

Name:

Hearing Your Heartbeat (Teacher Version)

Source of Sound

Name the source of each sound. What was vibrating?

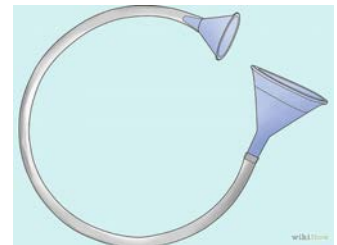


- When the girl strums the guitar, the **vibrating strings** send sound waves echoing out of the hole.
- The wind blows the chimes into one another, causing the **metal to vibrate** and produce sound.
- The cat is happy, causing it to vibrate muscles in its throat and produce sound through the gaps.
- The tuning fork is struck, causing the **ends to vibrate** and produce sound.

Super Listener Earphones!

Materials:

- 2 plastic funnels
- 1 metre of plastic tubing



Instructions:

- Push a plastic funnel into each end of the plastic tubing. Push hard so the funnels stay in place.
- Place one funnel over your heart, and the other over your ear. What do you hear?

Think About It...

- What is the apparatus that doctors use to check our heart?
A *stethoscope*.
- How do these devices work?
They capture sound waves and send them through the tube directly into the doctor's (or your) ear. This way you can listen to the sounds of the body to hear if anything seems off.



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Listen To Your Heart - Activity

How do different types of physical activities affect your heart rate?

Predict:

How do you expect your heart rate to change as you exercise?

How many times do you estimate your heart beats in 1 minute?

Do you think your heartbeat slows down right away after exercise?



It's Timing Time!

1. Using your Super Listener Earphones, count how many times your heart beats in 15 seconds. Have a partner time for you.

2. Multiply the number of beats you counted by 4 (to get beats per minute). This is your **resting heart rate**. Write this number in the table below.

3. Do **jumping jacks** for 1 minute while your partner times again, then repeat the process you did above. Add to the table.

4. Do **sit-ups** for 1 minute while your partner times again, then repeat the process you did above. Add to the table.

5. **Run on the spot** for 1 minute while your partner times again, then repeat the process you did above. Add to the table.

6. Take your heart rate again after 1 minute of resting and 5 minutes of resting.

| Activity | Beats Per Minute |
|---------------------|------------------|
| Resting | |
| Jumping Jacks | |
| Sit-Ups | |
| Running on the Spot | |
| After 1 Minute | |
| After 5 Minutes | |

Follow-Up

1. What do you think affects how your heart rate changes when you exercise?

Your fitness level.

2. How do you think your heart rate immediately after exercising would change if you got more or less exercise?

If you are quite fit, your heart rate after and during exercise would be lower since your heart has to work less to pump blood to the rest of your body.

3. How do you think your resting heart rate would change if you got more or less exercise?

It would be less, according to the same reasoning as above.

Name:

Image Sources:

Source of Sound:

1. Clipart Fort: <http://www.clipartfort.com/girl-playing-guitar/>
2. Rustic Home: <http://www.rustichome.com/unique-wind-chimes-2/>
3. Smirking Cat: <http://smirkingcat.wordpress.com/2012/08/16/am-i-purring/>
4. Steve Weiss Music: <http://www.steveweissmusic.com/category/drum-key-tuning-fork>

Super Listener Earphones:

1. GoGraph: <http://www.gograph.com/stock-illustration/bottleneck.html>
2. Freelin Wade: <http://www.freelin-wade.com/images.htm>
3. Wikihow: <http://www.wikihow.com/Make-a-Homemade-Stethoscope>

Think About It...

1. Clipart Pin: <http://clipartpin.com/stethoscope-clipart-1.html>

Listen To Your Heart – Activity:

1. Treat Doc: <http://treatdoc.com/get-strong-heart-balance-ball/>