

MATHEMATICS SCHEME OF WORK

Subject	Mathematics	Year	9	Key stage	3	Hours/week	3
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Y9

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Week	Focus	Detail
	1 Inequalities, equations and formulae	
0	Inequalities	Recap solving simple linear equations; Solve linear inequalities and represent the solution on a number line; Multiply both sides of an inequality by a negative number.
1	Using index laws Solving equations	Use index laws with zero and negative powers; Explain the difference between equations, formulae and functions; Construct and solve complex equations.
2	Changing the subject Algebraic fractions	Change the subject of a formula; Change algebraic fractions to equivalent fractions; Solve problems with fractions in formulae.
	2 Roots and powers	
3	Reciprocals and indices	Find the reciprocal of a number. Work with reciprocals.
4		Use negative indices. Work out powers of fractions.
5	Standard form	Write numbers using standard form; Order numbers written in standard form; Calculate with numbers written in standard form.
6	Fractional indices	Calculate with fractional indices.
	Half Term holiday	
7	Surds	Use surds; Understand the difference between rational and irrational numbers.
	3 Multiplicative reasoning	
8	Direct and indirect proportion	Recognise data sets that are in proportion; Set up equations that show direct proportion; Set up equations that show indirect proportion.
9	Solving problems using direct proportion. Non-linear proportion	Use algebra to solve problems involving proportion; Use algebra to solve problems involving different types of proportion.
10		
11	Arcs and sectors of circles	Work out the length of an arc; Work out the area of a sector; Solve problems involving arcs and sectors
	4 Collecting and analysing data	
12	Data collection	Identify sources of primary and secondary data; Choose a suitable sample size; Understand how to reduce bias in sampling and questionnaires; Identify a random sample.

13	Presenting and comparing data	Draw and interpret stem and leaf diagrams; Construct and interpret frequency polygons; Use frequency polygons to compare data.
	Christmas holiday	
14	Estimating statistics	Estimate the mean and range from a grouped frequency table; Draw conclusions from tables and charts.
15	Box plots	Interpret statistics; Draw and interpret box plots; Compare data using box plots.
16	Cumulative frequency graphs	Draw cumulative frequency graphs for grouped data; Interpret cumulative frequency graphs.
	5 Quadratics	
17	Sequences	Generate sequences using quadratic expressions. (arithmetic); Find an expression for the nth term of a quadratic sequence. (arithmetic)
18	Expanding	Expand simple bracket and simplify ; Multiply pairs of brackets; Square a linear expression; Use quadratic identities.
19	Factorising Solving quadratic equations	Factorise simple expression into single bracket ; Factorise quadratic expressions into two brackets; Solve quadratic equations by factorising.
	Half term holiday	
	6 Pythagoras' Theorem and trigonometry	
20	Pythagoras' Theorem	Use Pythagoras' theorem in right-angled triangles; Use conventions for naming sides of a right-angled triangle.
21	The tangent, sine and cosine ratios	Work out the tangent of any angle; Use the tangent ratio to work out an unknown side of a right-angled triangle; Work out the sine of any angle; Use the sine ratio to work out an unknown side of a right-angled triangle; Work out the cosine of any angle; Use the cosine ratio to work out an unknown side in a right-angled triangle.
22	Using trigonometry to find angles; Solving problems using trigonometry	Use the trigonometric ratios to work out an unknown angle in a right-angled triangle; Use trigonometry to solve problems involving missing lengths and angles.
23		
24	Comparing probabilities Mutually exclusive events	Calculate and compare probabilities; Decide if a game is fair; Identify mutually exclusive outcomes and events; Find the probabilities of mutually exclusive outcomes and events.
	7 Probability	
25	Estimating probability	Find the probability of an event not happening; Calculate the relative frequency of a value. Use relative frequency to make estimates; Use relative frequency to estimate the probability of an event; Use estimated probability to calculate expected frequencies
	Holy Week/ Easter holiday	
26	Experimental probability	. Carry out a probability experiment; Estimate probability using data from an experiment; Work out the expected results when an experiment is repeated; List all the possible outcomes of one or two events in sample space diagrams or Venn diagrams.
27	Probability diagrams Tree diagrams	Calculate probabilities of repeated events; Use tree diagrams to find the probabilities of two or more events.
28		
	8 Simultaneous equations	
29	Simultaneous equations	Solve a pair of simultaneous equations.
30	More simultaneous equations	Solve more complex simultaneous equations.
	Half term holiday	

31	Graphs and simultaneous equations	Solve simultaneous equations by drawing graphs.
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