S4 National 4 Course Notes

National 4 Numeracy	**February – May S3**
Whole Numbers and Negative Numbers Money and Percentages Use Basic percentages and VAT Foreign Exchange Hire Purchase Time, Distance and Speed 12 - 24 hour time Time intervals Speed, distance, time calculations Distance time graphs Ratio and Proportion Direct proportion Divide a quantity in a given ratio Length and Measurement Calculate the perimeter of a composite shape Measure length, angle and capacity Graphs, Charts and Tables Extraction and interpretation of data and making and explaining decisions based on interpretation of data from: - Tables with at least 4 categories of information - Charts where the values are given or where the scale is obvious e.g.pie - Graphs where the scale is obvious e.g. bar, pie, scatter, or line graph - Diagrams such as Stem & leaf , maps or plans Probability Calculation of Probability Convert equivalences between fractions Making and explaining decisions based on comparison of probabilities	
Numeracy Unit Assessment completed by end of S3	

National 4 Expressions and Formulae	June - November
Expressions and Formulae 1.1	
Simplifying Expressions in the form $a+4b-a+6b$	TJ Nat4-1 Ch 7, TJ Nat4-2 Ch 17
Expanding brackets in the form $5(a \pm 2c)$ or $3(4x \pm 2)$	TJ Nat4-1 Ch 7, TJ Nat4-2 Ch 1
Evaluating an expression $4w+6t-3k$	TJ Nat4-2 Ch 14
Factorising expressions $9c + 27$, $6a - 8$, $x^2 - 2x$	TJ Nat 4-2 Ch 17
Extending a straightforward number or diagrammatic pattern (1,3,5,7, . . .) and determining its formula Evaluate the determined formula for a given value	TJ Nat4-1 Ch 16, TJ Nat4-2 Ch 15
Calculate gradient - $\frac{\text{Vertical distance}}{\text{horizontal distance}}$	TJ Nat4-2 Ch 4
Expressions and Formulae 1.2	
Calculate circumference & area of a circle	TJ Nat4-1 Ch 9, TJ Nat4-2 Ch 11
Calculating the area of a parallelogram, kite & trapezium Investigate the surface area of a prism Calculate the volume of Cylinders and other prisms	TJ Nat4-1 Ch 14 & 26, TJ Nat4-2 Ch 6 & 8
Using rotational symmetry with straightforward linear shapes	TJ Nat4-2 Ch 3
Expressions and Formulae 1.3 Frequency tables from raw data	TJ Nat4-2 Ch 16
Calculate, use and understand Mean, median, mode & range	TJ Nat4-1 Ch 12 & 24
Stem and Leaf Diagrams Pie charts – calculation of sector angles and drawing Pie Charts	TJ Nat4-1 Ch 12 & 24
Calculation of Probability and Interpret probability in the context of risk	TJ Nat4-1 Ch 17
Expressions and Formulae Unit Assessment completed by end of November	

National 4 Relationships	December - March
Relationships 1.1 Solving Linear Equations ax+b=c, ax+b=cx +d Solving Equations with brackets a(x + b) = c Solving Inequations Draw a graph of $y = mx + c$ for chosen values of x Recognise the equation of a straight line $y = mx + c$ and know the meaning of m and c Recognise and use $y=a$, $x=b$ Change the subject of the formulae: - $G=x + a$ to x - $h = nv$ to n - $E=3wk - 3$ to w	TJ Nat 4-1 Ch 7 & 22 TJ Nat4-2 Ch 4 TJ Nat4-2 Ch 4 TJ Nat 4-2 Ch 14
Relationships 1.2 Using Pythagoras Theorem to calculate the hypotenuse and shorter sides if given measurements and coordinates Enlarge/ reduce shapes given scale factor, including fractional scale factor Scale Drawings Combination of angle properties associated with: - Intersecting and parallel lines - Triangles and quadrilaterals Circles: angles in a semi-circle relationship between tangent and radius	TJ Nat4-1 Ch 13 & 21 TJ Nat 4-1 Ch 5 & 21 TJ Nat4-1 Ch 2 TJ Nat4-2 Ch 7 & 13
Relationships 1.3 Tan, Sine and Cosine Ratio - Finding a side - Finding an angle Using SohCahToa to choose the correct ratio	TJ Nat4-2 Ch 5 & 9
Relationships 1.4 Scatter graphs and Line of Best Fit	TJ Nat4-1 Ch 12, TJ Nat4-2 Ch 16
Relationship Unit Assessment completed by end of February, 1st week of March	
Added Value Unit Assessment completed by end of Easter term	