



SECOND LEVEL		NUMERACY and MATHEMATICS		
Experiences and Outcomes		Progression		Benchmarks
Organiser—Number, money and measure	Estimation and rounding			
		I can/am able to: • Round to the nearest 1000. • Round 3 digit whole numbers to nearest ten. • Round 3 digit whole numbers to nearest hundred. • Use rounding skills to estimate. • Use rounding skills to check answers. • Use knowledge of estimation & rounding within a range of problem solving contexts including money or measure.	I can/am able to: • Round to the nearest 10 000. • Round 4 digit whole numbers to the nearest thousand, hundred & ten. • Round decimal numbers to the nearest whole number. • Round numbers to 1 and 2 decimal places using a number line. • Use rounding skills to estimate. • Use rounding skills to check answers. • Use knowledge of estimation and rounding within a range of problem solving contexts including money or measure.	I can/am able to: • Round to the nearest 100 000. • Round decimals up to at least 2 decimal places. • Round numbers larger than 4 digits & use in calculations to estimate answers then check against accurate calculations. • Use the rule for rounding involving half way between when dealing with decimal fractions e.g. 0.5 and above is rounded up, below 0.5 is rounded down. • Use knowledge of estimation & rounding within a range of problem solving contexts including money or measure.
	<i>I can use my knowledge of rounding to routinely estimate the answer to a problem then, after calculating, decide if my answer is reasonable, sharing my solution with others.</i> MNU 2-01a			



SECOND LEVEL		NUMERACY and MATHEMATICS		
Experiences and Outcomes		Progression		Benchmarks
Organiser—Number, money and measure	Number and number processes			
		I can/am able to:	I can/am able to:	I can/am able to:



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression			Benchmarks
Organiser—Number, money and measure	Number and number processes	I can/am able to: • Say & show which calculations are needed to solve simple two step problems involving whole numbers. • With support, decide, from all strategies, which is the most effective to use & explain why, in addition, subtraction, multiplication & division calculations. • Build on table facts for 2, 3, 4, 5 and 10 to explore links to 6, 7, 8 & 9 times tables. • Add & subtract numbers with 1 decimal place, e.g.1 6.7 + 32.4 (using partitioning & number line knowledge) • Multiply & divide whole numbers (up to 3 digits) by 10 & 100 • Multiply a 1 digit number by a 2 digit number using partitioning & addition skills (not long division) • Multiply & divide 4 digit numbers with up to 1 decimal place by 10, e.g. 223 ÷ 10 or 15.2 x 10 • Multiply and divide multiples of 10 with 2 digits by a single digit, e.g. 30 X 5, 60 ÷ 3 • Multiply 1 digit numbers by a single digit • Divide whole numbers up to 3 digits (with remainders) by a single digit • Say where decimal fraction problems occur in real life	I can/am able to: • Say & show which calculations are needed to solve two or 3 step problems involving whole numbers. • Decide, from all strategies, which is the most effective to use & explain why, in addition, subtraction, multiplication & division calculations. • Use multiplication and division facts for tables 6, 7, 8 & 9. • Add & subtract numbers up to 2 decimal places, e.g. 12.53 + 34.71 (using partitioning & number line knowledge) • Multiply & divide whole numbers (up to 4 digits) by 10, 100 and 1000 • Multiply a 2 digit number by a 2 digit number using partitioning & addition skills (not long division) • Multiply & divide 4 digit numbers with up to 2 decimal place by 10 & 100, e.g. 223/100 or 15.24 x 100 • Multiply and divide multiples of 10 and 100 with 3 digits by a single digit, e.g. 350 ÷ 5 • Multiply decimal fractions up to 1 decimal places by a single digit • Divide whole number by a single digit to give an answer with 1 decimal place • Use appropriate vocabulary to say & show which processes are needed to solve decimal fraction problems	I can/am able to: • Describe & show the approaches & solutions I use to solve a wider range of problems involving whole numbers. • Select, from all strategies, which is the most effective to use & explain why, in addition, subtraction, multiplication & division calculations. • Use multiplication and division facts for all tables from 1 to 10 • Add & subtract numbers up to 3 decimal places, e.g. 12.567 + 34.786 • Multiply & divide numbers including decimals by 10, 100 & 1000 • Multiply a whole number by a 2 digit number using partitioning & addition skills (not long division) • Multiply & divide 4 digit numbers with up to 2 decimal place by 10, 100 & 1000 e.g. 2243/1000 or 15.29 x 1000 • Multiply and divide multiples of 10, 100 and 1000 with 4 digits by a single digit, e.g. 1350 ÷ 5 • Multiply decimal fractions up to 2 decimal places by a single digit • Divide whole numbers by a single digit to give an answer with 2 decimal places • Add, subtract, multiply & divide decimal fractions in applications involving money & measurement problem solving contexts	• Uses multiplication and division facts to the 10th multiplication tables • Multiplies and divides whole numbers by multiples of 10, 100 and 1000. • Multiplies and divides decimal fractions to two decimal places by 10, 100 and 1000. • Multiplies whole numbers by two digit numbers • Multiplies decimal fractions to two decimal places by a single digit • Divides whole numbers and decimal fractions to two decimal places, by a single digit, including answers expressed as decimal fractions, for example, 43 ÷ 5 = 8.6.
		Having determined which calculations are needed, I can solve problems involving whole numbers using a range of methods, sharing my approaches & solutions with others. MNU 2-03a Link to MNU 2 -02a & MTH 2 -03c I have explored the contexts in which problems involving decimal fractions occur & can solve related problems using a variety of methods. MNU 2-03b Link to MNU 2 -02a Pupils should be offered opportunities to apply their mental strategies & written skills to solve problems with more than one step through a relevant context e.g. Money - MNU 2-09a			



