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National 5 Assignment
Hookes Law: Guide Sheet A



**Investigating the extension of a spring while changing the load (force).**

**Apparatus:** spring, retort stand, bosshead, clamp, metre stick or rule, load masses, weight for the base of the retort stand.

**Instructions:**

**READ THE METHOD BELOW AND MAKE SURE THAT YOU UNDERSTAND IT.**

Weight to stabilise the retort stand

1. Fix a clamp with its point in the boss on the stand.
2. Hang a spring from it and secure it so that it does not come off when stretched.
3. Clamp the metre stick / rule vertically alongside the spring.
4. Measure the length of the spring with the metre stick/ rule and record this.
5. Hang a mass hanger from the bottom of the spring and record the new length of the spring and the mass added.
6. Add further masses to the end of the spring.
7. Measure and record the new length of the spring.
8. Repeat for further masses but do not stretch the spring beyond its elastic limit as the spring will break.
9. Use your data to find the relationship between extension and load.

**Risk Assessment**

* Clamp or weigh down the clamp stand to the bench to prevent it from toppling.
* Students must wear eye protection.
* Eyes may be at the same level as clamp
* Springs store energy and can come off their supports.
* **Mrsphysics takes no responsibility for any health and safety. It is the responsibility of the teacher and student to risk assess any practical activity they complete!**
* **Sept 2023**