Make Your Own Stethoscope

In this activity, students create their own stethoscope and learn how to listen to their heartbeat, a.k.a. their own personal rhythm!

Materials

- 1 balloon per student
- 1 piece of tubing per student
- 2 small funnels per student
- Scissors
- A timer
- 1 rubber band per student
- A calculator (optional)
- Stethoscope Data Sheet (page 3 of this document)

Instructions

Fit a funnel to each end of the tubing. Take a balloon and blow it up, then let the air out. This stretches out the balloon. Now, cut off the top third of the balloon with scissors. Fit that portion of the balloon over the top of one of the funnels and use a rubber band to secure it.

Find someplace quiet with a timer and a calculator. Put the funnel that has the balloon attached on your skin over your heart (feel where your hand can feel the beat the strongest; this will be the best place to put your stethoscope). Place the other funnel to your ear. Using the timer, count how many times your heart beats in twenty seconds. Multiply this by three (using a calculator to double-check your work), and this will be how many times your heart beats per minute.
What is Happening?

Did you know that when a doctor listens to your heartbeat with a stethoscope, they are actually listening for two sounds? The first sound is a longer, lower pitched sound. The second is a shorter, higher pitched sound.

The lower pitched sound is made by the closing of two heart valves when blood is flowing out of the heart. The higher pitched sound is made by two other valves when blood is flowing into the heart. When a person exercises or participates in any kind of physical activity, the heart beats faster in order to pump more blood and oxygen to the muscles that are being used. The closing of the heart valves makes a sound which causes the stretched balloon to vibrate. The vibrating balloon makes the air in the tube vibrate and the tube then carries these sound vibrations to your ear.
How many times does your heart beat per minute when you are relaxed? (This is called your heart rate and should be written as number of beats per minute. Example: 80 beats/minute.)

Run around or exercise some. How many times does your heart beat when you have just finished physical activity?

How does your heart beat rate compare to others? Is it faster or slower than your friends’?

Your family’s?

Your pets’?