Topic: 1 Integers

Learning Outcomes and Scaffolding	Sparxmaths Code	Edexcel Ref
7.1.1 Understand and use integers and place value	M704	1.1, A(F)
π Should be known from KS2		
7.1.2 Use directed numbers in practical situations		1.1, B(F)
π Contexts such as temperature, finance, altitude and time (BC to AD)		
7.1.3 Order integers	M527	1.1, C(F)
π Should be known from KS2		
7.1.4 Use the four rules of addition, subtraction, multiplication and division	M106 M288	1.1, D(F)
π $-1+5, 2-8, 1+(-3), -3-(-4)$		
π $5\times(-2), -9\div(-3)$		
7.1.5 Use brackets and the hierarchy of operations (2 operations and three operations)	M521	1.1, E(F)
π $-3+(-4)\times(-2)$		
π $-2\times3-4\times(-2)$		

Topic: 2 Introduction to Algebra

Learning Outcomes and Scaffolding	Sparxmaths Code	Edexcel Ref
7.2.1 Understand that symbols may be used to represent numbers in equations or variables in expressions and formulae	M813	2.1, A(F)
π Form simple formulae/expressions from contexts		
7.2.2 Understand that algebraic expressions follow the generalised rules of arithmetic	M813	2.1, B(F)
π Pupils should be able to reason why $'x+x=2x'$, seeing multiplication as repeated addition		
7.2.3 Evaluate expressions by substituting numerical values for letters	M417 M327	2.2, A(F)
π Solve linear problems with no changing of the subject $'A=3x-2y, x=3, y=1'$		
7.2.4 Collect like terms	M795	2.2, B(F)
π $3x+2y-x$	M531	
π $3ab-bc+2ab$	M949	
π $3y^2-2y+5y-8y^2$		

Topic: 3 Symmetry and Coordinates

Learning Outcomes and Scaffolding	Sparxmaths Code	Edexcel Ref
7.3.1 Identify any lines of symmetry and the order of rotational symmetry of a given two-dimensional figure	M523	4.3, A(F)
π Complete drawings given half a polygon and a vertical, horizontal or $45°$ line of symmetry		
π Identify lines of symmetry in polygons, in nature and in architecture		
π State the order of rotational symmetry for any polygon		
7.3.2 Understand and use conventions for rectangular cartesian coordinates	M618	3.3, A(F)
π Read coordinates from graphs	M797	
π Be able to construct a graph with an appropriate scale		
7.3.3 Plot points (x, y) in any of the four quadrants or locate points with given coordinates	M230	3.3, B(F)
π Plot points on a graph in all four quadrants		
π Reinforce ideas behind integers when dealing with negative numbers		
7.3.4 Determine the coordinates of points identified by geometrical information	M230	3.3, C(F)
π Use symmetry in the axes to identify coordinates		
π Complete common polygons to reason about coordinates		

Topic: 4 Fractions

Learning Outcomes and Scaffolding	Sparxmaths Code	Edexcel Ref
7.4.1 Understand and use equivalent fractions, simplifying a fraction by cancelling common factors		1.2, A(F)
π Understand the concept of equivalency and why it's important	M671	
π Simplify a fraction by identifying common factors	M410	
7.4.2 Understand and use mixed numbers and vulgar fractions	M601	1.2, B(F)
π Convert between mixed numbers and improper (vulgar) fractions		
π Know the difference between proper and improper fractions		
7.4.3 Find a fraction of an amount	M158	
π $\frac{3}{8}$ of 24		1.2, C(F)

7.4.4	Use common denominators to add and subtract simple fractions. π $\frac{3}{7}+\frac{5}{7}$ π $\frac{3}{4}+\frac{5}{8}$ π $\frac{3}{5}+\frac{5}{7}$	M835	1.2, D(F)
7.4.5	Multiply and divide simple fractions π $\frac{3}{7}\times\frac{5}{9}$ π $\frac{2}{7}\div\frac{5}{9}$	M157 M110	1.2, E(F)

