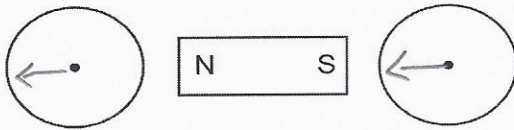


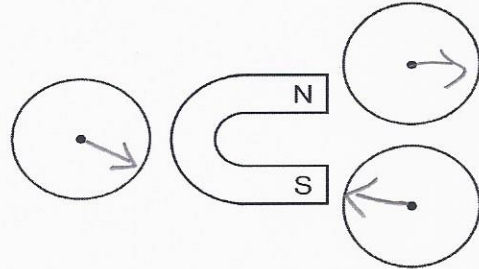
## Magnetism worksheet

1. The circles below represent compasses. In each situation, draw the needles of the compasses, using an arrow to show the direction they point.

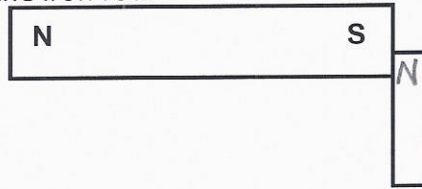
a)



b)

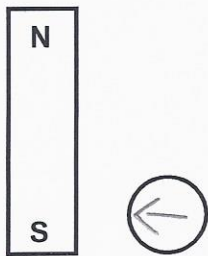


2. A soft iron rod is magnetized with a bar magnet, as shown in the diagram below. Identify the poles of the iron rod.

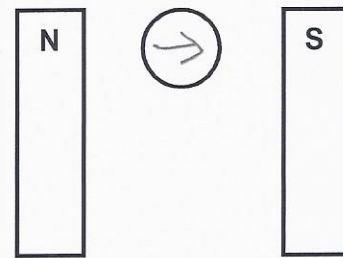


3. Draw the position of the needle in each of the compasses placed near the magnets or wire illustrated below.

a)

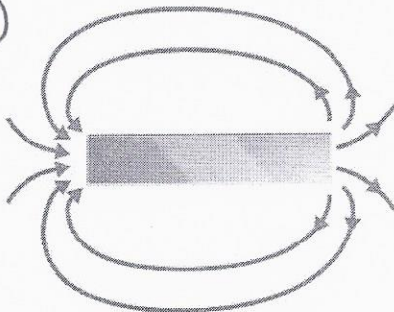


b)

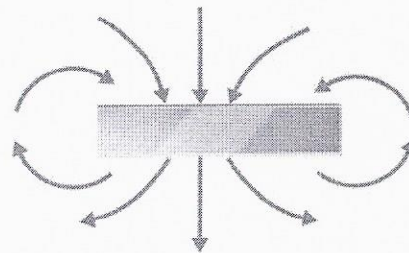


4. Which of the illustrations below is an accurate representation of the magnetic field of a bar magnet? Explain your answer.

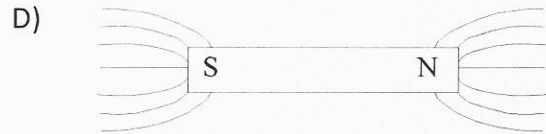
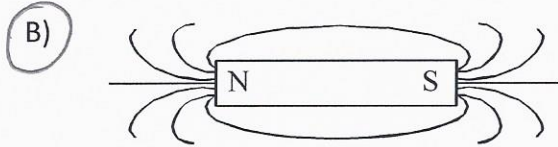
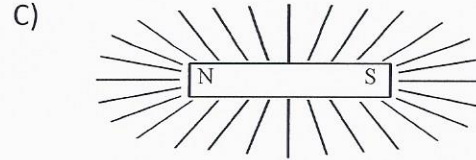
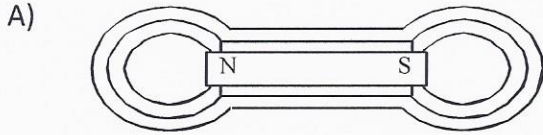
a)