SECOND LEVEL		NUMERACY and MATHEMATICS		
Experiences and Outcomes		Progression		Benchmarks
Organiser—Number, money and measure	Number and number processes	Having explored the need for rules for the order of operations in number calculations, I can apply them correctly when solving simple problems	I can/am able to:	I can/am able to:
		<i>MTH 2-03c</i> Link to MNU 2 -02a		
		• Show & talk about the different answers that you can get depending on which order you carry out the operations (÷ x + -) in simple number calculations e.g. 2 + 4 X 3 - 1 (add, multiply then subtract = 17) (add, subtract then multiply = 12) (correct answer: multiply, add then subtract = 13) • Explain, through the use of concrete materials, pictorial representations etc. which order gives the correct answer.	• Accept and understand that there is an established order in which the operations must be done. • With support, begin to use the strategy which aids order of operation problems and calculations e.g. BODMAS when solving simple multi-step problems. The BODMAS acronym is: • Brackets (parts of a calculation inside brackets always comes first). • Orders (numbers involving powers or square roots). • Division. • Multiplication. • Addition. • Subtraction.	• Use the order of operations correctly when solving a wider range of multi-step problems. • Remember the strategy which aids order of operation problems and calculations e.g. BODMAS .
				• Applies the correct order of operations in number calculations when solving multi-step problems.



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression		Benchmarks	
Organiser—Number, money and measure	Number and number processes	I can/am able to: • Recognise that there are numbers less than zero by exploring a number line. • Investigate & talk about where negative numbers are used in everyday life e.g. cold weather temperature, floor levels in car parks, etc.	I can/am able to: • Read & order positive and negative numbers. • Place & identify negative numbers on a number line. • Explain what negative numbers mean when they occur in real life e.g. <i>–2 is warmer than –6, and overdraft of £200 is less than one of £650.</i>	I can/am able to: • Use the number line to carry out simple addition & subtraction of positive & negative numbers. • Solve real life number problems including addition & subtraction of positive & negative numbers.	<i>* See 2-02a, 03a, b, c above</i> • Identifies familiar contexts in which negative numbers are used • Orders numbers less than zero and locates them on a number line
		<i>I can show my understanding of how the number line extends to include numbers less than zero & have investigated how these numbers occur & are used.</i> <i>MNU 2-04a</i>			



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression		Benchmarks	
Organiser—Number, money and measure	Multiples, factors and primes	I can/am able to: • Know & use table facts for 6, 7, 8 & 9 • Explore factors by grouping materials, using a hundred square, etc. & my knowledge of all times tables • Investigate multiples of numbers using the hundred square & my knowledge of all times tables • Use known relationships between multiplication & division to find multiples & factor pairs for a number • Complete tasks & solve real-life problems using these relationships e.g. doubling the quantity needed from a recipe, translating millimetres into centimetres, etc	I can/am able to: • Consolidate & use all table facts • Say what a factor is • Use multiplication & division to investigate & explore the relationships between, & common factors of 2 numbers including prime numbers • Describe & recognise a prime number • Complete tasks & solve real-life money, number & measure problems using factors for numbers up to 100	I can/am able to: • Consolidate & use all table facts • Investigate the relationships in multiplication & division by identifying & exploring square numbers & square roots • Apply my knowledge and understanding of multiples and factors to solve relevant real-life problems in number, money and measurement	• Identifies multiples and factors of whole numbers and applies knowledge and understanding of these when solving relevant problems in number, money and measurement.
		Please note that there are no Experiences and Outcomes at second level for Powers and Roots			



