

Name _____

Date _____

Commack High School
Regents Physics

Lab # ____ Mapping Magnetic Fields

PUPROSE: To map magnetic fields.

MATERIALS:

2 Bar magnets
1 horseshoe magnet
iron filings
paper

PROCEDURE:

- Check the magnets:
Like poles _____ and opposite poles _____. Bar magnets must have opposite poles. "Problem magnets" can be re-magnetized. See your teacher.
 - You will complete 3 cases:
(a) like poles (b) opposite poles (c) Horseshoe magnet
 - For each case draw the magnetic field full size. Please follow the rules for magnetic field lines. Include 8 cm around the poles of each magnet. Leave a space of about 5 cm between the magnets. Use a ruler and do neat work.
1. Place the magnet(s) to be mapped under a sheet of paper.
 2. Sprinkle some iron filings on top of the paper and gently tap the paper to help the iron filings lineup.
 3. Interpret the pattern of the iron filings and on a clean piece of paper draw a map of the magnetic field lines.
 4. Label the magnetic poles on your diagram. (The bar magnets may not be labeled you can determine their polarity by testing with one of the labeled bar magnets.)
 5. Gently lift the paper with the iron filings and pour them back into the jar or into a cup provided by your teacher.

Do not eat during this lab.
Please wash your hands before leaving.