

Hydro-Xylophone

Every sound is made when something vibrates. Sometimes it's the skin stretched across a drum, sometimes it's a plucked string. By fine-tuning the amount of what is vibrated, you can make notes.

At this station you'll make a full octave of eight notes.

Procedure

1. Fill a glass halfway full. Tap its side to hear the note it makes.
2. Add some water to the same glass. Tap its side again to hear the note it makes. Is it higher or lower than the first note?
3. Now your challenge is to fill each glass so that it makes a unique note. If you (or your partner) are a musician with a good ear, try to fill the glasses so that you have a full octave, or the eight notes "do," "re," "mi," "fa," "so," "la," "ti," and "do."
4. Use the ruler to measure from the top of the glass to the top of the water. Record this "air column" value for each note.
5. Try playing a tune! Beethoven's "Ode to Joy" should be possible. Or try to tap out the notes to "Old MacDonald," "The Itsy Bitsy Spider," or "Twinkle, Twinkle Little Star."
6. When it's time to go to the next station, dump the water from all 8 glasses back into the pitcher.

Turn and Talk

Think about it. How does this station work? Discuss these questions with a partner.

What is vibrating to make a sound?
How is it different in each glass?

What medium is transmitting the sounds waves?

If you figured out a song to play, write its notes down.

