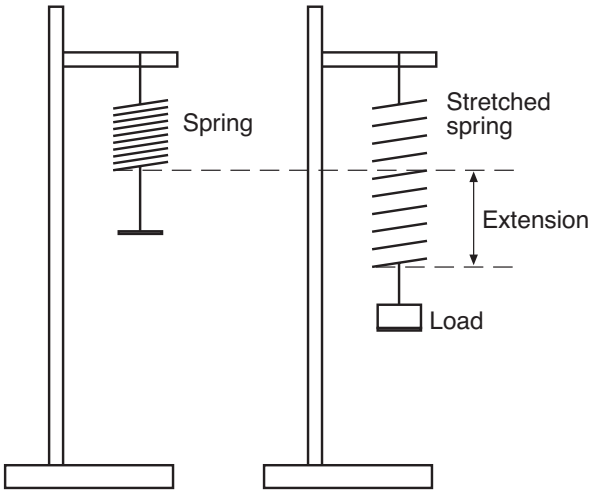
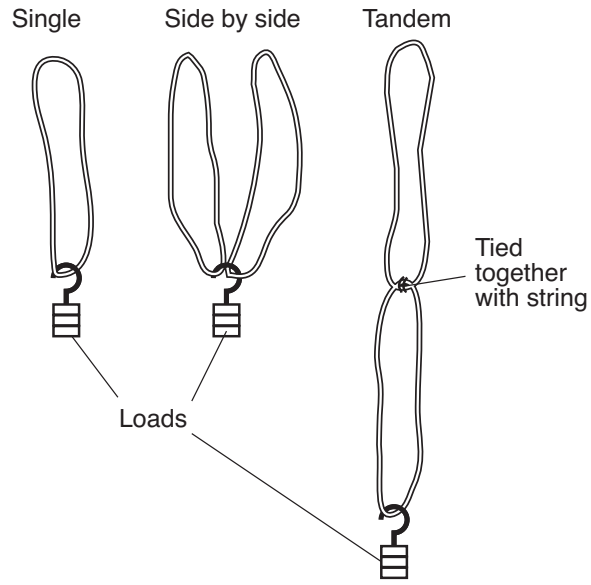
HOOKE'S LAW: A SCIENCE INVESTIGATION

Hooke's law states that extension is proportional to load provided the elastic limit is not exceeded. This law can easily be tested by adding loads to a spring and measuring the extension produced. If load and extension are plotted on a graph, the result is a straight line.



INVESTIGATING RUBBER BANDS

1. Do rubber bands obey Hooke's law when loads are added and removed?



2. What difference does length, width and thickness make to the extension produced for a given load? Is there a relationship between these factors?

   For a fair test, only one factor at a time must be changed (i.e. when testing different lengths the widths and thicknesses must be the same).

3. Does Hooke's law apply when there is more than one rubber band? How does the extension compare with that obtained from a single band?

MATHEMATICAL ANALYSIS

The results from investigations 2 and 3 can be compared on a graph with the results of two or three tests plotted on the same axes. Is there a link between the gradients of the lines and the factors being investigated?