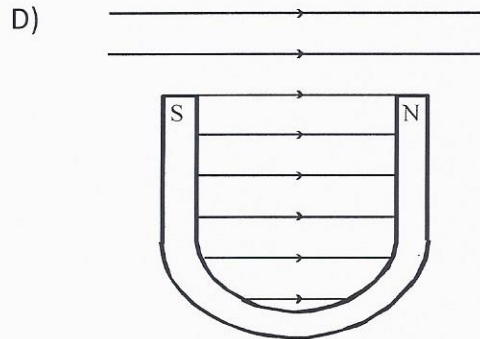
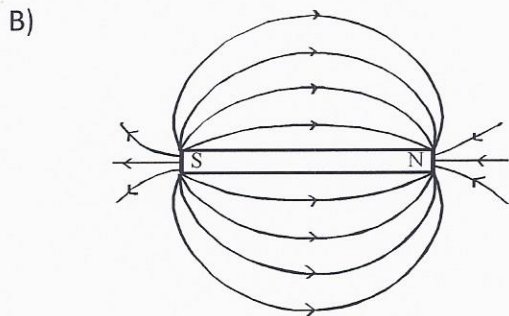
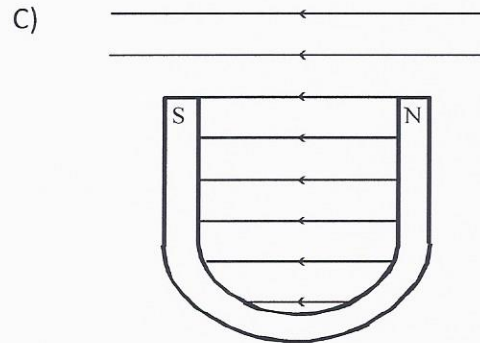
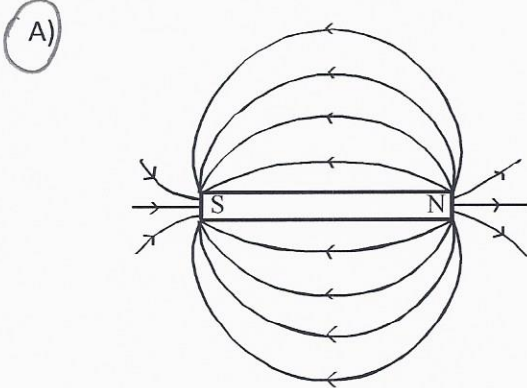
b)



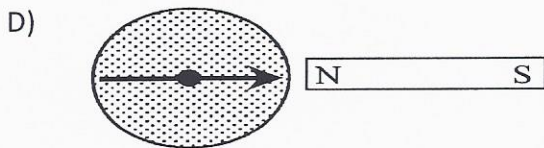
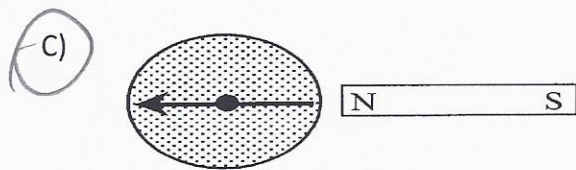
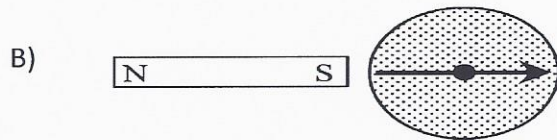
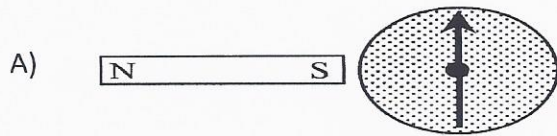
5. Maria sprinkles iron filings on a piece of cardboard placed on top of a bar magnet. Which configuration will the iron filings take?



