Scotland S1-S3 Course Alignment
Curriculum for Excellence

Third Level

Outcome	Activity
Number, Money & Measure	
Estimation & Rounding	
MNU 3-01a I can round a number using an appropriate degree of accuracy, having taken into account the context of the problem.	**Number - Estimation & Accuracy** Nearest Whole Number Nearest 100? Nearest 1000? Rounding Numbers Rounding Decimals Rounding Significant Figures
Number & Number Processes	
MNU 3-03a I can use a variety of methods to solve number problems in familiar contexts, clearly communicating my processes and solutions.	**Number - Addition & Subtraction** Problems: Add and Subtract 2 Bar Model Problems 1 Bar Model Problems 2 **Number - Multiplication & Division** Problems: Multiply and Divide 1 **Number - Fractions** Fraction Word Problems More Fraction Problems **Number - Percentages** Percentage Word Problems **Number - Ratio & Proportion** Rates Word Problems Equations to Solve Problems
MNU 3-03b I can continue to recall number facts quickly and use them accurately when making calculations.	**Number - Addition & Subtraction** Add Integers Subtract Integers More with Integers **Number - Multiplication & Division** Multiplying by 10, 100, 1000 Dividing by 10, 100, 1000 Mental Methods Multiplication 1 Mental Methods Division **Number - Properties** Multiplication Facts Divisibility Tests
MNU 3-04a I can use my understanding of numbers less than zero to solve simple problems in context.	
Multiples, Factors & Primes	
MTH 3-05a I have investigated strategies for identifying common multiples and common factors, explaining my ideas to others, and can apply my understanding to solve related problems.	**Number - Properties** Lowest Common Multiple Highest Common Factor
MTH 3-05b I can apply my understanding of factors to investigate and identify when a number is prime.	**Number - Properties** Prime or Composite?

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Third Level

Outcome	Activity
Powers & Roots	
MTH 3-06a Having explored the notation and vocabulary associated with whole number powers and the advantages of writing numbers in this form, I can evaluate powers of whole numbers mentally or using technology.	**Number - Powers & Roots** Square Roots Square and Cube Roots Index Notation Index Form to Numbers
Fractions, Decimal Fractions & Percentages	
MNU 3-07a I can solve problems by carrying out calculations with a wide range of fractions, decimal fractions and percentages, using my answers to make comparisons and informed choices for real-life situations.	**Number - Fractions** Fraction of an Amount Fraction Word Problems **Number - Percentages** Percentage of a Quantity Percentage Increase and Decrease Calculating Percentages Percentage Word Problems Profit and Loss Simple Interest Purchase Options Best Buy Solve Percent Equations
MTH 3-07b By applying my knowledge of equivalent fractions and common multiples, I can add and subtract commonly used fractions.	**Number - Fractions** One Take Fraction Common Denominator No Common Denominator
MTH 3-07c Having used practical, pictorial and written methods to develop my understanding, I can convert between whole or mixed numbers and fractions.	**Number - Fractions** Converting Mixed and Improper Mixed and Improper Fractions on a Number Line
MNU 3-08a I can show how quantities that are related can be increased or decreased proportionally and apply this to solve problems in everyday contexts.	**Number - Ratio & Proportion** Equivalent Ratios Solve Proportions Rates Rates Calculations Rates Word Problems Ratio Word Problems Rate Word Problems Converting Rates
Money	
MNU 3-09a When considering how to spend my money, I can source, compare and contrast different contracts and services, discuss their advantages and disadvantages, and explain which offer best value to me.	**Number - Percentages** Percentage Word Problems Profit and Loss Simple Interest Purchase Options Best Buy
MNU 3-09b I can budget effectively, making use of technology and other methods, to manage money and plan for future expenses.	**Number - Percentages** Percentage Word Problems Profit and Loss Simple Interest Purchase Options Best Buy

