Name: _____Date: _____Per: _____

Lab: Magnet Exploration

Objective: Test strength of several different magnets.

Materials

- Large Bar Magnet (red/blue)
- Small Bar Magnet (silver)
- Horseshoe Magnet (silver)
- Compass
- Meter Stick
- 5 Washers
- 10 Paper Clips
- Aluminum Foil
- Metal Marble
- Glass Marble
- Die
- Craft Stick
- Penny

Part 1: What objects do magnets affect?

Complete the table below using "yes" if the magnet attracts the object and "no" if the magnet does not attract the object.

Objects Magnets	Compass	Washer	Paper Clip	Foil	Metal Marble	Glass Marble	Die	Craft Stick	Your Choice
Large Bar									
Small Bar									
Horseshoe									

What do all of the materials that you answered "yes" to above have in common?

Part 2: Measuring the Magnetic Force

Place following objects at zero cm on the meter stick one at a time. Slowly move the magnet closer to the object and record when the magnet has an effect on the object in mm.

Objects Magnets	Compass	Washer	Paper Clip	Foil	Metal Marble	Glass Marble	Die	Craft Stick	Your Choice
Large Bar									
Small Bar									
Horseshoe									

Write a Claim, Evidence, Reasoning for which magnet is the strongest.

Claim (which magnet is the strongest):

Evidence (data/numbers proving your claim):

Reasoning (how your data proves your claim):

Part 3: Measuring the Magnetic Field

Using 2 of the Large Bar Magnets, place the North Pole of magnet1 at the zero cm mark on the meter stick. Place magnet2 with the North Pole side facing the North Pole side of magne1 at the 20 cm mark. Move magnet2 towards magnet1 and record, in mm, when the two magnets have an effect on each other.

At what measurement do they begin to move?

Which way do the magnets move?

Which type of force is this (attraction or repulsion)?

Part 4: Magnet strength

Using the North Pole of the large bar magnet, how many washers can you pick up?

Using the South Pole of the large bar magnet, how many washers can you pick up?

Was there a difference?

Now, stack two bar magnets together with the same poles on the same ends (red with red), how many washers can you pick up?

Now, stack two bar magnets together with the same poles on the opposite ends (red with blue), how many washers can you pick up?

How could you explain the difference (how many washers each combination was able to pick up and why you think the different combinations got different numbers)?

Part 5: Making a Magnet

Using the large paperclip, rub the large bar magnet along the paperclip in the same direction at least 50 times.

How many small paper clips can your large paper clip magnet pick up?

Using the large paperclip again, rub the large bar magnet along the paperclip in the same direction twice as many times as you did above.

How many small paper clips can your large paperclip magnet pick up?