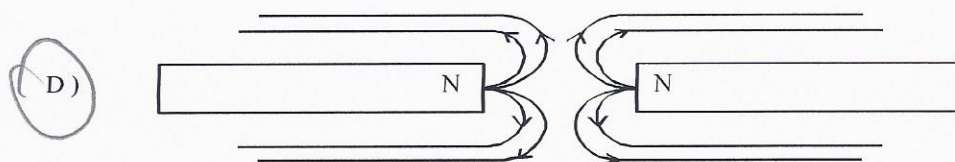
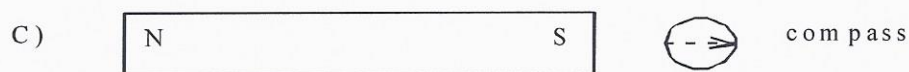
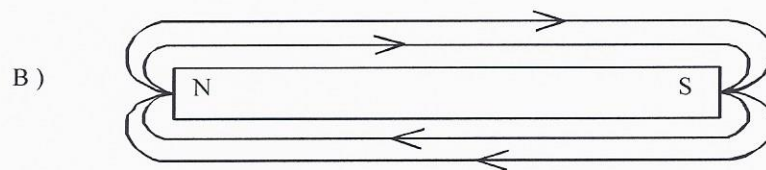
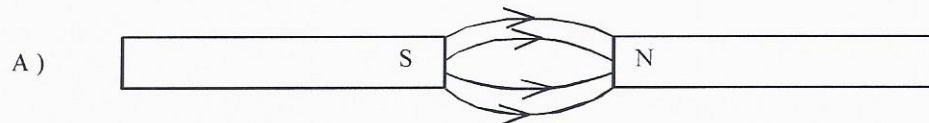
6. A magnet is surrounded by a magnetic field which is shown by lines of force. Which one of the following diagrams correctly represents the magnetic lines of force around a magnet?



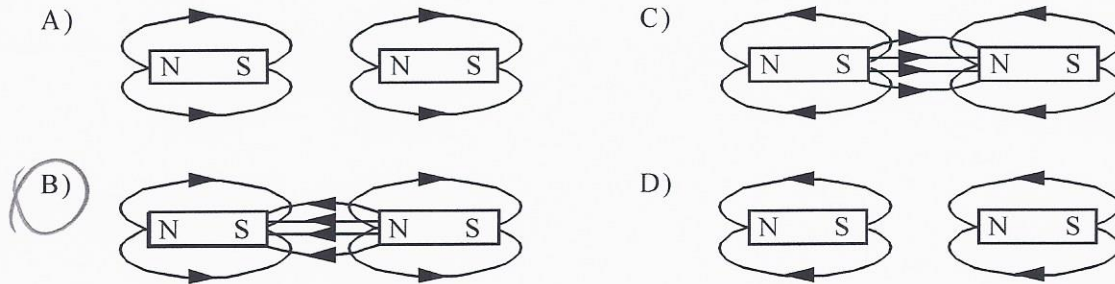
7. Which of the following diagrams correctly shows the direction in which the compass needle will point?



8. Among the following diagrams, which correctly illustrates a magnetic field?



9. Two magnets are placed end to end. Which diagram correctly illustrates the magnetic fields around these magnets?

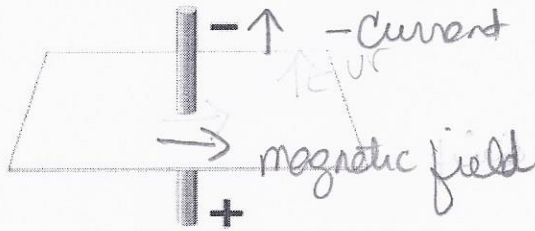


10. A magnet creates what is known as a magnetic field. A compass can be used to show the magnetic field. Which of the following statements are true?

1. If a bar magnet is broken in two, each piece will only have one magnetic pole.
2. Like poles repel each other.
3. The needle of a compass is a small magnet.

A) 1 and 2    B) 1 and 3    C) 2 and 3    D) All are true

11. Show the current direction and the magnetic field for the straight wire.

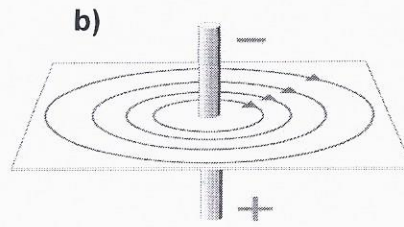
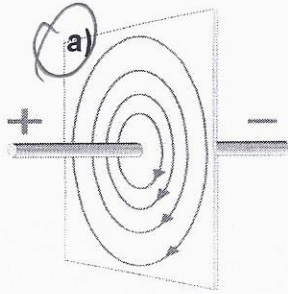