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Third Level

Outcome	Activity
Time	
MNU 3-10a Using simple time periods, I can work out how long a journey will take, the speed travelled at or distance covered, using my knowledge of the link between time, speed and distance.	**Number - Ratio & Proportion** Average Speed Time Taken Distance Travelled
Measurement	
MNU 3-11a 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.	**Number - Ratio & Proportion** Converting Units of Length Kilometre Conversions Converting Units of Area Converting Volume Capacity Addition Mass Addition Converting Units of Mass **Geometry - Area & Perimeter** Area: Squares and Rectangles Area: Right Angled Triangles Area: Triangles Area: Parallelograms Area: Quadrilaterals Area: Composite Shapes Area: Circles 1 Area: Compound Figures **Geometry - Volume & Surface Area** Volume: Rectangular Prisms 1 Volume: Triangular Prisms Volume: Cylinders Volume: Prisms
MTH 3-11b 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.	**Geometry - Area & Perimeter** Area: Composite Shapes Area: Compound Figures
Mathematics – its impact on the world, past, present and future	
MTH 3-12a I have worked with others to research a famous mathematician and the work they are known for, or investigated a mathematical topic, and have prepared and delivered a short presentation.	
Patterns & Relationships	
MTH 3-13a Having explored number sequences, I can establish the set of numbers generated by a given rule and determine a rule for a given sequence, expressing it using appropriate notation.	**Algebra - Sequences** Increasing Patterns Decreasing Patterns Describing Patterns Find the Function Rule Terms: Arithmetic Progressions Linear Expressions for the Nth Term

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Third Level

Outcome	Activity
Expressions & Equations	
MTH 3-14a I can collect like algebraic terms, simplify expressions and evaluate using substitution.	**Algebra - Simplifying** Recognising Like Terms Like Terms: Add and Subtract Simplifying Expressions **Algebra - Expressions & Formulae** Simple Substitution 1 Simple Substitution 2 Simple Substitution 3 Substitution in Formulae Complex Substitution More Substitution in Formulae Real Formulae Simple Substitution
MTH 3-15a Having discussed ways to express problems or statements using mathematical language, I can construct, and use appropriate methods to solve, a range of simple equations.	**Algebra - Linear Equations** Missing Numbers Find the Missing Number 2 Solve Equations: Add, Subtract 1 Solve Equations: Multiply, Divide 1 Solving Simple Equations Solve Two-Step Equations Equations: Variables, Both Sides Solve Multi-Step Equations Solving More Equations Equations to Solve Problems Solve Equations: Add, Subtract 2 Solve Equations: Multiply, Divide 2 Equations with Grouping Symbols
MTH 3-15b I can create and evaluate a simple formula representing information contained in a diagram, problem or statement.	**Algebra - Expressions & Formulae** Simple Substitution Simple Substitution 1 Simple Substitution 2 Simple Substitution 3 Substitution in Formulae Complex Substitution More Substitution in Formulae Real Formulae Constructing Formulae
Shape, Position & Movement	
Properties of 2D shapes and 3D objects	
MTH 3-16a Having investigated a range of methods, I can accurately draw 2D shapes using appropriate mathematical instruments and methods.	**Geometry - Shapes & Angles** Interior and Exterior Angles

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Third Level

Outcome	Activity
Angle, symmetry and transformation	
MTH 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.	**Geometry - Shapes & Angles** What Type of Angle? Measuring Angles Angles in a Revolution Angle Sum of a Triangle Angle Sum of a Quadrilateral Exterior Angles of a Triangle Interior and Exterior Angles Parallel Lines Angles and Parallel Lines
MTH 3-17b Having investigated navigation in the world, I can apply my understanding of bearings and scale to interpret maps and plans and create accurate plans, and scale drawings of routes and journeys.	**Geometry - Transformations** Scale Measurement
MTH 3-17c I can apply my understanding of scale when enlarging or reducing pictures and shapes, using different methods, including technology.	**Geometry - Transformations** Similar Figures Similar Triangles Similar Figures 1 Scale Factor
MTH 3-18a I can use my knowledge of the coordinate system to plot and describe the location of a point on a grid.	**Algebra - Graphing Equations** Number Plane Coordinate Graphs: 1st Quadrant Ordered Pairs Graphing from a Table of Values
MTH 3-19a I can illustrate the lines of symmetry for a range of 2D shapes and apply my understanding to create and complete symmetrical pictures and patterns.	**Geometry - Transformations** Symmetry or Not?
Information Handling	
Data & Analysis	
MNU 3-20a I can work collaboratively, making appropriate use of technology, to source information presented in a range of ways, interpret what it conveys and discuss whether I believe the information to be robust, vague or misleading.	**Statistics** Line Graphs: Interpretation Scatter Plots
MTH 3-20b When analysing information or collecting data of my own, I can use my understanding of how bias may arise and how sample size can affect precision, to ensure that the data allows for fair conclusions to be drawn.	**Statistics** Which Measure of Central Tendency?
MTH 3-21a I can display data in a clear way using a suitable scale, by choosing appropriately from an extended range of tables, charts, diagrams and graphs, making effective use of technology.	**Statistics** Tallies Reading from a Bar Chart Bar Chart Tally Charts Pie Charts Pie Chart Calculations
Ideas of chance and uncertainty	
MNU 3-22a I can find the probability of a simple event happening and explain why the consequences of the event, as well as its probability, should be considered when making choices.	**Probability** What are the Chances? Simple Probability Find the Probability

