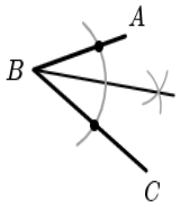
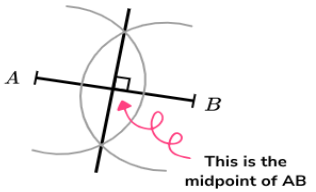
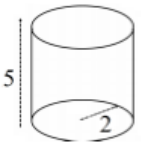
Knowledge Organiser - Mathematics

Re-arranging formulae, Bisectors and perpendicular lines, Circles and cylinders, Error intervals

	Topic	Information	Example	Sparx clip
1	Re-arranging formulae	**Use inverse operations** on both sides of the formula (balancing method) until you find the expression for the letter.	Make x the subject of $y = \frac{2x-1}{z}$ Multiply both sides by z $yz = 2x - 1$ Add 1 to both sides $yz + 1 = 2x$ Divide by 2 on both sides $\frac{yz+1}{2} = x$ We now have x as the subject.	U325, U870, U505, U556.
2	Constructing bisectors and perpendicular lines	An **angle bisector** is the name given to an accurate drawing where an angle is cut in half by a straight line. Bisector means to cut in half; in two equal pieces. To do this we need to use a pencil, a ruler and compasses. A **perpendicular bisector** is the name given to an accurate drawing where a line is cut in half by a new line which is at 9090 degrees to the original line.	 	U985, U196, U787, U245.
3	Circles and cylinders	$\boldsymbol{A = \pi r^2}$ which means 'pi x radius squared'. $\boldsymbol{C = \pi d}$ which means 'pi x diameter'. **Cylinder** **Curved Surface Area = $\boldsymbol{\pi dh}$** or **$\boldsymbol{2\pi rh}$** **Total SA = $\boldsymbol{2\pi r^2 + \pi dh}$** or **$\boldsymbol{2\pi r^2 + 2\pi rh}$**	If the radius was 5cm, then: $A = \pi \times 5^2 = 78.5cm^2$ If the radius was 5cm, then: $C = \pi \times 10 = 31.4cm$ $Total\ SA = 2\pi(2)^2 + \pi(4)(5)$ $= 28\pi$ 	U767, U604, U950, U259, U221, U373, U464, U915, U174, U926.
4	Error Intervals	A **range of values** that a number could have taken before being rounded or truncated. An error interval is written using inequalities, with a **lower bound** and an **upper bound**.	0.6 has been rounded to 1 decimal place. The error interval is: $0.55 \leq x < 0.65$ The lower bound is 0.55 The upper bound is 0.65	U480, U298, U731, U965, U657, U108, U301.