

A RAFT How To

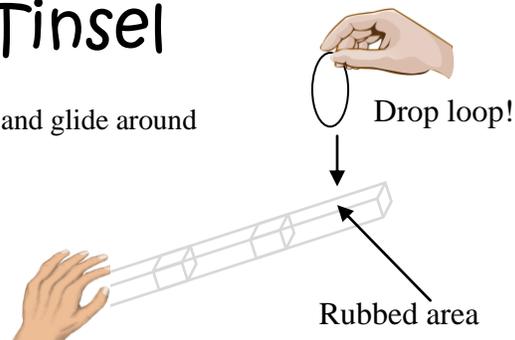
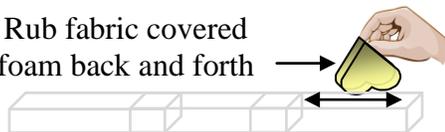
Materials List

- ✓ 3 rectangular plastic tubes
- ✓ Tinsel, very thin strands (as used for holiday decorations)
- ✓ Fabric rectangle (silk is best)
- ✓ Foam piece

Floating Tinsel

Learn how to make a loop of tinsel float and glide around using static electricity!

Rub fabric covered foam back and forth



Assembly

1. At the very end of a rectangular tube press inward on the middle of the two longer sides, bowing them in. While still pressing in push down on the top curve.



2. While pressing in and down push the deformed end into the open end of another tube, making a jam fit. The overlap will be about 4 cm (1-1/2"), see above.
3. Repeat step 1 and 2 for a third rectangular tube to add to the joined pair just created to form a 3 tube assembly (the "wand").



4. Take a strand of tinsel and tie the ends together using an over hand or square knot, whichever is easier to tie.
5. Place the cloth rectangle over the curved part of the foam block.
6. While holding the cloth to the foam, place the curved part against the wide side of **wand** toward one end. Rub the cloth back and forth several times. **See above left.**



7. With one hand pick up the **wand** by the **opposite end** from the rubbed end.
8. With the other hand pick up the tinsel loop and drop it toward the rubbed side of the **wand**. The tinsel must drop away from your top hand before touching the tube! If your top hand is touching the tinsel when the tinsel touches the tube, remove the tinsel and repeat steps 6, 7 and 8. **See the right top of the page.**

To Do and Notice

Once the tinsel touches the rubbed tube the tinsel should be repelled away and form a loop that hovers above the rubbed tube. If not try rubbing more in step 6 and try again. Note the effect works best on cool, dry days.

Science behind the activity

Rubbing a cloth, such as silk, on the plastic tube causes an **electrical charge separation**. Some electrons are pulled off one material and transferred to the other material. If the rubbed plastic tube has excess electrons then when the tinsel, having a metallic coating, touches the rubbed area some excess electrons move to and travel along the tinsel. Since the tinsel and tube now both have the same excess (negative) charge the tinsel is repelled away from the tube. The extra electrons on the metal tinsel surface move apart due to being equally repelling, forcing the tinsel to take on a looped shape.