Curriculum Map

Subject: STEM (Level 1 Maths)

Year: 10

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content	Use of number and number system.	Use of number and the number system	Use of number and the number system	Use of measures, shape and space	Handling information and data	Project - design your bedroom
Knowledge	NS1, NS2, NS3, NS4, NS5, NS6, NS7,	NS8, NS9, NS10, NS11, NS12,	NS13, NS14,NS15, NS16, NS17, M1, M2	M3, M4, M5, M6, M7, M8, M9	H1, H2, H3, H4, H5	NS3, NS5, NS11, NS12, NS14, NS17, M3, M4, M5, M7, M8, M9
Key Terms	Digit Number Positive Negative Whole number Addition Subtraction Multiplication Division Estimate Order Descending order Ascending order List Digit Approximate	Decimals Fractions Mixed Number Number patterns Decimal places Percentage Increase Decrease Denominator Equivalent Numerator Improper fraction Top-heavy Sequence Place value Simplify	Percentage Direct proportion Equivalence Compare Estimation Simple interest Discount Profit Savings Ratio	Money Time Length 12 hour clock 24 hour clock Unit Clockwise Anticlockwise Imperial Decimal Perimeter Weight Volume Degrees Celsius Mass Capacity	Lists Tables Pie and bar charts Line graphs. Timetable Tally chart Line graph Frequency Data Scatter graph Bar chart Anomaly Probability Likelihood of events	Area Length Width Ratio Volume Price Discount Weight Angles Scale Money Value for money Scale diagram Perimeter Area Convert units

	Product Total Difference Sum Formulae Square numbers BIDMAS Order of operations Integer			Surface area Difference Area Perimeter Plans Elevations Cube Cuboid Cylinder Angles Lines of symmetry Scale Right angle Horizontal Vertical Acute Obtuse Right angle Reflex Bearings Equilateral	Discrete data Outcome Range Mean Fair test Ordinary dice Random Formula	Metre Centimetre Width Length Ratio Rectangle Equilateral triangle Surface area Direct proportion Plan view Side view Net of cube
Skills	Reading,writing, comparing numbers u[p to a million. Recognising and using positive and negative numbers. Multiplying and	Reading, writing, ordering and comparing common fractions and mixed numbers. Finding fractions of whole number quantities or	Reading, writing, ordering and comparing percentages in whole numbers. Calculating percentages of quantities, including simple	Converting between units of length, weight, capacity, money and time, in the same system. Calculating the area and perimeter of	Being able to represent discrete data in tables, diagrams and charts including pie charts, bar charts and line graphs.	Being able to multiply and divide whole numbers and decimals by 10,100 and 1000. Use simple formulae expressed in words to work out area, volume.

	dividing whole numbers and decimals by 10, 100, 1000. Using multiplication facts and making connections with division facts.	measurements. Reading, writing, ordering and comparing decimals up to three decimal places. Adding, subtracting, multiplying and dividing decimals up to two decimal places. Ability to approximate by rounding to a whole number or to one or two decimal places.	percentage increases and decreases by 5% and multiples thereof. Estimating answers to calculations using fractions and decimals. Recognizing and calculating equivalences between common fractions, percentages and decimals. Working with simple ratios and direct proportions. Calculating simple interest in multiples of 5% on amounts of money. Calculate	simple shapes including those that are made up of a combination of rectangles. Calculate the volumes of cubes and cuboids. Recognising and making use of simple scales on maps and drawings. Drawing 2-D shapes and demonstrating an understanding of line symmetry and knowledge of the relative size of angles. Interpreting plans, elevations and m]nerts of simple 3-D shapes. Using angles	Being able to group discrete data and represent grouped data graphically. Being able to find the mean and range of a set of quantities. Being able to understand probability on a scale from 0 to 1 (certain) and use probabilities to compare the likelihood of events. Being able to use likely outcomes to find the probabilities of simple events and express them as	Add, subtract, multiply and divide decimals upto two decimal places. Approximate by rounding to a whole number. Calculate percentages of quantities. Work out simple ratios and direct proportions. Convert between units of length, weight, capacity, money and time. Recognise and make use of dimple scales on drawings. Calculate area and perimeter of rectangle. Draw 2-D shapes and demonstrate an

			discounts in multiples of 5% on amounts of money.		fractions.	understanding of line symmetry. Interpret plans and elevations of simple 3-D shapes. Use angles when describing positions and direction.
Key Questions	1. What is the product of? 2. What is the difference between? 3. What is the sum of? 4. What is the number when rounded to ? 5. What operation do we do first? 6. What is a square of this number? 7. Order these numbers in ascending/descending order	1. Convert this fraction into a decimal. 2. What is the equivalent fraction? 3. Can you simplify the fraction? 4. What is the common denominator for these two fractions? 5. Convert this mixed number into an improper fraction.	1. What is the time when you convert it from the 12 hour clock into a 24 hour clock? 2. What time do you have to leave? 3. How long is it in the imperial system? 4. How long does it take? 5. What is the perimeter of the shape? 6. How much of the foreign currency will you get for this	1. What is the difference in temperature? 2. Which place is colder? 3. Which item is heavier? 4. What is the weight in kg? 5. What is the surface area of the shape? 6. What is the volume of the shape? 7. How many lines of symmetry does the shape have? 8. How long is it	1. How long does it take? 2. What is the most common? 3. What is the most popular? 4. What graph would be the most suitable for the data? 5. Is there an anomaly? 6. What is the probability of e.g. winning the prize?	What shape is the room? How do you work out the area of the room? What's the scale of your drawing? How much will the carpet cost? How much could you save with a 20% discount? What size door do you need? What length of wood will you need to make a new door frame? How much skirting board will you need?

