



# Harmonic Oscillator

**Aim** To make an object, moving along a straight line and held in turn by each team member, perform 4 cycles of linear simple harmonic motion (like a mass on a spring). The amplitude is to be 10 m and the period 10 s.

**Materials** 1 stopwatch

**Method** The times at which the object passes each of four timing points will be recorded.

**Conditions**

- The object must start from rest at the  $-10\text{ m}$  line.
- The object is transferred to the next team member at the  $-10\text{ m}$  line.
- The acceleration must always be towards the centre.
- No timing devices other than the stopwatch provided may be used.
- Note that the timing points are *not* the same as the distance markers, which are there for guidance only.

**Time limit** 20 minutes planning/practice followed by the timed run.

**Ranking** The ranking order will be determined by the total time error.

**Team**

**Result**

Do not write below line

**Score**