CAM Trust Mathematics Department

This document outlines the main activities you will complete this year. Use this as a guide to prepare for lessons or check your understanding.

A scheme

Learning log 2023/24

Name:	
Maths teacher(s):	
Maths group:	

I will:

- work to the best of my ability, showing all my workings
- complete my homework to a good standard by the deadline set
- show tenacity when solving problems
- always have the correct equipment for all lessons

Signed:

……

The Mathematics Department will:

- help you develop fluency in mathematical concepts
- help you develop your mathematical communication and reasoning
- help you develop problem solving skills
- set appropriate homework
- regularly assess your progress
- give you regular feedback and let you know what else you need to do to maintain or increase your progress

Signed:

Maths Department

Sparx Maths

Online homework tasks will be set at www.sparxmaths.com

You will use your school log-in details.

Use this space to keep track of your Sparx XP-level:

XP level	

Every lesson you will need to bring this equipment:

- exercise book
- learning log
- scientific calculator
- black pen × 2
- pencil × 2
- ruler
- eraser
- pencil sharpener
- highlighter

When advised, you will also need to bring:

- protractor
- pair of compasses

Optionally:

- colouring pencils

		Objectives Term 1 Autumn	Sparx
ANum1		Read and write any numbers up to one million in words and figures, taking care to spell words correctly	M704
		Recall my times tables up to 10×10	
		Find factors and multiples of numbers	Q448, Q954
		Order numbers with two decimal places and put them on a number line	Q127, Q509
		Multiply and divide any number by 10, 100 or 1000	M113
		Read and write amounts of money, and do money calculations	M681, M429, M152
		Read 12 and 24 hour clock times, and tell the time exactly	Q283, Q428
		Explain when to add, subtract, multiply or divide to solve a problem	
		Use the symbols =, ≠, <, and >	
		Interpret scales on a range of measuring instruments	
	common factor, pounds, pence, tenths, hundredths, decimal place, factor, multiple, divisible, integer		
AAlg1		Use letters to represent numbers I don't know	M813, Q267
		Understand how to substitute into a simple algebraic expression and to evaluate it, eg if $a = 5$ then $a + 3 = 5 + 3 = 8$, and $2a = 2 \times 5 = 10$	M417
		Be able to simplify algebraic expressions eg $a + b + a + b$, or $3a + 2b + 4a$, or in a physical situation such as the perimeter of a rectangle	M795
	letter, algebra, substitute, evaluate, collect, equals sign		
AGeom1		Estimate the size of any angle to the nearest 10°	Q357
		Sketch an estimate of an angle to within 10°	
		Use a protractor to accurately draw or measure acute and obtuse angles within 1°	Q966
		Use the fact that angles on a straight line sum to 180° to find missing angles	Q498
		Know how to check whether the size of an angle is reasonable by using the name of an angle (eg an obtuse angle cannot be 47°)	Q396
		Recall the four cardinal points of the compass (N, E, S, W) and use these in problems involving turning	
		Recognise which nets make cubes and which do not	Q711
		Make a 3D shape (eg a prism or cuboid) by using its net	Q971
		Construct shapes (including nets) using a pencil, ruler and protractor	
		Be able to measure or construct a line segment accurate to the nearest mm	Q299, Q373
	estimate, draw, measure, sketch, angle, turn, acute angle, obtuse angle, reflex angle, right angle, straight line, protractor, 3D shape, prism, cuboid, tetrahedron, net, cube, degrees		
AData1		Ask questions, plan how to answer them and how to collect the data required	M493
		Understand the difference between primary data (data we collect ourselves) and secondary data (data collected by someone else)	U322
		Make a tally chart and frequency table	Q478, M945
		Draw a bar chart and label the axes	Q337
		Draw a bar chart for grouped data	
		Explain what a bar chart shows	Q940
	data, research question, primary data, secondary data, source, fair, tally, tally chart, frequency, frequency table, axis, scale, bar chart, misleading graph, grouping data, most common, least common		

