How to Build and Operate a Simple Electroscope

1. Cut two strips of plastic transparency. Each strip should be about 8½" long by about 1½" wide.
2. Stack the two strips on top of each other and staple one of their ends together.
3. Place a binder clip on the stapled end, allowing the other end to hang freely.
4. Holding your electroscope with one hand by the binder clip, place the index finger of your other hand between the two plastic sheets somewhere near the binder clip. Your thumb and middle finger should gently sandwich the two plastic sheets.
5. With one fluid motion, draw your hand down the length of the plastic sheets, allowing the sheets to slide freely between your fingers.
6. If all has gone well*, the two sheets have been given a static charge. Since both sheets have been given the same type of charge, they repel each other and the plastic sheets spread apart.

Things to try:

1. What happens if a conductor is placed between the charged sheets?
2. What happens if an insulator is placed between the charged sheets?
3. What happens if the electroscope is used on a humid day?
4. Can you determine if the electroscope is positively charged or negatively charged? If so, how?

*So what if all hasn't gone well? If the plastic sheets are dirty, they will not hold a charge very well. This is easily solved by washing the plastic sheets with soap and water and then thoroughly drying them. Some transparency sheets are given an anti-static coating, which, unfortunately, makes them unsuitable for this project. It has been our experience that transpariencies designed for use with printers and copy machines tend to have anti-static coatings while those designed strictly for overhead use tend to not.