Quality of Education: *Curriculum is planned and sequenced so that new **knowledge** and **skills** build on what has been taught before and towards its clearly defined end points.*

Ormiston Victory Academy

SUBJECT: Estimation/Approximation **CURRICULUM PROGRESSION PATHWAYS** **CL: Miss Z. Bradshaw**

Year 7	Year 8	Year 9	Year 10	Year 11	KS5 (Level 3) A-level Mathematics/Core Mathematics	Further Education and training	Careers
NP1 Placing positive integers/decimals approximately on a number line NP1 Rounding (to the nearest …, decimal places, significant figures) NP2 Estimating sums/differences NP3 Estimating products/quotients NP4 Estimating roots, writing an error interval for a root NP6 Placing negative integers/decimals approximately on a number line NP7 Placing fractions approximately on a number line NP9 Estimating calculations, using approximation to check orders of magnitude and answers on the calculator, upper and lower bounds, rounding vs. truncation	A3 Estimating solutions to equations GM1 Estimating lengths (straight and curved) NP10 Estimating calculations GM2 Estimating angles, including bearings SP1 Estimating averages GM3 Estimating area A6 Estimating gradient SP2 Drawing approximate lines of best fit, analysing trends in time	A8 Sketching number lines for inequalities, solution sets NP12 Estimating calculations in standard form, conceptualising extremes of big and small A9 Interpolation and extrapolation SP3 Likelihood - notions of vagueness yet setting parameters for likelihood A10 Estimating solutions to simultaneous equations, sketching linear graphs NP13 Estimating to sense-check percentage calculations	SP4 Estimating mean of grouped data (different understanding of 'estimate') NP14 Upper and lower bounds, error intervals for calculations A12 Sketching quadratic graphs GM8 Estimating volume NP15 Placing surds and numbers in index form approximately on a number line	NP16 Estimating exponential growth and decay A15 Sketching cubic, reciprocal, circle, exponential and trigonometric graphs A16 Estimating areas under curves (different understanding of 'estimate' - see SP4 also)	AS PURE Unit 8 Binomial Estimation, approximation of Roots. AS STATS Unit 2 Interpolation as a method to estimate central tendency and percentiles. AS STATS Unit 5 + 6 + 7 Estimated Probability or Expected Outcomes of a Test or Trials. A2 Pure Unit 5 Small Angle Approximations. A2 Pure Unit 10 Numerical Approximations of Roots and Iteration. A2 Pure Unit 11 Trapezium Rule to Approximate Areas under Graphs. A2 STATS Binomial to Normal Distribution Approximations.		

Core knowledge and skills mapped across the curriculum

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