Number	Algebra	Geometry	Data	Revision	Total	
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		Objectives Term 2 Spring	Sparx
ANum2		Work out complements to 100, 1000, 360	M928
		Recall my times tables up to 10×10	
		Use tables to do mental division	
		Use a written method to add and subtract 3 digit numbers	Q118, Q367
		Use a written method to add and subtract decimals	Q986, Q753
		Multiply a 2 digit number by a 1 digit number eg 14×5	Q390, Q978
		Round numbers to the nearest 1, 10 or 100	Q262
	integer, complement, bond, positive, multiple, times table, division, inverse, round, integer, decimal, whole number, ten, hundred, unit, estimate		
AAlg2		Use number machines with two steps	
		Use a number machine backwards	
		Explain what inverse means	M707
		Given a set of inputs and outputs, know how to create the number machine	
		Be able to solve simple one step equations using number machine/I think of a number reasoning, e.g. $3x = 15$ or $x - 7 = 15$	M707
		Be able to extend this to solving simple two step equations using number machine/I think of a number reasoning, e.g. $2x + 1 = 15$	M509
	number machine, input, output, operation, inverse, equation, unknown, solving		
AGeom2		Find an area by counting squares	Q789
		Find the area of an unusual shape by counting squares and estimating	
		Find an area of a rectangle by working out length × width	M390
		Find an area of a right-angled triangle by know it is half of the rectangle	Q902
		Find the perimeter by measuring sides	Q221
		Find the perimeter when I'm told the lengths of the sides	Q686, Q345
		Use the correct units for area and perimeter	
	area, squares, rectangle, right-angled triangle, diagonal, length, width, compound shape, square centimetre, square metre, perimeter, length, outside, centimetres, metres		
AData2		Find the mode	M841
		Find the median	M934
		Find the range	M328
		Describe a set of data using the mode, median and range	
		Compare two sets of data using the range and the median or mode	
	mode, modal, most common, frequency table, tally chart, bar chart, fair, median, middle, ascending order, range, measure of spread, measure of location, consistent, inconsistent, compare, research question		

Number	Algebra	Geometry	Data	Revision	Total	
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		Objectives Term 3 Summer	Sparx
ANum3		Say what fraction $\left(\frac{2}{3}, \frac{3}{5}, \frac{7}{10}, \text{etc}\right)$ has been shaded on a diagram	M158
		Shade in a diagram to show a given fraction	
		Work out unit fractions of an amount by dividing, eg $\frac{1}{3}$ of 15 can be worked out by 15 divided by 3	M695
		Find equivalent fractions	Q310
		Simplify (cancel) fractions to their lowest terms	Q954
		Order fractions and place them on a number line	Q804
		Add and subtract fractions with different denominators	Q150, Q593
	fraction, half, third, fifth, tenth (etc), number line, numerator, denominator		
AAlg3		Describe patterns in sequences, and how to get the next number	Q172
		Fill in the gaps in a sequence, both ascending (getting bigger) and descending (getting smaller)	Q124
		Recognise sequences of odd numbers, even numbers, and times tables	M981
		Make and draw sequence patterns	Q863
		Understand how to plot points in all four quadrants, knowing the order of the axes	M618
		Draw and label axes correctly	Q761
	sequence, pattern, order, term, ascending, descending, integer, even(s), odd(s), tables, multiples, pattern spotting, logical thinking, quadrants, axis, axes, negative, coordinates, position		
ARatio3		Understand that a percentage is a fraction out of 100	
		Find 10%, 25%, 50% of an amount	M437
		Be able to write ratios and use correct language, eg the ratio of boys to girls in the class is 15 : 12 (said "15 to 12")	Q198
	divisibility, ratio, parts		
AGeom3		Draw all the lines of symmetry on a regular polygon	Q389
		Draw all the lines of symmetry on other shapes	
		Complete a shape with a horizontal or vertical or diagonal mirror line	
		Explain and use the words axis, object, image	
		Recognise the order of rotational symmetry of a shape	M523
		Identify and describe all the properties of isosceles, equilateral and scalene triangles	Q763
		Identify and describe all the properties of special quadrilaterals (square, rectangle, parallelogram, trapezium, kite, rhombus and arrow-head)	Q787
		Know the conventional notation for marking that the sides on a shape are the same length or parallel	Q833
	symmetry, reflection, line of symmetry, axis, object, image, order of rotational symmetry, reflection symmetry, rotational symmetry, equal lengths, equal angles, parallel sides, opposite sides, adjacent sides, diagonals, right-angles, regular polygon, quadrilateral		
AData3		Put events onto a probability scale labelled impossible, unlikely, equally likely, likely, certain	M655
		Use the spaces in between the words to place events	
		Understand evens or 50-50	
	event, probability, impossible, certain, likely, unlikely, even chance, 50-50, equally likely, probability scale, chance, random, possible		

Number	Algebra	Ratio	Geometry	Data	Total	
/	/	/	/	/	/	