Science Skills Year 7 booklet: 5

Hooke's Law

Task 1 deadline (self-assessed):
Task 2 deadline (peer-assessed):
Task 3 deadline (teacher-assessed):

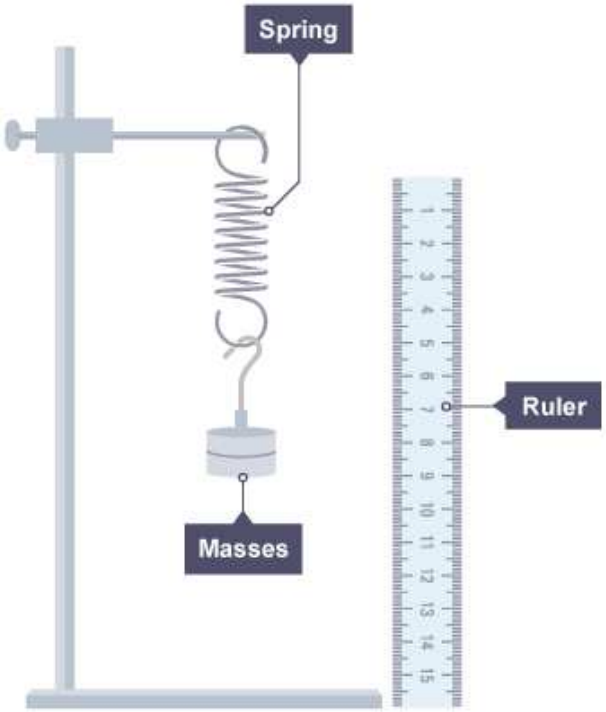
The tasks in this booklet relate to the investigation below. Read the following information before attempting any of the tasks.

Aim of the experiment

To investigate how adding mass to a spring affects its extension.

Method

1. Set up the apparatus as in the diagram
2. Add a 10g mass to the holder and record the spring length.
3. Add another 10g mass and record the new spring length.
4. Take away the previous spring length from the new length to calculate the extension (the difference).
5. Repeat by adding 10 g masses until 100 g is reached.



Task 1

Everyone to do-Match the key terms to the definitions:

Slotted Mass	A push, pull or twist.
Force	A metal circle with a set mass.
Extension	The difference between the start and end length.
Spring	A point or level which something does not extend.
Limit	A metal coil which can be pressed or pulled.

Green: you will be tested on the spelling of the five key terms

Amber: you will be tested on the spelling and the definition of the key terms

Red: you will be tested on the spelling and definition of the key terms. You will also need to put each into a sentence

Killer: you will be asked for synonyms for the key terms (if there are any!)

Task 2

Green:

Identify the independent, dependent and control variables (at least 2 controls):

- Independent-
- Dependent-
- Control-

Peer assessment score:

Amber:

Write a risk assessment for the practical. Include a minimum of three risks, how likely they are to happen and how you will control/reduce the risk.

Peer assessment:

STAR:

STAR:

WISH:

Red:

If 10g is 0.1N, complete the 'Force' column of the results table below. Also, complete the 'Extension' column by working out the difference between each measurement.

Mass used (g)	Force (N)	Spring length (mm)	Extension (mm)
0	0	20	N/A
10		25	5mm
20		30	
30		35	
40		40	
50		45	

Peer assessment:

STAR:

STAR:

WISH:

Task 3:

Green: State what the pattern is between the mass and force. State the pattern for the extension of the spring.

Amber: What can you conclude about the mass, force and extension on the spring? *Aim to use the word directly proportional.*

Red: Explain what the elastic limit is. What would you expect to see in your results if the elastic limit had been left? *(30+ words with a minimum of two explaining terms).*

Teacher assessment:

A2L = 1	Work is thorough, you have picked challenging tasks and have shown effort and understanding.
A2L = 2	Work has detail in most places, you have picked relevant tasks and have shown effort.
A2L = 3	Work lacks detail, there are some errors and shows some lack of preparation/understanding.
A2L = 4	Work is incomplete, there are errors throughout and a clear lack of preparation/understanding.

Teacher comment: