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| **Number, Money and Measure Estimating and Rounding**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | **Assessment**  **(Benchmarks)** |
| I can round a number using an  appropriate degree of accuracy,  having taken into account the  context of the problem.  MNU 3-01a | I can round numbers to 3 decimal places.  I can use my knowledge of estimation to solve problems.  I can show my knowledge of estimation by explaining my choice of strategy. | I can round numbers to estimate the answers of calculations.  I can apply my knowledge of estimating and rounding to solve problems.  I use the context of the problem to decide on a suitable degree of accuracy. | Rounds decimal fractions to three decimal places.  Uses rounding to routinely estimate the answers to calculations. |

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| **Number, Money and Measure Number and Number Processes**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | | **Assessment**  **(Benchmarks)** |
| I can use a variety of methods to solve number problems in familiar contexts, clearly communicating my processes and solutions. MNU 3-03a  I can continue to recall number facts quickly and use them accurately when making calculations. MNU 3-03b    I can use my understanding of numbers less than zero to solve simple problems in context. MNU 3-04a | I can use a range of mental strategies to quickly recall multiplication facts up to the 10x table.  I can use my current times-table facts to calculate the 11- and 12-times table e.g. If 6x9 = 54, then 12x9 is double this or 12 x9 = 10x9 +2x9.  I can use a range of strategies to add and subtract whole numbers and decimals. E.g. column addition/subtraction involving changing both numbers to 3 decimal places/ e.g. 10 - 7.182 = 10.000 - 7.182  I can apply my methods of addition/subtraction to real-life problems.  I can use strategies to check my answers to addition/subtraction problems.  I can use a number line to add/subtract positive and negative whole numbers.  I can mentally add/subtract integers without the use of a number line.  e.g. History timelines, temperature, money, height above sea level  I can use my knowledge of integers to work out if an answer to a multiplication or division calculation should be positive or negative.  I can calculate the answer to multiplication/division problems involving integers, including real-life contexts. e.g. 3x (-4) = 3 "lots of" -4.  I can apply my knowledge of integers and the order of operations to solve multi-step problems in the correct order. | I can recall the 11 times table and use this to calculate multiplication and division facts.  I can use my knowledge of times tables to recall division facts.  I can solve addition and subtraction problems in familiar contexts with integers and show my working.  I can solve multiplication and division problems in familiar contexts with integers and show my working. | I can recall the 12 times table and use this to calculate multiplication and division facts.  I can solve written multiplication and division problems in familiar contexts working with whole numbers and decimal fractions to three decimal places. | Recalls quickly multiplication and division facts to the 10th multiplication table.  Uses multiplication and division facts to the 12th multiplication table.  Solves addition and subtraction problems working with whole numbers and decimal fractions to three decimal places.  Solves addition and subtraction problems working with integers.  Solves multiplication and division problems working with whole numbers and decimal fractions to three decimal places.  Solves multiplication and division problems working with integers. |

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| **Number, Money and Measure Multiples, factors and primes**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | | **Assessment**  **(Benchmarks)** |
| 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. MTH 3-05a  I can apply my understanding of factors to investigate and identify when a number is prime.  MTH 3-05b | I can recall my multiplication tables.  I can find all common multiples of two given numbers, and hence the lowest common multiple.  I can find all the common factors of given numbers.  I understand that a prime number has only 2 factors - itself and 1.  I can list all the prime numbers below 50.  I can solve simple problems involving multiples and factors.  I can use a factor tree to express a given number as a product of primes. |  |  | Identifies common multiples, including the lowest common multiple for whole numbers and can explain method used.  Identifies common factors, including the highest common factor for whole numbers and can explain method used.  Identifies prime numbers to 100 and can explain method used.  Solves problems using multiples and factors.  Writes a given number as a product of its prime factors. |

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| **Number, Money and Measure Powers and roots**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | | **Assessment**  **(Benchmarks)** |
| 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. MTH 3-06a | I understand that there is a pattern in the sequence of powers  e.g. 22=2×2  23=2×2×2,  24=2×2 ×2 ×2  I can use the notation and vocabulary of powers.  I can evaluate (solve) whole number powers using a mental calculation strategy e.g. 23 = 2 x 2 x 2 = 8  I can use a calculator or other technology to evaluate whole number powers.  I can solve problems with whole number powers, choosing the appropriate notation and calculation strategy.  I can express a whole number as a power using a mental calculation strategy. e.g. 8 = 2 x 2 x 2 = 23 |  |  | Explains the notation and uses associated vocabulary appropriately, for example, index, exponent and power.  Evaluates whole number powers, for example, 24 = 16  Expresses whole numbers as powers, for example, 27 = 33 |

