S2 Block 1 – Upper and Middle Course – 12 weeks (4 weeks of summer term plus term 1).

Topic	EO	Content	Suggested Resource Teejay 4+	Time (hours)
NMM Chance and Uncertainty	MNU 3-22a MNU 4-22a By applying my understanding of probability, I can determine how many times I expect an event to occur, and use this information to make predictions, risk assessment, informed choices and decisions.	○ Revision of basic probability ○ Calculating probability and predicting events	Pages 200-203	4
Extension: Consolidation: Rich Tasks: Chocolate bar promotion Chocolate bar E and Os				
NMM Speed, Distance and Time	MNU 4-10b I can use the link between time, speed and distance to carry out related calculations.	○ D = S x T ○ S = D / T and T = D / S ○ Speed, Distance Time problems ○ Converting hours and minutes to hours ○ Converting decimal time to hours and minutes ○ Speed, Distance, Time graphs	Pages 101-110	6
Extension: Consolidation: Rich Tasks:				
NMM Money (percentages revision)	MNU 4-09b/c I can source information on earnings and deductions and use it when making calculations to determine net income. I can research, compare and contrast a range of personal finance products and, after making calculations, explain my preferred choices.	○ Wages and salaries – overtime etc. ○ Gross and net pay ○ Hire purchase ○ Foreign exchange	Pages 21-30	9
Extension: Decimal multipliers, reverse percentages, compound interest. Income tax bands.				

Consolidation: Rich Tasks:				
NMM Number Work	MNU 3-01a (E&F 4.4) MNU 4-03b MNU 3-04a I can round a number using an appropriate degree of accuracy, having taken into account the context of the problem.	○ Round to significant figures ○ Order of operations ○ Integers - +, -, x, /	Pages 6-10	5
Extension: Sig Figs smaller than 1. Estimating using significant figures. Consolidation: Rich Tasks: https://nrich.maths.org/9941 The balloon game (+/- negative numbers) http://nrich.maths.org/5864 Playing connect 3 (+/- negative numbers)				
SSM Angle Properties	MNU 3-17a I can name angles and find their sizes using my knowledge of the properties of a range of 2D shapes and the angle properties associated with intersecting and parallel lines.	○ Revision of angles including parallel lines ○ Angles in a quadrilateral	Pages 11-14	5
Extension: Consolidation: Rich Tasks:				
Enrichment/consolidation activities. Revisiting topics from S1.				4
Block Assessment (Week before October holidays).				3

Total Time	36

S2 Block 2 – Upper and Middle Course – 13 Weeks (Term 2 plus first 4 weeks of term 3)

Topic	EO	Content	Suggested Resource	Time (hours)
NMM Fractions, Decimals and Percentages	MNU 4-07a I can choose the most appropriate form of fractions, decimal fractions and percentages to use when making calculations mentally, in written form or using technology, then use my solutions to make comparisons, decisions and choices.	○ Percentages without a calculator ○ Percentages with a calculator ○ Linking fractions, decimals and percentages	Pages 15-18	6
Extension: Consolidation: Matching Fractions Decimals Percentages Rich Tasks:				
NMM Powers, Roots and Scientific Notation	MTH 4-06a MTH 4-06b (E&F 1.2) I have developed my understanding of the relationship between powers and roots and can carry out calculations mentally or using technology to evaluate whole number powers and roots, of any appropriate number.	○ Revision of roots and powers ○ Square and cube roots ○ Scientific Notation – large numbers ○ Scientific Notation – small numbers ○ Scientific Notation with a calculator	Pages 64-72	6
Extension: Consolidation: Powers of ten video- scientific notation, Scale of the universe- scientific notation Rich Tasks:				
NMM Algebra 1	MTH 4-14a MTH 4-14b Having explored the distributive law in practical contexts, I can simplify, multiply and evaluate simple algebraic terms involving a bracket. I can find the factors of algebraic terms, use my understanding to identify common factors and apply this to factorise expressions.	○ Solving equations recap ○ Multiply algebraic expressions: $2yz * 6y^2$ ○ Expand and tidy brackets ○ Factorise algebraic expressions	Pages 31-34	7
Introduction to factorisation (section 1 from this link) Extension:				

Consolidation: mrcartemaths.com Rich Tasks:				
SSM The Circle	MNU 3-11a MTH 3-11b I can solve practical problems by applying my knowledge of measure, choosing the appropriate units and degree of accuracy for the task and using a formula to calculate area or volume when required. Having investigated different routes to a solution, I can find the area of compound 2D shapes and the volume of compound 3D objects, applying my knowledge to solve practical problems.	○ The circumference of a circle ○ The area of a circle ○ Mixed problems	Pages 73-80	6
Extension: Calculating the diameter from the circumference. Calculating the radius from the area Consolidation: Rich Tasks:				
Information Handling	MTH 4-21a I can select appropriately from a wide range of tables, charts, diagrams and graphs when displaying discrete, continuous or grouped data, clearly communicating the significant features of the data.	○ Interpreting composite bar charts and line graphs (revision of) ○ Interpreting pie charts ○ Constructing pie charts	Pages 195-199	4
Extension: Consolidation: Rich Tasks:				
Enrichment/consolidation activities. Revisiting topics from block 1.				**7**

Block Assessment (End of January/start of February).	**3**
Total Time	**39**

S2 Block 3 – Upper and Middle Course – 13 Weeks (Remainder of term 3 plus first five weeks of term 4)

