



Essential Knowledge		Teaching Points	
<ul style="list-style-type: none"> Recall the definition of a circle; Identify, name and draw parts of a circle including tangent, chord and segment; Recall and use formulae for the circumference of a circle and the area enclosed by a circle circumference of a circle = $2\pi r = \pi d$, area of a circle = πr^2; Find circumferences and areas enclosed by circles; Use $\pi \approx 3.142$ or use the π button on a calculator; Give an answer to a question involving the circumference or area of a circle in terms of π; Find radius or diameter, given area or perimeter of a circles; Find the perimeters and areas of semicircles and quarter-circles; Calculate perimeters and areas of composite shapes made from circles and parts of circles; Calculate arc lengths, angles and areas of sectors of circles; Find the surface area of a cylinder; Find the volume of a cylinder; Find the surface area and volume of spheres, pyramids, cones and composite solids; Round answers to a given degree of accuracy. 		<ul style="list-style-type: none"> Emphasise the need to learn the circle formula: 'Cherry Pie's Delicious' and 'Apple Pies are too' are good ways to remember them. Formulae for curved surface area and volume of a sphere, and surface area and volume of a cone, will be given on the formulae sheet in the examination. Ensure that students know it is more accurate to leave answers in terms of π but only when asked to do so. 	
Assumed Prior Knowledge/ Links / Interleaving			
<ul style="list-style-type: none"> Students should know the formula for calculating the area of a rectangle. Students should know how to use the four operations on a calculator. 			
Potential Barriers to Access /Misconceptions		Opportunities for Reasoning/Problem Solving/Proofs	
<ul style="list-style-type: none"> Diameter and radius are often confused and recollection which formula to use for area and circumference of circles is often poor. Bidmas it not observed when substituting into formulae Rounding to significant figures is a problem, usually students think this is the same as decimal places 		<ul style="list-style-type: none"> Calculate the radius/diameter given the area/circumference type questions could be explored, including questions that require evaluation of statements, such as Andy states "Diameter = $2 \times$ Radius" and Bob states "Radius = $2 \times$ Diameter". Who is correct? 	
Key Mathematical Vocabulary	Area, perimeter, formula, length, width, measurement, volume, circle, segment, arc, sector, cylinder, circumference, radius, diameter, pi, sphere, cone, hemisphere, segment, accuracy, surface area		