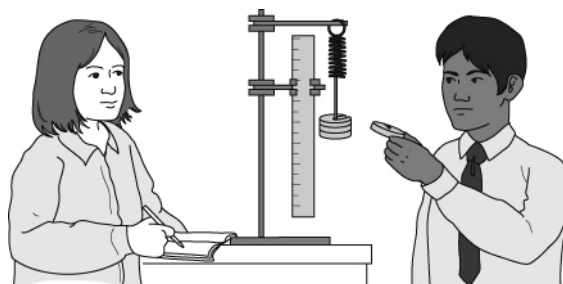


Matilda and Ravi carried out an experiment in class that showed how a spring was extended (stretched) by different forces.



Their results are shown in the table below.

Mass (g)	Weight (force) (N)	Length (cm)	Extension (cm)
0	0	3	0
200	2	7	
400	4	11	
600	6	15	
800	8	19	
1000	10	23	

- 1 Draw a table with columns for weight and extension. Copy the weights from the table above and work out the extensions.
- 2 Plot a scatter graph of their results on graph paper. Put weight on the horizontal axis and extension on the vertical axis.
- 3 Imagine that you make a force meter with this type of spring. What range of forces could you measure?
- 4 Ravi used his force meter to weigh some other objects. He wrote down the extension of the spring when he hung each object on it.

Work out the weight of each object using your graph.

Object	Extension (cm)
A	2.0
B	19.0
C	4.5
D	6.5

- 5 Matilda and Ravi wrote this conclusion:

*This experiment shows that a spring stretches by the same amount each time a 200 g force is added to the other weights.*

They made mistakes in their conclusion. What were they?

**I can...**

- present data as a scatter graph
- draw a conclusion
- use data from a scatter graph
- describe how the extension of a spring depends on the force applied.