Sound Lab 1

materials: tuning fork, table top

Experiment 1

Strike a tuning fork on the side of a table. Bring it close to your ear.

1. What do you hear?

Strike the tuning fork again. Touch the surface of the water with the tuning fork.

2. What do you see?

Sound Lab 1

materials: tuning fork, can, plastic wrap, salt

Experiment 2

Strike the tuning fork and hold it near the salt on top of the can.

1. What do you see?

Sound Lab 1

materials: rubber band

Experiment 3

Stretch the rubber band between two fingers. Pluck it.

1. What do you see?

Hold it close to your ear and pluck it.

1. What do you hear?
2. What did you see each time a sound was produced?
3. Therefore, sound is a _____.

Sound Lab 2

materials: you!

Experiment 1

Clap your hands in front of you, above your head, and behind your back.

1. Which of these can you hear the sound the best?

Sound Lab 2

materials: beaker, water, penny

Experiment 2

Drop a penny in a beaker of water.

Draw a picture of what you see.

1. What do you hear?

Sound Lab 2

materials: slinky

Experiment 3

Hold one end of a Slinky while your partner holds the other end. Stretch it across the table top. Strike the end of the Slinky with your hand.

1. Describe what you see.
2. In what directions does sound travel?
3. In what shape(s) does sound travel?

Sound Lab 3

materials: desk, metal spoon

Experiment 1

Tap the top of the desk lightly with a metal spoon. Then tap it harder.

1. Which produced a louder sound?
2. Why?

Sound Lab 3

materials: rubber band

Experiment 2

Stretch a rubber band between two fingers. Pluck it lightly.

1. What do you see?

Hold it close to your ear and pluck it.

1. What do you hear?

Pluck the rubber band harder.

1. What do you see?

Hold it close to your ear and pluck it harder.

1. What do you hear?

Sound Lab 3

materials: you!

Experiment 3

Clap your hands lightly. Clap them hard.

1. Which produces the louder sound?
2. Why?
3. When more force was applied, the sound was louder or softer?
4. Therefore, when more energy is used for a sound, the sound will be _____. **(← write all of this)**

Sound Lab 4

materials: thin rubber band, thick rubber band

Experiment 1

Stretch a thick rubber band and a thin rubber band around an empty box. Pluck and strum each rubber band.

1. Which produced a higher sound?

Sound Lab 4

materials: 3 bottles, water, metal spoon

Experiment 2

Strike each bottle with a metal spoon.

1. Which bottle produces the highest sound?
2. Which bottle produces the lowest sound?

Sound Lab 4

materials: 3 bottles, water

Experiment 3

Blow across the mouths of three bottles.

1. Which produces the highest sound?
2. Which produces the lowest sound?
3. In the experiments, a lower sound had **(a. more or less)** space to move, and a higher sound had **(b. more or less)** space to move.
4. Therefore, longer sound waves must produce **(a. lower or higher)** sounds and shorter sound waves must produce **(b. lower or higher)** sounds.

Sound Lab 5

materials: Different sized cups, string

One student will talk into the cup while the other student places the cup to their ear. The string between the students should be loose.

1. Describe the result in your notes.

Pull the string so it is tighter. Repeat step #1.

1. Describe the result in your notes.

Pull the string so it is the tightest. Repeat step #1.

1. Describe the result in your notes.
2. When can hear best? Why?

Sound Lab 6

materials: String, Desk

Experiment 1

Hold the string attached to the desk. Pull the string tight and pluck the string. You may need to get close to the string to hear it.
Shorten the string by moving your fingers down the string. Pluck the string. Repeat this in small intervals as the string gets smaller.

1. Write down what you notice happens to sound when the string shortens.

Repeat steps 1-2 using the other string and compare the results.

1. Write down the differences in sound between the two different size strings.
2. Write down the relationship between the pitch and the length of the string.

Sound Lab 6

Materials: String, Desk

Experiment 2

Pick one string and pull it as tight as you can. Pluck the string. Let the tightness (tension) up with the string and pluck again until there is no tone produced.

1. Write down what you notice happens to the string.
2. Why do you think guitarists and violinists adjust the length and the tension of strings before they start playing?

Sound Lab 7

materials: you!

Hold your fingers against the front of your throat and say ***aaaaaaahhh.*** Notice the vibrations against your fingers.

Now change the tone from low to high and back again.

1. How does this change the vibrations in your throat?

Change the sound to ***oooooh.***

1. What do you notice about the vibrations? How about the change in your mouth?

Change the sound to ***eeeeeee.***

1. What do you notice about the vibrations? How about the change in your mouth?
2. Would you say the different vowels are made differently by your throat or your mouth.

Now try ssssss (not esssss, like a snake!

1. Does your throat vibrate? What is vibrating?

Now try fffffffff.

1. What is vibrating?

Sound Lab 8

Materials: phone, youtube

Play this video from your phone:

https://www.youtube.com/watch?v=pRpN9uLiouI

1. According to the video, what causes the second tuning fork to begin to make sound when the other fork is hit?