

A toy company has produced a ball that they claim is perfectly elastic; meaning, it bounces back to the same height from which it is released. As a consumer protection agent, it is your responsibility to prove this claim.

You will be provided with the following materials in order to determine if this claim was true, or if there was at least a relationship between the drop height and the bounce height.

Materials:

- ball
- meter stick
- graph paper
- smart phone (for slow motion video), if necessary

Procedure:

You and your group will need to devise an experiment that tests the claim made by the toy company. You will need to determine the following for your experiment:

- Independent variable
- Dependent variable
- Constants
- Experimental procedure

Then, you must conduct your experiment, collect and organize data in a labeled table, and then graph your data.

Questions to consider:

1. Is there a linear relationship between your independent and dependent variables?

- *If there is a linear relationship, calculate the slope of the line of best fit.*

2. Is the company's claim about the perfectly elastic ball correct?

- *Give evidence from your experiment that either supports or refutes the claim.*