

## Experiment 1

Candidates will be expected to investigate the decay in oscillations of a spring and mass system. No previous knowledge of damping will be required.

### Test 1

#### Apparatus required:

4 cardboard discs of radii, 0.050 m, 0.060 m, 0.070 m, and 0.080 m, labelled A, B, C and D, respectively with a hole punched in the centre of each, so that they can be mounted between the 100 g masses as shown in the diagram.

2 × 100 g masses and a 100 g holder

2 × expendable Springs (e.g. Philip Harris B6A41397)

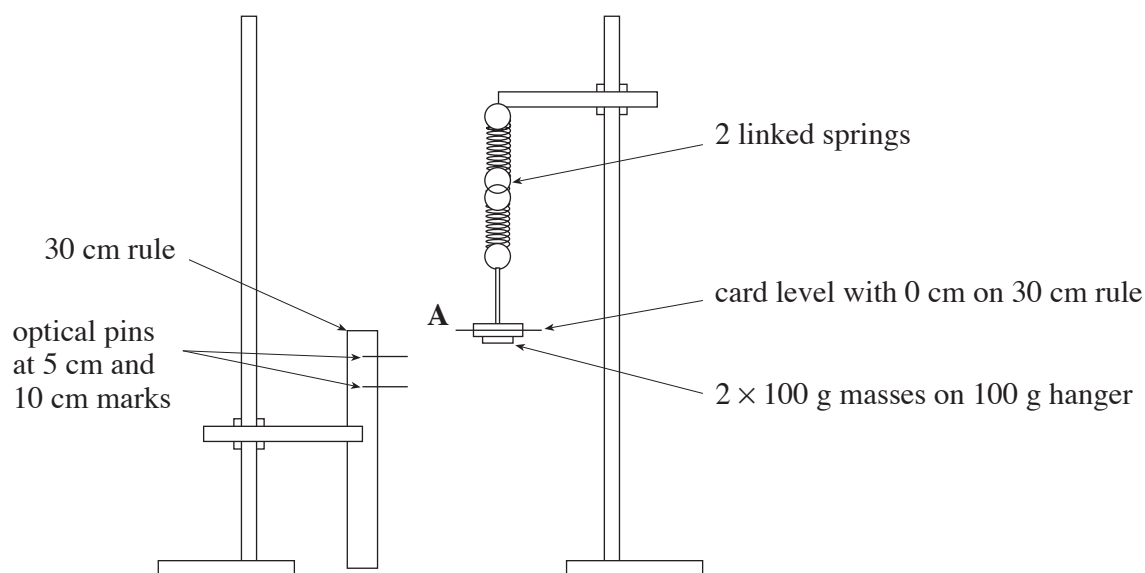
2 × Clamp, boss and stand

1 × split cork to help clamp the springs

Metre rule

30 cm rule

2 × optical pins [or other markers] one attached to the 5 cm mark and one attached to the 10 cm mark of the 30 cm rule as shown.



The two springs should be linked together at the start of the experiment and suspended from one of the clamp stands. The optical pins should be firmly attached to the 30 cm rule. Card A and the masses should be mounted as shown, with the card level with the 0 cm mark on the 30 cm rule.

### Test 2

The apparatus is as for **Test 1** except that **three** linked springs should be used and **one** 100 g mass on a 100 g hanger. Card A should be mounted below the 100 g mass and be level with the 0 cm mark on the 30 cm rule.