

General Topic	Objectives	Grade	LESSONS and ONLINE HOMEWORK
CHAPTER 1 ANGLES	Express fractions of full turns in degrees and vice versa	F	SHAPE / Angles
	Recognise acute, obtuse and reflex angles, estimate angles and measure them accurately		Position and Turning + Measuring angles
	Use properties of angles at a point and angles on a straight line, understand the terms 'perpendicular lines' and 'parallel lines'		Angle sums + Angle reasoning
	Recognise corresponding angles and alternate angles	D	Angles in Parallel lines
	Understand and use three-figure bearings		Bearings
CHAPTER 2 PROPERTIES OF TRIANGLES	Show that the angles of a triangle add up to 180° and use this to find angles	E	SHAPE / Angles / Angle Proofs and Bearings
	Show that an exterior angle of a triangle is equal to the sum of the interior opposite angles		
	Identify isosceles, equilateral and right-angled triangles	G	SHAPE / 2D and 3D Shapes / Properties of Triangles
	Use the word 'congruent' when triangles are identical		
Use angle properties of isosceles, equilateral and right-angled triangles	E	SHAPE / Congruency / Congruent Triangles	
CHAPTER 3 USE OF SYMBOLS	Simplify expressions with one variable such as $a + 2a + 3a$	F	ALGEBRA / Use of Symbols
	Simplify expressions with more than one variable such as $2a + 5b + a - 2b$	E	Simplifying 1 and 2
	Multiply out expressions with brackets	D	Brackets
	Expand (and simplify) harder expressions	C	Factorising Linear
	Factorise expressions	D	
CHAPTER 4 PERIMETER AND AREA	Find the perimeter of a shape by counting sides of squares	G	SHAPE / Area and Perimeter Perimeter + Areas of Rectangles
	Find the area of a square by counting squares		
	Work out the area and perimeter of a simple rectangle, such as 3 m by 8 m	F	Area of a Parallelogram
	Work out the area and perimeter of a harder rectangle, such as 3.6 m by 7.2 m	E	Area of a Triangle and a Trapezium
	Find the area and perimeter of compound shapes		
	Find the area of a triangle and a parallelogram	D	SHAPE / Circles
	Estimate the area of an irregular shape by counting squares and part squares	G	Circumference of a circle
	Find the area and perimeter of compound shapes	E	Area of a circle
	Find the area of a kite and a trapezium	D	
	Name the parts of a circle	G	
	Calculate the circumference of a circle, given the radius or diameter, to an appropriate degree of accuracy	D	
	Find the perimeter of a semicircle	C	
	Calculate the area of a circle, given the radius or diameter, to an appropriate degree of accuracy	D	
Find the area of a semicircle	C		

