

# **X**periments with **Magnets**

## #6 MAGNETIC "MOTOR"

**A MAGNET SWINGS, POWERED BY AN INVISIBLE FORCE!**

### **NEEDED:**

- three ring or disk magnets  
\*If you want to purchase these magnets from Dowling, try our item # SS10 or SS60.
- string or thread

### **INVESTIGATION:**

Run a string about two feet long through the center of one of the ring magnets. Use a simple knot or piece of tape at the end of the string to keep the ring magnet from falling off. When you hold the ring magnet in the air with the string the ring magnet should be flat like a tire laying on its side. Place a second magnet on a table so that it repels the magnet tied to the string. Now start swinging the magnet attached to the string about an inch above the magnet on the table. Now stop swinging the magnet and notice that it continues to move over the magnet on the table. You have a magnetic swing!

Place a second or third magnet on the table in the repel position and in the same line that the string magnet is swinging. Notice that the the swing will act even more wildly!

Now try taping the swinging magnet under a bookshelf or hanging down from a chair so that it is one inch above the other magnet(s). How long will it swing?

### **EXPLANATION:**

All magnets have a field of magnetic energy that surrounds the magnet and extends in all directions. The field created by the magnet(s) on the table in this experiment keeps the magnet swinging by affecting it each time it passes overhead. The magnet will always stop after a time due to friction. All electrical motors and generators work on this repel concept.