

Create Impact Crater Experiment

Interactive Student Handout

Testing for Mass

Question

How does the **mass** of an asteroid affect the size of a crater made upon impact?

OR IN OTHER WORDS...

How does _____ing the **mass** of an asteroid _____ the size of the crater it makes?

Hypotheses

What are your choices for filling in the blanks? in_____, de_____, or stay _____.

*If we increase the **mass** of the asteroid, then the **diameter** of the crater will _____.*

*If we increase the **mass** of the asteroid, then the **depth** of the crater will _____.*

What is a controlled experiment? An experiment where all the possible variables except the i_____ variable are kept c_____. These variables that are kept c_____ are called c_____d variables.

Describe the Variables for Testing for Mass Experiment

Independent Variable (what you change): _____


Dependent Variables (the results of the experiment) _____

Constants:(what you keep the same) _____

Check for Teacher Approval Before Collecting Data

Testing for Mass: Graphing and Analysis

Graph Instructions

- X axis = Independent Variable (mass)
- Y axis = Dependent Variables (diameter and depth)
- Graph Leger for data points: squares  clear square for diameter , shaded square for depth
- Scale graph to fit range of variables

Experiment 1: Mass vs Size

1. Copy and paste both your hypotheses for changing mass in the Crater Experiments here.

2. What was the independent variable in this experiment?

We purposefully changed the .

3. What were the dependent variables in this experiment?

We recorded the crater's and .

4. What are controlled variables?

Controlled variables are variables that we *could* but purposefully keep the s.

5. What were two controlled variables in this experiment?

The two variables we kept the s were the asteroid's h, which really kept it's s constant, and a a that we launched it at.

6. Explain how your data proved or disproved your hypotheses.

Our first hypothesis was correct/incorrect because when we increased the m from to , the diameter from to .

Our second hypothesis was correct/incorrect because when we increased the m from to , the depth from to .