

Sound Labs @ Home



For each mini lab...

- Draw a diagram
- Write down all observations and answers to questions

In Class Observations

Sound Drum

Materials:

- Cup
- Saran Wrap or Ziplock Bag
- Rubber Band
- Salt or Pepper
- Frequency App on Phone (or Youtube Videos
- Phone or Bluetooth Speaker

Set Up

Wrap the plastic around the cup and hold tightly with the rubber band. Sprinkle a tiny amount of salt on top (see picture).



Experiment

- Choose 5 frequencies between 200 and 1000 Hz
- For each one, play the speaker close to the salt. Observe what happens for each.
- What is the relationship between the frequency and movement of a material?

How Do We Produce Sound?

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?
1. 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?

Doppler Effect

Watch the video to the right. The air horn is at a constant frequency in the car.

- Where have you seen this phenomenon before?
- What observations can you make?
- What is “rule” you can make about what sound is going towards you and then away?

