Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# MCj02327270000[1]Marble Roll Relay

**Problem:** How does the incline of a ramp affect the speed of a marble rolling down it?

**Hypothesis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Materials:**

Wooden Ramp

Wooden rectangular block

Foam track

1 marble

Timer

**Procedure:**

1. Place the track so that it is against the wall
2. Measure the distance of your track including the ramp (ruler) in **cm**.

**DISTANCE: Length of track\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (distance traveled by marble)**

1. Place the wooden block against the wall underneath the ramp.
2. Roll the marble down the ramp.
3. Record the time it takes for the marble to cross the end of the track. Repeat two times (a total of three trials). Record the data for each trial on the data table given. Find the average time.
4. Determine the speed of each ramp height. Your units will be centimeters per second (round to the nearest whole number).

**Speed = distance ÷ time**

1. Place the wooden block in the middle of the ramp. Hold the ramp against the wall so that the top part touches the wall and the bottom part touches the ground.
2. Repeat steps #3-7.
3. Finally, place the wooden block at the far end of the ramp. Repeat steps #3-7.
4. Create a line graph of your results. \* remember to label each axis and write a title that explains the experiment.
5. Write a conclusion paragraph answering the given questions.

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| --- | --- | --- | --- | --- | --- |
| **HEIGHT OF RAMP** | **Time (seconds)** | | | **AVERAGE**  **TIME (s)** | **SPEED cm/s**  **Speed = distance ÷ time** |
| **TRIAL 1** | **TRIAL 2** | **TRIAL 3** |
| **LOW** |  |  |  |  |  |
| **MEDIUM** |  |  |  |  |  |
| **HIGH** |  |  |  |  |  |

**GRAPH your results:**

**Conclusions:**

1. Explain what you were trying to find out during this experiment.

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1. Was your hypothesis supported or not? Explain using data. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Explain what you learned about how the speed of a marble is affected by the height of a ramp it is rolling down.

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