

# Recipe for Homemade Science Sound Jam

## Materials/Ingredients:

- Toilet paper roll
- Paper towel or wrapping paper tube

## To Do/Cooking Instructions:

1. Bang/bop/bounce the shorter toilet paper tube and observe its sound.
2. Bang/bop/bounce the longer paper towel tube and observe its sound.
3. Now that you know the sound each makes, repeat the experiment over and over again until you find a pattern that sounds groovy to you!

## What's Happening?

Sounds occur when energy travels as **waves** through a substance or medium such as air, water or even solid materials. Almost anything that vibrates can produce sound. Have you ever put your hand on your throat when you talk? Try it! You can feel your vocal cords vibrating and producing sound.

Another aspect of sound is **pitch**. Pitch results from the rate or **frequency** of the vibrations. We experience this as higher and lower tones like the “do – re – mi” of a musical scale. The faster something vibrates, the higher the pitch.

The longer paper towel tube creates longer wavelength sounds, and as you'd expect, the shorter tube creates shorter wavelength sounds. Those two tube lengths and wavelengths both have different frequency values. The longer tube has a low frequency while the shorter tube has a high frequency. Do you hear the difference? The longer tube makes a lower sound than the shorter tube.

You now have all the ingredients to cook up a sonic treat with your own sick beat! It's time for a jam session. Gather anything in your house that you would like to (safely and with permission of course) try out as an instrument! Pots and pans, wooden spoons, empty soda bottles that you can fill with water, rubber bands and more. Host a virtual jam session with friends and family using your favorite virtual communication tool. Create your own music video, post to your favorite social platform and tag the Museum!



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