Pendulum Investigation

Materials:

 String, paper clip, weights or washers, meter stick, stopwatch, pencil

Build Your Pendulum:

* Tie the paper clip to one end of the string.
* Measure out the desired length of string (include the paper clip) and tie it to the pencil.
* Hook the washers to the paper clip.

Collect Data:

* Pull the bob (washers) the desired length to the side of the centerline.
* Start the stopwatch when you release the bob.
* You will determine the time for 10 complete swings.
* Divide this time by 10 to determine the time of one cycle.
* Change the number of washers and the pull length as indicated in the chart below.
* Record your data.

Data Table

|  |  |  |  |
| --- | --- | --- | --- |
| String Length (cm) | Number of Washers | Length of Pull (cm) | Time of One Cycle (sec) |
| 40 cm | 1 | 20 cm |  |
| 40 cm | 1 | 30 cm |  |
| 40 cm | 4 | 20 cm |  |
| 70 cm | 1 | 20 cm |  |
| 70 cm | 1 | 30 cm |  |
| 70 cm | 4 | 20 cm |  |

Based on the data gathered above, what variable(s) change the time of one cycle of the pendulum?

|  |  |
| --- | --- |
| **Length of String (cm)** | **Time of One Cycle (sec)** |
| 30 cm |  |
| 40 cm |  |
| 50 cm |  |
| 60 cm |  |
| 70 cm |  |
| 80 cm |  |
| 90 cm |  |
| 100 cm |  |