

MATHS: Year 10 Higher Course Outline



Half term	TOPIC	CONTENT	Suggestions for enrichment activities (eg: films, websites, books, museums and activity centres)
1	Graphs: the basics and real-life graphs	Plot coordinates, distance-time and velocity-time graphs, midpoints, equations of lines	http://nrich.maths.org/6354
	Linear graphs and coordinate geometry	Recognise and use $y=mx+c$, gradients, parallel and perpendicular lines	http://nrich.maths.org/6603
	Quadratic, cubic and other graphs	Generate points and draw quadratic graphs, draw circles from its equation	http://nrich.maths.org/6842
OCTOBER HALF TERM HOLIDAY			
2	Perimeter, area and circles	Area of compound shapes, estimate, properties of circles, in terms of π	http://nrich.maths.org/6323
	3D forms and volume, cylinders, cones and spheres	Sketch and identify solids, convert metric units, surface area of solids, volumes of solids	http://nrich.maths.org/4754
	Accuracy and bounds	Find and use upper and lower bounds	http://nrich.maths.org/6060
CHRISTMAS HOLIDAYS			
3	Transformations	Rotation, reflections, translation (using vectors), enlargements, positive and negative and fractional scale factors	http://nrich.maths.org/4897
	Constructions, loci and bearings	Scale diagrams, bisectors, angles, problems using loci including bearings	http://nrich.maths.org/1486
FEBRUARY HALF TERM HOLIDAY			
4	Solving quadratic and simultaneous equations	Factorise quadratics, solve quadratics, set up and solve simultaneous equations including one non-linear	http://nrich.maths.org/11596
	Inequalities	Use correct notation, inequalities on number lines	http://nrich.maths.org/7105
EASTER HOLIDAYS			
5	Probability	Outcomes of single events, tree diagrams, conditional probability	http://nrich.maths.org/471
	Multiplicative reasoning	Best buy offers, compound measures, proportional change	http://nrich.maths.org/5627
	Similarity and congruence in 2D and 3D	Congruence of triangles, geometric proof, identify scale factors	http://nrich.maths.org/1860
MAY HALF TERM HOLIDAY			
6	Graphs of trigonometric functions	Graphs of sin, cos and tan; use simple transformations of trigonometric graphs	http://nrich.maths.org/2693
	Further trigonometry	Area rule, sine and cosine rules, diagonals of cuboids	http://nrich.maths.org/7050
	Collecting data	Sample and population, bias	http://nrich.maths.org/9601
	Cumulative frequency, box plots and histograms	Create box plots, appropriate use of histograms, estimate mean and median from histogram	