



Student activity AP1.16.1
Lesson reference: P1.16 Seismic waves

Book links: Page 196
Specification links: P1h

Make your own seismometer

Equipment required per group:

Retort stand
String (strong enough to support 1 kg)
Felt-tip pen
1 kg mass (with hanger)
Sellotape
Four pieces of graph paper

Health and Safety notes:

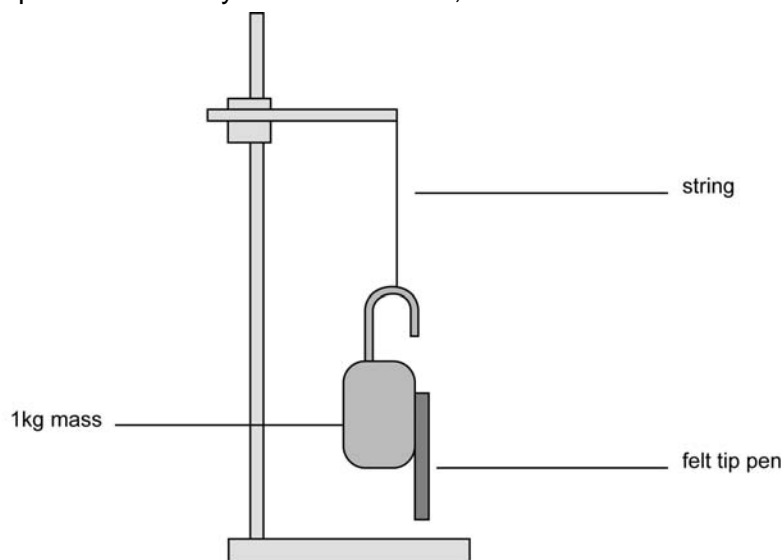
- Take care with the use of heavy masses.

Getting started

Working in pairs, you are going to make your own version of a seismometer. This is a piece of equipment that detects and measures the strength of earthquakes.

Investigating

- 1 Collect your apparatus – a retort stand (with clamp and boss), a 1 kg mass, some string, and a felt-tip pen.
- 2 Use the equipment to make your seismometer, as shown below:



You will need to Sellotape the pen to the side of the 1 kg mass so that it is pointing down, with the tip just touching the surface of the paper.



- 3**
- a** Put your seismometer on a desk. You are going to make two seismic traces.
 - b** Very carefully slide a piece of paper underneath the pen. Slowly and carefully, pull it through the seismometer. You will produce a 'seismic trace', and you should notice that it is pretty much a straight line.
 - c** Very carefully slide a different piece of paper underneath the pen. Slowly and carefully pull it through the seismometer, but this time your partner should knock and vibrate the desk. This need not be too violent – simply tapping the desk with the hands will be enough.
 - d** This time your trace will show an 'earthquake'. You should notice that the line moves up and down as the vibrations are recorded by the seismometer.
- 4** Repeat the experiment so that you both have two traces.

Thinking about

- A** Stick both traces in your book.
- B** Describe the differences between them.
- C** On the earthquake trace, mark on any large vibrations recorded by the seismometer.