

Practical 5, Topic 4

The simple pendulum: measurement of g

Criteria assessed

- DCP
- CE

Materials needed

- Stand
- String
- Small bob
- Stopwatch (or a light gate connected to an electronic timer)

The string that is attached to the bob must be attached to the stand in such a way that the support is not movable. The length of the string is the length from the point of support to the center of mass of the bob. The amplitude of oscillations must be small, no more than about 10° from the vertical. To verify

the relationship between the period T of a pendulum and its length L : it is known that $T = 2\pi\sqrt{\frac{L}{g}}$. If

you are using a stopwatch, time 20 oscillations and divide the time by 20 to get the period. Repeat with different string lengths.

- Find out how to plot relevant variables that will allow you to verify the theoretical relation between period and length.
- How can the acceleration of free fall be measured in this experiment?