LEARNING JOURNEY – Mathematics Year 10F   St Michael's Catholic School

Yr11 ready

Simultaneous Equation

Substitution	Simultaneous Equations (graphs and no adjustments	Manipulating equations Simultaneous Equations (adjustment)

Pythagoras' and Trigonometry

Pythagoras' Theorem	Trig ratios to calculate side/angles	Exact trig values (E)

Factors and Powers

Factors/Multiples/primes Prime factorisation	HCF/LCM/ square/cubes Powers and roots	Negative indices Surds (E)/ Irrational numbers

Angles

Angles around point/ straight line/ vertically opp	Triangles /Quadrilaterals	Interior /Exterior angles in polygon	Angles on parallel lines	Prove geometric facts (E)

Vectors

Understand/represent vectors/vector notation	Translate by a vector Scalar vector	Add/subtract vectors Problem solving (E)

Pentecost Term

Non Linear Graphs

Quadratic Graphs Intercepts/roots (E)	Cubic Graphs	Approximate solutions (E)

Graphs and diagrams

Pictograms/ Line/Bar graphs Dual/composite bar graphs	Pie charts Time series	Frequency polygon Stem and leaf diagram

Interpret and represent data

Averages and range	Compare distributions (E)	Types of data Sampling	Scatter graphs Interpolation/extrapolation

Rounding and estimation

Round to decimal place/ sig fig	Estimation/ use of a calculator	Error intervals

Perimeter Area and Volume

Name 2D/3D shapes	Perimeter /Area of 2D/compound shapes	The circle Parts/ circumference/ area	Volume of/ nets/Surface area of Prisms

Probability

Probability of events	Outcomes/ relative frequency/ sample space	Two-way table/ Frequency trees/ independent events	Tree diagrams

Work with fractions

Fraction of amount Increase/ decrease an amount by a fraction	Use fraction to find the whole Equivalent fractions	Add/subtract/ multiply/divide fraction	Solve problems with fractions

Straight line graphs

Straight line graphs/Gradients/ y=mx+c	Midpoint of line segments	Equation of straight line graphs using points /gradients	Real life straight life graphs

Lent Term

Ratio and Scale

Equivalent ratio/ share ratio	Link ratio and fraction	Combine sets of ratio/ use algebra (E)	Ratio and Scales

Non calculator methods

Place value/ compare and order numbers	Add/subtract/multiply/divide integers and decimals	Four operations with directed numbers	Order of operations/ related calculations/ multistep problems

Quadratic expressions and Equations

Expand double brackets	Factorise quadratics/DOTS	Solve quadratic equations	Quadratic graphs

Equations Inequalities and Formulae

Solve Equations	Fractional equations	Equations with unknown on both side	Inequalities Change the subject

Advent Term

Percentages

Percentages of amounts/ percentage increase/decrease	Express one number as fraction/percentage of another	Percentage change	Simple/compound Interest/ Problem solving methods

Algebraic manipulations

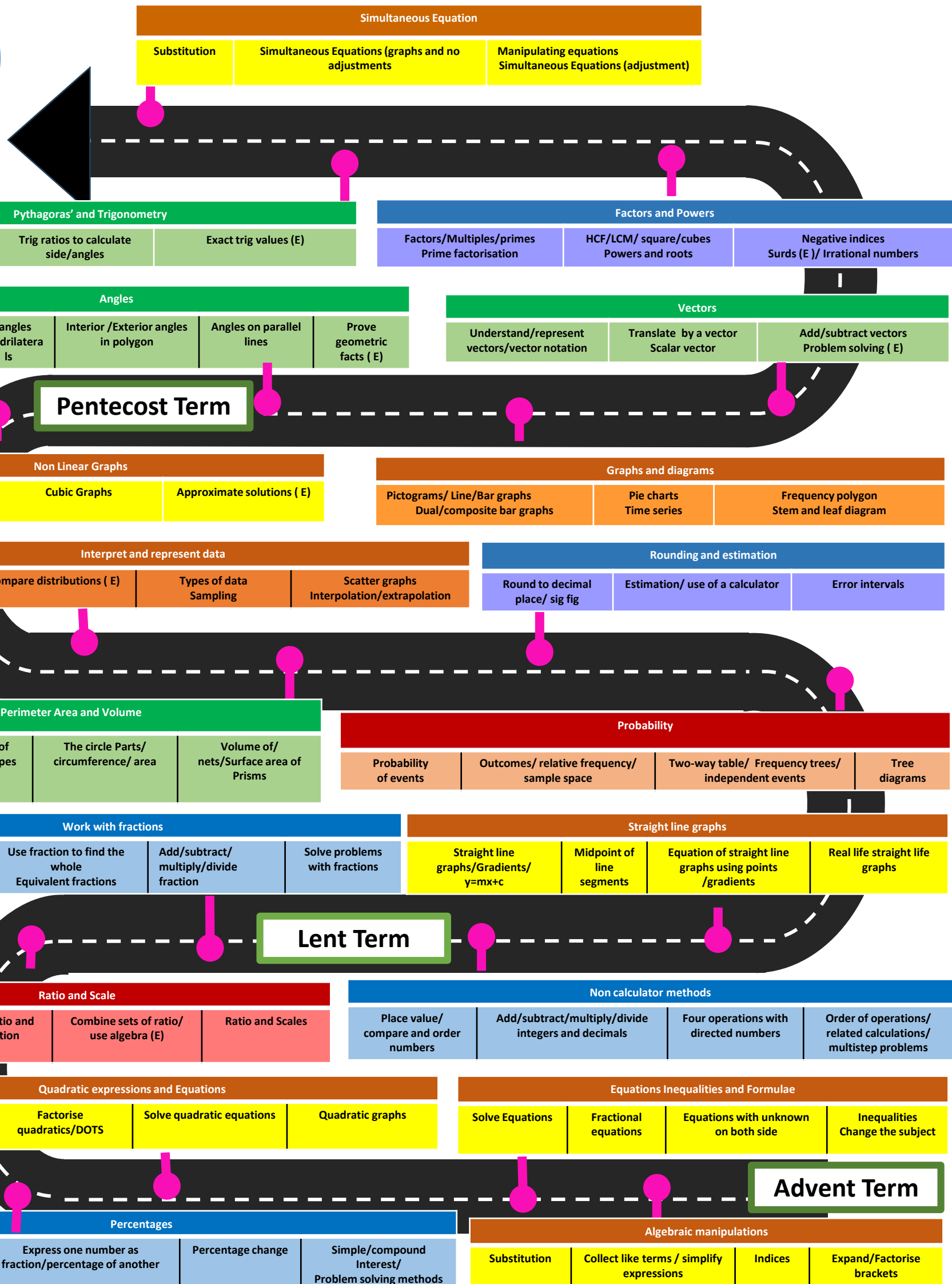| Substitution	Collect like terms / simplify expressions	Indices	Expand/Factorise brackets

Department Intent : To develop students' curiosity and creativity, rich in skills and knowledge, preparing students well for everyday life and future pathways.