12. Put in the compass direction for the straight wire.

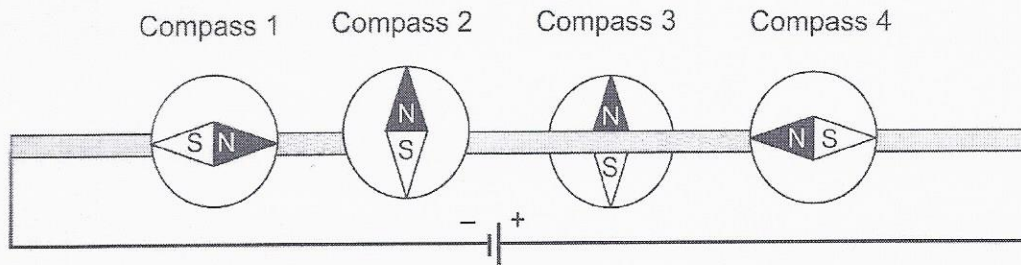


13. Which of the illustrations below is an accurate representation of the magnetic field of a live wire?





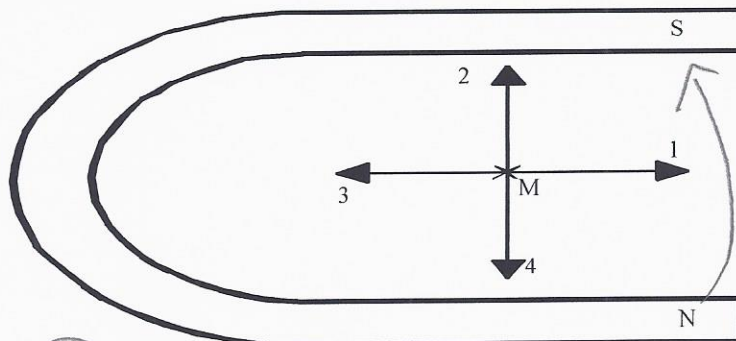
14. The following diagram show four compasses and a straight, current-bearing copper wire.



In which compass is the needle pointing in the direction of the magnetic field produced by the current flowing through the straight wire?

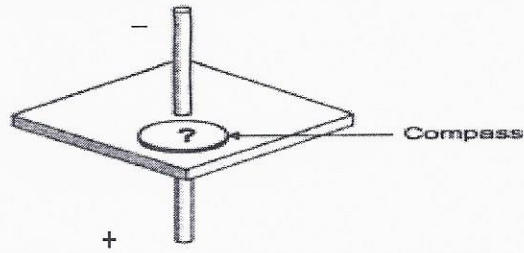
- A) Compass 1    **B) Compass 2**    C) Compass 3    D) Compass 4

15. Given a point M in the magnetic field surrounding a U-shaped magnet. Of the four arrows shown below, which one correctly shows the magnetic force which would act on a point charge at point M?



- A) 1    **B) 2**    C) 3    D) 4

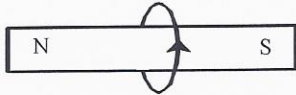



16. The following diagram shows a straight current-bearing wire that runs through a surface on which a compass has been placed.



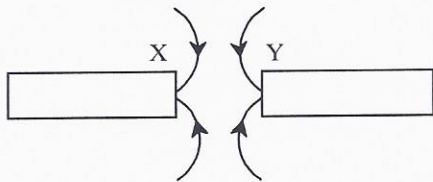
Which of the following compass needles is pointing in the direction of the magnetic field produced by the current flowing through the wire?

- A) 
- B) 
- C) 
- D) 

17. Which of the following diagrams best illustrates the magnetic field surrounding a bar magnet?

- A) 
- B) 
- C) 
- D) 

18. The following diagram represents some of the magnetic lines of force between two bar magnets. Pole X of one magnet and pole Y of the other magnet were brought close together.



Which of the following statements is true?

- A) X and Y are south poles.
- B) X and Y are north poles.
- C) X is a south pole, and Y is a north pole.
- D) X is a north pole, and Y is a south pole.