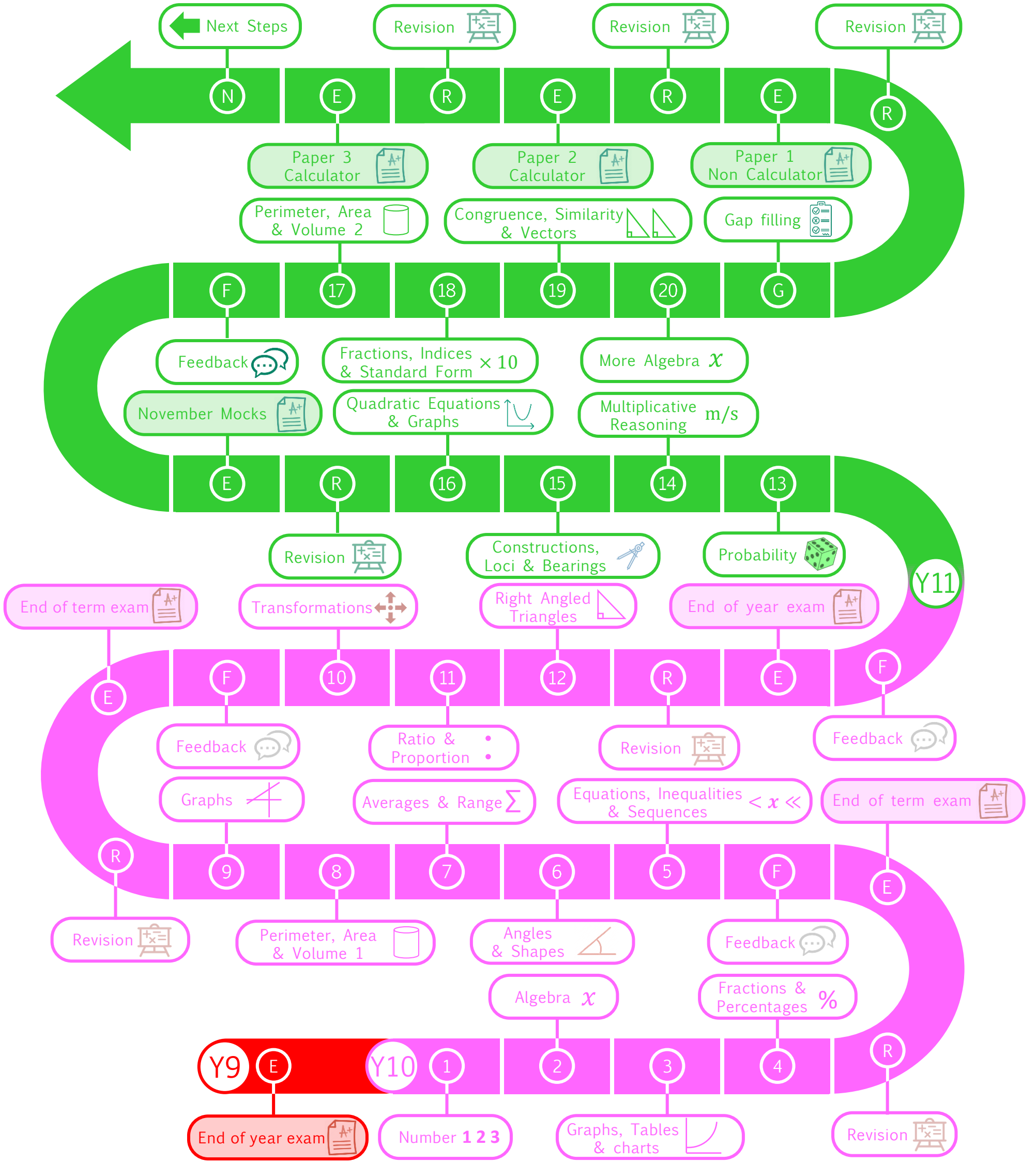
GCSE Foundation Mathematics Intent Overview