SECOND LEVEL		NUMERACY and MATHEMATICS				
Experiences and Outcomes		Progression			Benchmarks	
Organiser—Number, money and measure	Fractions, decimal fractions and percentages	<i>I have investigated the everyday contexts in which simple fractions, percentages or decimal fractions are used & can carry out the necessary calculations to solve related problems.</i> MNU 2-07a Link to MNU 2-03b	I can/am able to: • Use knowledge of division to find fractions of quantities for 3 digit numbers (1/2, 1/3, 1/4, 1/5, 1/10) • Understand that the % symbol relates to number of parts out of 100 e.g. 50% means 50 out of 100 , 100% means 100/100 = 1 whole • Mentally find percentages of simple whole numbers by using knowledge of division facts e.g. 50% uses knowledge from 2 x table, 25% uses knowledge from 4 x table, etc. • Use knowledge of division to find fractions of quantities up to 2 digits for 1/6, 1/7, 1/8, 1/9 • Investigate where & how fractions & percentages are used in everyday life e.g. shop sales, altering quantities needed from recipes • Explain & show the equivalence of simple fractions to decimal fractions to percentages e.g. 1/2 = 0.5=50% supported by use of the hundred square. • Choose whether I use a fraction, a decimal fraction or a percentage to complete calculations & solve real-life problems. • Use my knowledge of multiplication & division facts to translate common fractions into equivalent fractions e.g. 1/5 = 2/10 = 20/100 • Reduce common fractions to their simplest form using my knowledge of multiplication, division, multiples & factors e.g. 20/100 = 1/5 (reduce until there are no further common factors)	I can/am able to: • Use knowledge of multiplication & division to find simple fractions of a quantity e.g. 3/4 of 12 • Use knowledge of multiplication & division to find percentages of a quantity (100%, 75%, 50%, 25%, 10% and 1%) • Use knowledge of multiplication & division to find simple fractions of a broader range of quantities e.g. 3/8 of 16, 5/8 of 32 • Use knowledge of fractions & percentages to solve a range of real-life problems e.g. Calculating sale discounts such as 10%, 20%. • Explain & show the equivalence of common fractions to decimal fractions to percentages e.g. 1/1 =1=100%, 3/4 = 0.75 = 75%, 1/2 = 0.5 = 50%, 1/4 = 0.25 = 25%, 1/10 = 0.1 = 10% & 1/100 = 0.01 = 1% • Say why I choose to use fractions, decimal fractions or percentages to complete calculations & solve real-life problems • Use my knowledge of multiplication & division facts to create equivalent fractions from a wider range of common fractions e.g. 3/4, 3/8., 5/8 • Reduce a wider range of common fractions to their simplest form using my knowledge of multiplication, division, multiples & factors & begin to order these.	I can/am able to: • Use knowledge of multiplication & division to find a wider range of fractions of a quantity e.g. 1/3 of 60, 2/3 of 600 • Use knowledge of multiplication & division to find percentages of a quantity (66.6%, 33.3%, 20% and 5%) • Use knowledge of fractions & percentages to solve a range of real-life problems such as e.g. Calculating VAT on items, or the amount of interest gained on a bank balance • Use my knowledge of equivalent fractions & percentages to calculate percentages with & without a calculator. • Choose the most efficient method to complete calculations & solve real-life problems using fractions, decimal fractions or percentages • Put fractions into their simplest form routinely when solving problems or making calculations • Place a wider range of fractions in order	• Uses knowledge of equivalent forms of common fractions, decimal fractions and percentages, for example, 3/4= 0.75 = 75%, to solve problems. • Calculates simple percentages of a quantity, and uses this knowledge to solve problems in everyday contexts, for example, calculates the sale price of an item with a discount of 15% • Calculates simple fractions of a quantity and uses this knowledge to solve problems, for example, find 3/5 of 60 • Creates equivalent fractions and uses this knowledge to put a set of most commonly used fractions in order • Expresses fractions in their simplest form
		<i>I can show the equivalent forms of simple fractions, decimal fractions and percentages & can choose my preferred form when solving a problem, explaining my choice of method.</i> MNU 2-07b I have investigated how a set of equivalent fractions can be created, understanding the meaning of simplest form, & can apply my knowledge to compare and order the most commonly used fractions MTH 2-07c Potential to link these experiences & outcomes to practical activities such as Time MNU 2-10a & Measurement MNU 2-11b				



