

General Topic	Objectives	Grade	MYMATHS website
CHAPTER 1 AREA AND VOLUME	Find the area of a triangle, parallelogram, kite and trapezium	D	SHAPE / Area and Perimeter All lessons
	Find the area and perimeter of compound shapes		
	Calculate the circumference of a circle to an appropriate degree of accuracy		
	Find the perimeter and area of a semicircle	C	SHAPE / Circles
	Calculate the area of a circle to an appropriate degree of accuracy	D	Circumference of a Circle and Area of a Circle
	Convert between measures of area	D	Arc, sectors, segments
	Calculate volumes of triangular prisms, parallelogram-based prisms and cylinders	C	SHAPE / Volume All lessons
	Convert between measures of volume		
	Solve problems involving surface areas of prisms and cylinders		
	Find the volume and surface area of pyramids, cones and spheres	A	
	Find the volume of the top cone of a truncated cone		
	Find the length of a major arc of a circle		
	Find the area of a major sector of a circle		
	Find the area of a segment of a circle	A*	
Find the volume of the frustum of a truncated cone			
CHAPTER 2 PROPERTIES OF POLYGONS	Classify a quadrilateral by geometric properties	C	SHAPE / Angles / Interior Exterior Angles
	Calculate exterior and interior angles of a regular polygon		
CHAPTER 3 SEQUENCES	Write the terms of a sequence or a series of diagrams given the $n$ th term	D	ALGEBRA / Sequences
	Write the $n$ th term of a sequence or a series of diagrams	C	
CHAPTER 4 CO-ORDINATES	Draw lines such as $y = 2x + 3$	D	SHAPE / Coordinates Coordinates 1 and 2
	Solve problems involving straight lines		
	Find the midpoint of a line segment	C	3D Coordinates
	Use and understand coordinates in three dimensions		
CHAPTER 5 EQUATIONS	Solve equations such as $3x - 4 = 5 + x$	D	ALGEBRA / Equations Solving Equations
	Solve equations such as $2(5x + 1) = 28$		
	Solve equations such as $3x - 12 = 2(x - 5)$	C	Equations with Fractions
	Solve equations involving fractions	C/B	
CHAPTER 6 REFLECTIONS AND ROTATIONS	Reflect shapes in lines such as $x = 2$ or $y = -1$	D	SHAPE / Transformations Rotating shapes
	Rotate shapes about the origin		
	Reflect shapes in the lines $y = x$ and $y = -x$	C	Reflecting shapes
	Rotate shapes about any point		
	Describe fully reflections and rotations about the origin	D	
	Describe fully reflections and rotations about any point		
	Find the centre of a rotation and describe it fully	C	
	Combine reflections and rotations		
Identify reflection symmetry in 3-D solids	D		

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CHAPTER 7 PROPERTIES OF CIRCLES	Use the angle properties of a circle	B	SHAPE / Circles
	Prove the angle properties of a circle	A	Circle Theorems
	Use the tangent / chord properties of a circle	B	Circle Theorem Proof
	Prove the tangent / chord properties of a circle	A	
	Use and prove the alternate segment theorem		
CHAPTER 8 TRIAL AND IMPROVEMENT	Form and solve equations using trial and improvement	D	ALGEBRA Equations / Trial and Improvement
CHAPTER 9 TRANSLATION AND ENLARGEMENT	Translate a shape using a description such as 4 units right and 3 units down	D	Shape / Transformations
	Translate a shape by a vector	C	Enlarging shapes
	Transform shapes by a combination of translation, reflection and rotation		Translating shapes
	Compare the area of an enlarged shape with the original shape		All Transformations
	Enlarge a shape by a positive scale factor from a given centre	D	Area Scale Factor and Volume Scale Factor
	Enlarge a shape by a fractional scale factor	C	
	Enlarge a shape by a negative scale factor	A	
	Compare areas and volumes of enlarged shapes	A	
Distinguish between formulae for perimeter, area and volume by considering dimensions	B		
CHAPTER 10 MEASURES	Solve more difficult speed problems	C	SHAPE / Measures / Speed NUMBER / Accuracy and Estimation / Upper and Lower Bounds 1 and 2
	Understand and use compound measures such as speed and density		
	Recognise accuracy in measurements given to the nearest whole unit	C	
	Find the upper and lower bounds of simple calculations involving quantities given to a particular degree of accuracy	B	
	Find the upper and lower bounds of more difficult calculations with quantities given to a various degrees of accuracy	A-A*	
CHAPTER 11 REAL-LIFE GRAPHS	Calculate simple average speeds from distance–time graphs	D	ALGEBRA / Graphs
	Calculate complex average speeds from distance–time graphs	C	Conversion graphs
	Interpret velocity–time graphs	B	Real Life Graphs
	Discuss and interpret graphs modelling real situations	B	
CHAPTER 12 FORMULAE	Substitute numbers into more complicated formulae	D	ALGEBRA / Formulae
	Find a solution to a problem by forming an equation and solving it	C	Substitution 1 and 2
	Rearrange linear formulae		Rearranging 1 and 2
	Rearrange formulae that include brackets, fractions and square roots	B	
	Rearrange formulae where the variable appears twice	A	

