Applied Science Lab #1 Name: _____

Bounce Back Height

Background:

- Data Collection
- Graphing

Objective:

Be able to predict how high a ball will bounce from a given height.

Requirements and Other Information:

1. On competition day, you will be dropping your ball onto a tile floor.
2. You may NOT drop your ball from a height greater than 3 meters.
    a. If you do this, you will receive a "0" for the lab
3. You must record and graph data to accomplish this goal.
    a. Must be in a typed table
    b. Graph MUST be labeled, titled, etc.
4. You will get **ONE** drop on the competition day
    a. So…Practice, Practice, Practice ☺

Question:

1. Why did you choose your bounce back height? (i.e. why 250 cm and not 300 cm?)

Data Collection

When collecting data think about

- WHAT type of data would be useful and HOW it is going to be useful
- WHAT measurements you should be using (m, cm, mm…)
- HOW you are going to record the data
  - 1 person, 2 people…
- WHAT you are going to DO with the data
  - Find and average, max and min, …

How to collect data

- You should always collect more than once
  - For Example - You should measure the mass 2 or more times, measure the length 2 or more times, measure the temperature 2 or more times…
- You record ALL data, even if it seems wrong
- You get rid of "outliers"
  - Figure out WHY you had the outlier

How to report data

- Data needs to be reported in a data TABLE
  - The Table must have….
    - Title for the entire table as well as each column
    - Measurement labels IN the column titles
    - Same number of decimal places (if applicable)

Graphing

- When making a graph the…
  - Dependent variable is always on the vertical axis (y-axis)
  - Independent variable is on the horizontal axis (x-axis).
- A graph should ALWAYS have a **TITLE** and **LABELED AXIS**
- When making a graph, you should make it large enough to use
  - i.e. don't make a graph in the corner of a page, use most of the page

Applied Science Graphing Assignment 1 Name _____

Place the following data into a data table and then graph the data.

Assume I retraced my path home.

On Monday morning I walked 6 blocks North to the post office and then 3 blocks North to city hall and then returned home. In the afternoon, I walked 10 blocks East to the grocery store and back home.

On Tuesday morning I walked 6 blocks North to the post office, 14 blocks North to the restaurant, and 4 blocks North to the mechanic before returning home. That afternoon I walked 30 blocks East to the park and then returned home.

On Wednesday morning I walked to the post office and back home. In the afternoon I walked 8 blocks Northwest to the football field and 4 more blocks Northwest to the card store before going back home.

On Thursday morning I walked to the post office and then an additional 22 blocks North to the hardware store before going home. I the afternoon I walked 17 blocks West to the zoo and then 5 blocks West to the ice cream store before going back home.

On Friday morning I walked 9 blocks Southeast to the recycling center and then went home. In the afternoon I walked to the post office, the 14 blocks to the restaurant, and 3 blocks to the city hall. That afternoon I walked 1 block Southeast to the fire hydrant and back home.

Rebound Height Score Sheet

Graph

- Neat ..... 1____
- Labeled Axis (cm) ..... 1____
- Independent Variable on X (Drop) ..... 1____
- Dependent Variable on Y (Rebound) ..... 1____
- Title ..... 1____
- Makes Sense ..... 1____

Data

- In a Table ..... 1____
- Neat ..... 1____
- Title ..... 1____
- Labeled Columns ..... 1____
- Makes Sense ..... 1____

Lab Report Format ..... 10 ____

Title, names, date, class, problem ..... 1 ____

Hypothesis (Well thought out) ..... 1 ____

Procedure ..... 2 ____

- Easy to follow, numbered, followed my sug.

Observations ..... 1 ____

- Data Table, Graph, Other Ob are present

Conclusion 2

- Supported/Not Supported AND why

Question: ..... 3 ____

- Well thought out and explains

Drop Height ..... 9 ____

(ranked from best to worst with pts distributed accordingly)

$$Score = \frac{(Actual\ Height - |Predicted\ Height|)}{Actual\ Height} * 100$$

$$\left(\frac{(\_\_\_\_\_ - |\_\_\_\_\_|)}{\_\_\_\_\_}\right) * 100 = \_\_\_\_$$

Total ..... _____ / 30

Applied Physics – Rebound Height

____ Day	**Today**	**Assignments**
____ Day 1	Intro to Rebound Height Lab Graphing Assignment	
____ Day 2	Work on Graphing Assignment	Finish Assignment
____ Day 3	Come up with a procedure for the lab Start the lab	
____ Day 4	Work on Lab - Collect Data	
____ Day 5	Work on Lab - Collect Data - Create Data Table/Graph	
____ Day 6	Work on Lab - Create Data Table/Graph	
____ Day 7	Testing Day	