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression			Benchmarks
Organiser—Number, money and measure	Money	I can/am able to:	I can/am able to:	I can/am able to:	• Carries out money calculations involving the four operations. • Compares costs and determines affordability within a given budget. • Demonstrates understanding of the benefits and risks of using bank cards and digital technologies • Calculates profit and loss accurately, for example, when working with a budget
		• Carry out basic money calculations involving the four operations using all coins & notes e.g. Monopoly, using coins & notes in role play • Investigate different retailers to explore what they charge for the same item e.g. everyday staple items (bread, milk, cereal), mid-range costs such as a Gamestation, & higher costs such as holidays • Understand that some purchases include hidden costs such as VAT • Say which purchases are essential & non-essential e.g. Appreciate the difference between wants & needs	• Use knowledge of all calculation methods to solve a range of money problems e.g. totalling the cost of a shopping list, splitting a bill for a meal • Identify the cost of purchases in various contexts to compare how these fit to a variety of budget constraints e.g. weekly shop, birthday or Christmas presents, pet ownership • Understand that some purchases have additional costs such as bag or delivery charges • Say which purchases are the most affordable & give reasons for my answers	• Use knowledge of all calculation methods to choose the most efficient ways to solve a more complex range of money problems • Solve a variety of budgeting tasks to identify the most affordable options • Understand that some purchases include further costs such as insurance cover, running costs & maintenance	
		• Explore different ways to purchase goods (cash, card, vouchers, online payments) through tasks, games, role-play or visits to or from a bank/building society • Understand the difference between a credit & debit card e.g. debit card payment is immediate, credit payment is deferred.	• Explore the pros and cons of purchasing goods using cash, card, vouchers, online payments through a range of real-life contexts e.g. security of payment, free insurance, risk of running up debt, ease of purchase for larger items • Understand what debt is & say how payment decisions contribute to working within a budget	• Through a range of real-life contexts, identify the most beneficial payment option when purchasing a variety of items or services, and justify my choice • Explore budgeting through a range of real-life contexts in order to demonstrate how to avoid debt	
		• Through role play or enterprise activities, explore situations where goods are exchanged for more, or less than their purchase cost. e.g. making a profit, or a loss • Understand that a well-managed budget will make a balance of money grow, & that bad budgeting results in a reduction of balance - also that no profit or loss is called breaking even	• Complete tasks & solve real-life problems to calculate whether a profit or a loss is made e.g. class enterprise challenge, Myco tyco, goods for sale at the school Fayre	• Complete activities with a real-life context which involve maintaining a balance either paper-based or using software such as Excel	
I can manage money, compare costs from different retailers, & determine what I can afford to buy. MNU 2-09a					
I understand the costs benefits & risks of using bank cards to purchase goods or obtain cash & realise that budgeting is important MNU 2-09b					
I can use the terms profit and loss in buying & selling activities & can make simple calculations for this. MNU 2-09c					



SECOND LEVEL		NUMERACY and MATHEMATICS				
Experiences and Outcomes		Progression		Benchmarks		
Organiser—Number, money and measure	Time	I can use & interpret electronic & paper based timetables & schedules to plan events & activities, & make time calculations MNU 2-10a	I can/am able to: • Discuss the properties & differences of 12 hour and 24 hour notation. • Read and record both 12 hour and 24hr notation. • Convert between 12 hour & 24 hour notation. • Calculate durations of activities & events including situations bridging over several hours and using both 12 hour and 24 hour. • Use & interpret a range of timetables & calendars (electronic or otherwise) to plan an event or activity. • Investigate common units used in measuring speed, distance & time, e.g. speed limits, athletics etc. • Understand what is meant by miles per hour (mph) and kilometres per hour (kph). • With support explore & discuss the link between distance, speed & time e.g. the time to travel 100m and the time to travel 200m if you were running at the same speed for both; what could you say about that?	I can/am able to: • Investigate & discuss longer periods of time e.g. decades, centuries etc. • Apply my knowledge of the links with commonly used units of time to carry out simple conversion calculations e.g. change 1 ¾ hours into minutes. • Calculate durations of activities & events including situations bridging over parts of hours and using both 12 hour and 24 hour. e.g. 1.15pm to 3.40pm. • Use empty number lines to calculate start time, end time or duration from a range of electronic or paper based timetables or calendars, e.g. TV guides, bus timetables, written problems etc. • Through practical activities, use a stopwatch to calculate metres per second. • Investigate how long a journey will take using Multimaps , AA Route Finder or similar. • Estimate the time taken for simple journeys given information about the distance travelled and speed used,	I can/am able to: • Convert common times into common units e.g. 90 minutes = 1.5 hours. • Solve real life problems (involving converting between units of time) & explain my choice of the unit of time I've used. • Solve practical problems using the most appropriate timing device & record using most appropriate units including hundredths of a second. • Make informed estimates for the duration of a journey using my knowledge of distance, speed & time.	• Reads and records time in both 12 hour and 24 hour notation and converts between the two • Knows the relationships between commonly used units of time and carries out simple conversion calculations, for example, changes 1 3/4 hours into minutes. • Uses and interprets a range of electronic and paper based timetables and calendars to plan events or activities and solve real life problems • Calculates durations of activities and events including situations bridging across several hours and parts of hours using both 12 hour and 24 hour notation • Estimates the duration of a journey based on knowledge of the link between speed, distance and time. • Chooses the most appropriate timing device in practical situations and records using relevant units, including hundredths of a second. • Selects the most appropriate unit of time for a given task and justifies choice.
		I can carry out practical tasks & investigations involving timed events & can explain which unit of time would be most appropriate to use MNU 2-10b Link to 2-07a & b				
		Using simple time periods, I can give a good estimate of how long a journey should take, based on my knowledge of the link between time, speed & distance. MNU 2-10c				



