

Bungee Cord Project

Planet Holloway Physics

Objective:

To design and build a bungee cord based on experimental data collected from experiments you design.

Materials:

Rubber bands only. Construct a section of your bungee with rubber bands in a weave of your own design. The test section may be no bigger than 1 m relaxed.

Experiment:

Design and test bungee to determine the k value for your particular weave. Calculate the size of the bungee needed to safely rebound a mass (determined by instructor) before striking the ground 5.07 m below. Maximum points are achieved if the rebound happens 4.82 m below drop (25 cm above the ground). The maximum length of your bungee is 2.75 m relaxed.

Write up:

Describe your engineering process. Explain why you chose the weave you built. How did you determine the k value? How many tests did you conduct? What did you learn from testing? How many drops is your bungee rated for? How did you come up with this number?

Include photos or illustrations with your explanations where appropriate. Explain your engineering ideas.

Include a section for qualitative and quantitative data about the bungee. What did it do as you added weight? Be specific, down to the shape, number of breaks, how it restored after, etc.

Conclude with a relative rating of your bungee compared with your expectations and what improvements need to be made for better consistency, a longer life span and holding more cargo.