Simple Harmonic Motion

What science says

The scientific model says that the time taken for one oscillation of the pendulum is dependent only on its length'. The longer the pendulum, the longer the time.

Time for one oscillation = 2pi.SQRT (l/g)

Where:

l is the length of the pendulum

g is a constant - the acceleration due to gravity (about 10 m/s2).

Capturing the data

How will you accurately measure the time of one oscillation?

How will you measure the length?

What assumptions are you making in taking these measurements?

What shape do you expect the displacement/time curve to have?

Modelling the data

What variable will you use for your model?

What variable(s) will you empirically adjust?

Why might the model not fit your data?

Extensions

What might you (or children) expect to affect the time for an oscillation that does not appear in the model?

How could you test whether this/these variables really do have no effect?

Use the model to make a prediction - then test this empirically.