

Flying Hoops & Baby Balloons

Levitation is easier than you may think!

WHAT TO DO

Gently press and rub the thin polystyrene grocery bag hoop on a wooden panel or tabletop, then rub the PVC pipe with cotton cloth. Toss the hoop in the air then hold and move the PVC "wand" underneath to levitate the hoop. You can also rub a small Latex balloon with cotton cloth and levitate it in place of the plastic hoop.

WHAT'S HAPPENING?

When you rub two different objects together one of them may "steal" some electrons from the other so that we say one object becomes negatively charged while the other is left positively charged. This is sometimes called "static" electricity. These electrical charges really create invisible electric force fields in space, and the electric force field of a charged object can create a force to repel or push away any other charged objects having the same sign, and attract or pull on any charged objects having the opposite sign. That's why your hair is attracted to the balloon after rubbing them together. The forces created can be strong enough to overcome gravity and make objects levitate.

Note that static electricity can often be difficult to predict and control (especially if the humidity is high), so experiment with different combinations of materials to see what happens. You might also notice that the hoop or balloon is attracted to your hand or body as you are a large sink or source of electric charges.