Topic: 5 Fractions Decimals & Percentages

Learning Outcomes and Scaffolding		Sparxmaths Code	Edexcel Ref
7.5.1	Convert between fractions and decimals π Know by heart the fraction, decimal conversions for: o Half, Thirds, Quarters, Fifths, Eighths & Tenths π Know the place value of the digits after the point and understand how they relate to fractions π Be able to write and decimal as a fraction and simplify accordingly	M958	1.3, A(F)
7.5.2	Convert between fractions and percentages π Can write scores like $\frac{13}{20}$ as a percentage using fractional equivalency π Knows the definition of a percentage and can express percentages as fractions out of 100 π Use simplification to write a percentage as a fraction in its simplest form.	M264	1.3, B(F)
7.5.3	Convert between percentages and decimals π Knows to multiply/ divide by 100 to convert between percentages and decimals	M264	1.3, C(F)
7.5.4	Order fractions, decimals and percentages π Order decimals to 4 decimal places π Order fractions, decimals and percentages	M553	1.3, D(F)

Topic: 6 Number Properties

Learning Outcomes and Scaffolding	Sparxmaths Code	Edexcel Ref
7.7.1 Use the terms odd, even and prime numbers, factors and multiples	M823	1.1, F(F)
π Know that a prime number has two factors	M332	
π Know the prime numbers from 1 to 100		
π Be able to define multiples and factors clearly in written and spoken English		
7.7.2 Identify prime factors, common factors and common multiples	M108	1.1, G(F)
π Identify a prime factor		
π Identify a common factor of two values		
π Identify a common multiple of two values		
7.7.3 Identify square numbers and cube numbers		1.4, A(F)
π Know the square numbers from 1 to 15		
π Know the cube numbers from 1 to 5		
7.7.4 Calculate squares, square roots, cubes and cube roots	M135	1.4, B(F)
π Use knowledge of square numbers to find the roots for the first fifteen square numbers		
π Use knowledge of cube numbers to find the cube roots for the first 5 cube numbers		

Topic: 7 Angles

Learning Outcomes and Scaffolding	Sparxmaths Code	Edexcel Ref
7.6.1 Measure and draw angles using a ruler and protractor		4.1, A(F)
π Draw angles of 30,45,80 etc using a ruler and protractor	M331	
π Measure acute and obtuse angles using a protractor	M780	
π Estimate acute and obtuse angles	M541	
7.6.2 Distinguish between acute, obtuse, reflex and right angles		4.1, B(F)
π Can identify different types of angles by inspection	M502	
π Know the symbol for right angles and can identify on a diagram		
7.6.3 Use basic angle facts	M818	4.1, C(F)
π Solve problems involving finding missing angles on a straight line, around a point		
π Know that vertically opposite angles are equal		
7.6.4 Understand the terms 'isosceles', 'equilateral' and 'right-angled triangles' and the angle properties of these triangles	M351	4.1, D(F)
π Can identify isosceles, equilateral and right-angle triangles by identifying the correct symbols on a diagram		
π Know that all the angles in an equilateral triangle are 60°		
7.6.5 Understand the exterior angle of a triangle property and the angle sum of a triangle property	M351	4.2, A(F)
π Know the angles in a triangle sum to 180°		

	π find missing interior and exterior angles in a triangle		
7.6.6	Understand and use the term 'quadrilateral' and the angle sum property of quadrilaterals	M679	4.2, B(F)
	π Know that all quadrilaterals angles total 360°		
	π find missing angles in quadrilaterals.		

Topic: 8 Degrees of Accuracy

Learning Outcomes and Scaffolding	Sparxmaths Code	Edexcel Ref
7.8.1 Round integers to a given power of 10	M111	1.8, A(F)
π Round values to the nearest 10, 100, 1000 etc…		
7.8.2 Round to a given number of significant figures or decimal places	M431	1.8, B(F)
π Round values to up to 3 decimal places	M994	
π Round values to a required number of significant figures particularly the following cases	M131	
○ Round 9.0 to 2 significant figures		
○ Round 4999 to 3 significant figures		
○ Round 0.00987 to 2 significant figures		

Topic: 9 Linear Equations

Learning Outcomes and Scaffolding	Sparxmaths Code	Edexcel Ref
7.9.1 Solve linear equations of the form 3x + 4 = 12. Include negative numbers	M707	2.4, A(F)
π Solve: $x + 3 = 9$	M634	
π Solve: $3x = 12$	M647	
π Solve: $\frac{x}{4} = 5$		
π Solve: $3x + 1 = 13$		
π Solve: $\frac{x}{2} - 1 = 3$		

Topic: 10 Geometric Properties

Learning Outcomes and Scaffolding	Sparxmaths Code	Edexcel Ref
7.10.1 Recognise and give the names of polygons	M814	
π Know that polygon means any 2D shapes and the names of polygons up to 10 sides		
Understand the difference between a regular and irregular polygon		
7.10.2 Recognise the terms 'centre', 'radius', 'chord', 'diameter', 'circumference', 'tangent', 'arc', 'sector' and 'segment' of a circle	M595	

