

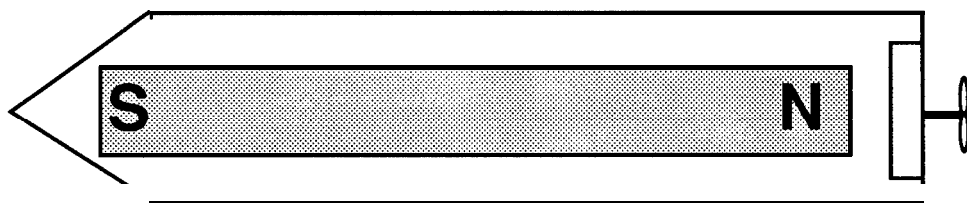
Homework 35d Magnetic fields

1. Use the words in the HELP-BOX to copy and complete the paragraph below.

current field	repel south	north iron
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Steel and are examples of magnetic materials. Most materials are not magnetic. A magnet has two poles called and Around every magnet there is a magnetic Two like poles (two norths or two souths) will each other. Unlike poles (one north and one south) will attract each other. An electric will produce a magnetic field, as in an electromagnet.

2. Why is a magnetic compass very useful for sailors and scouts?
3. Jenny has a small plastic boat which is powered by an electric motor. She places a strong bar magnet in the boat as shown below.



She sets the boat off in a direction away from the south bank of a calm lake and after some time it returns to the south bank. Explain why this happens.

4. Draw diagrams to show the magnetic field patterns around
(a) a bar magnet (b) a long straight wire carrying a current
5. Explain how iron filings or a plotting compass could be used to find the magnetic field pattern near two bar magnets arranged in an L-shape.