Topic: Volume

Topic/Skill	Definition/Tips	Example
1. Volume	Volume is a measure of the amount of	
	space inside a solid shape.	
	Units: mm^3 , cm^3 , m^3 etc.	
2. Volume of a	V = Length imes Width imes Height	1 M
Cube/Cuboid	$V = L \times W \times H$	6cm
	Ver on also use the Velume of a Drive	
	You can also use the Volume of a Prism formula for a cube/cuboid.	3 cm
		₩ ₩
		5 cm volume = 6 x 5 x 3
		$= 90 \text{ cm}^3$
3. Prism	A prism is a 3D shape whose cross section	
	is the same throughout.	
		Rectangle Prism Cube
		Triangle Prism
1.0		Pentagonal Prism Hexagonal Prism
4. Cross Section	The cross section is the shape that continues all the way through the prism .	
Section	continues an the way through the prism.	Cross Section
5. Volume of a	$V = Area of Cross Section \times Length$	
Prism	$V = A \times L$	
		Area of Cross
		Section
		Length
6. Volume of a	$V = \pi r^2 h$	
Cylinder		5cm
		$V = \pi(4)(5)$
		$= 62.8 cm^{3}$
7. Volume of a	$V = \frac{1}{3}\pi r^2 h$	
Cone	$v = \frac{1}{3}\pi r^{-}n$	5cm
		_2cm
		$V = \frac{1}{3}\pi(4)(5)$

8. Volume of a	$Volume - \frac{1}{-Rh}$	
Pyramid	$Volume = \frac{1}{3}Bh$	
	where $\mathbf{B} = $ area of the base	7cm
		6cm 6cm
		1
		$V = \frac{1}{3} \times 6 \times 6 \times 7 = 84cm^3$
		5
9. Volume of a	$V = \frac{4}{3}\pi r^3$	Find the volume of a sphere with
Sphere	$V = \frac{1}{3}nT$	diameter 10cm.
	Look out for hemispheres – just halve the	$V = \frac{4}{3}\pi(5)^3 = \frac{500\pi}{3}cm^3$
	volume of a sphere.	$V = \frac{1}{3}\pi(5)^{\circ} = \frac{1}{3}cm^{\circ}$
10. Frustums	A frustum is a solid (usually a cone or	
	pyramid) with the top removed .	12cm
	Find the volume of the whole shape, then	24cm 5cm
	take away the volume of the small	
	cone/pyramid removed at the top.	10cm
	conc, pyranna removed at the top.	
		Volume = ?
		$V = \frac{1}{3}\pi(10)^2(24) - \frac{1}{3}\pi(5)^2(12)$
		$= 700\pi cm^3$
		$= 700\pi cm^{\circ}$