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Fourth Level

Outcome	Activity
Number, Money & Measure	
Estimation & Rounding	
MNU 4-01 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.	**Number - Estimation & Accuracy** Error in Measurement Percentage Error
Number & Number Processes	
MNU 4-03a Having recognised similarities between new problems and problems I have solved before, I can carry out the necessary calculations to solve problems set in unfamiliar contexts.	**Number - Addition & Subtraction** Problems: Add and Subtract 2 Bar Model Problems 1 Bar Model Problems 2 **Number - Multiplication & Division** Problems: Multiply and Divide 1 **Number - Fractions** Fraction Word Problems More Fraction Problems **Number - Percentages** Percentage Word Problems **Number - Ratio & Proportion** Rates Word Problems Ratio Word Problems Rate Word Problems **Algebra - Linear Equations** Equations to Solve Problems
MTH 4-03b I have investigated how introducing brackets to an expression can change the emphasis and can demonstrate my understanding by using the correct order of operations when carrying out calculations.	**Number - Multiplication & Division** Order of Operations 1 (BIDMAS) Identifying errors in applying the order of operations
Powers & Roots	
MTH 4-06a 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.	**Number - Powers & Roots** Index Notation Index Form to Numbers Simplifying with Index Laws 1
MTH 4-06b Within real-life contexts, I can use scientific notation to express large or small numbers in a more efficient way and can understand and work with numbers written in this form.	**Number - Estimation & Accuracy** Scientific Notation Scientific Notation 1 Scientific Notation 2 Scientific notation to decimal Ordering Scientific Notation

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Fourth Level

Outcome	Activity
Fractions, Decimal Fractions & 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.	**Number - Fractions** Fraction of an Amount Fraction Word Problems **Number - Percentages** Percentage of a Quantity Percentage Increase and Decrease Calculating Percentages Percentage Word Problems Profit and Loss Simple Interest Purchase Options Best Buy Solve Percent Equations
MTH 4-07b I can solve problems involving fractions and mixed numbers in context, using addition, subtraction or multiplication.	**Number - Fractions** Fraction Word Problems More Fraction Problems
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.	**Number - Ratio & Proportion** Equivalent Ratios Solve Proportions Rates Rates Calculations Rates Word Problems Ratio Word Problems Rate Word Problems Converting Rates
Money	
MNU 4-09a I can discuss and illustrate the facts I need to consider when determining what I can afford, in order to manage credit and debt and lead a responsible lifestyle.	**Number - Percentages** Profit and Loss Simple Interest Purchase Options Best Buy
MNU 4-09b I can source information on earnings and deductions and use it when making calculations to determine net income.	**Number - Percentages** Calculating Income Tax Deductions and Tax Instalments Income Tax (UK)
MNU 4-09c I can research, compare and contrast a range of personal finance products and, after making calculations, explain my preferred choices.	**Number - Percentages** Purchase Options Best Buy
Time	
MNU 4-10a I can research, compare and contrast aspects of time and time management as they impact on me.	Using Timetables
MNU 4-10b I can use the link between time, speed and distance to carry out related calculations.	**Number - Ratio & Proportion** Average Speed Time Taken Distance Travelled

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Fourth Level

Outcome	Activity
Measurement	
MNU 4-11a I can apply my knowledge and understanding of measure to everyday problems and tasks and appreciate the practical importance of accuracy when making calculations.	**Number - Estimation & Accuracy** Error in Measurement Percentage Error
MTH 4-11b 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.	**Geometry - Volume & Surface Area** Surface Area: Rectangular Prisms Surface Area: Triangular Prisms Surface Area: Cylinders Surface Area: Square Pyramids
MTH 4-11c I have explored with others the practicalities of the use of 3D objects in everyday life and can solve problems involving the volume of a prism, using a formula to make related calculations when required.	**Geometry - Volume & Surface Area** Comparing Volume Volume: Rectangular Prisms 1 Volume: Triangular Prisms Volume: Cylinders Volume: Prisms Volume: Rectangular Prisms 2 Volume: Cuboid 2
Mathematics – its impact on the world, past, present and future	
MTH 4-12a I have discussed the importance of mathematics in the real world, investigated the mathematical skills required for different career paths and delivered, with others, a presentation on how mathematics can be applied in the workplace.	
Patterns & Relationships	
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.	**Algebra - Sequences** Find the Function Rule Terms: Arithmetic Progressions Linear Expressions for the Nth Term
MTH 4-13b I have discussed ways to describe the slope of a line, can interpret the definition of gradient and can use it to make relevant calculations, interpreting my answer for the context of the problem.	**Algebra - Graphing Equations** Gradient Gradients for Real Modelling Linear Relationships Are they Parallel?
MTH 4-13c Having investigated the pattern of the coordinate points lying on a horizontal or vertical line, I can describe the pattern using a simple equation.	**Algebra - Graphing Equations** Horizontal and Vertical Lines
MTH 4-13d I can use a given formula to generate points lying on a straight line, plot them to create a graphical representation then use this to answer related questions.	**Algebra - Graphing Equations** Function Rules and Tables Graphing from a Table of Values Reading Values from a Line Mental Methods Division

