Spring Energy Lab

**Purpose:** The purpose of this lab is to describe the energy conversions that take place in a pop up toy, determine the amount of energy in the spring, and estimate the velocity of the toy.

**Data:**

* Average pop height = (62cm + 60cm + 65cm + 61cm + 62cm) / 5 = 62cm
* Mass of the toy = .005kg

**Calculations:**

* PE = mgh

PE = (.005)(9.8)(62)

PE = 3.038J

* PETop = KEBottom
* KE = (1/2) mv2

3.038J = (1/2)(.005)v2

6.076J = (.005)v2

1215.2J = v2

V = 34.86m/s

**Conclusion:**

The toy generated energy by compressing the spring and allowing it to be released. The energy was converted through the toy by converting the potential energy of the spring into motion by the spring being released from the “clicked” position. If the spring in the toy had a higher spring constant the toy would travel higher. The height reached by the toy might be different than the initial amount of work done on the toy due to air resistance and inefficiency.