Hearing the Heart

Have you ever wanted to know what your heart sounds like? In this activity, you will create a device that will help you hear your heart!

Be sure to have permission before starting this project!

Background:
When you listen to your heart really closely, you can usually hear two different sounds. Most people describe these sounds as “lub” and “dub”. Every time you hear “lub dub” when listening to your heart, you are actually hearing one full heartbeat! In humans, you would hear “lub dub” anywhere between 60-100 times each minute. If you listened to a dog, you would hear “lub dub” between 60-140 times each minute. If you listened to a hummingbird, you might lose count—their hearts beat around 1000 times per minute!

Scientists have worked hard to pinpoint what happens inside of the heart that causes the “lub dub” sounds. Each time your heart contracts, the cardiac muscle pushes blood through the heart or out to the body. When blood travels through your heart, the flow is controlled by small valves that open to allow blood in and close when they’ve let enough blood through. There are two valves that control the flow of blood between the heart chambers, the Tricuspid Valve and the Mitral Valve. When these valves close, your heart makes the “lub” sound. Two other valves in the heart control the flow of blood to the body. The Pulmonic Valve controls blood going to the lungs and the Aortic Valve controls blood going to the Aorta. When these valves close, your heart makes the “dub” sound.

To hear heart sounds (and other sounds inside the body) more clearly, doctors use a tool called a Stethoscope. A stethoscope is a listening device that amplifies sounds, or makes them louder, so that doctors can make sure everything is working properly. The stethoscope has three main parts: a chest piece, tubing, and a headset. The chest piece is the small, round metal piece doctors usually place on your chest. This piece is responsible for picking up the sounds in your body. The tubing allows the sounds to travel from the chestpiece to the headset. Lastly, the headset carries the sound to the ear tips that rest inside of the doctor’s ear.

This activity will let you practice your listening skills and make your very own stethoscope!

What you’ll need:
- Duct Tape (or other strong tape)
- Scissors
- Plastic Funnel
- A Cardboard Tube (like a paper towel roll)
- A Partner
Directions:
1. Place the narrow end of the funnel inside of the cardboard tube.
2. Using a strip of duct tape, tape the funnel and cardboard tube together.
   ○ TIP: Make sure there are no gaps or spaces when you tape them together.
3. Place the funnel flat on the left side of your partner’s chest.
4. Put your ear against the hole at the end of the cardboard tube.
5. Listen for the heartbeat!