Experiment

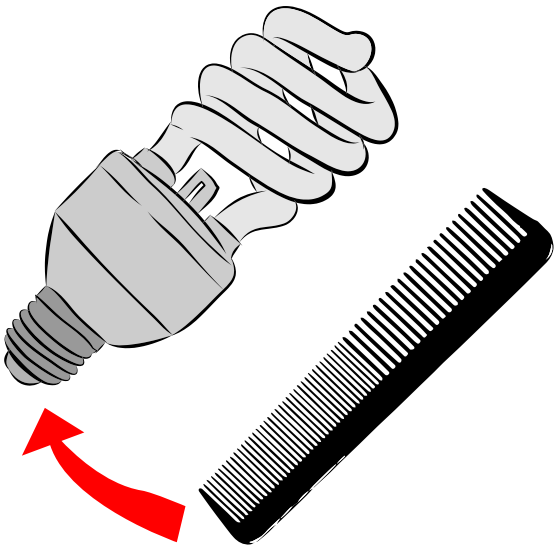
2

You are electric!

Grade 5

You have probably already studied atoms by now, and you already know they are the basis of all matter. They consist of subatomic particles called electrons, protons and neutrons. These particles have different charges — protons have a positive charge, electrons have a negative charge, and neutrons have no charge.

If a large number of atoms in an object gain or lose electrons, sometimes the entire object takes on an electric charge. **Static electricity** is a term that describes when objects carry an electric charge. Did you know your body can generate static electricity — enough to light up a light bulb?



You will need these:

- A small plastic comb
- A small Compact Fluorescent Bulb (CFL)

Here's what you do:

Step 1 Brush your hair vigorously with a comb. The friction will cause electrons to jump from your hair to the comb.

Step 2 Now, try touching your comb to the silver end of the light bulb. The static electricity may cause the bulb to light up as it jumps from the comb to the bulb. You may need to darken the room to see this effect.

Try this, too:

To see static electicity in action, try rubbing a balloon on your shirt. The friction between your shirt and the balloon causes negatively charged electrons to transfer from her shirt to the balloon. The shirt then has an overall positive charge because it has more protons than electrons. The balloon takes on a negative charge because it has extra negative charges (electrons). You may be able to get the balloon to stick to another surface, such as a wall.

Further study:

How is static electricity used every day? Find out how static electricity is used in photocopiers, spray painting car parts, air fresheners, and pollution control.