

“Don’t Shoot Your Eye Out!”

- Spring Energy Investigation

Name: _____ Date: _____

Your Task

In this investigation you will **determine the spring constant of a toy gun/launcher**. You must write out a procedure to outline the method you will use to calculate this value experimentally as well as collect and organize the data and then showing your work calculate the value of the spring constant. You will also compare this value to the teacher’s “known” value and calculate the % difference. You must also state possible sources of error and what affect this would have on the value.

Checklist

- Procedure
- Diagram (with labelled variables, etc)
- Data table(s)
- Calculations (Spring Constant & Percent Difference) & Results
- Sources of Error / Discussion

Apparatus

You may use any tools you would like; rulers, stop watches, etc. The spring launcher will be provided by your teacher.

Percent Difference

Percent difference is applied when comparing two experimental quantities, E1 and E2, neither of which can be considered the “correct” value. The percent difference is the absolute value of the difference over the mean times 100.

$$\% \text{ difference} = \frac{|E_1 - E_2|}{\frac{1}{2}(E_1 + E_2)} \times 100$$