


Subject	Year	Month	
Mathematics	10	March	
Topic:			
Circles, cylinders, cones, and spheres			3 lessons
Content (Intent)			
Prior Learning		Future Learning	
Year 9 Circles, arcs, sectors, surface area of prisms and cylinders January		Year 11 Circle theorems October Year 11 Circle geometry October	
Objectives			
<ul style="list-style-type: none"> Recall the definition of a circle and name and draw parts of a circle; Recall and use formulae for the circumference of a circle and the area enclosed by a circle (using $\text{circumference} = 2\pi r = \pi d$ and $\text{area of a circle} = \pi r^2$) using a variety of metric measures; Use $\pi \approx 3.142$ or use the π button on a calculator; Calculate perimeters and areas of composite shapes made from circles and parts of circles (including semicircles, quarter-circles, combinations of these and also incorporating other polygons); Calculate arc lengths, angles and areas of sectors of circles; Find radius or diameter, given area or circumference of circles in a variety of metric measures; Find the volume and surface area of a cylinder; Recall and use the formula for volume of pyramid; Find the surface area of a pyramid; Use the formulae for volume and surface area of spheres and cones; Solve problems involving more complex shapes and solids, including segments of circles and frustums of cones; Find the surface area and volumes of compound solids constructed from cubes, cuboids, cones, pyramids, spheres, hemispheres, cylinders; Giving answers in terms of π; Form equations involving more complex shapes and solve these equations. 			
Pedagogical notes (implementation)		How will understanding be assessed & recorded (Impact)	
Emphasise the need to learn the circle formulae. Formulae for curved surface area and volume of a sphere, and surface area and volume of a cone will be given on the formulae page of the examinations. Ensure that students know it is more accurate to leave answers in terms of π but only when asked to do so.		End of half term no End of Year Mocks in April	
		How can parents help at home?	
		MathsWatch clips (Qualification KS4)	
Further reading/discussion			
Reading / Enrichment http://passyworldofmathematics.com/interesting-circles/	Literacy	Numeracy Links	Careers Links Builder Architect Painter & decorator Product designer