			many pounds?	in real life? 9. How long is it in real life? 10. How long is the distance on the map? 11. What is the name of the shape?What is the bearing of B from A?		What length of dado rail will you need? What is the area of the ceiling? How much paint will you need to paint the ceiling? How many rolls will you need to wallpaper the walls? How much is it going to cost to buy the wallpaper?
Assessment	Informal class assessment.	Informal class assessment.	Informal class assessment.	Functional skills Level 1 practice paper.	Level 1 exam paper.	Informal class assessment.
Literacy/ Numeracy	Being able to read a number described in words and formulae described in words. Being able to understand a different meaning of certain words used also in Maths, e.g. negative, positive,	Expanding a student's vocabulary by learning mathematical terminology such as denominator, numerator, etc. Understanding a different meaning of common words such as improper, common, convert,	Understanding mathematical meaning of words such as proportional, interest. Ability to read lengthy worded problems and extract the most important information.	Expanding a student's vocabulary by learning the meaning of words such as clockwise, anticlockwise, capacity. Expanding a student's vocabulary by learning the meaning of words	Expanding a student's vocabulary by learning mathematical meaning of commonly used words such as mean, range, outcome, discrete.	Reading comprehension of longer scenario style questions. Identify and obtain necessary information to tackle a very realistic problem. Comprehension of the multi step worded questions in

	divide, product, square, etc.	etc.	Comprehension of the multi step worded questions in order to be able to decide what order to use the data given.	such as scale, symmetry, obtuse, reflex. Being able to read the text carefully and identify such details as e.g. from which point the angle needs to be measured when working out the bearing.		order to be able to decide what order to use the data given.
SMSC/ Character	Being able to recognise which temperature is higher and therefore be able to plan e.g. holidays. Questioning value for money in real life. Being able to	Understanding the prices and being able to budget correctly. Being able to work with money (decimal numbers). Being able to share e.g. money between people,	Realisation that there are different time zones in the world. Understanding the importance of using a 24 hour clock when travelling. Understanding that the	Being able to read maps and drawings. Improving their imagination and creativity. Being able to draw a plan of e.g. a garden, while using a scale.	Being able to read and understand graphs in the media. Ability to interpret data and create their own opinion about it. Realisation that	Identify and obtain necessary information to tackle a very realistic problem. Select mathematical operations in an organised way to find solutions. Use appropriate checking

	approximate the expenses and therefore stick to the budget. To be able to do simple operations when working out e.g. discounts in shops.	split people into groups following a certain rule. Understanding the prices and being able to budget correctly. Being able to work with money (decimal numbers). Being able to share e.g. money between people, split people into groups following a certain rule	economical rewards differ between jobs. Being able to work out the amount of materials needed to be bought when looking after their households and budgeting correctly. Being able to plan a trip abroad and exchange a suitable amount of money, therefore being an independent and confident traveller.	To be able to work out the bearing of a journey. Being able to work out the amount of materials needed to be bought when looking after their households and therefore budgeting correctly. Realisation that there is a difference between climate in different countries. Ability to convert between imperial and decimal measures. Ability to approximate the length of time a journey will take and therefore plan correctly.	some data might not follow a pattern and being able to recognise this anomaly. Ability to read timetables when travelling and therefore being independent and confident to plan e.g. a day trip, going for an interview, etc. Ability to recognise the most popular item.	procedures at each stage. Interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations.

				Being able to read maps and drawings. Improving their imagination and creativity. Being able to draw a plan of e.g. a garden, while using a scale. To be able to work out the bearing of a journey.		
Enrichment opportunities and futures	Club - Barrington Stoke Young Editors after school on Fridays at 3.10pm.		Club - Barrington Stoke Young Editors after school on Fridays at 3.10pm. Holocaust Memorial Day speaker with National Literacy Trust.		Club - Barrington Stoke Young Editors after school on Fridays at 3.10pm. Uxbridge College next step advisor. London Fire Brigade Visit.	
Rationale	Revisiting the topics and making sure that there is a solid mathematical understanding of working with positive and	Closing up any gaps in knowing how to apply mathematical operations to fractions, decimal numbers and ratios.	Extending the knowledge to the concept of percentages and practising on questions from past papers.	Introducing scale and angles. Practising in questions from past exam papers.	Revisiting and solidifying the knowledge of a range of statistical diagrams to be	Applying some key mathematical skills and knowledge acquired in lessons in a real life scenario.

	negative whole numbers.				ready for the exam paper.	