

Lab: The Electric Bunny

Physics 1P

Mr. Traeger

Name: _____

Period: _____

Date: _____

Purpose

The purpose of this lab is to investigate the basics of creating static electric charge. Different materials will be used to see which one makes the greatest and least amounts of charge. Students will also review conduction, induction, friction, and polarization.

Materials

- Rabbit fur
- cloth
 - polyester
 - white plastic
 - Electroscope
- Silk
- felt
 - black rod
 - clear plastic
 - Milky plastic
- wool
- green plastic
- clear plastic rod
- clear glass rod

Part 1: Hypothesis and Data

Procedure and Questions

1. State your hypothesis here: Which rod and type of material will produce the most charge? Why do you think that?

2. Rub each rod/piece of plastic with different materials. Rub each one vigorously at least 5 times.
3. Place rod/plastic on the top of the electroscope without touching.
4. Note the magnitude of deflection by number of marks that the electroscope moves.
5. Repeat for each rod/piece of plastic.
6. Record magnitude of deflection of electroscope data in chart below.

	White Plastic	Green Plastic	Black Plastic Rod	Clear Plastic Rod	Clear Glass Rod	Milky Plastic	Clear Plastic
Fur							
Silk							
Polyester							
Wool							
Felt							
Cotton Cloth							

7. Make a histogram graph with type of material on x axis and electroscope deflection on y axis. Color code each type of fabric/fur. Do this on a separate sheet of paper or in Excel. Attach the graph to this lab.

Lab: The Electric Bunny

Physics 1P

Mr. Traeger

Part 2: Analysis and Questions

1. What fabric/rod combination produced the best charging results? Why do you think this was?
2. What fabric/rod combination produced the worst charging results? Why do you think this was?
3. What are some factors beyond your control that could have affected your lab results? Discuss these in detail.
4. Describe charging by friction. What is going on in terms of charge? Draw pictures here!
5. Describe charging by conduction. What is going on in terms of charge? Draw pictures here!
6. Describe charging by induction. What is going on in terms of charge? Draw pictures here!
7. Describe charging by polarization. What is going on in terms of charge? Draw pictures here!
8. Describe how the electroscope works. Drawing a diagram is a MUST!

Conclusion: What did you learn? Full sentences ONLY!