

WATER XYLOPHONE



Do you have a favorite musical instrument and have you ever wondered what makes it sound the way that it does? The science of sound, or acoustics, is a branch of physics that studies the way sound waves travel through different mediums (like gases, liquids and solids).

WHAT YOU'LL NEED:

- 4+ Glass Jars or Drinking Glasses (the same size and shape)
- Wooden Spoon
- Water
- Food Coloring

Caution: Be careful with the glass jars and drinking glasses. Ask a grownup if they would like to help you.

WHAT YOU'LL DO:

1. **Line up your glass jars or drinking glasses** in a straight line on a flat surface.
2. With a wooden spoon, **gently tap each jar on the side**. What sound does each jar make? Is it the same sound or are they different?
3. **Pour a small amount of water into the first jar**. Then, pour a little more water into the jar that's next to it.
4. **Continue doing this until all the jars have water in them**. Each jar should have a little more water than the jar before it. (*Tip: The last jar should be nearly full.*)



5. For a fun addition, add a few drops of different food colorings to each jar. This will look great and help you better visualize the different pitches.
6. With your wooden spoon, **gently tap each jar again**. Notice how the sounds have changed.

FOR ADVANCED SCIENTISTS:

Try tuning each glass to a specific pitch. Use a digital or online tuner, and add or subtract water from each jar until the pitches match.

Time to review what we learned. Ask yourself the following:

- Which jar had the highest sound or pitch?
- Which jar had the lowest?
- Why do you think the pitches were different?

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