How Do We Hear?

Grade Level: 3rd - 5th; **Type:** Physical/Life Science

Objective:

To explore the different parts of the human ear. To model how the human ear reacts to sound waves.

Research Questions:

- How do we hear sound?
- How do your ears turn vibrations into sound that we hear?
- What are the functions of the different parts of the ear?

Our ears are important organs and are the means by which we experience sound. The ear captures sound energy and transmits it to the brain. Each part of the ear plays a different role in transmitting that sound.

Materials:

- Coffee can (without the top and with the bottom of the can cut out)
- Tape
- Water
- Cup
- Large balloon
- Flexible straw

Experimental Procedure:

1. Make sure that your coffee can is cleaned out and the bottom of the can is cut out.
2. Cut the neck of the balloon off then stretch the remainder of the balloon over one end of the coffee can. Make sure that the balloon is secure.
3. Tape one end of the straw to the center of the balloon. The rest of the straw should be sticking out to the side.
4. Lay the coffee can on its side on a table. As best you can, tape the can to the table.
5. Bend the end of the straw that is sticking out so that it points down. Put that end of the straw into a glass of water.
6. Have an adult or friend make noises into the open end of the coffee can. Watch the straw carefully. What happens in the glass of water?
7. Look at the diagram of the ear. What parts are represented in your model?

    a. Coffee can—Outer ear
    b. Balloon—Ear drum
    c. Glass of water—Cochlea

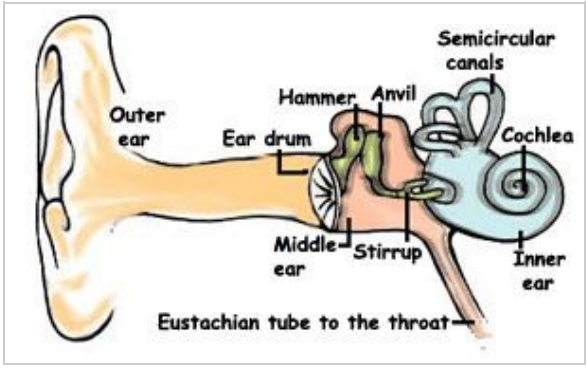

Image taken from: http://www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=152&id=1463

Terms/Concepts: Sound; Outer ear; Ear drum; Cochlea

References:

a. http://www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=152&id=1463 b. http://www.otikids.com/eprise/main/oticon/com/sec_products/sec_otikids/kids/abouthearing/cnt10_howdoestheearwork