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| **Number, Money and Measure Fractions, decimal fractions and percentages**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | **Assessment**  **(Benchmarks)** |
| 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. MNU 3-07a  By applying my knowledge of equivalent fractions and common multiples, I can add and subtract commonly used fractions. MTH 3-07b  Having used practical, pictorial and written methods to develop my understanding, I can convert between whole or mixed numbers and fractions. MTH 3-07c  I can show how quantities that are related can be increased or decreased proportionally and apply this to solve problems in everyday contexts. MNU 3-08a | I can convert any fraction, decimal or percentage into a fraction, decimal or percentage. e.g. 3/20 = 15% = 0.15  I can convert between whole or mixed numbers and improper fractions. e.g. 2 ¼ = 9/4  I can convert between mixed numbers and decimals. e.g. 2 3/5 = 2.6  I can add and subtract whole numbers and fractions with the same common denominator.  I can add and subtract fractions when changing one denominator  e.g. ½ + 1/12 = 6/12 + 1/12  I can solve problems with a wide range of fractions, decimals and percentages including finding a fraction or percentage of a quantity (with/without a calculator).  I can increase and decrease quantities proportionally (for example: percentage increase/decrease). e.g. Increase £640 by 35%  I can solve simple problems involving direct proportion e.g. cost of 5 items compared to cost of 7.  I can express quantities as a ratio and simplify where appropriate. | I can solve problems with a wide range of fractions, decimal fractions and percentages including finding a fraction or percentage of a quantity (with/without a calculator).  I can add and subtract fractions and mixed numbers with any denominator.  I can increase and decrease quantities proportionally (for example: percentage increase/decrease).  I can simplify a ratio.  I can share an amount in a given ratio.  I can use ratio to solve problems | Converts fractions, decimal fractions or percentages into equivalent fractions, decimal fractions or percentages.  Converts between whole or mixed numbers, improper fractions and decimal fractions.  Adds and subtracts whole numbers and fractions, including when changing a denominator.  Uses knowledge of fractions, decimal fractions and percentages to carry out calculations with and without a calculator.  Solves problems in which related quantities are increased or decreased proportionally.  Expresses quantities as a ratio and where appropriate simplifies, for example, ‘if there are 6 teachers and 60 children in a school find the ratio of the number of teachers to the total amount of teachers and children’. |
| **Number, Money and Measure Money**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | **Assessment**  **(Benchmarks)** |
| 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. MNU 3-09a    I can budget effectively, making use of technology and other methods, to manage money and plan for future expenses. MNU 3-09b | I can use the internet and other sources to find goods and services, compare them and discuss their advantages and disadvantages.  I can calculate simple interest and percentage reductions.  I can use technology and other methods to keep a budget for an event e.g. planning a holiday, designing a new bedroom.  I know the meaning of financial terms, including, debit/credit, APR, p.a., direct debit/standing order and interest rate.  I can give examples of currencies that are used in different countries. | I can consider 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.  I have investigated the effects of interest and percentage rates in the context of contracts and services.  I can use technology and other methods to budget effectively showing development of increased financial capability.  I can plan personal spending and budget in a responsible way including planning for future spending.  I can convert between different currencies. | Demonstrates understanding of best value in relation to contracts and services when comparing products.  Chooses the best value for their personal situation and justifies choices.  Budgets effectively, using digital technology where appropriate, showing development of financial capability.  Demonstrates knowledge of financial terms, for example, debit/credit, APR, pa, direct debit/standing order and interest rate.  Converts between different currencies. |

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| **Number, Money and Measure Time**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | **Assessment**  **(Benchmarks)** |
| 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. MNU 3-10a | I can convert time into fractions or decimals of an hour, using a suitable method.  Mins----> (÷60) ---->hours  Hours---->(x60) ----->mins  Given the appropriate formula, I can calculate the unknown quantity - speed/distance/time.  I can interpret distance/time graphs to link the gradient of the line with the speed of travel.  I can choose the correct formula to solve speed/distance/time problems in a real-life context using SDT triangle.  I can interpret and solve a problem by identifying what I am being asked to find. e.g. "How far (distance)...?", "How fast. (speed)...?", "How long.(time)...?"  I can calculate time intervals using my chosen method. e.g. Timelines or mental methods. | Applies knowledge of the relationship between speed, distance and time to find each of the three variables.  Calculates time durations across hours and days. |

