**Transforming Parabolas**

1. a) plot the graph of $y=x^{2}$ on the grid below. Your $x$-axis should go from -10 to 10 and your $y$-axis should go from -5 to 20. Label your curve.



b) plot the graph of $y=x^{2}+2$ on the same grid above. Label the curve.

c) Describe the transformation (what is the difference between the two graphs?).

1. Plot and label another graph of $y=x^{2}$ on the grid below.



b) plot and label the graph of $y=(x-3)^{2}$ on the grid above.

1. Describe the transformation (what is the difference between the two graphs?).
2. Discuss with your partner:
	* What would you expect the graph of $y=x^{2}-4$ to look like? Draw a sketch, showing the coordinates of the minimum point.
	* What would you expect the graph of $y=(x+1)^{2}$ to look like? Draw a sketch, showing the coordinates of the minimum point.
	* What would you expect the graph of $y=(x-3)^{2}+2$ to look like? Draw a sketch, showing the coordinates of the minimum point.
3. Discuss with your partner:
	1. What would you expect the graph of $y=x^{2}-4$ to look like? Draw a sketch, showing the coordinates of the minimum point.
	2. What would you expect the graph of $y=(x+1)^{2}$ to look like? Draw a sketch, showing the coordinates of the minimum point.
	3. What would you expect the graph of $y=(x-3)^{2}+2$ to look like? Draw a sketch, showing the coordinates of the minimum point.
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