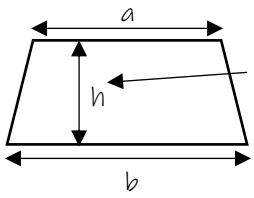
Y8 Maths Knowledge Organiser Topic 7: Area and Perimeter 2

What must I be able to do?	Key vocabulary	
You may need to revise the following: • Year 7 Topic 13: Area and Perimeter 1 **New content:** ☐ Convert between mm^2, cm^2 and m^2 ☐ Find the areas of trapezia ➢ Sparx M705 ☐ Find the areas and perimeters of composite shapes including rectangles, squares, triangles, parallelograms and trapezia. ➢ Sparx M996, M303	**Trapezium**	A quadrilateral with only one pair of parallel sides. The plural of trapezium is trapezia.
	Composite shapes	Shapes created by combining other shapes

Area of a trapezium



Height must be perpendicular to the parallel sides.

$$\text{Area} = \frac{1}{2}(a + b)h$$

$\frac{1}{2}(a + b)$ finds the average length of the parallel sides. This essentially turns the formula into the same as for the area of a parallelogram!

Converting units of area

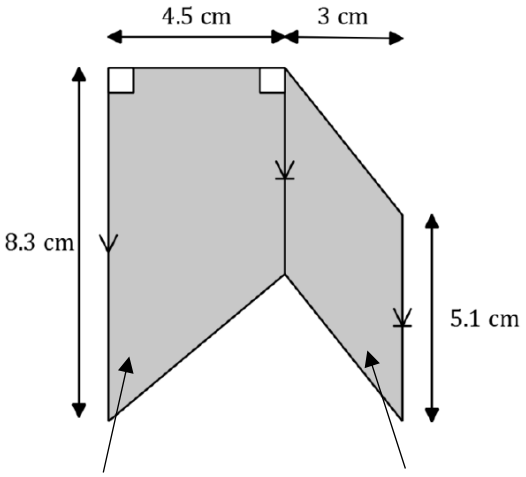
When converting units of area, you need to do the standard length conversion rule twice, once for each dimension.

$1m^2 = 1m \times 1m = 100cm \times 100cm = 10{,}000cm^2$

$1cm^2 = 1cm \times 1cm = 10mm \times 10mm = 100mm^2$

Therefore $1m^2 = 1{,}000{,}000mm^2$

Area of composite shapes



Area of the trapezium is:

$\frac{1}{2} \times (8.3 + 5.1) \times 4.5 = 30.15cm^2$

Area of the parallelogram is:

$5.1 \times 3 = 15.3cm^2$

So the total area of the composite shape is:

$30.15 + 15.3 = 45.45\ cm^2$

Y8 Maths Knowledge Organiser Topic 8: Negative numbers 2

What must I be able to do?	Key vocabulary	
You may need to revise the following: • Year 7 Topic 6: Negative numbers 1 **New content:** ☐ Use correctly the symbols <, >, ≥, ≤, and the associated language to order a set of decimals and integers including negatives	**Greater than**	The symbol > represents greater than. It means bigger.
	Less than	The symbol < represents less than. It means smaller.
	Greater than or equal	The symbol ≥ represents greater than or equal to. It means bigger but also includes the possibility of it being equal.
	Less than or equal	The symbol ≤ represents less than or equal to. It means smaller but also includes the possibility of it being equal.

Using inequalities with negatives

e.g. $x < y$ Write down 2 possible values for x if:

a) $y = 1$

$x = 0$ or $x = 0.5$

b) $y = 0$

$x = -1$ or $x = -20$

e.g. put a correct symbol in each circle

a) -4 (>) -5

b) $-\frac{1}{2}$ (<) $-\frac{1}{4}$