Calculating Lift

In order for us to have the balloon take our package up into the sky we need to make sure the balloon has enough lift to carry the weight of the package. If we don't have enough lift the balloon will not rise, and if we have too much lift it will rise too fast.

Description

- Helium balloons, like the kind we use at birthday parties, easily fly away when we let go of the string. This is because when holding onto the string we are acting as a weight too heavy for the balloon to lift. If we want to add a weight to the string we will need to calculate how much lift is created by the helium in the balloon.

Task

- This experiment will show us how much weight a balloon can carry and how to calculate the amount lift a balloon will have after we add the weight.

Materials

5 balloons filled with helium
5 identical lengths of string
Package of pencils or pens
Rubber band and/or Tape

Process

1) Tie lengths of string to each balloon
2) Rubber band/tape pencils together
3) Secure the ends of the string to pencils using rubber band or tape
4) Hold the pencils above the ground
5) Let go of the pencils and see if the balloon rises, holds steady or sinks
6) Add or remove pencils until balloon holds steady. (as close as you can to steady)
7) Remove pencils until the balloon rises to the ceiling.

- You can use other items to measure the lift of you balloons.
- Weigh the pencils your balloons lifted and you will know the maximum lift of your balloons in terms of grams or ounces.

Conclusions/Results

How many pencils did you need to have the balloons hold steady?
How many pencils can your balloons lift to the ceiling?
How many grams or ounces did your balloons lift?