

1. Demonstration: Magnetic field lines (iron filings on a magnet). Draw an idealized sketch of the field lines of:
a. the north & south poles of a magnet (or a north & south attracting)

b. two north poles repelling

c. two south poles repelling

2. Obtain two of the small magnets. Investigate their interactions with each. Where are the poles on the small magnets? Be able to use the compass to identify the north and south pole of any of the magnets used.

3. Make an electromagnet. Which end is north ?

4. Tangent galvanometer: Draw the orientation of the compasses around the wires carrying a current downward.

5. Try the hand galvanometer. How does this explain the RHR?

6. Make a speaker. How & why does it work ?

7. Make a Motor. How & why does it work ? (use the word torque in there somewhere). Why do half of the leads to the coil need to be "coated" ?

8. Try to use the LED generator. The darker the better. Whether it works or not for you, why does it emit light when you shake it vigorously horizontally?

9. Use the hand generator to light the bulb. Now using the power supply, no more than 3 volts, make a motor. Explain what you had to change.

10. How & why does the bite-o-phone work ?

11. Observe the penta-battery. How & why does it work ?

12. At the "current swing" which is the north side of the magnet ? How do you know ?

13. Motor effect. Describe what occurs when you add current. Then describe what happens when you change polarity. How does the RHR apply to this?