

Instructions

To continue your maths learning, whilst you are isolating, we have put together a set of lesson which cover all the work being done in class in November and December. The lessons are all from the Oak National Academy's website and include: an introductory quiz; a video to watch explaining the topic; a practice task or tasks; and a quiz at the end to check your understanding. Just find the lesson you are scheduled to do and click the link to be taken directly to it.

Area	Topic	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
4 FRACTIONS, RATIO & PERCENTAGES	Unit: 4.1 Fractions, p.98	Adding and Subtracting fractions < 1	Adding Mixed numbers	Subtracting mixed numbers	Increasing and decreasing by a fraction of an amount	Find the whole when given a fraction of an amount
	Unit: 4.2 Ratios, p.101	Simplifying ratios	Divide a quantity in a given ratio	Find a part given a part	Find the total or difference given a part	Ratio and fractions
	Unit: 4.3 Ratio and proportion, p.103	Compare the cost of two items using the unitary method	Using direct proportion graphs	Proportion problems		
	Unit: 4.4 Percentages, p.105	Simple percentages without a calculator	Decimal multiplier method to find percentages of an amount	Fractions greater than 1 and percentages above 100%	Express one number as a fraction or percentage of another without a calculator	Simple fraction, decimal and percentage equivalents
	Unit: 4.5 Fractions, decimals and percentages, p.108	Convert fractions to decimals and percentages without a calculator	Convert fractions to decimals and percentages with a calculator	Change percentages to fractions and decimals	Increase and Decrease an Amount by a Percentage	Calculate Percentage Change
	Converting recurring decimals - not enough content in textbook	Write a fraction as a recurring decimal using division	Recurring decimals where one number repeats	Recurring decimals where 2 or more numbers repeat	Recurring decimals where one number after the decimal point is fixed and the others repeat	
6 GRAPHS	Unit: 6.1 Linear graphs, p.161	Find the gradient of a line	Find the equation of a straight line using $y=mx+c$	Find the intercept and gradient from a line given in any form	Using gradient to solve problems with parallel lines	Write the equation of a straight line if parallel to a line and passing through (0,n)
	Unit: 6.2 More linear graphs, p.164	Write the equation of a straight line if parallel to a line and passing through any point	Find the equation of a straight line through two given points	Interpret gradient and intercept on real life graphs	Work out gradient of line perpendicular to a given line	Work out equation of the line perpendicular that passes through a given point
	Unit: 6.3 Graphing rates of change, p.166	Understanding rate	Conversion rates	Exchange rates with graphs	Density as rate	Speed as rate (distance-time graphs)
	Unit: 6.4 Real-life graphs, p.170	Calculating speed, distance and time	Displacement-time graphs (Part 1)	Displacement-time graphs (Part 2)		
	Unit: 6.5 Line segments, p.174	Finding midpoints	Solving geometric problems	Forming shapes from midpoints	Forming shapes from diagonals	Equations of lines
	Unit: 6.6 Quadratic graphs, p.176	Recognising linear and non-linear graphs	Plotting quadratics (Part 1)	Plotting quadratics (Part 2)	Plot simple quadratic equations	Plot other quadratic equations
	Unit: 6.7 Cubic and reciprocal graphs, p.180	Draw graphs of simple cubic functions using a table of values.	Sketch graphs of simple cubic functions, given as three linear expressions.	Interpret graphs of simple cubic functions, including finding solutions to cubic equations	Recognise, draw, sketch and interpret graphs of the reciprocal function $y = 1/x$	
	Unit: 6.8 More graphs, p.182	Draw and recognise circle graphs of the form $x^2 + y^2 = r^2$	Decide whether a point lies, on, outside or inside a circle	Intersection of lines and circles	Find the equation of a tangent to a circle at a given point	
13 MORE TRIGONOMETRY	Unit: 13.1 Accuracy, p.400	Round to two decimal places	Round up to three significant figures	Limits of accuracy	Estimating answers	
	Unit: 13.2 Graph of the sine function, p.402	HEGARTY 303 - Sine graph			HEGARTY 306 - Sine, cosine, tangent summary	HEGARTY 845 - Non-calculator trigonometry (1)
	Unit: 13.3 Graph of the cosine function, p.405		HEGARTY 304 - Cosine graph			
	Unit: 13.4 The tangent function, p.408			HEGARTY 305 - Tangent graph		
7 AREA & VOLUME	Unit: 7.1 Perimeter and area, p.204	Area of rectangles, parallelograms and triangles	Area of a trapezium	Area of compound shapes	Perimeter of polygons and compound shapes	
	Unit: 7.2 Units and accuracy, p.207	Upper and lower bounds: Error intervals	Upper and lower bounds: Adding and subtracting	Upper and lower bounds: Multiplying and dividing	Upper and lower bounds: Application of skills	
	Unit: 7.3 Prisms, p.210	Volume of Cubes and Cuboids	Finding the Volume of Triangular Prisms	Finding the Surface Area of Cubes and Cuboids	Finding the Surface Area of Triangular Prisms	

