Pie Static - sample student worksheet

Name:_____

Date:_____

Part 1. Material checklist and setup

Materials:

- Aluminum pie plate - piece of fur or wool sock/sweater

- sheet of tissue paper - tape

- flat piece(enough surface area for the pie plate to rest on) of Styrofoam(the blue insulating Styrofoam works best)

Setup:

Part 2. Experiment

Doing it:

A1. Place the pie plate on the table upside down. Tear very small pieces of tissue paper and place about 10 on top of the pie plate.

A2. Rub the Styrofoam with the fur/wool to charge it, this may take several minutes if this is the first time trying with this piece of Styrofoam.

A3. hold the charged Styrofoam above the pie plate and slowly bring it closer. When it is about 5-10cm away, the pieces of tissue paper should jump back and forth between the pie plate and the Styrofoam.

B1. Cut a shaft of Styrofoam from the large piece (about 2cm x 2cm x 10cm) and tape it sticking out of the inside of the pie plate. You will use this as an insulating handle to move the pie plate while it is charged.

B2. Charge the Styrofoam again and place it on the table. Slowly lower the pie plate down onto the Styrofoam. (with the lights off?) Slowly bring your finger close to the edge of the pie plate. At about 1cm from the edge there will be an electrostatic spark from the plate to your finger.

B3. Now lift the plate up using the handle and move it away from the Styrofoam. It is now charged. You can discharge it by again bringing your finger close and creating another(but smaller) spark.

C1. Follow the steps in B to charge the pie plate.

C2. Put an empty pop can on its side and move the plate close to one side.