

Investigation into the relationship between an objects mass and weight

Method

- 1 Put a mass on the electronic balance. Measure its mass in grams. Record it in a table like the one below (in step 6).
- 2 Use the force meter to measure the weight of the mass, in Newtons. Record the answer in your table.

- 3 Now add a second mass. Measure the total mass on the electronic balance, then measure the weight on the force meter. Record the answers in your table.

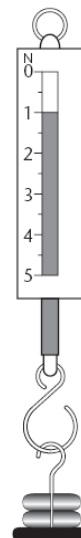
- 4 Carry on adding masses until you have five results.

5. Use the conversion chart to convert the mass in grams to kilograms if you need to.

You will use this for your graph later.

Conversion chart

Mass in grams	Mass in kilograms
100	0.1
200	0.2
300	0.3
400	0.4
500	0.5



Results

- 6 Use a table like this to record your results.

Mass in grams	Mass in kilograms	Force in Newtons

- 7 Draw a line graph of your results. Put the mass in kilograms on the x-axis and the force in Newtons on the y-axis. Use a ruler to draw a straight line even if all the crosses do not fit exactly on it.

Extension

> Use your force meter to find out the force of **2 random objects in the room**. Write down your answers and use the graph to estimate their mass. If you have time, check them on the balances.

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