

- (1) Roll a strip of paper (~ 1 in width, full length) around the magnet, use two magnets stuck together (see Fig. 1). Use scotch tape to keep it together, only on the outermost layer. Roll a second strip of paper on the first roll, and tape the outermost layer. This will serve as a base for the coil.
- (2) Start making your coil by wrapping the copper wire around the paper cylinder (see Fig. 2). Make **at least** 50 loops of wire. Leave about 10 in of cable hanging out of the coil. Wrap some scotch tape around the coil, such that it holds together. Scratch off the outer layer (enamel) of the end of the wires. Remove the innermost roll of paper and discard it (its only used for creating a gap between the magnets and the cylinder.)
- (3) Glue the paper cylinder to the center of the **foam** plate. You may use either the hot glue gun (recommended) or scotch tape.
- (4) Attach the two magnets to the base of your speaker: place the magnets on **top** of your base, at the center, then place a third magnet **below** the base, directly below the two magnets. Use the paper plates as a base. Make sure to place the magnet at the center of the base.
- (5) Fold the business cards in five parts, as shown in Fig. 3. Glue the folded business cards to the foam plate (see Fig. 4), you may use either the hot glue gun (recommended) or scotch tape.
- (6) Lastly, glue the business cards to the paper plate, in such a way that the magnets are lying **inside** the coil.
- (7) Test the speaker: attach alligator wires to the end of each wire coming out of the coil, then attach the alligator wires to a battery, **one at a time**. You should see a very clear sign of inductance!



Fig. 1

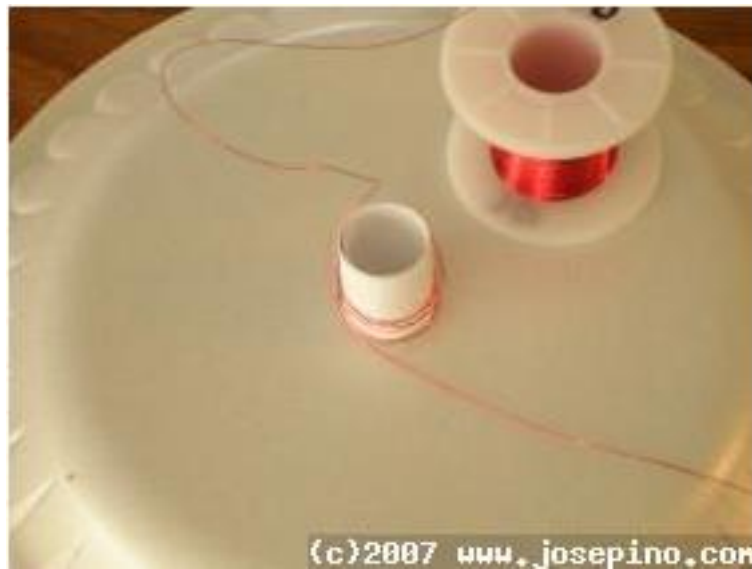


Fig. 2



Fig. 3



Fig. 4