Name: ____________________  

**Move that Magnet!**

**Background**  
In this inquiry lab, you will explore with magnets to see and feel attractive and repulsive forces. You will develop your own lab tests to identify the variables that affect forces of attraction or repulsion – the foundation of Coulomb’s Law.

**Problem**  
How can you make the magnet move the most without touching it?

**Materials (per lab group)**  
- Ring Stand  
- Clamp  
- String (30 cm)  
- Tape  
- Marker  
- Ceramic Magnets (2)  
- Neodymium Disc Magnets (2)  
- Ruler (cm)

**Safety**  
- Do not allow the Neodymium Disc Magnets to snap to each other or to any magnetic surface as the magnets may pinch fingers, break, or shatter.  
- Keep strong magnets away from pacemakers.  
- Magnets may pose a choking hazard.

**Procedure**  
1. Obtain two ceramic magnets. Hold the magnets close to one another. Flip one of the magnets over and repeat. Based on the attractive or repulsive forces you feel, label each side of the magnet as “+” or “-.” Use a small piece of tape and marker to label each side of the magnet with “+” for positive and/or “-” for negative. Repeat with all the other magnets, including the neodymium magnets. Record your observations in the “Observation and Notes” section. **Note: Correctly identifying the North Pole of the magnet as negative is not necessary.**
2. Attach a clamp to a ring stand as shown at right.
3. Tape a magnet to one end of a string. Tie the other end of the string to the clamp as shown at right. The magnet should be suspended in air and should not touch the table.
4. Using this set-up, ruler, and additional ceramic and neodymium magnets, determine how to make the suspended magnet move the farthest (in cm). You may not touch the magnet. You may not use wind/air to move the magnet.

**Good Luck! Move That Magnet!**
Observations and Notes:

Analysis Questions
1. How did you know which side of the magnet was positive and which side was negative? Explain using evidence and reasoning from your observations of the magnets.

2. How far, in centimeters, were you able to move the suspended magnet?

3. How did you make the magnet move the most without touching it? What method(s) worked best? Did other lab groups in the class see similar results?

Conclusion
In your own words, summarize variables that affect forces of attraction or repulsion.