



## WATER SCALES

Make your own xylophone with items from your house.

### Materials

- 4 glass bottles, jars, or cups
- Plastic rod, such as a pen
- Water
- (Optional) Food coloring



### Procedure

- Fill the first bottle  $\frac{1}{4}$  full of water, the second  $\frac{1}{2}$  full of water, the third  $\frac{3}{4}$  full of water, and the fourth completely full.
- (Optional) Put food coloring in the water to see the levels better.
- Line the bottles up by how full they are.
- Strike the side of each bottle gently with the plastic rod.
- Listen for differences in sound. Which bottle makes the highest-pitched sound? Which makes the lowest-pitched sound?

### Results

The bottles with more water make lower pitched sounds than the bottles with less water. The bottles can be used like a xylophone to create tunes.

### Why?

Sound is created by vibrations traveling through objects and air. Because vibrations travel more quickly through air than liquids or solids, the sounds they make are different. The slower the vibration moves, the lower the sound is. The more water in the bottle, the slower the vibration travels through it and the lower the sound. Because there are different levels of water in the bottles, you can create different sounds and use them to make music!