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CHAPTER 5 PROPERTIES OF POLYGONS	Recognise and name shapes, such as isosceles triangle, parallelogram, rhombus, trapezium and hexagon	G	SHAPE / Angles Interior Exterior angles
	Calculate interior and exterior angles of a quadrilateral	E	
	Investigate tessellations		
	Classify a quadrilateral by geometric properties	C	
	Calculate exterior and interior angles of a regular polygon		
CHAPTER 6 SEQUENCES	Continue a sequence of numbers or diagrams	G	ALGEBRA / Sequences Sequences and nth Term
	Write down terms of a simple sequence		
	Find a particular term in a sequence involving positive numbers	F	
	Write the term-to-term rule in a sequence involving positive numbers		
	Find a particular term in a sequence involving negative or fractional numbers	E	
	Write the term-to-term rule in a sequence involving negative or fractional numbers		
	Write the terms of a sequence or a series of diagrams given the n th term	D	
Write the n th term of a sequence or a series of diagrams	C		
CHAPTER 7 CO-ORDINATES	Use coordinates in the first quadrant, such as plot the point (3, 2)	G	SHAPE / Co-ordinates Coordinates 1 and 2 3D Coordinates ALGEBRA / Graphs Drawing Graphs
	Use coordinates in all four quadrants, such as plot the points (3, -2), (-2, 1) and (-4, -3)	F	
	Draw lines such as $x = 3$ and $y = x + 2$	E	
	Solve problems involving straight lines	D	
	Draw lines such as $y = 2x + 3$		
	Find the midpoint of a line segment	C	
	Use and understand coordinates in three dimensions		
CHAPTER 8 AREA AND VOLUME	Find the volume of a solid by counting cubes and stating units	G	SHAPE / Volume Volume of Cuboids and Cylinders Volume of Prisms SHAPE / Area and Perimeter Nets, Surface Area
	Find the volume of a cube or cuboid		
	Find the height of a cuboid, given volume, length and breadth	E	
	Calculate volumes of prisms and cylinders		
	Change between volume measures such as m^3 to cm^3 or cm^3 to litres	C	
	Calculate surface areas of prisms and cylinders	C	
CHAPTER 9 EQUATIONS AND INEQUALITIES	Change between area measures such as m^2 to cm^2	D	ALGEBRA / Equations All lessons involving equations ALGEBRA / Inequalities Inequations and negative Inequations
	Solve equations such as $3x = 12$, $x + 5 = 6$	E/F	
	Solve equations such as $3x - 5 = x + 6$	D	
	Solve equations such as $3(x - 4) = 28$, $3x - 12 = 5(x + 1)$	D/C	
	Solve equations involving fractions	C	
	Solve inequalities such as $3x < 9$ and $12 \leq 3n < 20$		
	Solve linear inequalities such as $4x - 3 < 10$ and $4x < 2x + 7$	C	
Represent sets of solutions on the number line			

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CHAPTER 10 REFLECTIONS AND ROTATIONS	Draw the reflection of a shape in a mirror line	G	SHAPE / Symmetry
	Reflect shapes in the axes of a graph	E	All lessons
	Reflect shapes in lines parallel to the axes such as $x = 2$ and $y = -1$	D	
	Reflect shapes in lines such as $y = x$ and $y = -x$	C	SHAPE / Transformations
	Draw a line of symmetry on a 2-D shape	G	Rotating Shapes
	Draw all the lines of symmetry on a 2-D shape	F	Reflecing Shapes
	Identify reflection symmetry in 3-D solids	D	
	Give the order of rotations symmetry of a 2-D shape	F	
	Name, draw or complete 2-D shapes from information about their symmetry		
	Rotate shapes about any point	C	
	Draw the line of reflection for two shapes	F	
	Describe fully reflections in a line and rotations about the origin	D	
	Describe fully reflections in any line and rotations about any point		
	Find the centre of a rotation and describe it fully	C	
Combine reflections and rotations	C		
CHAPTER 11 TRIAL AND IMPROVEMENT	Form and solve equations using trial and improvement methods	C	ALGEBRA / Equations / Trial and Improvement
CHAPTER 12 TRANSLATION AND ENLARGEMENT	Give a scale factor of an enlarged shape	F	SHAPE / Transformations
	Enlarge a shape by a positive scale factor	E	Enlarging Shapes
	Compare the area of an enlarged shape with the original shape	D	Translating Shapes
	Enlarge a shape by a positive scale factor from a given centre	D	All Transformations
	Enlarge a shape by a fractional scale factor	C	
	Find the measurements of the dimensions of an enlarged shape	E	
	Translate a shape using a description such as 4 units right and 3 units down	D	
	Translate a shape by a vector	C	
	Transform shapes by a combination of translation, rotation and reflection	C	
Use map scales to find distance	E		
CHAPTER 13 MEASURES	Convert between imperial and metric units	F	SHAPE / Measures
	Know rough metric equivalents of pounds, feet, miles, pints and gallons	F	Converting Measures
	Decide which metric unit to use for everyday measurements	G	Imperial Measures
	Make sensible estimates of a range of measures in everyday settings	F	Speed
	Solve simple speed problems	E	
	Solve more difficult speed problems	C	
	Understand and use compound measures such as speed and density		
Recognise accuracy in measurements given to the nearest whole unit	C		