St Benedict's Department of MATHEMATICS 1971

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Yr 10	Unit	Students will learn to:	
Autumn 1	**Units 1 & 2**	**Unit 1 – Number** **1.1** Calculations **1.2** Decimal numbers **1.3** Rounding and estimation **1.4** Factors and multiples **1.5** Squares, cubes and roots **1.6** Index notation **1.7** Standard Form **1.8** Prime factors **1.9** Use of a Calculator	**Unit 2 - Algebra** **2.1** Algebraic expressions **2.2** Simplifying expressions **2.3** Substitution **2.4** Formulae **2.5** Expanding brackets **2.6** Factorising **2.7** Using expressions and formula **2.8** Language of algebra
Autumn 2	**Units 3 & 4**	**Unit 3 – Graphs, Tables & Charts** **3.1** Frequency tables **3.2** Two-way tables **3.3** Time **3.4** Representing data **3.5** Time series **3.6** Stem and leaf diagrams **3.7** Pie charts **3.8** Scatter graphs **3.9** Line of best fit	**Unit 4 – Fractions & Percentages** **4.1** Working with fractions **4.2** Operations with fractions **4.3** Multiplying fractions **4.4** Dividing fractions **4.5** Fractions and decimals **4.6** Fractions and percentages **4.7** Calculating percentages
Spring 1	**Units 5 & 6**	**Unit 5 – Equations, Inequalities & Sequences** **5.1** Solving simple equations **5.2** Solving complex equations **5.3** Solving equations with brackets **5.4** Inequality notation & listing values **5.5** Inequalities on a number line **5.6** Formulae **5.7** Generating sequences **5.8** Using the nth term of a sequence	**Unit 6 – Angles & Shapes** **6.1** Properties of shapes **6.2** Angles in triangles **6.3** Angles in quadrilaterals **6.4** Angles in parallel lines **6.5** Exterior and interior angles **6.6** Geometric patterns
Spring 2	**Units 7 & 8**	**Unit 7 – Averages & Range** **7.1** Mean and range **7.2** Mode and median **7.3** Types of average **7.4** Estimating the mean **7.5** Sampling **7.6** Types of Data	**Topic 8 – Perimeter, Area & Volume** **8.1** Rectangles, parallelograms and triangles **8.2** Trapezia and changing units **8.3** Compound shapes **8.4** Surface area of 3D solids **8.5** Volume of prisms **8.6** Volume and surface area problems
Summer 1	**Units 9 & 10**	**Unit 9 – Graphs** **9.1** Coordinates **9.2** Linear graphs **9.3** Gradient **9.4** $y = mx + c$ **9.5** Real-life graphs **9.6** Distance-time graphs	**Unit 10 – Transformations** **10.1** Translation **10.2** Reflection **10.3** Rotation **10.4** Enlargement **10.5** Describing transformations **10.6** Combining transformations
Summer 2	**Units 11 & 12**	**Unit 11 – Ratio & Proportion** **11.1** Writing ratios **11.2** Using ratios **11.3** Ratios and measures **11.4** Comparing ratios **11.5** Using proportion **11.6** Proportion and graphs **11.7** Proportion problems	**Unit 12 – Right Angled Triangles** **12.1** Pythagoras' theorem **12.2** Trigonometry: the sine ratio **12.3** Trigonometry: the cosine ratio **12.4** Trigonometry: the tangent ratio **12.5** Finding lengths and angles using trigonometry **12.6** Knowing exact values for trigonometric ratios

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Yr 11	Unit	Students will learn to:	
Autumn 1	**Units 13 & 14**	**Unit 13 – Probability** **13.1** Calculating probability **13.2** Two events **13.3** Experimental probability **13.4** Venn diagrams **13.5** Tree diagrams	**Unit 14 – Multiplicative Reasoning** **14.1** Percentages **14.2** Growth and decay **14.3** Compound measures **14.4** Distance, speed and time **14.5** Direct and inverse proportion
Autumn 2	**Units 15 & 16**	**Unit 15 – Constructions, Loci & Bearings** **15.1** 3D solids **15.2** Plans and elevations **15.3** Accurate drawings **15.4** Scale drawings and maps **15.5** Constructions **15.6** Loci and regions **15.7** Bearings	**Unit 16 – Quadratic Equations & Graphs** **16.1** Expanding double brackets **16.2** Plotting quadratic graphs **16.3** Using quadratic graphs **16.4** Factorising quadratic expressions **16.5** Solving quadratic equations algebraically
Spring 1	**Units 17 & 18**	**Unit 17 – Perimeter, Area & Volume 2** **17.1** Circumference of a circle **17.2** Area of a circle **17.3** Semicircles and sectors **17.4** Composite 2D shapes and cylinders **17.5** Pyramids and cones **17.6** Spheres and composite solids	**Unit 18 – Fractions, Indices & Standard Form** **18.1** Multiplying and dividing fractions **18.2** The laws of indices **18.3** Writing large numbers in standard form **18.4** Writing small numbers in standard form **18.5** Calculating with standard form
Spring 2	**Units 19 & 20**	**Unit 19 – Congruence, Similarity & Vectors** **19.1** Similarity and enlargement **19.2** Using similarity **19.3** Similarity problems **19.4** Recognising congruence **19.5** Congruence problems **19.6** Vectors	**Unit 20 – Further Algebra** **20.1** Graphs of cubic and reciprocal functions **20.2** Non-linear graphs **20.3** Solving simultaneous equations graphically **20.4** Solving simultaneous equations algebraically **20.5** Rearranging formulae **20.6** Proof
Summer 1	Revision & Exam Preparation		