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression		Benchmarks	
Organiser—Number, money and measure	Measurement	I can/am able to: - Estimate the size & distance of objects using the appropriate tools & units. - Estimate the size of familiar objects by comparing them to another object. - Accurately measure the size & distance of objects using the appropriate tools & units. - Discuss & explain the value of units of measure e.g. 1000m = 1km, 1000g = 1kg, 10mm = 1cm etc. & can convert between them. - Record measurements in a variety of ways, e.g. 1 metre 25 centimetres = 1m 25cm = 125cm - Choose the most appropriate measuring device for a given task & read the scale on it accurately.	I can/am able to: - Investigate the size of familiar objects & use this knowledge to estimate & compare length, mass, area or capacity. - Apply measuring skills accurately, using appropriate units of measure. - Convert between different units of metric measure e.g. km & m, cm & m, cm & mm, g & kg, l & ml. - Record measurements in a variety of ways using decimal notation up to 2 places, e.g. 1 metre 25 centimetres = 1.25m - Read scales on measuring devices calculating unmarked intervals. - Discuss & explain that in everyday life we use imperial units e.g. miles or stones.	I can/am able to: - Demonstrate & apply my understanding of measurement of familiar objects by solving problems in context. - Select appropriate units of measurement when solving problems. - Measure accurately length, mass, area or capacity. - Convert between standard units, converting measurements of length, mass, volume & time from a smaller unit of measure to a larger unit (& vice versa) - Record measurements in a variety of ways using decimal notation up to 3 places, e.g. 1 metre 25 centimetres = 1.25m - Discuss & explain that in everyday life we use imperial units e.g. hectare or tonnes.	- Uses the comparative size of familiar objects to make reasonable estimations of length, mass, area and capacity. - Estimates to the nearest appropriate unit, then measures accurately: length, height and distance in millimetres (mm), centimetres (cm), metres (m) and kilometres (km); mass in grams (g) and kilograms (kg); and capacity in millilitres (ml) and litres (l). - Converts between common units of measurement using decimal notation, for example, 550 cm = 5.5 m; 3.009kg = 3009 g. - Chooses the most appropriate measuring device for a given task and carries out the required calculation, recording results in the correct unit - Reads a variety of scales accurately - Shows awareness of imperial units used in everyday life for example, miles or stones
		I can use my knowledge of the sizes of familiar objects or places to assist me when making an estimate of measure. MNU 2-11a I can use the common units of measure, convert between related units of the metric system & carry out calculations when solving problems. MNU 2-11b Link to MNU 2-07b			



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression		Benchmarks	
Organiser—Number, money and measure	Measurement	I can/am able to: • Calculate perimeter of squares & rectangles by adding the sides & record with appropriate units. • Use appropriate measuring tools to measure the perimeter of squares & rectangles. • Calculate the area of rectangles & squares by multiplying 2 adjoining sides & record with appropriate units. • Investigate & measure the volume of a range of containers using water.	I can/am able to: • Investigate & discuss in words and/or symbols a rule for calculating the perimeter of a square or rectangle. • Calculate the perimeter of 2D shapes involving same or mixed units. • Draw a square or rectangle accurately given perimeter or area. • Explore & recognise that 2D shapes with the same areas can have different • Investigate & discuss in words and/or symbols a rule for calculating the area of a square or rectangle. • Investigate & discuss in words and/or symbols a rule for calculating the area of a right angled triangle e.g. recognising the link to half a square or rectangle. • Use cubes to measure containers. • Investigate & discuss in words and/or symbols a rule to calculate the volume of a range of containers e.g. use cubes	I can/am able to: • Use formula to calculate perimeter of squares & rectangles in problems and real life contexts & record with • Explore, recognise & show that area can be conserved e.g. investigate & draw a number of rectangles that all have the same area. • Calculate the area of a square or rectangle using the formula $A= l \times b$ & record with appropriate units. • Calculate the area of a right angled triangle using the formula $A= \frac{1}{2}(l \times b)$ & record with appropriate units. • Calculate the volume of cubes and cuboids using the formula $V = L \times B \times H$ & record with appropriate units.	• Calculates the perimeter of simple straight sided 2D shapes in millimetres (mm), centimetres (cm) and metres (m) • Calculates the area of squares, rectangles and right-angled triangles in square millimetres (mm²), square centimetres (cm²) and square metres (m²) • Draws squares and rectangles accurately with a given perimeter or area • Demonstrates understanding of the conservation of measurement, for example, draw three different rectangles each with an area of 24 cm2 • Calculates the volume of cubes and cuboids in cubic centimetres (cm³) and cubic metres (m³)
		I can explain how different methods can be used to find the perimeter & area of a simple 2D shape or volume of a simple 3D object. MNU 2-11c			



