

PREMISES: There are two kinds of electric charge, positive and negative. In ordinary solid materials like paper, metal, plastic, glass, tape, etc., only negative charges (electrons) are able to move. Positive charges (protons) are locked into position in the nucleus.

PROCEDURE: Follow the directions on the "Electroscope" sheet from the Exploratorium Snackbook. Answer the following questions as you proceed.

1. The two strips which were pulled from the table < attracted / repelled > each other.
2. The two strips of tape which were stuck together sticky-shiny side < attracted / repelled > each other.
3. The charged comb < attracted / repelled > the pieces of tape which were pulled from the table.
4. The charged comb < attracted / repelled > the piece of tape which had its SHINY side in the middle of the "tape sandwich."
5. The charged comb < attracted / repelled > the piece of tape which had its STICKY side in the middle of the "tape sandwich."
6. The charge on the comb was < negative / positive >. (See "Electroscope" sheet for answer.)
7. The charge on the pieces of tape which were pulled from the table was < negative / positive >.
8. In the "tape sandwich," the piece which had its STICKY side in the middle became < positively / negatively > charged when the pieces were pulled apart.
9. In the "tape sandwich," the piece which had its SMOOTH side in the middle became < positively / negatively > charged when the pieces were pulled apart.
10. The comb < gains / loses > electrons when it is run through your hair.
11. The pieces of tape which were pulled from the table < gained / lost > electrons in their tug-of-war with the table for possession of electrons.
12. The piece of tape which GAINED electrons when the "tape sandwich" was pulled apart was the side with its < sticky / shiny > side in the middle.
13. Make another "shiny side /sticky side" sandwich, and pull the pieces apart. Hold each piece close to your opposite forearm (one at a time!), and circle the correct answer below:
 - a) each piece is repelled by the opposite forearm
 - b) each piece is attracted to the opposite forearm
 - c) one piece is attracted to the opposite forearm and one piece is repelled
14. a) Will the charged comb attract an ordinary piece of paper? < yes / no >
b) Do you think the paper had a charge to begin with? < yes / no >
15. Consider the results of 13 & 14. Briefly describe what happens when
 - a) negatively charged object is brought close to a neutral object:

 - b) positively charged object is brought close to a neutral object