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Fourth Level

Outcome	Activity
Expressions & Equations	
MTH 4-14a Having explored the distributive law in practical contexts, I can simplify, multiply and evaluate simple algebraic terms involving a bracket.	**Algebra - Simplifying** Recognising Like Terms Like Terms: Add and Subtract Simplifying Expressions Algebraic Multiplication **Algebra - Expressions & Formulae** Simple Substitution 1 Simple Substitution 2 Simple Substitution 3
MTH 4-14b I can find the factors of algebraic terms, use my understanding to identify common factors and apply this to factorise expressions.	**Algebra - Simplifying** Factorising Factorising Expressions Factorising with Indices Algebraic Fractions 1 Algebraic Fractions 2 Highest Common Algebraic Factor Grouping in Pairs
MTH 4-15a Having discussed the benefits of using mathematics to model real- life situations, I can construct and solve inequalities and an extended range of equations.	**Algebra - Inequalities** Solving Inequalities 1 Solving Inequalities 2 Solving Inequalities 3 Graphing Inequalities 1 Graphing Inequalities 2 Graphing Inequalities 3 Linear Regions **Algebra - Graphing Equations** Modelling Linear Relationships **Algebra - Linear Equations** Equations to Solve Problems Writing Equations
Shape, Position & Movement	
Properties of 2D shapes and 3D objects	
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.	**Geometry - Pythagoras & Trigonometry** Pythagorean Theorem Pythagorean Triads Hypotenuse of a Right Triangle Hypotenuse, Adjacent, Opposite Sin A Cos A Tan A Find Unknown Angles Find Unknown Sides Elevation and Depression Bearings
MTH 4-16b Having investigated the relationships between the radius, diameter, circumference and area of a circle, I can apply my knowledge to solve related problems.	**Geometry - Area & Perimeter** Circumference: Circles Area: Circles 1

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Fourth Level

Outcome	Activity
Angle, symmetry and transformation	
MTH 4-17a Having investigated the relationship between a radius and a tangent and explored the size of the angle in a semi-circle, I can use the facts I have established to solve related problems.	**Geometry - Shapes & Angles** Circle Theorems
MTH 4-17b I can apply my understanding of the properties of similar figures to solve problems involving length and area.	**Geometry - Transformations** Similar Figures Similar Triangles Scale Factor Similar Figures 1
MTH 4-18a I can plot and describe the position of a point on a 4-quadrant coordinate grid.	**Algebra - Graphing Equations** Number Plane Coordinate Graphs: 1st Quadrant Ordered Pairs Graphing from a Table of Values
MTH 4-18b I can apply my understanding of the 4-quadrant coordinate system to move, and describe the transformation of, a point or shape on a grid.	**Geometry - Transformations** Rotations: Coordinate Plane Transformations: Coordinate Plane
MTH 4-19a Having investigated patterns in the environment, I can use appropriate mathematical vocabulary to discuss the rotational properties of shapes, pictures and patterns and can apply my understanding when completing or creating designs.	**Geometry - Transformations** Rotational Symmetry
Information Handling	
Data & Analysis	
MNU 4-20a I can evaluate and interpret raw and graphical data using a variety of methods, comment on relationships I observe within the data and communicate my findings to others.	**Statistics** Line Graphs: Interpretation Scatter Plots
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.	**Statistics** Mode Median Mean Which Measure of Central Tendency? Mode from Frequency Table Median from Frequency Mean from Frequency Table
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.	**Statistics** Tallies Reading from a Bar Chart Bar Chart Tally Charts Pie Charts Pie Chart Calculations Step Graphs
Ideas of chance and uncertainty	
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. MNU 4-22a	Probability Simple Probability Find the Probability Complementary Events Venn Diagrams Venn Diagram1 Dice and Coins Probability Tables