Investigating the period of vertical a mass-spring oscillator

1. Find the spring constant of your spring by measuring the **extension** when 500g is added. For the purposes of this part, assume that 500g weighs 5N. Make sure your spring constant is in Nm^{-1} and record the value somewhere – you will need it later.

2. Measure the period of the oscillation of a vertical mass-spring oscillator for 6 values of mass from 100g to 600g. **Make sure you wear goggles.** Use a fiducial mark appropriately, and take measurements in such a way as to obtain the best value for period.

3. Assume the period **T** is related to the mass **m** by the following formula: $\mathbf{T = Am^B}$. Plot a graph of log(T) against log(m). Find the gradient and the y-intercept, and deduce the values of A and B.

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