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|  | **Autumn 1**  | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| Year 7 | SequencesAlgebraic NotationEquality and Equivalence | Place ValueIntegers & DecimalsFractions, Decimals and Percentages | Addition & Subtraction ProblemsSolving Problems with Multiplication and DivisionFractions & Percentages of Amounts | Four Operations with Directed NumbersAddition & Subtraction with Fractions | Constructing, measuring and using geometric progressionDeveloping Geometric reasoning | Developing Number SenseSets and ProbabilityPrime Numbers and Proof |
| **Catholic Social Teaching** | Care for God’s creationDignity of work and participation Solidarity  | Dignity of work and participation The common good | Common goodCare 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 ScaleMultiplicative changeMultiplying and dividing fractions | Working in the Cartesian planeRepresenting dataTables and probability | Brackets, equations and inequalitiesSequencesIndices | Fractions and percentagesStandard Index FormNumber sense | Angles in parallel lines and polygonsArea of trapezia and circlesLine symmetry and reflection | The data handling cycleMeasures 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 creationDignity of work and participation  | Care for God’s creationSolidarity   | Solidarity  |
| Year 9 | Straight Line GraphsForming and solving equationsTesting Conjectures | Three dimensional shapesConstruction and congruency | NumbersUsing PercentagesMaths and money | DeductionRotation and translationPythagoras’ Theorem | Enlargement and similaritySolving ration and proportional problemsRates | ProbabilityAlgebraic 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 SkillsWhole Number TheoryAlgebraic ExpressionsFunctions & SequencesProperties of shapes & solidsConstruction & LociFurther Algebraic Expressions | **Higher**EquationsAnglesFractions | **Higher**DecimalsUnits of MeasurementsPercentagesAlgebraic Formulae | **Higher**PerimeterAreaApproximation & EstimatesStraight Line GraphsGraphs of Equations & Functions | **Higher**Three Dimensional ShapesVolume & Surface AreaCalculations with ratioBasic probability and experimentsCombined events and probability diagramsPowers & RootsStandard Form | **Higher**SurdsPlane Vector GeometryRevision & Recap of Yr10 |
| **Foundation**Basic Calculation SkillsWhole Number TheoryAlgebraic ExpressionsFunctions & Sequences | **Foundation**Properties of shapes & solidsConstruction & LociFurther Algebraic Expressions | **Foundation**EquationsAnglesFractions | **Foundation**DecimalsUnits of MeasurementPercentagesAlgebraic Formulae | **Foundation**PerimeterAreaApproximation & EstimationStraight Line Graphs | **Foundation**Graphs of Equations & FunctionsThree dimensional shapesVolume & 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 | DignityCare for God’s creationOption for the poor and vulnerable | Option for the poor and vulnerable Care for God’s creation  |
| Year 11(2022) | **Higher**Plane Isometric TransformationsCongruent TrianglesSimilarityPythagoras’ Theorem | **Higher**TrigonometryCircle Theorems | **Higher**Discrete growth and decayDirect and Inverse proportionCollecting and Displaying DataAnalysing Data | **Higher**Interpreting GraphsAlgebraic InequalitiesTransformations of curves and their equations. | Past Paper RevisionStudy LeaveGCSE Exams |
| **Foundation**Calculations with ratioBasic Probability & ExperimentsCombined events and Probability diagramsPowers & RootsStandard FormPlane vector Geometry | **Foundation**Plane Isometric TransformationsCongruent TrianglesSimilarity | **Foundation**Pythagoras’ TheoremTrigonometryDiscrete growth and decayDirect and Inverse proportion | **Foundation**Collecting and Displaying DataAnalysing DataInterpreting GraphsAlgebraic 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)**VectorsDefinitions, 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/perpendicularLength and area problemsCircles**Equation of a circle****Geometric problems on a** **grid (4)**VectorsPosition vectorsDistance between two pointsGeometric problems (3)**Algebraic division****Factor theorem****Proof (4)** | Mechanics: kinematics 1Graphical 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** $x^{n}$**Definite integrals and areas** **under curves (4)**StatisticsProbability: 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** $x^{n}$**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)** InequalitiesLinear and quadratic including graphical solutions (4)TrigonometryTrig 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)**StatisticsInterpretation 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 fractionsPartial 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 | TrigonometryRadians, arcs and sectorsSmall angles (5)TrigonometrySecant, cosecant, cotangentInverse trig functionsCompound and double angle formulaeR cos (x ± 𝛼) or R sin (x ± 𝛼)Proving trig identities (15)VectorsUse of vectors in 3 dimensionsKnowledge of column vectors and **i, j** and unit vectors (4) | Parametric equations (4)DifferentiationDifferentiating sin x and cos x from first principlesDifferentiating exponentials and logarithmsDifferentiating products, quotients, implicit and parametric functionsSecond derivativesRates of change problems (16)ProofIncluding proof by deduction and proof by contradiction (3)TransformationsModelling with transformations (4)Modulus functionComposite and inverse functions (4) | The Normal distributionUnderstand and use the Normal distributionUse the Normal distribution as an approximation to the binomial distributionSelect the appropriate DistributionStatistical hypothesis testing for the mean of the Normal distribution (14)IntegrationIntegrating (Including $x^{n}$when x = -1), exponentials and trigonometric functions (4)Forces – resolving forcesFurther kinematicsConstant acceleration (Equations of motion in 2D; the **i, j** system)Applications of kinematics –projectiles (10) | IntegrationUsing the reverse of differentiation and trigonometric identities Integration by substitutionIntegration by partsUse of partial fractionsAreas under graphs or between two curvesThe trapezium ruleDifferential equations (22)Forces at any angle; Friction forces including the coefficient of frictionApplication of forces: equilibrium and statics of a particle, dynamics of a particle (9) | ProbabilityUsing set notationAssumptionsRegression and correlationChange of variableCorrelation coefficientsStatistical hypothesis testing for zero correlation (10)Further kinematics: variable acceleration and use of calculusMomentsApplication of forces (4)The Binomial theoremExpanding (a + bx$)^{n} $for rational n; knowledge of range of validityExpansion of functions using partial fractions. |  |
| **Catholic Social Teaching** | Solidarity  | Care for God’s creation  | Dignity  | Dignity of work and participation  | Solidarity  |  |