SECOND LEVEL		NUMERACY and MATHEMATICS		
Experiences and Outcomes		Progression		
Organiser—Number, money and measure	Mathematics—its impact on the world, past, present and future	I can/am able to:	I can/am able to:	I can/am able to:
		- Research & discuss/present ways in which Mathematics has played an important role in advancing our world of work e.g. in the construction industry, engineering of bridges, etc. - Investigate & discuss/present how Mathematics has played an important role in advancing inventions now and in the past e.g. binary code led to the digital age, sequences of numbers for security, bearings in navigation (sea and air) etc. - Explore & discuss/present the ways in which Mathematics has played an important role in particular jobs/careers e.g. STEM careers, Arts, business.		- Researches and presents examples of the impact mathematics has in the world of life and work. - Contributes to discussions and activities on the role of mathematics in the creation of important inventions, now and in the past.
	I have worked with others to explore, & present our findings on, how mathematics impacts on the world & the important part it has played in advances & inventions. MTH 2-12a			



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression			Benchmarks
Organiser—Number, money and measure	Patterns and relationships	I can/am able to: - Continue a sequence using a rule explained in words, e.g. start at 3 & add 4 - Describe a simple sequence using words - Write the rule to a simple sequence - Find a missing number in a simple sequence	I can/am able to: - Describe more complex sequences using words - Write the rule to a more complex sequence. - Find a missing number in a complex sequence - Explore and discuss common sequences, e.g. Fibonacci, square numbers, triangular numbers etc.	I can/am able to: - Express a linear sequence in a table format - Apply knowledge of multiples, factors, square numbers and triangular numbers to generate number patterns for others to continue	- Explains and uses a rule to extend well known number sequences including square numbers, triangular numbers and Fibonacci sequences - Applies knowledge of multiples, square numbers and triangular numbers to generate number patterns.
	Expressions and equations	I can apply my knowledge of number facts to solve problems where an unknown value is represented by a symbol or letter MTH 2-15a	- Use function machines forward & backwards for addition & subtraction e.g. $a - 30 = 40$. - Use function machines forward & backwards for multiplication & division e.g. $4x = 12$.	- Use function machines forward & backwards for equations including 2 or more operations e.g. $3x + 1 = 10$; $2x - 4 = 14$. - Use more formal written methods (other than a function machine) to record solutions to simple algebraic equations	Use knowledge of number facts & opposite operations to solve simple algebraic problems where an unknown value is represented by a symbol or letter



SECOND LEVEL		NUMERACY and MATHEMATICS					
Experiences and Outcomes		Progression		Benchmarks			
Organiser—Shape, position and movement	Properties of 2D shapes and 3D objects	I can/am able to: • Name & identify properties of right angled & equilateral triangles. • Name & classify 2D shapes & 3D objects & describe their properties e.g. angles, edges, vertices and faces. • Discuss & explain that a regular polygon is equiangular (all angles are equal in measure) & equilateral (all sides have the same length). • Identify how & where 3D objects are used in the environment	I can/am able to: • Name & identify properties of isosceles & scalene triangles. • Discuss & describe the properties of the circle using terms such as radius, diameter & circumference. • Recall & explain that the diameter is twice the radius & that the radius is half of the diameter. • Distinguish between regular & irregular polygons based on reasoning about equal sides & angles	I can/am able to: • Recognise & name common quadrilaterals & describe their properties. • Explain the term diagonal & investigate the number of diagonals in a range of 2D shapes. • Identify and describe 2D shapes & 3D objects within the real world & explain why their properties match their function e.g. the importance of triangles in a bridge structure	• Describes 3D objects and 2D shapes using specific vocabulary including regular, irregular, diagonal, radius, diameter and circumference. Applies this knowledge to demonstrate understanding of the relationship between 3D objects and their nets. • Identifies and describes 3D objects and 2D shapes within the environment and explains why their properties match their function • Knows that the radius is half of the diameter.		
		Having explored a range of 3D objects and 2D shapes, I can use mathematical language to describe their properties, & through investigation can discuss where & why particular shapes are used in the environment MTH 2-16a	Through practical activities, I can show my understanding of the relationship between 3D objects & their nets. MTH 2-16b	I can draw 2D shapes & make representations of 3D objects using an appropriate range of methods & effective use of resources MTH 2-16c	• Explore & investigate nets by building skeletal structures e.g. using straws to build simple 3D objects a face at a time. • Draw simple 2D shapes using lengths e.g. squares, rectangles. • Draw informal representations of other 2D shapes e.g. triangles, kites, rhombus etc.	• Create a net for a simple 3D object e.g. cube. • Draw informal representations of other 3D objects e.g. cylinders, prisms etc. • Make use of digital technologies & mathematical instruments to draw 3D objects • Explain that there are instances when not all parts of the 3D object can be seen.	• Uses digital technologies and mathematical instruments to draw 2D shapes and make representations of 3D objects, understanding that not all parts of the 3D object can be seen
		Potential to link these experiences & outcomes to practical activities such as MNU 2-19a					

