

MATHEMATICS SCHEME OF WORK

Subject	Mathematics	Year	8	Key stage	3	Hours/week	3
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Y8

Pearson: KS3 Maths Progress – Delta 2

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Week	Focus	Detail
	1 Factors and powers	
0	Prime factor decomposition	Write the prime factor decomposition of a number. Use prime factor decomposition to find the HCF or LCM of two numbers.
1	Laws of indices	Work out the laws of indices for positive powers. Show that any number to the power of zero is 1. Use the laws of indices for multiplying and dividing.
2	Powers of 10	Use and understand powers of 10. Use the prefixes associated with powers of 10. Understand the effect of multiplying and dividing by any integer power of 10.
3	Calculating and estimating	Calculate with powers. Round to a number of significant figures.
	2 Equations and brackets	
4	Simplifying expressions	Simplify expressions involving powers and brackets. Understand the meaning of an identity.
5	Simplifying	Use the index laws in algebraic calculations and expressions. Simplify expressions with powers.
6	More simplifying Substituting and solving	Write and simplify expressions involving brackets and powers. Factorise an algebraic expression. Substitute integers into expressions.
	Half Term holiday	
7	Expanding and simplifying	Construct and solve equations with unknowns on both sides and involving brackets.
	3 2D shapes and 3D solids	
8	Plans and elevations Surface area of prisms	Use 2D representations of 3D solids. Sketch nets of 3D solids. Calculate the surface area of prisms (including cylinders but see wk 12)
9	Volume of prisms Circumference of a circle	Calculate the volume of right prisms. Name the different parts of a circle. Calculate the circumference.

		Calculate the radius or diameter when you know the circumference.
10	Area of a circle	Calculate the area of a circle. Calculate the radius or diameter when you know the area.
11	Surface area	Calculate the volume and surface area of a cylinder.
12		
13		
Christmas holiday		
4 Fractions, decimals and percentages		
14	Recurring decimals	Recognise fractional equivalents to important recurring decimals; Recognise which denominators of simple fractions produce recurring decimals; Change a recurring decimal into a fraction.
15	Using percentages Percentage change	Calculate percentages; Work out an original quantity before a percentage increase or decrease; Calculate percentage change;
16	Repeated change (compound interest and decay)	Calculate the effect of repeated percentage changes.
5 Sequences, functions and graphs		
17	Arithmetic functions	Work out the terms of an arithmetic sequence using the term-to-term rule.
18	n^{th} term	Work out a given term in a simple arithmetic sequence. Work out and use expressions for the n^{th} term in an arithmetic sequence.
19	Geometric sequences Coordinates in 4 quadrants Line segment midpoint	Generate sequences and predict how they will continue. Recognise geometric sequences and work out the term-to-term rule; Use positive and negative coordinates. Work out the midpoint of a line segment.
Half term holiday		
20	Tables of values Plotting straight-line graphs Interpret $y=mx+c$	Draw straight-line graphs; Recognise straight-line graphs parallel to the axes; Understand $y=mx+c$ as a general format for a straight line and recognize the value of m and of c
21		Recognise graphs of $y = x$ and $y = -x$
22		
6 Graphs		
23	Plotting graphs of equations	Plot straight-line graphs; Find the y-intercept of a straight line graph
24	Gradient and y-intercept	Find the gradient of a straight-line graph; Plot graphs using the gradient and y-intercept
25	Using $y=mx+c$ to solve problems	Use $y=mx+c$; Find the equation of a straight-line graph
Holy week/ Easter holiday		
7 Transformations		
26	Translations, reflections and rotations	Describe and carry out translations; Describe and carry out reflections; Describe and carry out rotations.

27	Enlargement	Enlarge a shape; Describe an enlargement; Enlarge a shape using negative scale factors; Enlarge a shape using fractional scale factors;
28	Transformations in combination	Transform 2D shapes using a combination of reflection, rotation, enlargement and translation.
29	3D symmetry Effects of enlargement on perimeter, area and volume	Identify planes of reflection symmetry in 3D solids; Find the perimeter and area of 2D shapes after enlargement; Find the volume of 3D solids after enlargements.
	8 Constructions and loci	
30		
	Half term holiday	
31	Accuracy in drawing	Draw triangles accurately using a ruler and protractor; Draw diagrams to scale; Draw accurate nets of 3D solids.
32	Constructions using compass and ruler	Construct triangles using a ruler and compasses; Construct nets of 3D solids using a ruler and compasses.
33		Bisect a line using a ruler and compasses; Construct perpendicular lines using a ruler and compasses; Bisect angles using a ruler and compasses.
34	Loci	Draw accurate diagrams to solve problems; Draw a locus; Use loci to solve problems.
35		
36		