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| **Number, Money and Measure Measurement**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | **Assessment**  **(Benchmarks)** |
| 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. MNU 3-11a    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. MTH 3-11b | I choose appropriate units and ensure that the units are consistent when solving problems.  I can convert between standard units to 3 decimal places when solving calculations of length, capacity, volume and area. e.g.1.239m + 44mm + 32cm  I can calculate the area of a 2D shapes where different units are used. e.g. 1.8m x 70cm  I can find the area of a non-right-angled triangle using the formula a = ½ bh    I can calculate the area of a compound shape constructed from two rectangles.    I can calculate the area of compound 2D shapes constructed from squares, rectangles and triangles.  I can find the volume of compound 3D objects constructed from cubes and cuboids.  I can find the volume of compound 3D objects constructed from cubes and cuboids. | Finds the area of compound 2D shapes constructed from squares, rectangles and triangles.  Finds the volume of compound 3D objects constructed from cubes and cuboids. |

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| **Number, Money and Measure**  **Mathematics – its impact on the world, past, present and future**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | **Assessment**  **(Benchmarks)** |
| 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. MTH 3-12a | I can choose and research famous mathematicians and the work they were known for, and share this research with others, for example Archimedes, Pythagoras, Hypatia, Leibniz, Newton, Gauss, Mandelbrot.  I can choose and research a mathematical topic with others and present my findings. | Researches and communicates using appropriate mathematical vocabulary and notation, the work of a famous mathematician or a mathematical topic and explains the relevance and impact they have on society. |

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| **Number, money and measure**  **Patterns and relationships**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | **Assessment**  **(Benchmarks)** |
| 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. MTH 3-13a | I can generate number sequences when given a simple rule, for example T=3n.  I can extend a given pattern in tabular form. I can use a table to help me extend a sequence of numbers.  I can recognise relationships between consecutive terms and use this to write a rule for a sequence of numbers. | I can generate more difficult number sequences when given a rule, for example T=5n.  I can use a rule for a sequence to calculate the value of any given element in the pattern.  I can extend a given pattern and describe the rule.  I can use algebraic notation to express the rule for a given sequence. | Generates number  sequences from a given rule, for example, T = 4n + 6.  Extends a given pattern and describes the rule.  Expresses sequence rules in algebraic notation, for example, the cost of hiring a car is £75 plus a charge of £0·05 per mile, ‘m’ driven, C = 0.05m + 75. |

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| **Number, money and measure**  **Expressions and Equations**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | **Assessment**  **(Benchmarks)** |
| I can collect like algebraic terms, simplify expressions and evaluate using substitution.  MTH 3-14a    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.  MTH 3-15a    I can create and evaluate a simple formula representing information contained in a diagram, problem or statement. MTH 3-15b | I can collect like terms to simplify an expression for adding and multiplying terms.  I can substitute to evaluate expressions involving 2 variables using positive values.  I can solve a linear equation using inverses or by balancing. | I can collect like terms including squared terms to simplify any algebraic expression.  I can create an expression to represent a situation and simplify it by collecting like terms.  I can substitute to evaluate expressions and formulae for positive and negative values.  I can construct and then solve a range of linear equations using an appropriate method.  I can create a simple formula representing information contained in a diagram, problem or statement. | Collects like terms, including squared terms, to simplify an algebraic expression.  Evaluates expressions involving two variables using both positive and negative numbers.  Solves linear equations, for example, ax ± b = c where a, b and c are integers.  Creates a simple linear formula representing information contained in a diagram, problem or statement.  Evaluates a simple formula, for example, C = 0.05m + 75. |

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| **Shape, position and movement**  **Properties of 2D shape and 3D objects**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | **Assessment**  **(Benchmarks)** |
| Having investigated a range of methods, I can accurately draw 2D shapes using appropriate mathematical instruments and methods. MTH 3-16a | I can use a variety of methods to accurately draw triangles and regular polygons (when given the interior angle), using mathematical instruments.  I can use the formulae and when calculating the radius and diameter and can use this as an accurate method of drawing a circle. | Demonstrates a variety of methods to accurately draw 2D shapes, including triangles and regular polygons (given the interior angle), using mathematical instruments. |

