

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.**

## Alpha 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:

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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](http://www.sparxmaths.com)

You will use your school log-in details.

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

XP level	
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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

	HW	Objectives	Sparx
$\alpha$ Num1	—	Read and write any numbers up to ten thousand in words and figures	M704
		Recall my times tables up to $10 \times 10$	
		Explain how to tell if a number is divisible by 2, 5 or 10	
		Understand place value, including for decimal numbers up to two decimal places	
		Order numbers with one decimal place	M522
		Tell the time using $\frac{1}{4}$ and $\frac{1}{2}$ hours, and find how long between times	M892
		Know when to add, subtract, multiply or divide	M928,
		Know other words for add, subtract, multiply and divide	
		Be able to multiply and divide numbers, up to one decimal place, by 10 and 100	M113
		add, plus, sum, subtract, take away, difference, product, factor, multiple, multiply, times, divide, place value, ten, hundred, thousand, tenths, thousandths, hour, minute, seconds, half hour, quarter past, quarter to, decimal point	
$\alpha$ Alg1	—	Explain what the equals sign = means	
		Fill gaps in number sentences $\diamond + 3 = 8$ ; $4 + 7 = \square$ ; $12 = 20 - \square$	M707 (hard)
		Use letters to stand for numbers	
		letter, unknown, variable, algebra, equals sign	
$\alpha$ Geom1	—	Use acute, obtuse, reflex and right angle to describe angles	M502
		Recognise and name a: scalene triangle, isosceles triangle, equilateral triangle, square, rectangle, rhombus, parallelogram, trapezium, pentagon	M276
		Recognise and be able to create the net of a cube	
		angle, turn, acute angle, obtuse angle, reflex angle, right angle, straight line, 2D shape, pentagon, hexagon, square, trapezium, rhombus, rectangle, parallelogram, kite, isosceles triangle, equilateral triangle, scalene triangle, acute-angled triangle, obtuse-angled triangle, right-angled triangle, net, cube.	
$\alpha$ Data1	—	Use a tally chart and tally marks	M945
		Fill in a frequency table	M945
		Explain what a frequency table shows	
		Draw a pictogram	M644
		Explain what a pictogram shows	
		Put shapes or numbers onto a Venn diagram or a two way table	
raw data, tally chart, total, frequency, frequency table, most common, least common, represent, diagram, pictogram, key, region, intersecting, overlapping, Venn, Carroll			

Number	Algebra	Geometry	Data	Revision	Total	
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	HW	Objectives	Sparx
αNum2	—	Work out complements to 100 and 1000	
		Recall my times tables up to 10x10	
		Add and subtract whole numbers	M928, M347, M928, M347
		Add and subtract numbers with one decimal place	M429, M152
		Solve problems about time and money	
		integer, complement, positive, multiple, times table, division, inverse, round, integer, decimal, whole number, ten, hundred, unit, place value, estimate, AM/PM, 24 hour clock	
αAlg2	—	Put numbers into an expression to get an answer, eg if $a = 10$ , $b = 4$ and $c = 3$ , evaluate $a + b$ , $a - c$ , $4c$	M208
		Use number machines	
		evaluate, substitute, number machine, input, output, expression, equation	
αGeom2	—	Find an area by counting squares	M900
		Find the area of an unusual shape by counting squares and estimating	
		Work out the perimeter of a shape by measuring	
		Work out the perimeter of a shape when I know the lengths of the sides	M920
		area, perimeter, measure, squares, rectangle, length, width, square centimetre, square metre, estimate	
αData2	—	Put data in order	M704, M527, M522
		Find the biggest and smallest values	
		Find the middle value (Median)	M934
		Describe a set of data using the most common value or what most numbers are close to	M841
		Compare two sets of data	
numerical, non-numerical, data value, order, smallest, biggest, middle, compare, research question			

Number	Algebra	Geometry	Data	Revision	Total	
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	HW	Objectives	Sparx
αNum3	—	Work out how much more I must add to a fraction to make a whole one	
		Divide a shape into fractions	M158
		Work out what fraction of a shape is shaded	M158
		Explain which is the numerator and denominator	
		Put simple fractions on a number line	
		Work out fractions, eg $\frac{1}{2}$ , $\frac{1}{3}$ , $\frac{1}{4}$ , of an amount	M695
		Add fractions with the same denominator	M835
		whole, fraction, part, denominator, numerator, unit fraction	
αAlg3	—	Describe the pattern being followed by a sequence	M241
		Use a pattern to extend sequences both ascending and descending	
		Explain why times tables are sequences	
		Explain how the coordinate grid works, labelling the axes correctly	M618
		Use coordinates to draw pictures by following instructions	
		Identify the coordinates of a point and write them correctly	
		sequence, pattern, order, term, ascending, descending, integer, point, position, coordinates, axis, axes, plot, x-axis, y-axis	
αRatio3		No ratio and proportion topics in αRatio3	
αGeom3	—	Recognise reflection symmetry in simple shapes	M290
		Colour/shade a diagram to give it reflection symmetry	
		symmetry, reflection, reflect, mirror line, line of symmetry, horizontal, vertical, diagonal	
αData3	—	Use words to describe how likely something is	M655
		Explain the words certain, impossible, likely, unlikely	
		Decide which event is most likely to happen	
		event, probability, likelihood, impossible, certain, likely, unlikely, even chance, chance	

Number	Algebra	Ratio	Geometry	Data	Total	
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