	Unit: 7.4 Circles, p.213	Find the circumference of a circle	Find the Diameter or Radius when given the Circumference	Find the Area of a Circle	Find the radius and diameter when given the area	
	Unit: 7.5 Sectors of circles, p.216	Parts of a circle	Fractions of a circle	Compound Perimeter	Area of sectors	Compound area problems
	Unit: 7.6 Cylinders and spheres, p.220	Volume and surface area of a sphere	Surface area and volume of a hemisphere	Prisms and cylinders	Volume of prisms and cylinders	Surface area of cylinders
	Unit: 7.7 Pyramids and cones, p.222	Volume and surface area of a pyramid	Volume and surface area of a cone	Volume: Further problem solving with spheres, cones and pyramids	Surface Area: Further problem solving	Find the volume of a frustum
8 TRANSFORMATIONS & CONSTRUCTIONS	Unit: 8.1 3D solids, p.240	HEGARTY 841 - Plans and elevations (5)	HEGARTY 842 - Plans and elevations (6)	HEGARTY 843 - Plans and elevations (7)	HEGARTY 567 - Counting cubes	HEGARTY 582 - Compound volume
	Unit: 8.2 Reflection and rotation, p.242	Reflecting in a given horizontal or vertical line (Part 2)	Reflecting in a given diagonal line (Part 1)	Reflecting in a given diagonal line (Part 2)	Rotate an Object around a Given Point	Rotate an Object around a Given Coordinate
	Unit: 8.3 Enlargement, p.245	Enlarge an Object with a Positive Scale Factor	Enlarge an Object with a Positive Scale Factor from a Given Coordinate	Enlargement with a negative scale factor	Describe an enlargement with a negative scale factor	
	Unit: 8.4 Transformations and combinations of transformations, p.249	HEGARTY 650 - Describe Transformations (1)	HEGARTY 651 - Describe Transformations (2)	HEGARTY 652 - Describe Transformations (3)	HEGARTY 654 - Describe Transformations (5)	HEGARTY 656 - Combined Transformations (1)
	Unit: 8.5 Bearings and scale drawings, p.253	Know the cardinal compass and the three rules of bearings	Measure the 3-figure bearing between 2 points and find a point when given a 3-figure bearing and length	When given two points and 2 bearings find a third point	Back bearings	
	Unit: 8.6 Constructions 1, p.256	Construct triangles	Construct a perpendicular bisector	Construct a perpendicular bisector from a point to a line	Construct an angle bisector	
	Unit: 8.7 Constructions 2, p.259	HEGARTY 664 - Construct a 90° or 45° angle	HEGARTY 666 - Construct an equilateral triangle	HEGARTY 667 - Construct a regular hexagon	Introducing loci	HEGARTY 674 - Loci (1)
	Unit: 8.8 Loci, p.262	HEGARTY 675 - Loci (2)	HEGARTY 676 - Loci (3)	HEGARTY 677 - Loci (4)	HEGARTY 678 - Loci (5)	HEGARTY 679 - Loci (problem solving)