

Build A Speaker Lab

Define the following and give an example of each:

Electromagnet - _____

Speaker - _____

Today's Objective:

Materials: 4 neodymium magnets, Ruler, Card stock paper, Construction paper, Electric tape, Foam bowls, Magnet wire, Sand paper

Directions:

1. Each group will get 4 neodymium magnets. Your group will make a cylinder just larger than the magnets out of construction paper (about 1 cm around and 4 cm in height).
2. Wrap one end of the tube with a piece of tape with the sticky side on the outside. Wrap this piece of tape with about 7 meters of magnet wire. Make sure to leave about 12 cm left on each side of the wire. Tape the magnet wire in place once you finish your wraps.
3. Cut the paper end of the tube and cut it into 4 sections and tape these section on the bottom of the styrofoam bowl. Now make 4 paper springs from paper that is about 1.5 cm in width and 25 cm in length out of card stock paper. Tape these paper springs on top of the sections you just taped to the bowl.
4. Sand the coating off both ends of the magnet wire. Cut 3.5 mm headphone plug wires where you have about 8 inches of wire. Strip each end of the wire and attach to the wires coming from your magnet wire.
5. Plug your 3.5 mm headphone plug into your phone, play a **SCHOOL APPROPRIATE SONG** and you have just made a speaker!

Conceptual Questions:

1. What should happen to your speaker if you made it correctly? _____

2. Why does this happen? _____
3. What are 3 ways you can make your speaker stronger? _____

4. What is really happening when you are listening to music with headphones? _____



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