

PRACTICAL 1.3.4 -3

- ✓ **Describe** the relationship between force and extension for a spring obeying Hooke's Law.
- ✓ **Compare** the extension of combinations of springs in series and parallel.
- ✓ **Select** and **apply** the equation $F = kx$ where k is the force constant of the spring or the wire.

You are to investigate the behaviour of a springs set up in parallel and series, building on the work you completed in [Practical 1.3.4 – 2](#).

Once you have recorded your results you are to plot all your data on one graph with force on the y-axis and extension on the x-axis.

Calculate the gradient of each line and comment on your results.

Write an equation for the combined spring constant in terms of the spring constant ' k ' of one spring for n springs in parallel or series.

Equipment Required:

- **SAFETY GLASSES (SPRINGS CAN SNAP AND FLY INTO EYES)**
- Retort stand, clamp and boss
- Springs
- Metre rule, set square
- 100g slotted masses

