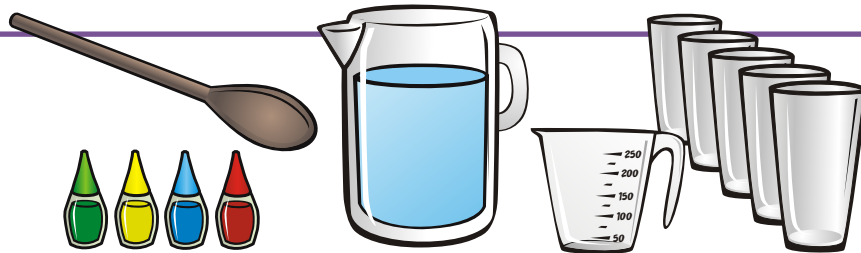


What you need:

- 5 tall glasses
- Measuring cup
- Water
- Wooden spoon
- Food coloring, four colors (optional)



What you do:

Step 1: Line up the five glasses side by side. Leave the first glass empty. Add a few drops of food coloring to each of the other four glasses.

Step 2: Leave the first glass empty. Add 60mL (1/4 cup) of water to the second glass.

Step 3: Add 120mL (1/2 cup) of water to the third glass.

Step 4: Add 180mL (3/4 cup) of water to the fourth glass.

Step 5: Add 240mL (1 cup) of water to the fifth glass.

Step 6: Tap the spoon against the glasses. What do you hear?

Step 1:



Step 5:



Step 6:



What's going on:

Everything is made up of tiny atoms, and sound travels in waves by vibrating atoms. Sound waves can travel through gases, like the air, and also through liquids and solids. Quick vibrations have a higher pitch, like a whistle. Slow vibrations have a lower pitch, like a dog growling. When you tap the empty glass, it makes a higher pitch than when you tap the glasses with water. The water makes the sound waves vibrate more slowly in the glasses. The more water the glass contains, the lower the sound will be. The different pitches give you a fun instrument to make music with!

Now try this:

Test this experiment in different sized glasses. Does the sound change? You can also try using different liquids of varying densities. Can you guess which ones will make higher or lower sounds? Why not try testing different "drumsticks", such as spoons made out of plastic or metal, or an entirely different object?

