Floating Magnets

Can metal magnets actually resist the pull of gravity? Hard to imagine, but they can. The notion may seem like something from a science fiction movie, but it's merely another demonstration of magnetic repulsion.

Materials
- 4 circular magnets with holes in their centers (available at local electronics stores)
- A 6-inch-long (15 cm) wooden dowel, 1/4-inch (6 mm) in diameter
- A flat wooden base
- Carpenter’s wood glue

To Do
Cut a piece of 1/4-inch (6 mm) wooden dowel about 6 inches (15 cm) long. Make sure that both ends are flat and smooth. Position the dowel in the center of the flat wooden base. Secure it to the base with a bead of carpenter’s wood glue. Let it dry.
Slip a magnet over the dowel. Slip another one on top. If the magnets attract, remove the upper magnet. Flip it upside down and replace it on the dowel so it is repelled by the magnet below. The upper magnet will appear to float and bounce in the air. Add several more magnets. Make sure that each magnet repels the magnets on either side of it.

The Science
As you’ve learned, like poles repel and unlike poles attract. You create a force of repulsion by positioning like poles next to like poles. This force is strong enough to keep the upper magnets suspended in the air.

Check It Out! Could you keep adding magnets without ever having like poles come in contact? Give it a try!