapezia and circles  Line symmetry and reflection | The data handling cycle  Measures of Location |
| **Catholic Social Teaching** | Option for the poor and vulnerable  Dignity of work and participation  Solidarity | Option for the poor and vulnerable | The common good  Care for God’s creation  Solidarity | Option for the poor and vulnerable  Care for God’s creation  Dignity of work and participation | Care for God’s creation  Solidarity | Solidarity |
| Year 9 | Straight Line Graphs  Forming and solving equations  Testing Conjectures | Three dimensional shapes  Construction and congruency | Numbers  Using Percentages  Maths and money | Deduction  Rotation and translation  Pythagoras’ Theorem | Enlargement and similarity  Solving ration and proportional problems  Rates | Probability  Algebraic Representation |
| **Catholic Social Teaching** | Option for the poor and vulnerable  The common good | Option for the poor and vulnerable  Care for God’s creation | Common good  Dignity  Option for the poor and vulnerable | Solidarity  Care for God’s creation | Solidarity  Option for the poor and vulnerable  Care for God’s creation | Solidarity  Option for the poor and vulnerable |
| Year 10 | **Higher**  Basic Calculation Skills  Whole Number Theory  Algebraic Expressions  Functions & Sequences  Properties of shapes & solids  Construction & Loci  Further Algebraic Expressions | **Higher**  Equations  Angles  Fractions | **Higher**  Decimals  Units of Measurements  Percentages  Algebraic Formulae | **Higher**  Perimeter  Area  Approximation & Estimates  Straight Line Graphs  Graphs of Equations & Functions | **Higher**  Three Dimensional Shapes  Volume & Surface Area  Calculations with ratio  Basic probability and experiments  Combined events and probability diagrams  Powers & Roots  Standard Form | **Higher**  Surds  Plane Vector Geometry  Revision & Recap of Yr10 |
| **Foundation**  Basic Calculation Skills  Whole Number Theory  Algebraic Expressions  Functions & Sequences | **Foundation**  Properties of shapes & solids  Construction & Loci  Further Algebraic Expressions | **Foundation**  Equations  Angles  Fractions | **Foundation**  Decimals  Units of Measurement  Percentages  Algebraic Formulae | **Foundation**  Perimeter  Area  Approximation & Estimation  Straight Line Graphs | **Foundation**  Graphs of Equations & Functions  Three dimensional shapes  Volume & Surface Area |
| **Catholic Social Teaching** | Dignity of work and participation  Solidarity  Care for God’s creation | Solidarity  Care for God’s creation  Option for the poor and vulnerable | Dignity of work and participation  Option for the poor and vulnerable | Solidarity  Option for the poor and vulnerable  Common good | Dignity  Care for God’s creation  Option for the poor and vulnerable | Option for the poor and vulnerable  Care for God’s creation |
| Year 11  (2022) | **Higher**  Plane Isometric Transformations  Congruent Triangles  Similarity  Pythagoras’ Theorem | **Higher**  Trigonometry  Circle Theorems | **Higher**  Discrete growth and decay  Direct and Inverse proportion  Collecting and Displaying Data  Analysing Data | **Higher**  Interpreting Graphs  Algebraic Inequalities  Transformations of curves and their equations. | Past Paper Revision  Study Leave  GCSE Exams | |
| **Foundation**  Calculations with ratio  Basic Probability & Experiments  Combined events and Probability diagrams  Powers & Roots  Standard Form  Plane vector Geometry | **Foundation**  Plane Isometric Transformations  Congruent Triangles  Similarity | **Foundation**  Pythagoras’ Theorem  Trigonometry  Discrete growth and decay  Direct and Inverse proportion | **Foundation**  Collecting and Displaying Data  Analysing Data  Interpreting Graphs  Algebraic Inequalities |
| **Catholic Social Teaching** | Care for God’s creation  Dignity  Option for the poor and vulnerable | Care for God’s creation  Dignity  Solidarity | Option for the poor and vulnerable  Care for God’s creation | Dignity of work and participation  Option for the poor and vulnerable. |

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|  | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| Year 12 | Basic algebraic  manipulation, indices and  surds (3)  **Binomial expansion (4)**  **Quantities and units in**  **mechanics**  Introduction to  mathematical modelling  and standard S.I units of  length, time and mass.  Definitions of force,  velocity, speed,  acceleration, weight and  displacement. Vector and  scalar quantities (3)  Simultaneous equations –  linear and quadratic.  Graphs  (Cubic, **Quartic** Reciprocal)  (3)  Quadratic functions –  factorising, solving, graphs  and the **discriminant (3)**  Statistics  **Large data set**  **Measures of location**  **Coding**  **Statistical distributions (4)**  Vectors  Definitions,  magnitude/direction,  addition & scalar multi. (2) | **Differentiation**  **Definition**  **Differentiating polynomials**  **Second derivatives**  **Gradients**  **Tangents**  **Normals**  **Maxima and minima (6)**  Coordinate geometry in the  (x, y) plane.  **Straight line**  Parallel/perpendicular  Length and area problems  Circles  **Equation of a circle**  **Geometric problems on a**  **grid (4)**  Vectors  Position vectors  Distance between two points  Geometric problems (3)  **Algebraic division**  **Factor theorem**  **Proof (4)** | Mechanics: kinematics 1  Graphical representation of  velocity, acceleration and  displacement  **Motion in a straight line under**  **constant acceleration; suvat**  **formulae, vertical motion**  **under gravity (4)**  **Integration**  **Definition as opposite of**  **differentiation, indefinite**  **integrals of**  **Definite integrals and areas**  **under curves (4)**  Statistics  Probability: mutually exclusive  events; independent events  **Hypothesis testing; language;**  **significance levels; hypothesis**  **tests involving the binomial**  **distribution (4)**  Transformations  Transforming graph  F(x) notation (4) | **Integration**  **Definition as opposite of**  **differentiation, indefinite**  **integrals of**  **Definite integrals and areas**  **under curves (8)**  **Forces and Newton’s laws**  **Newton’s first law, force**  **diagrams, equilibrium,**  **introductions to 𝒊, 𝒋 system.**  **Newton’s 2nd law, connected**  **particles; Newton’s 3rd law:**  **equilibrium, problems involving**  **smooth pulleys (8)**  Inequalities  Linear and quadratic including  graphical solutions (4)  Trigonometry  Trig ratios and graphs (8) | **Trigonometric identities**  **and equations (10)**  Mechanics  **Variable force**  **Calculus to determine**  **rates of change for**  **kinematics**  **Use of integration for**  **kinematics problems (4)**  **Exponentials and**  **logarithms**  **Exponential functions and**  **natural logarithms (10)**  Statistics  Interpretation of diagrams,  including scatter graphs  **Regression lines**  **Recognise and interpret**  **outliers**  **Draw conclusions from**  **statistical problems (3)** | **Year 2 – Series and**  **sequences**  **Arithmetic and geometric**  **progressions**  **Sigma notation**  **Recurrence and iterations**  **(5)**  Year 2 - Simplifying  algebraic fractions  Partial fractions (5)  Year 12 catch up (2)  **Year 2 – Numerical**  **methods**  **Location of roots**  **Solving by iterative**  **methods**  **Newton-Raphson method**  **(5)** |
| **Catholic Social Teaching** | Solidarity | Dignity | Care for God’s creation | Dignity | Dignity in work and participation | Care for God’s creation |
| Year 13 | Trigonometry  Radians, arcs and sectors  Small angles (5)  Trigonometry  Secant, cosecant, cotangent  Inverse trig functions  Compound and double  angle formulae  R cos (x ± 𝛼) or R sin  (x ± 𝛼)  Proving trig identities (15)  Vectors  Use of vectors in 3  dimensions  Knowledge of column  vectors and **i, j** and unit  vectors (4) | Parametric equations (4)  Differentiation  Differentiating sin x and cos x  from first principles  Differentiating exponentials  and logarithms  Differentiating products,  quotients, implicit and  parametric functions  Second derivatives  Rates of change problems  (16)  Proof  Including proof by deduction  and proof by contradiction  (3)  Transformations  Modelling with  transformations (4)  Modulus function  Composite and inverse  functions (4) | The Normal distribution  Understand and use the  Normal distribution  Use the Normal distribution as  an approximation to the  binomial distribution  Select the appropriate  Distribution  Statistical hypothesis testing for  the mean of the Normal  distribution (14)  Integration  Integrating  (Including when  x = -1), exponentials and  trigonometric functions (4)  Forces – resolving forces  Further kinematics  Constant acceleration  (Equations of motion in 2D; the  **i, j** system)  Applications of kinematics –  projectiles (10) | Integration  Using the reverse of  differentiation and trigonometric  identities  Integration by substitution  Integration by parts  Use of partial fractions  Areas under graphs or between  two curves  The trapezium rule  Differential equations (22)  Forces at any angle; Friction  forces including the coefficient of  friction  Application of forces: equilibrium  and statics of a particle, dynamics  of a particle (9) | Probability  Using set notation  Assumptions  Regression and correlation  Change of variable  Correlation coefficients  Statistical hypothesis  testing for zero correlation  (10)  Further kinematics: variable  acceleration and use of  calculus  Moments  Application of forces (4)  The Binomial theorem  Expanding (a + bxfor  rational n; knowledge of  range of validity  Expansion of functions  using partial fractions. |  |
| **Catholic Social Teaching** | Solidarity | Care for God’s creation | Dignity | Dignity of work and participation | Solidarity |  |