HO4: Plotting graphs of equations

In pairs, use *Geogebra* (or other graph plotting software) to explore the following:

Plot $y = x$

Now plot $y = 2x$ on the same axes.

- Describe what happens to the graph
- The '2' in $y = 2x$ is called the coefficient of x
- What happens when you increase the coefficient further to 3, 4 … 10 …?
- What about when the coefficient is a fraction?
- What about if the coefficient is negative?
- Write down a sentence or two explaining the effect of changing the coefficient of x.

Clear the screen

Plot $y = x$

Now plot $y = x + 1$ on the same axes.

- Describe what happens to the graph
- Where does the graph intersect with the y axis?
- What $y = x + 2$ … or $y = x + 3$?
- What about $y = x - 3$?
- The number added on is called a constant, because in the equation, this part stays constant no matter what x is
- Explore a range of different constants. Can you write down a sentence describing what the constant does?

Explore some other equations – do your 'rules' above always hold true?

How could you use Excel to plot graphs of equations?