



CAM Trust
Mathematic
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

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:

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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 =, $\neq$, $<$, and $>$	
	Interpret scales on a range of measuring instruments	
	common factor, pounds, pence, tenths, hundredths, decimal place, factor, multiple, divisible, integer	
AAIg1	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		
AAIg2	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 $\times$ 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		
AAIg3	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	
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