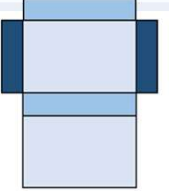
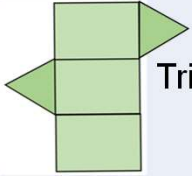
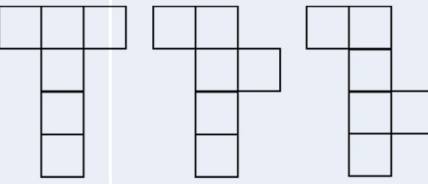
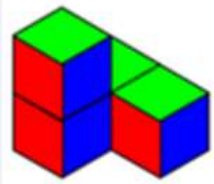

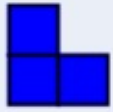


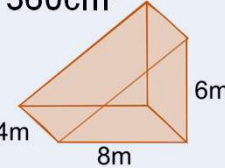
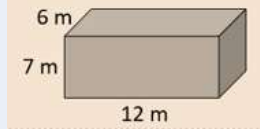
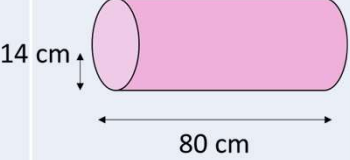
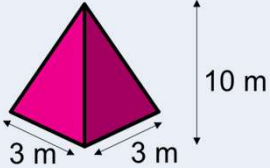
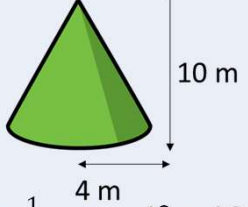
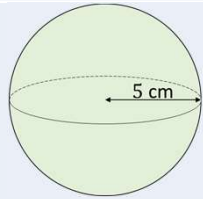


# 3D SHAPE

<b>Keywords:</b>	Volume / Prism / Net / Face / Cross-section / Surface area / Pyramid						
<b>Definition / Description:</b>	Volume: The amount of space in a 3D container	Prism: A 3D shape with a uniform cross-section	Net: A surface that can be folded in a solid	Face: A flat surface of a solid shape	Cross-Section: A slice cut through at an angle 90° to its axis	Surface Area: Total area of a solids exterior surface	Pyramid: A solid shape with triangular faces that meet at a vertex
<b>Knowledge points:</b>	Nets	Plans and elevation – 2D representations of a 3D shape	Volume of prisms: $V = \text{Cross Section} \times \text{Length}$	Surface area of prisms: Total area of all faces	Volume of a Pyramid – The volume of a pyramid is $\frac{1}{3}$ the volume of a prism.	Spheres: $V = \frac{4}{3}\pi r^3$ $SA = 4\pi r^2$	
<b>Knowledge point examples:</b>	 <p style="text-align: right;">Cuboid</p>  <p style="text-align: right;">Triangular Prism</p> <p>Some shapes may have more than 1 possible net like a cube:</p> 	  <p style="text-align: center;">Front Elevation</p>  <p style="text-align: center;">Side Elevation</p>  <p style="text-align: center;">Plan view (Birds eye)</p>	 <p style="text-align: center;">5cm 12cm 6cm</p> <p>Volume = <math>5 \times 12 \times 6</math>  <math>= 60 \times 6</math>  <math>= 360\text{cm}^3</math></p>  <p style="text-align: center;">4m 8m 6m</p> <p>Volume = <math>\frac{8 \times 6}{2} \times 4</math>  <math>= 24 \times 4</math>  <math>= 96\text{m}^3</math></p>	 <p style="text-align: center;">6m 7m 12m</p> <p>Surface Area = <math>(6 \times 7) + (6 \times 7) + (7 \times 12) + (7 \times 12) + (12 \times 6) + (12 \times 6)</math>  <math>= 2 \times (6 \times 7) + (7 \times 12) + (12 \times 6) = 270\text{m}^2</math></p>  <p style="text-align: center;">14 cm 80 cm</p> <p><math>\pi \times 14^2 = 616</math>  <math>2 \times \pi \times 14 \times 80 = 7\,037</math>  <math>616 + 616 + 7\,037 = 8\,269\text{cm}^2</math></p>	 <p style="text-align: center;">3m 3m 10m</p> <p><math>V = \frac{1}{3} \times 3 \times 3 \times 10</math>  <math>V = \frac{1}{3} \times 90</math>  <math>V = 30\text{m}^3</math></p>  <p style="text-align: center;">4m 10m</p> <p><math>V = \frac{1}{3} \times \pi \times 4^2 \times 10</math>  <math>V = \frac{1}{3} \times 160\pi</math>  <math>V = 167.6\text{m}^3</math></p>	 <p style="text-align: center;">5cm</p> <p>Volume = <math>\frac{4}{3} \times \pi \times 5^3</math>  <math>= \frac{500}{3} \pi</math>  <math>\approx 523.6\text{cm}^3</math></p> <p>Surface Area = <math>4 \times \pi \times 5^2</math>  <math>= 100\pi</math>  <math>\approx 314.2\text{cm}^2</math></p>	
<b>Linked Knowledge Maps</b>	Pythagoras and Trigonometry / Compound and non-compound measures						