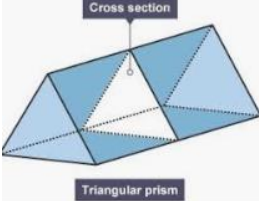
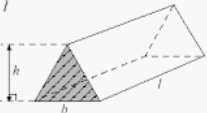
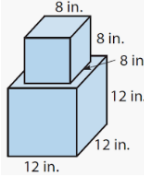
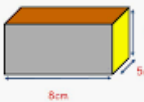


# Year 8 Strand 5

Topic/Skill	Definition/Tips	Example															
Rounding to a given decimal place	Pi is 3.14159265358979323846264338327950288419716939937510582097494459230781640628620899862803482534211706798214808651328230664709384460955058223172535940812848111.... this carries on forever																
Rounding to a given significant figure	£13, 679.29 The first (and most) significant figure here is 1. So 1 is the first significant figure. 3 is the 2 <sup>nd</sup> significant and 6 is the 3 <sup>rd</sup> .	<p style="text-align: center;"><b>Significant Figures (Rounding)</b></p> <p>Numbers can be rounded to 1, 2, 3 or more significant figures. We count the number of figures from the <b>first non-zero digit</b>.</p> <p><b>Rounding to 1 s.f</b></p> <table style="width: 100%; text-align: center;"> <tr> <td>4.3325</td> <td>5.7425</td> <td>0.0425</td> </tr> <tr> <td>↑</td> <td>↑</td> <td>↑</td> </tr> <tr> <td>5 or bigger?</td> <td>5 or bigger?</td> <td>5 or bigger?</td> </tr> <tr> <td>No</td> <td>Yes</td> <td>No</td> </tr> <tr> <td>4</td> <td>6</td> <td>0.04</td> </tr> </table> <p style="text-align: right; font-size: small;">First non-zero digit.</p>	4.3325	5.7425	0.0425	↑	↑	↑	5 or bigger?	5 or bigger?	5 or bigger?	No	Yes	No	4	6	0.04
4.3325	5.7425	0.0425															
↑	↑	↑															
5 or bigger?	5 or bigger?	5 or bigger?															
No	Yes	No															
4	6	0.04															
Error intervals	An <b>error interval</b> is the range of values that a number could have taken before being rounded or truncated. <b>Error intervals</b> are usually written as a range using inequalities, with a lower bound and an upper bound.	20000 is rounded to 1 significant figure. State the error interval. The smallest value it could be is 15000 and the largest is 24999.99999.... we write $15000 \leq x < 25000$															
Estimation	Estimation is used in everyday life to help us make calculations more simple	To estimate you round all the numbers in the calculation to 1sf and then perform the calculation. Estimate $1.95 \times 312.89$ Rounding we get $2 \times 300 = 600$ so 600 is the approximate value of this calculation															
Circumference of a circle	This is the perimeter of the circle - i.e. the distance around the circle	Use $c = \pi \times d$ where d is the diameter of the circle															
Area of a circle	The area of a circle is the number of square units inside that circle	Use $\text{Area} = \pi \times r^2$ where r is the radius of the circle															
Parts of a circle	A circle has many different parts that have special names																
Nets	A "Geometry Net" is a flattened out three dimensional solid (a three dimensional shape) -- like a cube, a prism or a pyramid. A net can be folded to make a 3D object.																

# Year 8 Strand 5

<p>Prism</p>	<p>A <b>prism</b> is a solid object with: identical ends; flat faces; and the same cross section all along its length</p>	 <p>Cross section Triangular prism</p>
<p>Volume of a prism</p>	<p>The volume can be calculated by working out the area of the cross-section and multiplying this by the length of the prism</p>	<p>Volume of triangular prism = area of cross-section <math>\times</math> length  <math>= \frac{1}{2} \times b \times h \times l</math></p> 
<p>Composite solid</p>	<p><b>composite solid.</b> A <b>solid</b> that is composed, or made up of, two or more <b>solids</b></p>	 <p>8 in. 8 in. 8 in. 12 in. 12 in. 12 in.</p> <p>Volume of large cube = <math>12 \times 12 \times 12 = 1728 \text{in}^3</math>. The volume of the small cube = <math>8 \times 8 \times 8 = 512 \text{in}^3</math>. Adding we get a total volume of <math>2240 \text{in}^3</math></p>
<p>Surface area</p>	<p>the area of an outer part or uppermost layer of something.</p>	<p><b>Example</b> Find the surface area of the cuboid</p>  <p>8cm 6cm 5cm</p> <p>Front and back are the same Top and bottom are the same Right and left are the same</p> <p><b>Working</b>          Front Area = <math>l \times b = 8 \times 6 = 48 \text{cm}^2</math>          Top Area = <math>l \times b = 8 \times 5 = 40 \text{cm}^2</math>          Side Area = <math>l \times b = 6 \times 5 = 30 \text{cm}^2</math>          Total Area = <math>48 + 48 + 40 + 40 + 30 + 30 = 236 \text{cm}^2</math></p>
<p>Convert between <math>\text{m}^3</math> and <math>\text{cm}^3</math></p>	<p>To convert from one unit of volume to another</p>	<p>Convert <math>3 \text{m}^3</math> to <math>\text{cm}^3</math>. To convert from m to cm you multiply by 100. For the volume you multiply by <math>100^3</math>.  <math>3 \times 100^3 = 3,000,000 \text{cm}^3</math></p>