JOURNEY DIAGRAM - MATHS - KS4

St John Bosco College

Year 10

Autumn 1

Graphs and sequences
- Plotting linear graphs
- Conversion and distance-time graphs
- Identifying key points on graphs
- Solving simultaneous equations using graphs

Measurements and shape geometry
- Perimeter and area of shapes
- Volumes of prisms and cylinders
- Circles

Ratios and percentages
- Simplifying and solving problems with ratios
- Finding percentages of amounts without a calculator
- Reverse percentages
- Compound interest and depreciation

Equations and Formula
- Simplifying algebraic expressions
- Forming algebraic expressions
- Expanding brackets and factorizing expressions
- Index laws
- Quadratic equations: solving by factorizing
- Quadratic inequalities

Autumn 2

Number
- Standard Form
- Error intervals and bounds
- Prime factor decomposition with HCF and LCM
- Recurring decimals

Angles
- Interior and exterior angles in polygons
- Angles in parallel lines
- Bearings
- Pythagoras' Theorem and Trigonometry

Calculations
- Negative numbers
- Calculations with fractions
- Index laws
- Surds

Spring 1

Equations and Formula
- Substitution
- Linear inequalities
- Expanding brackets
- Completing the square
- The Quadratic Formula
- Inverse and composite functions

Transformations
- Perform and describe the 4 types of transformations:

1) Enlargements
2) Rotation
3) Translation
4) Reflections

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Spring 2

Data analysis
- Different types of data
- Venn diagrams
- Stem and Leaf diagrams
- Scatter Graphs
- Pie Charts
- Compare data using statistical measurements
- Frequency Polygons
- Capture-Recapture Method
- Cumulative Frequency diagrams
- Box plots
- Histograms

Proportion and Percentages
- Using a calculator to find a percentage of amount
- Compound interest and depreciations
- Solve ratio problems
- Use scale drawings
- Best buy
- Direct and inverse proportion equations

Summer 1

Graphs and Sequences
- Types of sequences including Fibonacci
- Arithmetic sequences
- Quadratic sequences
- Plotting linear graphs
- The equation of straight-line graphs
- Solving simultaneous equations graphically

Angles
- Interior and exterior angles of polygons
- Bearings
- Exact trigonometric values
- Pythagoras' Theorem

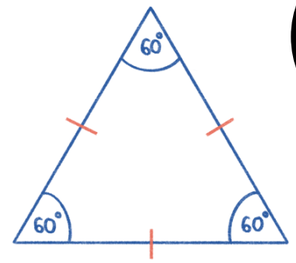
Probability
- Two-way tables
- Venn diagrams
- Frequency trees
- Tree diagrams
- The product rule for counting

Equations and Formula
- Form and solving linear equations
- Expanding single and double brackets
- Quadratic equations: factorise to solve, complete the square, the quadratic formula
- Quadratic inequalities

Summer 2

Number
- Standard form
- Error intervals
- Bounds

Constructions
- Correct notations for angles and lengths
- Construct angle bisectors, different types of triangles
- Loci



Year 11

Summer 2

Revision and GCSE Exams

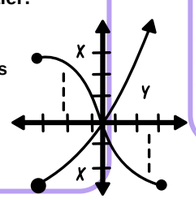
Summer 1

Revision and GCSE Exams

Spring 2

Higher tier:
- **Transformations**
- **Transforming graphs**
- **Vectors**
- **Algebraic Proof**
- **Area under a curve**
- **Volume and surface area**
- **Indices**

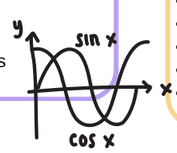
Foundation tier:
- **Scatter graphs**
- **Percentages**
- **Averages from tables**
- **Bearings**
- **Averages**
- **Probability**
- **Standard form**



Spring 1

Higher tier:
- Algebraic fractions
- Sequences
- Error intervals and bounds
- Iteration
- Product rule for Counting
- Scatter Graphs

Foundation tier:
- Error intervals
- Area and Volume
- Inequalities
- Scale drawings
- Graphs and their equations
- Sequences



Autumn 2

Higher tier:
- Trigonometry
- Rearranging equations
- Histograms
- Recurring Decimals to Fractions
- Circle theorems
- Similarity

Foundation tier:
- Trigonometry
- Transformations
- Expanding and factorising
- Rearrange formula
- Plans and elevations
- Laws of indices

Autumn 1

Higher tier:
- Simultaneous Equations
- Functions
- Surds
- Proportion
- Graphs and their equations
- Cumulative Frequency graphs and box plots
- Probability

Foundation tier:
- Simultaneous equations
- Circles
- Pythagoras' theorem
- Volume and surface area
- Angles and reasons
- Indices
- Fraction calculations
- Prime factor decomposition