



## FLYING TINSEL

### TOOLS

- Tinsel– a thin strip of Christmas tree tinsel that is approximately 30 centimeters long
- An aluminum pie pan that is at least 20 centimeters in diameter
- Wool– use a piece of clothing or fabric; be sure to wash and dry it well
- A piece of thick Styrofoam that's larger than your pie plate
- A Styrofoam cup
- Tape



## ASSEMBLY:

- Make a large loop with the tinsel and tie a knot, leaving the ends long so there are two “legs” sticking out from either side of the knot.
- Place the Styrofoam cup, mouth side down, in the middle of the pie plate (see photo below), and tape it in place. This forms your Styrofoam handle. Note: Tape is better than glue, as solvent-based glues will dissolve Styrofoam.



## TO DO:

- Charge the large piece of Styrofoam by rubbing it with wool for at least 30 seconds. To test that it's charged, hold the Styrofoam near the hairs on your arms. If you feel them wiggling, then it's charged.
- Next, to positively charge your pie plate, place the pan on top of the large piece of Styrofoam, then touch the edge of the plate with your finger. Notice that as you move the tip of your finger to within a centimeter of the pie plate you will hear a snap, feel a shock, and in dim light see a spark. Now you're ready to fly some tinsel.  
**Note: Once the pie pan is charged, be sure to handle and move it only with the Styrofoam cup. Avoid any part of your body touching or even coming near the metal.**
- Using the Styrofoam handle, pick up the charged pie pan and turn it upside down, so that the cup is now underneath the pie plate and the flat bottom of the pie plate is pointing toward the ceiling.
- With your other hand, hold the loop of tinsel over the pie plate with the two “legs” drooping down towards it. Hold the tinsel near but not touching the pie plate—about 10 centimeters away. The tinsel will be attracted to the pie plate.
- Release the tinsel and quickly move your hand away. The tinsel will drop toward the pie plate and then jump away. Be sure to keep the pie plate directly under the tinsel—you'll see the tinsel fly! This is because the electrostatic repulsion from the pie plate pushed it up and holds it in the air even though gravity is pulling it down. You might also notice that the loop of tinsel opens up into a circle as it floats.

**WATCH OUT!** The tinsel will be attracted to your hand and your body, but keep away from it. If it touches you it will lose its charge and won't fly.

Have fun and let us know how it went.