Potential to link these experiences & outcomes to practical activities such as MNU 2-19a



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression		Benchmarks	
Organiser—Shape, position and movement	Angle, symmetry and transformation	I can/am able to: • Discuss the properties of a right angle, straight angle & a full turn angles e.g. 90°, 180° & 360°. • Discuss the properties of acute angles e.g. is less than 90° • Discuss the properties of obtuse angles e.g. is more than 90° but less than 180° • Discuss the properties of reflex angles e.g. is more than 180°, but less than 360° • Use technologies to draw a range of angles e.g. using a programmable toy • Accurately measure angles up to 180° • Discuss & name the eight compass points. • Follow and give directions involving the eight compass points • Explore scale and scale drawings through real life contexts, play and outdoor learning etc.	I can/am able to: • Investigate & discuss the angles I find in my environment. • Describe & classify the angle I discover in the environment using appropriate mathematical vocabulary. • With or without technology, use my knowledge of angles to solve simple problems. • Accurately measure angles up to 360° • Use standard notation to record 3-figure bearings of all 8 compass points • Draw any bearing up to 180° • Investigate simple scales on maps, models or plans and discuss what it represents & means e.g. 1cm:2km means that 1cm on the plan is actually 2km in real life. • Recognise that a scale drawing is an accurate representation of an area of land, building, object etc. but in a smaller form	I can/am able to: • Discuss the properties of supplementary angles e.g. adds to 180° & can carry out calculations using this knowledge. • Discuss the properties of complementary angles e.g. adds to 90° & can carry out calculations using this knowledge. • With or without technology, use my knowledge & skills of angles to solve problems in context. e.g. missing angles in quadrilaterals & regular polygons • Construct and draw a range of angles using a ruler and a protractor . • Use standard notation to record any 3 figure bearing • Apply my knowledge & understanding of scale to problems which involve the interpretation of simple models, maps & plans.	• Uses mathematical language including acute, obtuse, straight and reflex to describe and classify a range of angles identified within shapes in the environment. • Measure and draws a range of angles to within $\pm 2^0$ • Knows that complementary angles add up to 90° and supplementary angles add up to 180° and uses this knowledge to calculate missing angles. • Uses knowledge of the link between the eight compass points and angles to describe, follow and record directions. • Interprets maps, models or plans with simple scales, for example, 1cm:2km
		I have investigated angles in the environment, & can discuss, describe & classify angles using appropriate mathematical vocabulary. MTH 2-17a			
		I can accurately measure & draw angles using appropriate equipment, applying my skills to problems in context MTH 2 -17b			
		Through practical activities which include the use of technology, I have developed my understanding of the link between compass points & angles & can describe, follow and record directions, routes & journeys using appropriate vocabulary MTH 2-17c			
Having investigated where, why & how scale is used & expressed, I can apply my understanding to interpret simple models, maps & plans MTH 2-17d					



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression			Benchmarks
Organiser—Shape, position and movement	I can use my knowledge of the co-ordinate system to plot & describe the location of a point on a grid MTH 2-18a/ MTH 3-18a	I can/am able to: Use grid references to read, plot & record locations on a grid (First quadrant only)	I can/am able to: With support, begin to solve real life problems by applying my knowledge of the coordinate system to plot and describe the location of a point on the grid.	I can/am able to: Solve real life problems by applying my knowledge of the coordinate system to plot and describe the location of a point on the grid	Describe, plots and records the location of a point, in the first quadrant, using coordinate notation
	I can illustrate the lines of symmetry for a range of 2D shapes & apply my understanding to create & complete symmetrical pictures & patterns MTH 2-19a/ MTH 3-19a	- Identify and draw lines of up to 4 lines of symmetry on 2D shapes - Complete and/or create symmetrical shapes and patterns.	- Identify & draw all lines of symmetry on a wide range of 2D shapes - Complete and/or create symmetrical shapes & patterns using digital technologies.	- Identify, describe & represent the position of a shape following a reflection - Discuss, & show my understanding of shapes when reflected e.g. recognise that given a reflection of a shape, that the shape has not changed.	Identifies and illustrates line symmetry on a wide range of 2D shapes and applies this understanding to complete a range of symmetrical patterns, with and without the use of digital technologies.



