

Name:

Hearing Your Heartbeat (Teacher Version)

Source of Sound

Name the source of each sound. What was vibrating?

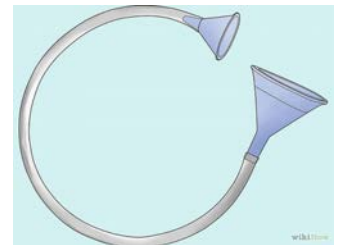


- When the girl strums the guitar, the **vibrating strings** send sound waves echoing out of the hole.
- The wind blows the chimes into one another, causing the **metal to vibrate** and produce sound.
- The cat is happy, causing it to vibrate muscles in its throat and produce sound through the gaps.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

1. Push a plastic funnel into each end of the plastic tubing. Push hard so the funnels stay in place.

2. Place one funnel over your heart, and the other over your ear. What do you hear?

Think About It...

1. What is the apparatus that doctors use to check our heart?
A stethoscope.

2. How do these devices work?

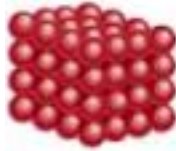
They capture sound waves and send them through the tube directly into the doctor's (or your) ear. This way you can listen to the sounds of the body to hear if anything seems off.



Name: _____

Sound and Solids?

Predict: Do sounds travel faster in solids than gases?



Loud Liquids?

Predict: Do sounds travel faster in liquids than gases?



States of Matter - Activity!

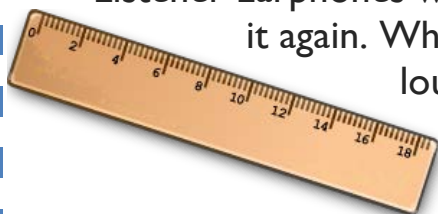
1. Divide the class into 10 groups. Take 6 of the groups and call them the **solids**. Take 3 of the groups and call them the **liquids**. Call the final group the **gases**.
2. Spread out in your group (solid, liquid, or gas) from the front of the class to the back. There should be 1 line for each group.
3. Your teacher will give the person at the back of the line a **password**, which they will have to run and tell to the next person when told to start. (This part is similar to the Telephone game.)
4. Wait for your teacher to tell you to go, then start!

Questions:

1. Was this a fair game? Who won? *No, it was not a fair game. The solids should have won because the password was short and easy to pass on between people who were close together.*
2. How were the groups arranged? *The solids were closer together than the liquids, who were closer together than the gases.*
3. How is this set-up similar to the particles of solids, liquids, and gases? *The particles of solids are tightly packed, liquids are less tight, and gases flow very freely.*

Listen Up: Solids!

Have a partner slap a ruler against a desk while you listen. Now, listen to the desk through your Super Listener Earphones while they hit it again. Which was louder?



Listen Up: Liquids!

Using a container of water, have a partner “speak” into the water through a straw while you listen in the air. Now, use your Super Listener Earphones to listen by submerging one end in the water. What do you notice?



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>

Sound & Solids?

1. Science Language Gallery:
<https://sciencelanguagegallery.wikispaces.com/Particles+Elements,+Compounds+and+separating+Mixtures>

Loud Liquids?

1. Science Language Gallery:
<https://sciencelanguagegallery.wikispaces.com/Particles+Elements,+Compounds+and+separating+Mixtures>

Listen Up: Solids!

1. 4Vector: <http://4vector.com/free-vector/free-vector-vector-clip-art-ruler-clip-art-115827>

Listen Up: Liquids!

1. Clipart Best: <http://www.clipartbest.com/gold-fish-clip-art>