7.10.3	Use angle properties of intersecting lines, parallel lines and angles on a straight line	M163	
	π Use the terms corresponding, alternate, supplementary to describe angles	M606	
	π Find missing angles involving parallel lines		

Topic: 11 Mensuration of 2D Shapes

Learning Outcomes and Scaffolding		Sparxmaths Code	Edexcel Ref
7.11.1	Convert measurements within the metric system to include linear and area units		4.9, A(F)
	π Convert between metric units for length	M772	
	π Convert from cm^2 to m^2 and vice versa	M728	
7.11.2	Find the perimeter of shapes made from triangles and rectangles		4.9, B(F)
	π Calculate the perimeter of a 2D shape given all the relevant lengths	M920	
	π Calculate the perimeter of a shape where some lengths need to be identified using others	M635	
	π Calculate a length given the perimeter and some of the sides		
7.11.3	Find the area of simple shapes using the formulae for the areas of triangles and rectangles		4.9, C(F)
	π Identify areas of shapes using square paper	M900	
	π Find the area of a rectangle using the formula $A = lw$	M390	
	π Find the area of a triangle using the formula $A = \frac{1}{2}bh$	M610	
	π Find the area of composite shapes made of triangles and rectangles	M269	
7.11.4	Area and expressions		2.2, C(F)
	π Find an expression for perimeter of 2D shape		
	π Find an expression for the area of rectangles and triangles where one side is an integer		
	π Solve basic equations to find length of a square or rectangle given the perimeter		

Topic: 12 Graphical Representation of Data

Learning Outcomes and Scaffolding		Sparxmaths Code	Edexcel Ref
7.12.1	Use different methods of presenting data: Pictograms and Bar Charts	M644	6.1, A(F)
	π Construct pictograms, bar charts and line graphs	M738	
	π Identify which table is best to use in specific contexts		
7.12.2	Use appropriate methods of tabulation to enable the construction of statistical diagrams	M597	6.1, B(F)
	π Record data in frequency table	M829	
	π Sort data using Venn diagrams		
7.12.3	Interpret statistical diagrams	M644	6.1, C(F)
	π Interpret bar charts, pictograms and line graphs in a range of different contexts	M738	

	π Compare two different graphs or charts		
7.12.4	Plot Straight Line Graphs	M932	2.2, D(F)
	π Use a table to plot straight line graphs in the first quadrant		
7.12.5	Extension Only		6.1, D(F)
	π Look at misleading graphs		

Topic: 13 Percentages

Learning Outcomes and Scaffolding		Sparxmaths Code	Edexcel Ref
7.13.1	Express a given number as a percentage of another number	M235	1.6, A(F),
	π Can write scores like $\frac{13}{20}$ as a percentage using fractional equivalency		
	π Can write any amount as a percentage using a calculator		
7.13.2	Solve simple percentage problems, including percentage increase and decrease	M437	1.6, B(F)
	π Knows how to work out 50%, 10%,1% by dividing by 2,10,100 etc		
	π Can find a percentage of an amount using non calculator written methods	M476	
	π Can find a percentage increase/decrease using non calculator written methods		

Topic: 14 Statistical Measures

Learning Outcomes and Scaffolding		Sparxmaths Code	Edexcel Ref
7.14.1	Interpret information presented in a range of linear and non-linear graphs	M183	3.3, A(F)
	π Interpret graphs in simple contexts such as weather, finance etc…		
7.14.2	Understand the concept of average and spread	M940	6.2, A(F)
	π Understand what an average is and how it is linked to a measure of spread	M934	
7.14.3	Calculate the mean, median, mode and range from a list of values	M841	6.2, B(F)
	π Calculate the mean, median and mode and identify their advantages/disadvantages in the context	M328	
	π Find the range of a data set	M440	
	π Compare two data sets given the mean and range		

Topic: 15 3D Shape and Volume

Learning Outcomes and Scaffolding		Sparxmaths Code	Edexcel Ref
7.15.1	Recognise and give the names of solids	M767	4.10, A(F)

	π Identify shapes as cube, cuboid, cone and sphere π Know the difference between a prism and a pyramid	
7.15.2	Understand the terms face, edge and vertex in the context of 3-D solids π Be able to identify the number of vertices, edges and faces of a given solid π Construct nets of common solids	4.10, B(F)