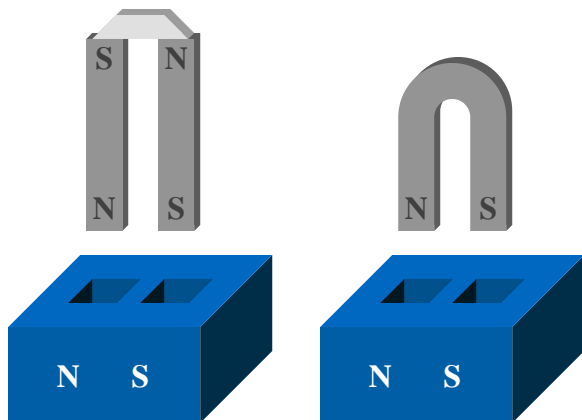


MAGNETIC FIELD

☞ The purpose of this lab is to draw the magnetic field around magnets in different arrangements.

1. Sometime during the period, obtain two bar magnets and one horseshoe magnet. Share the equipment in a responsible manner. Return what you are not using to the teacher's desk. Everybody will do their own work, but you may help each other.
2. Use the magnetizer on any magnet that feels unusually weak or misaligned. (These are soft iron magnets, so the repulsion force is normally weak anyway.) Place the north pole in the side labeled north and the south pole in the side labeled south. Use a bridge between bar magnets. Turn the magnetizer on. Press the black button and hold it for a few seconds. Holding the button down for a long time does not make the magnets any more powerful.



3. Place your compass between the poles of the large laboratory magnet. Notice the way the compass is aligned. The end that points toward the south pole is the north pole of the compass. This is the important side of the compass as it tells you the direction of the magnetic field. Remember which end of the compass is north and which is south. The compasses are very delicate and can reverse polarity without warning. It may be necessary to check their polarity a second or third time during the lab.

4. The diagrams at the bottom of this page show the arrangements of the magnets that you are to investigate with the required starting points. Do them in whatever order is convenient for you.
5. Place the magnet(s) on a piece of paper as indicated. Use a separate sheet of paper for each arrangement. Trace the outline of the magnets. Remove them and label the north and south poles on the paper. Mark the starting points. Return the magnet(s) to their outlines on the paper.
6. Align your compass so that the south pole of the compass points to a starting point. Place a dot at the end where the north pole of the compass lies. Move the compass until the south pole points to this dot. Place a dot at the end where the north pole lies. Repeat this procedure until the field line goes off the paper, hits another part of the same magnet, or lands on a different magnet.
7. Connect the dots you have drawn with a smooth continuous line. Place an arrow on the line that points in the direction you moved the compass. Repeat steps 6 & 7 for each starting point.
8. Complete all five diagrams and staple them together. Submit them for grading before the end of lab.

Magnet Arrangements with Starting Points