Topic	EO	Content	Suggested Resource Teejay 4+	Time (hours)
NMM Fractions	MTH 4-07b I can solve problems involving fractions and mixed numbers in context, using addition, subtraction or multiplication.	○ Simplifying and equivalence ○ Add and subtract basic fractions ○ Add and subtract with different denominators ○ Multiply fractions	Pages 178-183	6
Extension: Divide fractions (N5) Consolidation: Subtracting fractions (conceptual) Rich Tasks: Multiplying mixed numbers Fraction fascinations Fractions to Percentages				
SSM Pythagoras' Theorem	MTH 4-16a (Rel 4.1) I have explored the relationships that exist between the sides, or sides and angles, in right-angled triangles and can select and use an appropriate strategy to solve related problems, interpreting my answer for the context.	○ Find the hypotenuse of a right angled triangle (RAT) ○ Problems solved using Pythagoras' Theorem ○ Finding a shorter side in a RAT ○ Mixed problems	Pages 91-100	6
Extension: Distance between 2 coordinates. Introduction to 3-D Pythagoras. 3-D Pythagoras problem solving questions sheet T/7 Kite areas (short – lesson starter / end of lesson problem) Two diagonals (short – lesson starter / end of lesson problem) Consolidation: Video showing demonstration of Pythagoras' Theorem Problem Solving questions (sheet T/6) Rich Tasks: Pythagorean triples investigation or another Inscribed in a circle				
NMM Algebra 2	MTH 4-15a (Rel 1.2) Having discussed the benefits of using mathematics to model real-life situations, I can construct and solve inequalities and an extended range of equations.	○ Revise equations up to including brackets and with x terms on both sides ○ Equations involving fractions ○ Inequalities	P55-61	6
Extension: Harder equations involving fractions Inequalities including division of both sides by a negative				

Consolidation: mrcartermaths.com Rich Tasks: Temperature Your number was				
SSM Volume and Surface Area	MNU 3-11a MTH 3-11b MTH 4-11b As the circle above plus: Through investigating real-life problems involving the surface area of simple 3D shapes, I can explore ways to make the most efficient use of materials and carry out the necessary calculations to solve related problems.	○ Revise area of triangle and quadrilaterals ○ Revise volume of cubes and cuboids ○ Surface area of cubes and cuboids	Pages 121-123	6
Extension: Volume of cylinder, cone, prism, sphere and composite shapes. Consolidation: Interactive cube – handy for looking at surface area Rich Tasks: Lovely Cuboids Cornflakes box (volume and surface area) Breeze Blocks Dan Meyer Meatball task (Volume of sphere and cylinder) Design a juice box Design a juice box assessment				
NMM Proportion	MNU 4-08a Using proportion, I can calculate the change in one quantity caused by a change in a related quantity and solve real-life problems.	○ Ratio – proportional sharing ○ Unitary proportion ○ Direct proportion ○ Linear graph of proportion ○ Indirect (inverse) proportion	Pages 111-117	6
Extension: Toad in the hole Consolidation: age ratios ratio bingo cards Ratio codebreaker Rich Tasks: sum, difference, product ratios				
Enrichment/consolidation activities. Revisiting topics from block 1 and 2.				6
Block Assessment (mid May).				3
Total Time				**39**

S2 Block 4 – Upper and Middle Course – (Weeks 6-11 of term 4 plus first 6 weeks in term 1 of S3)

Topic	EO	Content	Suggested Resource Teejay 4+	Time (hours)
Information Handling Using Simple Statistics	MTH 4-20b In order to compare numerical information in real-life contexts, I can find the mean, median, mode and range of sets of numbers, decide which type of average is most appropriate to use and discuss how using an alternative type of average could be misleading.	○ Mean, mode, median and range. ○ Scattergraphs (from block 2)	Page 188-192, 194	4
Extension: Consolidation: Rich Tasks:				
NMM Tolerance	MNU 4-01a Having investigated the practical impact of inaccuracy and error, I can use my knowledge of tolerance when choosing the required degree of accuracy to make real-life calculations.	○ The idea of tolerance ○ Tolerance notation	Pages 42-45	2
Extension: Consolidation: Rich Tasks:				
NMM Patterns	MTH 4-13a Having explored how real-life situations can be modelled by number patterns, I can establish a number sequence to represent a physical or pictorial pattern, determine a general formula to describe the sequence, then use it to make evaluations and solve related problems.	○ Linear patterns of the form $y = mx$ ○ Linear patterns of the form $y = mx + c$ ○ Non Linear-patterns ○ Investigations and harder patterns	Pages 132-138	5
Extension:				

Consolidation: Rich Tasks:				
SSM Trigonometry	MTH 4-16a I have explored the relationships that exist between the sides, or sides and angles, in right-angled triangles and can select and use an appropriate strategy to solve related problems, interpreting my answer for the context.	○ Ratio of sides in similar triangles ○ Tangents and calculating sides ○ Tangents and calculating angles ○ Sine and Cosine ratio ○ Use of SOHCAHTOA	Pages 150-165	8
Extension: Harder questions – (missing side as denominator) Consolidation: Rich Tasks:				
		○ Review of level 4 work / preparation for National 4 AVU	Pages 204-210 Online practice	8
Enrichment/consolidation activities				3
National 4 Added Value Unit (September 3rd week before holidays).				3
SSM Linear Relationships	Mth 4-13b/c/d (E&F 4.1, Rel 1.1)	○ Gradients of hills, slopes, ladders etc ○ Gradient of a line in a coordinate diagram ○ Sketch $y = mx$, $y = mx + c$ from a table ○ The line $y = mx + c$, gradient and y-intercept.	Pages 150-165	6
Extension: Consolidation: Rich Tasks:				

Total Time	**39**