

Using Data to Draw a Graph

The table below shows some data collected in a Hooke's law investigation.

The dependent variable (the value of which is measured for each change in the independent variable) goes on the y-axis.

Force (N)	Extension (cm)
0	0
2	4
4	8
6	11
8	13
10	14

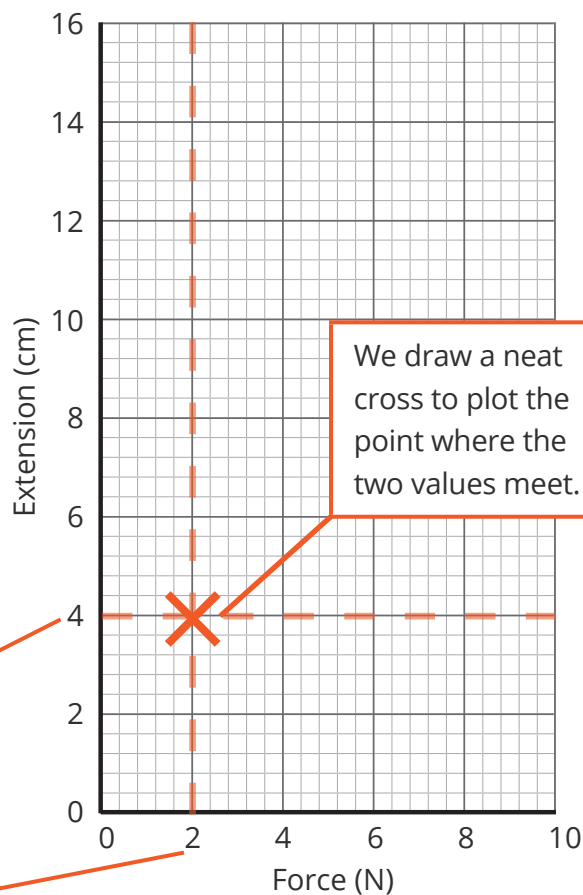
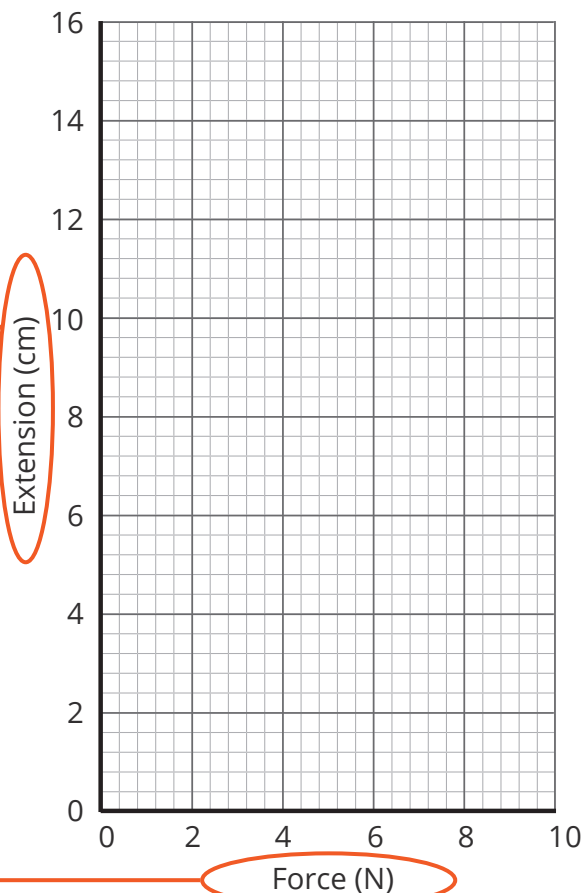
The independent variable (the values of which are changed or chosen by the investigator) goes on the x-axis.

Force (N)	Extension (cm)
0	0
2	4
4	8
6	11
8	13
10	14

This row tells us that when a force of **2N** is applied to the spring, the extension is **4cm**.

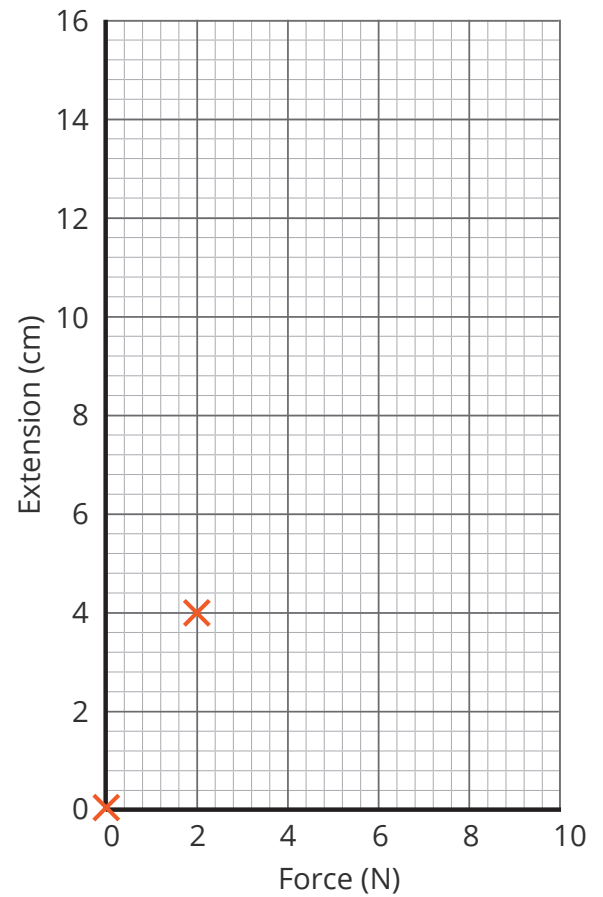
The value on the y-axis is 4cm.

The value on the x-axis is 2N.



1. Plot the points on this graph. The first two points have been plotted for you.

Force (N)	Extension (cm)
0	0
2	4
4	8
6	11
8	13
10	14



The **line of best fit** is the most reasonable continuous line determined by the points; it helps to visualise the relationship between variables by averaging out any errors.

- The line may not pass through every point.
- If it does not pass through every point, there should be the same number of points above the line than below it.
- It may not be a straight line.

2. Add a line of best fit to the graph you plotted above.

3. Use your graph to predict the extension when a force of 3N is added to the spring.
