

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Swinging Pendulum Activity – Swinging Pendulum Worksheet

### Data

1. Measure the mass of your weight.
2. Measure the distance from the ceiling to your weight.
3. Place two pieces of tape on the wall/other surface that are 50 cm apart with your weight in the middle.
4. Measure the height from the floor to the bottom of the weight when it is at equilibrium and again when the bottom is at one of the pieces of tape.
5. Record the time it takes for the weight to swing to the piece of tape on the other side ( $t_1$ ).
6. Record the time it takes for the weight to swing to the other side and back again ( $t_2$ ).
7. Perform three trials of this experiment.

| Mass of Weight (kg) | Ceiling to Weight (m) | Floor to Weight At Equilibrium (m) | Floor to Weight At Tape (m) | $t_1$ (s) | $t_2$ (s) |
|---------------------|-----------------------|------------------------------------|-----------------------------|-----------|-----------|
|                     |                       |                                    |                             |           |           |
|                     |                       |                                    |                             |           |           |
|                     |                       |                                    |                             |           |           |

8. Perform the same procedures as before, except adjust the pieces of tape to be 80 cm apart.

| Mass of Weight (kg) | Ceiling to Weight (m) | Floor to Weight At Equilibrium (m) | Floor to Weight At Tape (m) | $t_1$ (s) | $t_2$ (s) |
|---------------------|-----------------------|------------------------------------|-----------------------------|-----------|-----------|
|                     |                       |                                    |                             |           |           |
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### Calculations and Results