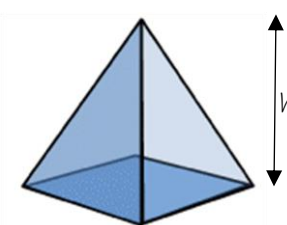# Y10 Maths Knowledge Organiser Foundation Tier: Curved Shapes and Pyramids

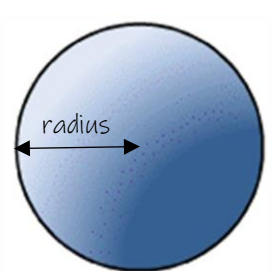| What must I be able to do?	Key vocabulary	
New content: ☐ Calculate the length of an arc ➤ Sparx U221 ☐ Calculate the area and angle of a sector ➤ Sparx U373 ☐ Calculate the volume of a pyramid ➤ Sparx U484 ☐ Calculate the volume and surface area of a cone ➤ Sparx U116, U523 ☐ Calculate the volume and surface area of a sphere ➤ Sparx U617, U893	Sector	A fraction of a circle, cut from the centre like a slice of pizza. The two straight sides will be the radius of the circle.
	Arc	A section of the circumference of a circle.

Pyramids

Volume $= \frac{1}{3} \times$ area of base $\times$ perpendicular height

Surface area = area of base + area of all the triangles
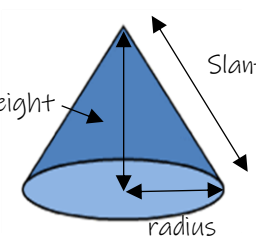
Given to you in an exam!

Spheres

Volume $= \frac{4}{3} \times \pi \times$ radius cubed

$= \frac{4}{3}\pi r^3$

Surface area $= 4 \times \pi \times$ radius squared

$= 4\pi r^2$

Cones

Volume $= \frac{1}{3} \times$ pi $\times$ radius squared $\times$ height

$= \frac{1}{3}\pi r^2 h$

Given to you in an exam!

Curved surface area = pi $\times$ radius $\times$ slant height

$= \pi r l$

Total surface area $= \pi r^2 + \pi r l$

Arcs and sectors
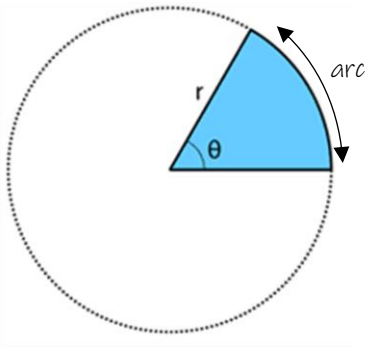
Area of a sector = fraction of a full circle x area of a circle

$$= \frac{\theta}{360} \pi r^2$$

Arc length = fraction of a full circle x circumference

$$= \frac{\theta}{360} \pi d$$

Perimeter of a sector = arc length + radius + radius

$$= \frac{\theta}{360} \pi d + 2r$$

GLUE

HERE