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression			Benchmarks
Organiser—Information Handling	Data and analysis	In a range of contexts across my learning, I can/am able to: • With support, begin to interpret & draw conclusions from information displayed in a variety of ways & media. • With support, begin to recognise when & how the method of display or presentation of data could mislead its audience. • Begin to devise & use a wider range of methods to carry out investigations & surveys & gather information. • Apply my knowledge of tables, charts, diagrams & graphs with increasing independence to collate, organise & communicate the results of the investigations & surveys I conduct e.g. individually & with others. • With support, begin to explore & use simple data bases e.g. to extract & to collate information. • With support, explore & extend the range of tables, charts, diagrams & graphs I can use, understand & create e.g. including digital methods. • With support, display data by selecting & using scale with increasing skill & understanding e.g. including digital methods.	In a range of contexts across my learning, I can/am able to: • With increasing independence & accuracy, interpret & draw conclusions from information displayed in a variety of ways & media e.g. bar graphs, tables & charts & line graphs • With support, begin to explore & comment on the reliability of information & data e.g. consider what its author might want the reader to believe & question how the information has been gathered. • With increasing independence, devise & use a variety of methods to carry out investigations & surveys & gather information e.g. individually & with others. • Apply my knowledge of tables, charts, diagrams & graphs to collate, organise & communicate the results of the investigations & surveys I conduct using increasingly suitable & appropriate methods. • With support, explore & extend my ability to gather, organise & share my data & analysis using digital technologies e.g. beginning to create data bases & spreadsheets. • Display data using an extended range of tables, charts, diagrams & graphs & make increasingly appropriate choices about which method is most suitable e.g. including digital methods. • Demonstrate my increasing ability to independently choose a suitable scale when creating graphs.	In a range of contexts across my learning, I can/am able to: • Interpret & draw accurate conclusions from information displayed in a variety of ways & media. • Analyse & draw appropriate conclusions about the reliability of information & data displayed in a variety of ways. • Devise & accurately use a variety of methods to carry out appropriate investigations & surveys & gather information e.g. individually & with others. • Collate, organise & communicate my results in an appropriate way using my knowledge of surveys, tables, bar & line graphs, frequency tables, simple pie charts (pre-sectioned) & spreadsheets e.g. including digital methods. • Calculate averages (mean only) & share in an appropriate way when communicating my results. • Select the most appropriate method to display a variety of data e.g. using an extended range of tables, charts, diagrams & graphs—including digital methods. • Use a suitable scale when displaying data in a range of tables, charts, diagrams & graphs e.g. including digital methods.	• Devises ways of collecting data in the most suitable way for the given task • Collects, organises and displays data accurately in a variety of ways including through the use of digital technologies, for example, creating surveys, tables, bar, graphs, line graphs, frequency tables, simple pie charts and spreadsheets. • Analyses, interpret and draws conclusions from a variety of data • Draws conclusions about the reliability of data taking into account, for example, the author, the audience, the scale and sample size used. • Displays data appropriately making effective use of technology and chooses a suitable scale when creating graphs.
		<i>Having discussed the variety of ways and range of media used to present data, I can interpret and draw conclusions from the information displayed, recognising that the presentation may be misleading</i> MNU 2-20a			
		<i>I have carried out investigations and surveys, devising & using a variety of methods to gather information & have worked with others to collate, organise & communicate the results in an appropriate way</i> MNU 2-20b			
		I can display data in a clear way using a suitable scale, by choosing appropriately from an extended range of tables, charts, diagrams & graphs, making effective use of technology MTH 2-21a/MTH 3-21a			



SECOND LEVEL		NUMERACY and MATHEMATICS			
Experiences and Outcomes		Progression		Benchmarks	
Organiser—Information Handling	Ideas of chance and uncertainty	I can/am able to: • Use appropriate vocabulary such as “highly likely, unlikely,” etc., to predict the probability of an outcome/event. • Discuss & describe the term ‘equal chance’ & talk about equally likely events. • Place events on a empty number line to demonstrate the probability of any event. • Discuss & describe percentage chance e.g. 100% chance, 0% chance, 50% chance etc. • Show that probability can be represented by a fraction. • List all the possible outcomes of simple events using tree diagrams & organised lists.	I can/am able to: • Investigate, through experimenting with tossing a coin, rolling a dice coloured beads etc. the possible outcomes of simple, random events. • Place events on a percentage number line to demonstrate the probability of any event. • Show that probability can be represented by a ratio e.g. 1:6 • Arrange events in order to determine which is most or least likely.	I can/am able to: • Use data to predict the outcome of a simple experiment & explain the reasoning behind my prediction. • Understand that the more you carry out an experiment, the more confident you can become in predicting the result. • Discuss & describe the terms favourable outcome & total outcomes. • Discuss & describe how implications of chance are used in daily routines, decision making and the media.	• Uses the language of probability accurately to describe the likelihood of simple events occurring, for example equal chance; fifty-fifty; one in two, two in three; percentage chance; and 1:6 • Plans and carries out simple experiments involving chance with repeated trails, for example, ‘what is the probability of throwing a six if you throw a die fifty times?’ • Uses data to predict the outcome of a simple experiment
		I can conduct simple experiments involving chance and communicate my predictions and findings using the vocabulary of probability MNU 2-22a			