








National 5 Mathematics Content Checklist - Interactive

Please download and work through the checklist, ticking boxes that apply to your knowledge and understanding and email it back to me. You can copy and paste this tick: ✓

Mastered – I am confident I can answer questions on this	
OK, but need some more help	
Not a clue!	
Haven't done this yet (or have forgotten if I have!)	

Expressions and Formulae

Topic				
Significant figures and Rounding				
Volume - Cube/Cuboid, <i>including working backwards</i>				
Volume - Cylinder				
Volume - Sphere				
Volume - Cone				
Volume - Pyramid				
Algebra - Multiplying out brackets and simplifying				
Algebra – Factorising using a common factor				
Algebra – Factorising using difference of 2 squares.				
Algebra – Factorising trinomials, with unitary x^2 coefficient eg: $x^2 + 5x - 8$				
Algebra – Factorising trinomials, with non- unitary x^2 coefficient eg: $2x^2 + 4x + 9$				
Algebra - Completing the square - unitary x^2 coefficient				
Gradient – Calculating the gradient of a straight line using the formula				
Circle - Length of an arc				
Circle - Area of a sector				
Circle - Finding the angle				
Surds - Simplify				
Surds - Add/Subtract including multiplying out brackets				
Surds - Rationalise the denominator				
Indices – Multiplying, dividing, and raising to power.				
Indices – Negative and fractional powers				
Indices – Multiplying out brackets including a^0 and a^1				
Indices – Using Scientific notation (2.3×10^4)				
Algebraic Operations – Simplifying fractions				
Algebraic Operations – Factorising and simplifying fractions				
Algebraic Operations – Add and subtract fractions				
Algebraic Operations – Multiply and divide fractions				

Relationships

Topic				
Straight Line: $y = mx + c$, Drawing and identifying m and c from graph.				
Straight Line: rearranging and identifying m and c from equation				
Straight Line: $y - b = m(x - a)$ forming equation.				
Linear equations/inequations – Solving in form $ax + b = c$ and $ax + b = cx + d$ and including brackets and fractions				
Simultaneous Equations - Graphically				
Simultaneous Equations - Substitution				
Simultaneous Equations – Elimination, no scaling				
Simultaneous Equations – Elimination, scaling one equation				
Simultaneous Equations – Elimination, scaling both equations				
Change the subject- basic operations				
Change the subject – involving brackets and indices				
Quadratics - Determine equation of a quadratic from graphs				
Quadratics - Identifying max/min turning point, roots and line of symmetry from graphs				
Quadratics - Solving quadratic equations through factorisation				
Quadratics - Solving quadratic equations through quadratic formula				
Quadratics – sketching and annotating quadratic graphs				
Quadratics - Using the discriminant from the quadratic formula				
Pythagoras - Mixed examples & Converse of Pythagoras				
Pythagoras – 3D and distance between two points				
Properties of shape - Triangles				
Properties of shape - Quadrilaterals				
Properties of shape – Polygons: interior and exterior angles				
Properties of shape - Circle properties including triangles, angles in semi-circle and tangents.				
Properties of shape - Circle properties including perpendicular bisector				
Similarity - Similar figures and lengths				
Similarity - Similar triangles				
Similarity – Area Scale Factor				
Similarity – Volume Scale Factor				
Trigonometric graphs - curve sketching & identifying key features of graphs				
Scaling amplitude eg $y = 2\sin x$ and multiple angles $y = \sin 2x$				
Trigonometric graphs - curve sketching & identifying key features of graphs				
Vertical translation $y = \sin x + 2$ and phase angles $y = \sin(x - a)$				
Trigonometric Functions – CAST diagram (or quadrant rule)				
Trigonometric Functions - Solving				
Trigonometric Functions - Identities				

Applications

Topic				
Trigonometry - Area of a triangle				
Trigonometry - Sine rule to find side				
Trigonometry - Sine rule to find angle				
Trigonometry - Cosine rule to find side				
Trigonometry - Cosine rule to find angle				
Trigonometry - Questions involving bearings				
2D Vectors/3D Coordinates - Vector notation(components) - directed line segment/ <i>equal vectors/vectors in opposite directions</i>				
2D Vectors/3D Coordinates - Multiplying a vector by a scalar				
2D Vectors/3D Coordinates - Magnitude of a Vector				
2D Vectors/3D Coordinates - Vector addition/subtraction & <i>diagrams (vector journeys)</i>				
2D Vectors/3D Coordinates - 3D Coordinates				
Percentages - Reverse percentages				
Percentages - Simple interest				
Percentages - Compound interest				
Percentages - Appreciation/Depreciation				
Fractions - Add/Subtract				
Fractions – Multiply/ Divide, BIDMAS				
Statistics - Mean, median, mode and range				
Statistics - Five figure summary with Boxplot & IQR				
Statistics - Standard deviation				
Statistics - Standard deviation (2 nd formula?)				
Statistics - Standard deviation including comparing distributions				
Statistics - Scatter graphs and correlation				
Statistics - Scatter graphs - line of best fit				

Please type any additional information that could be of use – e.g. preferred learning styles/methods, any specific problems, etc: