

Name:

Date:

Activity 2.3

Making Lightning

Objectives:

To observe how charges build up causing static electricity.

To show how touching a conductor will cause a release of static electricity known as “static discharge.”

To compare static electricity to lightning, which is also static discharge.

Materials:

- Styrofoam plate
- Styrofoam cup
- Foil pie pan
- Masking tape
- Source to charge the Styrofoam plate (fur pads work the best, but you can also use clear plastic wrap or other fabrics)
- WEATHERlogs

Procedure:

1. Take a long strip of masking tape and tape the cup, open end down, to the foil pie pan. The rim of the cup (the end you would drink from) needs to be completely attached to the foil pie pan. Place the long side of the tape around the rim of the cup and the other side to the foil pie pan. Do NOT simply place strips across the bottom of the cup and attach to the pie pan.
2. Charge the Styrofoam plate by rubbing the fur pad, or clear plastic wrap, across the plate.
3. Place the foil pie pan with the Styrofoam cup on the plate.
4. Place your left hand on the cup and touch the foil pie pan with your right hand. You have now become charged!
5. Using your left hand, lift the pie pan off the Styrofoam plate. If the plate sticks to the pie pan, loosen it with your right hand being careful not to touch the foil pan.
6. Bring your right hand toward the foil pan. If the charge is large enough, even before you touch the pan, a spark will travel from your hand to the foil pan. This is known as “static discharge.” In a darkened room you can see this easily.
7. Repeat the procedure. The charge will continue to build up and you will be able to see the static discharge even more clearly.

(Continued on Side 2)

Observations:

Describe what you observed in your WEATHERlogs. (Use all of your senses, not just what you saw.)

**Conclusions:**

How does what you just experienced in class compare to what happens during a lightning storm? (Go online to the LIVE FROM THE STORM site, in the WHAT section, to read more about thunder and lightning.)

Why was it important to use materials that conducted electricity and insulators?