



## EXPERIMENT: THE INVISIBLE LEASH

What do you think will happen when you move a balloon towards an empty soda can? Will it make a difference if the balloon has a static charge? Write your hypothesis (best guess) below.

HYPOTHESIS: \_\_\_\_\_

### Step 1



Lay the empty aluminum soda can on its side onto a table top. Slowly move an inflated balloon towards the can. What happened? Write your results below.

\_\_\_\_\_

\_\_\_\_\_

### Step 2



This time rub the balloon on your hair at least twenty times **in one direction only**. Repeat step one - slowly moving the inflated balloon towards the empty can. What happened? Write your results below.

\_\_\_\_\_

\_\_\_\_\_

### Conclusion

What is your conclusion on why the outcome was different in step 2 than step 1?

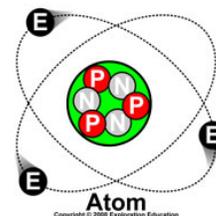
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### So What Happened?

It's all because of static electricity. Static electricity is a force that is created when objects lose or gain electrons. An **atom** is made up of **electrons** (negative charge), **protons** (positive charge) and **neutrons** (no charge or neutral). The balloon starts off neutral. When you rub the balloon across the top of your head, it picks up electrons from your hair. Now it has more electrons (negative) than protons (positive) so it has an overall negative charge. In our online curriculum, we go in depth regarding static electricity, what causes it, and why objects can attract and repel each other.



So what about the soda can? Is it positive or negative? You might assume it is positive since we know the balloon is negative. But this is where it gets interesting. Any charged object (positive or negative) will attract a neutral object (no charge). So the negatively charged balloon attracted the neutral soda can. This has to do with "induction" which we discuss more thoroughly in our curriculum.

So ... Opposites attract ... Likes repel ... Charged objects attract neutral objects.

For the accompanying video, additional experiments, and to see our curricula offerings, go to:

**Experiment.EScience.com**