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CHAPTER 14 REAL-LIFE GRAPHS	Plot points of a conversion graph and read off positive values	F	ALGEBRA / Graphs Conversion graphs Real Life Graphs
	Read from a conversion graph for negative values	E	
	Interpret distance–time graphs	E	
	Calculate simple average speeds from distance–time graphs	D	
	Calculate complex average speeds from distance–time graphs	C	
CHAPTER 15 FORMULAE	Use a formula written in words	G	ALGEBRA / Formulae All lessons
	Write an expression from a problem	E	
	Find a solution to a problem by forming an equation and solving it	C	
	Use a simple formula	F	
	Substitute positive numbers into a simple formula	E	
	Substitute negative numbers into a simple formula		
	Use formulae from mathematics and other subjects	D	
	Substitute numbers into more complicated formulae		
Rearrange linear formulae such as $p = 3q + 5$	C		
CHAPTER 16 CONSTRUCTION	Measure a line accurately to the nearest millimetre	G	SHAPE / Construction Constructing Shapes
	Measure or draw an angle accurately to the nearest degree	F	
	Draw a triangle given three sides, or two angles and a side, or two sides and the included angle	E	
	Draw a quadrilateral such as a kite or a parallelogram with given measurements	D	
	Understand that giving the lengths of two sides and a non-included angle may not produce a unique triangle		
	Construct the perpendicular bisector of a line	C	
	Construct the bisector of an angle		
	Construct the perpendicular from a point to a line	C	
	Construct the perpendicular from a point on the line		
	Construct angles of 60° and 90°	G	
	Recognise the net of a simple solid such as a cuboid		
	Draw the net of a simple solid such as a cuboid	F	
Construct and recognise the nets of 3-D solids such as pyramids and triangular prisms	D		
CHAPTER 17 GRAPHS OF LINEAR FUNCTIONS	Plot the graphs of straight lines	E	ALGEBRA / Graphs Drawing graphs and $y = mx + c$
	Complete a table of values for equations such as $y = 2x + 6$ and draw the graph		
	Solve problems involving graphs, such as finding where the line $y = x + 2$ crosses the line $y = -1$	D	
	Recognise the equations of straight-line graphs such as $y = -4x + 1$	C	
Find the gradients of straight-line graphs			

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CHAPTER 18 PYTHAGORAS' THEOREM	Use Pythagoras' theorem to find the hypotenuse of a right-angled triangle	G	SHAPE / Pythagoras's theorem Pythagoras Theorem
	Use Pythagoras' theorem to find any side of a right-angled triangle	C	
	Use Pythagoras' theorem to find the height of an isosceles triangle		
	Use Pythagoras' theorem in practical problems		
CHAPTER 19 QUADRATIC GRAPHS	Draw graphs of simple quadratic functions such as $y = 3x^2$	D	ALGEBRA / Graphs Solving with Graphs
	Draw graphs of harder quadratic functions such as $y = 2x^2 + 3x - 2$	C	
	Find the points of intersection of quadratic graphs with lines		
	Use graphs to find the approximate solutions of quadratic equations		
CHAPTER 20 LOCI	Understand the idea of a locus	D	SHAPE / Loci Drawing Loci
	Construct accurate loci, such as those of points equidistant from two fixed points	C	
	Solve loci problems, such as identifying points less than 3 cm from a point P		
CHAPTER 21 3-D SOLIDS	Recognise and name three-dimensional (3-D) solids	G	SHAPE / 2D and 3D Shapes 3D Shapes Plans and Elevations
	Sketch three-dimensional (3-D) solids		
	Draw a cuboid on an isometric grid and mark its dimensions	E	
	Draw plans and elevations of three-dimensional (3-D) solids	D	