**Magnaprobe Lab Name**

**A. The Fixed Magnets.**

* I found the North and South pole of the red rectangular magnet.
* I found the North and South pole of the lodestone

Draw a picture of the hard drive magnets. Each facing half has a N and S pole facing up. Draw a picture of the domains below: (indicate where the N and S poles are





**B. The mysterious Levitation Spinny Magnet.**

Draw a picture of the base of the spinny magnet and the rotor. Find the hidden magnets:

Picture of the base, and where the N and S poles are Picture of the rotor and where its N and S Poles are

**C. Electric motors**

* I found the North and South poles of the fixed magnet motor demo
* I admired the motor that generates the fixed magnets with electric current
* I pulled out the hard drive platters and looked at the electromagnets under it, and located the fixed magnets on the rotor itself. (on the bottom of the platters)
* I made the speaker move in and out with the battery. I looked at the other speakers in various states of disassembly, and found the voice coil in the taken apart speaker.
* I looked at the seek arms and how they have the hard drive magnets around them
* I turned on the computer, waited, hit F1, and watched the seek arm going crazy as it loads the OS.

**D. The generators.**

* I tried the hand crank generator with no load, with a light bulb attached, and with a dead short. I pondered how the torque needed to turn the generator increased as the load increased.
* I connected the generators together, had my partner turn one, and I allowed the other handle to spin in my hand.
* I tried both of the flashlights.

When does the shaker flashlight light up? How does the squeeze flashlight stay lit between squeezes?

**E. A current carrying straight wire. (outside in the computer lab)**

* I used my right hand rule to predict the direction of the magnetic field around the wire
* I used the magnaprobe to confirm this. (The red end points in the direction of B)

**F. Flat solenoid.**

* I used my right hand rule to predict the direction of the North pole of the whole big flat solenoid.
* I used the magnaprobe to confirm this. (The red will point toward the South pole)

**G. The long long solenoid. (on the principal’s table at the back of the room)**

* I used my right hand rule to predict the direction of the North pole of the long long solenoid.
* I used the magnaprobe to confirm this.
* I explored the space inside of, and around the long long solenoid with the magnaprobe

**Put your magnaprobe back on the paper where you found it.**

**H. Transformers**

* I checked out the big beefy microwave oven transformers

If they are step up transformers, which side it the primary? The one with more windings, or the side with fewer?

* I checked out the doorbell transformer and the isolation transformer
* I checked out the power supplies. I located the
  + transformers
  + diodes
  + capacitors

on each one

**I. BusyTown**

* I drove a little car around BusyTown

How must the poles of the magnets be laid out above and below the cardboard?