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| **Shape, position and movement**  **Angle, symmetry and transformation**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | | | **Assessment**  **(Benchmarks)** |
| 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. MTH 3-17a    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. MTH 3-17b    I can apply my understanding of scale when enlarging or reducing pictures and shapes, using different methods, including technology. MTH 3-17c    I can use my knowledge of the coordinate system to plot and describe the location of a point on a grid. MTH 3-18a    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. MTH 3-19a | I know that the sum of the 3 angles of a triangle add to 180° and find missing angles.  I know that the angles around a point add to 360° and find missing angles.  I can name angles using appropriate notation, for example, ABC.  I can measure bearings on a map or plan.  I can measure and read distance from a scale map or plan.  I can draw bearings onto a map or plan to plot a route or journey.  I can draw routes or journeys onto a scale map or plan.  I can use a scale factor to enlarge a picture or shape. | | I understand vertically opposite angles, corresponding angles and alternate angles and can use these to find missing angles.  I can create a scale map or plan and record routes or journeys with bearings and distances.  I can calculate bearings and distances from a scale map or plan.  I understand that a fractional scale factor can create a reduction. | | Applies knowledge and understanding of scale to enlarge and reduce objects in size showing understanding of linear scale factor.  Uses bearings in a navigational context, including creating scale drawings.  Identifies all lines of symmetry in 2D shapes.  Creates symmetrical patterns and pictures. |
| **Information Handling**  **Data and Analysis**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | | | **Assessment**  **(Benchmarks)** |
| 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. MNU 3-20a  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. MTH 3-20b    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.  MTH 3-21a | I can find information in text, numerical, pictorial form from a variety of sources.  I can discuss problems involved with carrying out a real-life survey.  I can make appropriate conclusions from given data.  I can source data and make appropriate conclusions.  I can describe the trend in data.  I can justify the sample size for my data collection and explain how bias may arise.  I can construct and interpret pie charts (not pre-sectioned). | | | I can interpret, describe and discuss the important features of a data set and discuss whether I believe the information to be robust, vague or misleading.  When analysing information or collecting my own data, I understand that bias may arise, and the sample size can affect precision. I use this knowledge when I design my data collection process and when I justify my conclusions and predictions.  I can draw compound bar graphs and line graphs and pie charts. | Sources information or collects data making use of digital technology where appropriate.  Interprets data sourced or given.  Describes trends in data using appropriate language, for example, increasing trend.  Determines if information is robust, vague or misleading by considering, for example, the validity of the source, scale used, sample size, method of presentation and appropriateness of how the sample was selected.  Collects data by choosing a representative sample to avoid bias.  Organises and displays data appropriately in a variety of forms, for example, compound bar and line graphs and pie charts, making effective use of technology as appropriate. |
| **Information Handling**  **ideas of chance and uncertainty**  **THIRD LEVEL** | **Suggested line of progression**  **(Progression Framework)** | | | | **Assessment**  **(Benchmarks)** |
| 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. MNU 3-22a | I understand that probability is the measure of how likely an event is (between 0 and 1).  I can use a given probability to calculate an expected outcome.  I can define probability as the number of favourable outcomes ÷ the total number of outcomes.  I can calculate the probability that an event will/will not happen. | I can use information collected in the past to make predictions or risk assessments for the future.  I can use experiments and practical activities to make links between the frequency of an event occurring and the probability of the event occurring.  I can calculate the expectation of an event, for example, how many times I expect the event to occur in a trial.  I can determine all possible outcomes from a single event and calculate the probability of each.  I can make decisions in real life situations based on the likelihood of events occurring and consider the implications of possible decisions before choosing the way ahead. | | | Uses the probability scale of 0 to 1 showing probability as a fraction or decimal fraction.  Demonstrates understanding of the relationship between the frequency of an event happening and the probability of it happening.  Uses a given probability to calculate an expected outcome, for example, ‘probability of rain in June is 0·25 so how many days do we expect it to rain?’.  Calculates the probability of a simple event happening, for example, ‘what is the probability of throwing a prime number on a 12-sided die?’  Identifies all of the mutually exclusive outcomes of a single event and calculates the probability of each.  Investigates real-life situations which involve making decisions on the likelihood of events. occurring and the consequences involved. |