A-day: Due Mon., Apr 23 (Assigned TAKS week)
B-day. Due Tues., Apr 24 (Assigned TAKS week)

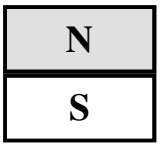
Magnetism 2

Equation
$F_{mag} = qvB$
$F_{mag} = BI\ell$

Variable	Unit	Var Name	Notes
B	T (Teslas)	Magnetic field	Goes from N to S; points direction N of compass.
ℓ	m	Length	Length of current carrying wire in B
I	Amps	current	Current in wire of length ℓ

1. Write the above equations and units on your charts—10 points!
2. If the ring magnet is repelling the square magnets, label the ring magnet in *Diagram 1*.
3. Why can't I isolate a north pole? (Why can't I ever split a north from a south pole?)

Diagram 1



4. If I rub a piece of iron with a magnet, what happens to the piece of iron?

5. Moving electricity always causes _____.

The red or pointed part of a compass is the north pole of its magnet.

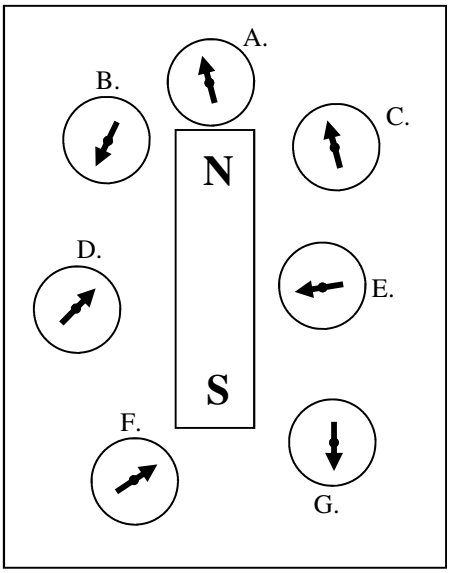
6. Label poles of the compass needle with N and S.

7. A compass needle points toward which pole?

The magnetic field (B) goes from N to S. It shows the direction a N pole of another magnetic would point at that place.

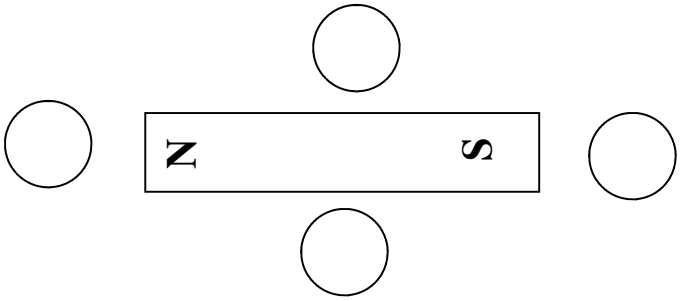
8. Using *Diagram* 2, which three magnets are real (pointing the correct way)?

Diagram 2

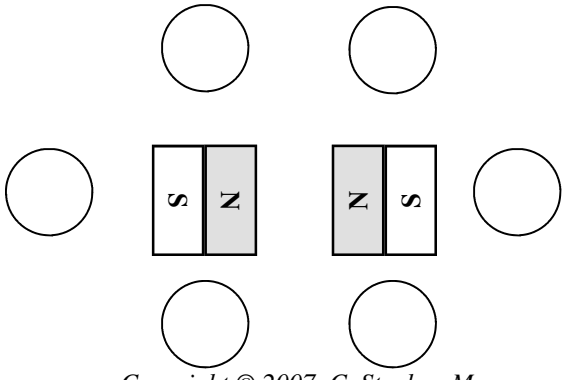


9. Moving magnets always cause _____.

10. On the following magnet
    A. Draw the magnetic field lines using the above rule.
    B. In the given circles draw arrows to show the direction a compass would point at the point.



11. For the two magnets at the right.
    A. Draw the magnetic field lines.
    B. Show the direction the compasses would point.



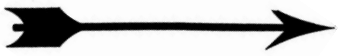
Magnetism 2

12. Find the variables for the following: 34 m/s is ____; 8 T is ____; 4.5μC is ____; 4 m is ____; 2.5 amps is ____.

13. How much force does a 6 C charge going 256 m/s feel in a 75 T magnetic field?
Variables: Equation: Solve:

14. 3 cm of a wire is inside a 4.4 T field. If it feels 1.2 N force on it, how much current is running thru the wire?
Variables: Equation: Solve:

We'll start on the Right-Hand Rule next class, so let's first learn some direction symbols. Most of the symbols are obvious (the arrows), but what if the arrow is going into or out of the page? Look at the arrow at the right and think about it pointing at you or away from you and you should be able to figure out all of the symbols.



15. Label the following direction symbols as up, down, left, right, into the page, or out of the page.

A. ↓ _____ C. ↑ _____ E. X _____

B. • _____ D. → _____ F. ← _____

16. Find the following somewhere in your book or online, etc.
A. Where does the earth's magnetic field come from?

B. Why is the earth's magnetic field important for life on our planet?

17. (Book, again) What is a magnetic domain?

18. Using the domain idea, what is the difference between a piece of iron and a magnetized piece of iron?