# Swing Pendulum Swing Student Worksheet

Name: Date:

List a few places that you might find a pendulum in your everyday life:

## Hypothesis:

**Every scientist must form a hypothesis before he/she conducts an experiment. The hypothesis helps the scientist to design the experiment effectively.**

If you change the length of string that the mass swings from will you change the period of your pendulum? Why?

If you leave the length unaltered and rather change the mass hanging from the string, will you change the period of your pendulum? Why?

Record your observations in the table below. In the appropriate box, record the number of oscillations at each string length for the two different weights.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mass | 10 cm | 20 cm | 30 cm | 40 cm | 50 cm |
| Lighter |  |  |  |  |  |
| Heavier |  |  |  |  |  |

Is there a noticeable difference between the number of oscillations for the two different weights when the string length is the same?

Does the mass have an effect on the number of oscillations?

Does the length have an effect on the number of oscillations?

Plot your observations with the number of swings on the vertical axis and the length of string on the horizontal axis. Use two different coloured pens to represent the two different weights on the same graph.



Based on your observations, predict the number of swings for your pendulum when the length is 60 cm, 70 cm, 80 cm, 90 cm and 100 cm. Record these predictions, along with your results in the table below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mass | 60 cm | 70 cm | 80 cm | 90 cm | 100 cm |
| Predicted # of swings |  |  |  |  |  |
| Observed # of swings |  |  |  |  |  |