Summer 2022		Higher			
UNIT / LESSON	PRIOR KNOWLEDGE	GRADE FROM ...	GRADE TO ...	OBJECTIVES	Corbett
6 Graphs		**3**	**7**		
	Identify coordinates of given points in the first quadrant or all four quadrants.				84,85
	Write the equation for a straight line graph.				187,191
	Use and draw conversion graphs.				151,152
	Use function machines and inverse operations.				
	Use compound units, such a speed.				299
6.1 Linear graphs	Identify positive and negative gradients and intercepts from graphs.	**3**	**5**	Find the gradient and y-intercept from a linear equation.	189,190
	Rearrange equations.			Rearrange an equation into the form y = mx + c.	7
				Compare two graphs from their equations.	
				Plot graphs with equations ax + by = c.	
6.2 More linear graphs	Identify lines with the same gradient or y-intercept from their equations.	**4**	**5**	Sketch graphs using the gradient and intercepts.	194
	Write the equation of a line from a graph.			Find the equation of a line, given its gradient and one point on the line.	195
				Find the gradient of a line through two points.	190
6.3 Graphing rates of change	Find speed from given distance and time.	**3**	**7**	Draw and interpret distance–time graphs.	171
	Find the area of triangles and rectangles.			Calculate average speed from a distance–time graph.	
				Understand velocity–time graphs.	
				Find acceleration and distance from velocity–time graphs.	389
6.4 Real-life graphs	Write the equation of a line from a sketch graph.	**3**	**5**	Draw and interpret real-life linear graphs.	
	Plot a graph using values given in a table.			Recognise direct proportion.	254,255
				Draw and use a line of best fit.	167
6.5 Line segments	Identify parallel and perpendicular lines	**3**	**7**	Find the coordinates of the midpoint of a line segment.	198
	Know properties of gradients of parallel lines.			Find the gradient and length of a line segment.	190,185
	Identify the gradient and intercept from an equation in the form y = mx + c.			Find the equations of lines parallel or perpendicular to a given line.	196,197
6.6 Quadratic graphs	Identify quadratic expressions.	**4**	**7**	Draw quadratic graphs.	264,265
	Write the equation of a line from a graph.			Solve quadratic equations using graphs.	267
				Identify the line of symmetry of a quadratic graph.	
				Interpret quadratic graphs relating to real-life situations.	
6.7 Cubic and reciprocal graphs	Know the shape of linear and quadratic graphs.	**5**	**7**	Draw graphs of cubic functions.	
				Solve cubic equations using graphs.	
				Draw graphs of reciprocal functions.	
				Recognise a graph from its shape.	
6.8 More graphs	Match the shape of a container to the graph of depth of water against time.	**4**	**6**	Interpret linear and non-linear real-life graphs.	
	Read values from graphs.			Draw the graph of a circle.	
7 Area and volume		**3**	**9**		
	Know the names and properties of 3D shapes.				
	Know the concept of perimeter and area by measuring lengths of sides.				
	Substitute numbers into an equation and give answers to an appropriate degree of accuracy.				
	Know the various metric units.				
	Identify planes of symmetry of 3D solids.				
	Sketch a net of a 3D shape.				
	Work out the volume of a 3D solid made of cuboids.				
	Recall Pythagoras' theorem.				
7.1 Perimeter and area	Recognising units of length (perimeter) and area.	**3**	**3**	Find the perimeter and area of compound shapes.	41
	Work out the area and perimeter of rectangles, triangles and parallelograms.			Recall and use the formula for the area of a trapezium.	48
7.2 Units and accuracy	Recall the formulae for the area of quadrilaterals and triangles. Identify the possible integer values of x from an inequality.	**3**	**7**	Convert between metric units of area.	350
	Round numbers to a specified degree of accuracy.			Calculate the maximum and minimum possible values of a measurement.	280
	Work out percentages of quantities.				
7.3 Prisms	Calculate the volume and surface area of a cuboid.	**4**	**6**	Convert between metric units of volume.	351
	Calculate the volume of a shape made from cuboids.			Calculate volumes and surface areas of prisms.	356/309-312
7.4 Circles	Understand 'radius' and 'diameter'.	**3**	**5**	Calculate the area and circumference of a circle.	40,60
	Solve and rearrange simple equations.			Calculate area and circumference in terms of π.	
7.5 Sectors of circles	Work out fractions of a circle given the angle of a sector.	**5**	**9**	Calculate the perimeter and area of semicircles and quarter circles.	47
	Simplify equations.			Calculate arc lengths, angles and areas of sectors of circles.	46
7.6 Cylinders and spheres	Find the area and circumference of a circle in terms of π.	**4**	**8**	Calculate volume and surface area of a cylinder and a sphere.	357,361,313,315
	Sketch a net of a cylinder.			Solve problems involving volumes and surface areas.	
	Solve simple equations.				
7.7 Pyramids and cones	Find the volume of a cube.	**3**	**9**	Calculate volume and surface area of pyramids and cones.	359,360,314
	Find the side length of a cube given its volume.			Solve problems involving pyramids and cones.	
	Calculate the area of a triangle.				
	Use Pythagoras' theorem to work out the length of the hypotenuse.				
8 Transformations and constructions		**3**	**7**		
	Recognise 2D shapes.				

	Plot coordinates in four quadrants and linear equations parallel to the coordinate axes. Convert metric measures. Recognise congruent and similar shapes. Transform shapes using translation, reflection, rotation and enlargement.				
8.1 3D solids	Draw 3D shapes on an isometric grid. Recognise dimensions of a cuboid.	**3**	**4**	Draw plans and elevations of 3D solids.	
8.2 Reflection and rotation	Draw simple straight lines on a coordinate grid. Know whether the image is congruent to the original following a reflection or a rotation.	**3**	**4**	Refl ect a 2D shape in a mirror line. Rotate a 2D shape about a centre of rotation. Describe refl ections and rotations.	272,273 274,275
8.3 Enlargement	Enlarge shapes on a coordinate grid in one quadrant.	**3**	**7**	Enlarge shapes by fractional and negative scale factors about a centre of enlargement.	107,108
8.4 Transformations and combinations of transformations	Describe translations.	**4**	**5**	Translate a shape using a vector. Carry out and describe combinations of transformations.	326
8.5 Bearings and scale drawings	Convert metric measures and apply to scales. Accurate drawing of right-angled triangle.	**3**	**4**	Draw and use scales on maps and scale drawings. Solve problems involving bearings.	283,284 26
8.6 Constructions 1	Accurate drawings of triangles given SSS and ASA. Know the meaning of the terms perpendicular, bisect, arc.	**3**	**4**	Construct triangles using a ruler and compasses. Construct the perpendicular bisector of a line. Construct the shortest distance from a point to a line using a ruler and compasses.	81,82,83 78 79
8.7 Constructions 2	Draw angles with a protractor. Construct triangles and deduce infomration from them.	**4**	**5**	Bisect an angle using a ruler and compasses. Construct angles using a ruler and compasses. Construct shapes made from triangles using a ruler and compasses.	72 68,69,70,71
8.8 Loci		**4**	**7**	Draw a locus. Use loci to solve problems.	75,76,77
TEST					