	STM Knowledge Organiser Year: 8	Subject: Maths
--	---------------------------------	----------------

<u>Core Knowledge</u>Topic: Graphs

Topic/Skill	Definition/Tips	Example
1. Coordinates	Written in pairs . The first term is the x - coordinate (movement across). The second term is the y-coordinate (movement up or down)	$\begin{array}{c} & & & & & & \\ & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\$
2. Linear Graph	Straight line graph. The equation of a linear graph can contain an x-term , a y-term and a number .	Example: Other examples: x = y y = 4 x = -2 y = 2x - 7 y + x = 10 2y - 4x = 12
3. Quadratic Graph	A 'U-shaped' curve called a parabola. The equation is of the form $y = ax^2 + bx + c$, where <i>a</i> , <i>b</i> and <i>c</i> are numbers, $a \neq 0$. If $a < 0$, the parabola is upside down.	y ↑ y = x ² -4x-5 -2 (2, ⁻ 9)
4. Cubic Graph	The equation is of the form $y = ax^3 + k$, where k is an number. If $a > 0$, the curve is increasing. If $a < 0$, the curve is decreasing.	
5. Reciprocal Graph	The equation is of the form $y = \frac{A}{x}$, where <i>A</i> is a number and $x \neq 0$. The graph has asymptotes on the x-axis and y-axis.	$y + \frac{y}{y} = \frac{1}{x}$

Links to shapes of graphs, plotting graphs, substitution, exact trig values, change in (x,y) coordinates. Percentage increase and decrease graphs