

Magnetic Levitation



The Tricks	
Levitating Rings	Magic Jar
How to do the trick	
<p><u>Levitating Rings</u></p> <ol style="list-style-type: none"> 1. Say, "I have black rings that were made out in space near the planet Saturn, and were influenced by its rings. You will see they have magical properties." 2. Put two magnets on the chopstick stand so they repel each other. Hold the bottom ring and move it up and down along the chopstick. The upper magnet will jump up and down as if it were attached to a spring. <p><u>Magic Jar</u></p> <ol style="list-style-type: none"> 1. Before starting the trick, remove the jar lid and attach the 2 ring magnets to it. Cover magnets with the black paper circle. 2. Turn the jar right side up and screw on the lid. The clip will be lying on the bottom of the jar. 3. Say, "I have a magic jar that is filled with anti-gravitational space. A foreign country would like to know the secret so they can launch a space vehicle without the use of rockets." 4. Turn the jar upside down. The clip will be attracted to the magnet. 5. Carefully turn the jar right side up again. The clip will be suspended in the jar. 	
The Science	
<p>_____ is an invisible force or field caused by the unique properties of certain materials. In most objects, electrons spin in different, random directions. This causes them to cancel each other out over time. In magnets, the molecules are arranged so that their electrons spin in the same direction. This arrangement of atoms creates two poles in a magnet, a north-seeking pole and a south-seeking pole. In ring magnets, the north and south sides are along the flat surface. In bar magnets, the north and south sides are at the ends of the magnet.</p> <p>Some metallic materials, like the paperclip, are attracted to magnets. This attraction is due to the iron contained in the metal. Magnets attract iron due to the influence of their magnetic field on the iron. When exposed to the magnetic field, the atoms begin to align their electrons with the flow of the magnetic field, which makes the iron magnetized. This, in turn, creates an attraction between the two magnetized objects.</p>	

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Questions

1) On the sides of the ring magnets that are repelling each other, the magnetic poles are:

same

different

2) What happens when you turn one of the magnets over and place it on the magnet stand?

What do you know about the magnetic poles?

same

different

3) How does the magnet attract the paperclip even though it is not in direct contact with it?

4) How does the magnetic force on the paperclip change as you decrease the distance between the magnet and paperclip?

increases (gets stronger)

decreases (gets weaker)

5) Draw the magnetic field around a ring magnet and a bar magnet.

ring magnet

bar magnet