**Look Out Below!** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Aim:*** To investigate if heavier objects fall faster than lighter ones.

***Variables:***

Independent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dependent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Control: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Hypothesis:*** If [independent changes], then [dependent changes].

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***Materials***

* Golf Ball
* Ping-pong Ball
* Electronic Balance
* Stopwatch

***Procedure***

1. Measure the mass of each ball and record the masses in your results table .
2. Use the edge of the workbench to ensure you drop the balls from the same height each time. This is your 'drop zone' to test how fast each object falls.
3. Drop the golf ball and record the time it takes to hit the ground in the table below.
4. Repeat step 3 for each of the 5 golf ball trials.
5. Repeat step 3-4 using the ping-pong ball.
6. Calculate the average of the 5 trials using the formula .

***Results***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Ball Type** | **Mass** | **Trial 1** | **Trial 2** | **Trial 3** | **Trial 4** | **Trial 5** | **Average** |
| **Golf** |  |  |  |  |  |  |  |
| **Ping-pong** |  |  |  |  |  |  |  |

***Discussion***

1. Was your hypothesis correct? Explain your choice using the data collected.

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1. Using your knowledge of gravity, propose an explanation why you discovered these results.

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1. Identify an error that may have caused your results to be unreliable.

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1. Explain how your error could have affected your results.

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1. If you were to repeat this experiment, what improvements would you make to make the results more reliable?

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1. Draw a conclusion for this activity.

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