Ball Bounce Challenge – Review for Summative Assessment

Purpose: To determine the relationship between drop height and the maximum height after one bounce for a ball released from rest.

1. Make a hypothesis, using the words in the "Written Relationship" column of the "Graphical Methods Summary" sheet. Replace "x" with the name of your independent variable and "y" with the name of your dependent variable for this experiment. Explain the reasoning behind your hypothesis.
2. Conduct your experiment. Set up a data table and record your data. Include units. Make sure your measurements have the correct number of significant figures. Include at least 6 data points (3 trials each) per graph.
3. Input the data into LoggerPro using the correct units and significant figures. Use LoggerPro to make graphs and manipulate the data to find the best fit line. Write your equation for the graph that has the best fit line (don't forget the 5% rule for the y-intercept and units on your slope and y-intercept!). Print your data tables and graphs.
4. Write a conclusion, using the words in the "Written Relationship" column of the "Graphical Methods Summary" sheet. Compare this to your hypothesis. Discuss experimental error.
5. Your teacher will now give you a height your ball needs to reach after the first bounce. Using your mathematical model, predict the height you will need to drop the ball from. Try it! How close were you?

Data:

observations:

controls or constants:

independent variable _____ units _____	dependent variable _____ units _____			
	trial #1	trial #2	trial #3	ave