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CHAPTER 13 CONSTRUCTION	Draw a quadrilateral such as a kite or a parallelogram with given measurements	D	SHAPE / Construction / Constructing Shapes  SHAPE / 2D and 3D Shapes / Plans Elevations
	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 a line		
	Construct angles of $60^\circ$ and $90^\circ$		
	Construct and recognise the nets of 3-D solids such as pyramids and triangular prisms	D	
Draw plans and elevations of 3-D solids	D		
CHAPTER 14 VECTORS	Add, subtract and multiply vectors to solve vector geometry problems	A	SHAPE / Vectors Vectors 1 and 2
	Understand the relationship between parallel and perpendicular vectors	A	
	Solve more difficult vector geometry problems	A*	
CHAPTER 15 GRAPHS OF LINEAR FUNCTIONS	Solve problems involving graphs such as finding where the line $y = x + 2$ crosses the line $y = 1$	D	ALGEBRA / Graphs
	Recognise the equations of straight-line graphs such as $y = -4x + 2$	C	Drawing Graphs and $y = mx + c$ Solving Graphs
	Find the gradients of straight-line graphs		
	Explore the gradients of parallel straight-line graphs	B	
	Explore the gradients of perpendicular straight-line graphs	A	
CHAPTER 16 SIMILARITY AND CONGRUENCE	Match sides and angles of similar triangles, given some dimensions	B	
	Find the area of a 2-D shape, given the area of a similar shape and the ratio	A	All lessons
	Find the volume of a 3-D solid, given the volume of a similar solid and the ratio		
	Match one side and one angle of congruent triangles, given some dimensions	C	SHAPE / Congruency / Congruent triangles
	Prove that two triangles are congruent	A	
	Prove the construction theorems		
CHAPTER 17 PYTHAGORAS' THEOREM	Use Pythagoras' theorem to find the hypotenuse of a right-angled triangle	C	SHAPE / Pythagoras's Theorem Pythagoras Theorem Pythagoras 3D
	Use Pythagoras' theorem to find any side of a right-angled triangle		
	Use Pythagoras' theorem to find the height of an isosceles triangle		
	Use Pythagoras' theorem in practical problems		
	Find the distance between two points from their coordinates	B	
	Use Pythagoras' theorem in 3-D problems	A	
CHAPTER 18 QUADRATIC FUNCTIONS	Solve quadratic equations by factorisation	B	ALGEBRA / Quadratics
	Solve equations involving fractions	A*	Completing the square
	Solve quadratic equations using the quadratic formula	A	Factorising Quadratics 1 and 2
	Write quadratic expressions by completing the square	A*	Quadratic equations and Quadratic Formula
	Use completing the square to solve equations and find maximum and minimum values		

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CHAPTER 19 INEQUALITIES AND SIMULTANEOUS EQUATIONS	Solve inequalities such as $3x > 9$ and $12 \leq 3n < 20$	C	ALGEBRA / Inequalities All lessons except Quadratic Inequalities
	Solve linear inequalities such as $4x - 3 < 10$ and $4x < 2x + 7$		
	Represent sets of solutions on the number line		
	Solve linear inequalities such as $x + 13 > 5x - 3$	B	ALGEBRA / Simultaneous Equations All lessons
	Solve a set of linear inequalities in two variables and represent the solution as a region of a graph		
	Solve a pair of simultaneous equations in two unknowns		
	Know that each equation can be represented by a line on a graph and that the point of intersection of the lines is the solution		
	Solve a pair of simultaneous equations where one is linear and one is non-linear	A / A*	
CHAPTER 20 TRIGONOMETRY	Use sine, cosine and tangent to calculate a side in a right-angled triangle	B	SHAPE / Trigonometry All lessons
	Use sine, cosine and tangent to calculate an angle in a right-angled triangle		
	Use trigonometry to find sides and angles in three dimensions	A*	
	Find the angle between a line and a plane		
	Sketch and draw trigonometric graphs	A	
	Understand the graphs of trigonometric functions for angles of any size	A*	
	Use the sine rule to find the missing sides and missing angles in any triangle		
	Use the cosine rule to find the missing sides and missing angles in any triangle	A	
Use the formula for the area of a non right-angled triangle			
CHAPTER 21 OTHER FUNCTIONS	Complete tables for, and draw graphs of cubic functions	B	ALGEBRA / Graphs Reciprocal graphs Recognising graphs Solving with graphs
	Use cubic graphs to solve equations		
	Solve cubic equations by drawing appropriate lines on graphs	A*	
	Complete tables for, and draw graphs of reciprocal functions	B	
	Use reciprocal graphs to solve equations		
	Plot and sketch graphs of exponential functions	A*	NUMBER / Exponentials Exponential Growth
Recognise the shapes of graphs of functions			
CHAPTER 22 LOCI	Understand the idea of a locus	D	SHAPE / Loci / Drawing Loci
	Construct accurately 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		
	Construct the graphs of loci	A	
	Solve simultaneous equations graphically	A/A*	
CHAPTER 23 TRANSFORMING FUNCTIONS	Transform the graphs of $y = f(x)$ , such as linear, quadratic, cubic, sine and cosine functions, using the transformations $y = f(x) + a$ , $y = f(x + a)$ , $y = af(x)$ and $y = f(ax)$	A*	ALGEBRA / Graphs / Transforming graphs

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CHAPTER 24 ALGEBRAIC PROOFS	Decide with a reason whether a harder statement is true or false	D	
	Identify a counter example		
	Understand the difference between a demonstration and a proof	C	
	Show step-by-step deductions in providing a basic algebraic explanation		
	Show step-by-step deductions in providing a full mathematical explanation	B	
	Derive simple algebraic proofs using reasoning	A	
	Derive harder algebraic proofs using reasoning and logic	A*	