64. Egg Bungee Jump Competition

Classroom Activity: To determine the distance an egg will "bungee" jump to the floor without breaking.

Grade(s): 9

Course(s) and Strand(s): Mathematics

Principles of Mathematics, Grade 9 Academic

Linear Relations

Foundations of Mathematics, Grade 9 Applied

Linear Relations

Relevant mathematics expectations for this activity can be found in the supplementary Ontario curriculum alignment document: Ontario Curriculum Alignment for Engineer-in-Residence Secondary Classroom Activities: Science and Technological Education

Assessment Categories:

- Knowledge and Understanding
- Thinking
- Communication
- Teambuilding skills

Type of Activity: Classroom or Science Club

Time needed to plan: 3 hours

Time needed to complete activity: 3 hours

Materials/Resources for teachers:

Panty hose

Coins or other weights

Ziploc bags

Eggs

Weigh scales (grams) - one per group of 4

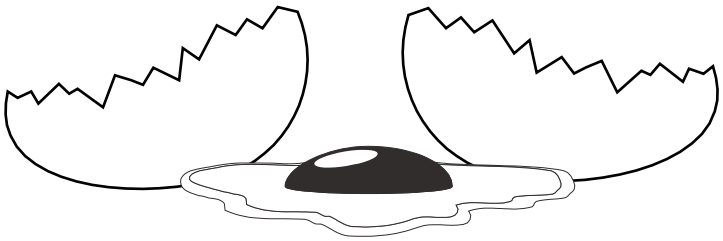
Metre stick

Graph paper

Activity Description:

In this activity, students test the elasticity of panty hose using coins or weights, and then test their hypothesis by placing an egg in the bottom of the panty hose and dropping it.

Break the students into teams of four, and provide them



with about 100 grams of weight (coins, metal or other item), an egg, a pair of regular (cheap) panty hose, a metre stick, a Ziploc bag, and a piece of graph paper.

Have the students measure the panty hose when unstretched. Then, with a weight (about 30g) have one student stand on top of a chair, holding the panty hose and weight, and then drop the weighted end. The other students make note of how far the panty hose stretches. They try again with 60g, and then 100g. They graph the distance the panty hose stretch on a piece of graph paper.

From a best-fit analysis (once the egg is weighed), they can determine how far the panty hose will stretch when an egg is placed in the panty hose and dropped.

They then hold the panty hose with the egg (in a Ziploc bag) from the height they determine. The one that gets the egg closest to the floor without breaking wins the competition.

Tips:

Explain to the class how graphing and best fit analysis works. If you know how something reacts at 0, 30, 60 and 100g,

then you will know how an egg (about 70g) will react.

Have plenty of eggs on hand.

If possible, have the eggs and weights pre-measured as this can take the longest amount of time.