

WIND INSTRUMENT VIBRATIONS HARMONICA

Here's a fun and simple way to make some musical notes and to learn a bit about the science of sound. Just like a real harmonica, this one has a part that vibrates when you direct air past it with your breath. In this homemade version, it's a piece of paper held between two toothpicks sandwiched between two lollipop sticks. Go on, see what weird and wonderful sounds you can make!

> The pitch of the note your harmonica produces—how high or low it is depends on how fast the paper vibrates. The faster it vibrates, the higher the pitch.



Making harmonicas is a good way to recycle your lollipop sticks, but make sure they are dry first.

As you play the harmonica, you'll be able to feel the tickle of the vibrations that create the sound.





From DK's STEM Lab

HOW TO MAKE A HARMONICA

This harmonica is made with lollipop sticks. As you are going to be touching these with your mouth, make sure they are clean. The only other things you need are rubber bands, toothpicks, and a strip of paper. You'll be making music in just a few minutes!







On the paper, draw around a lollipop stick with the pencil, then carefully cut around the shape with the scissors.



Place the piece of paper you cut out on top of one of the lollipop sticks, then place the other lollipop stick on top.



Wedge a toothpick between the lollipop sticks and slide it as far toward the end with the rubber band as you can.



Wrap another rubber band around the other end of the lollipop sticks, then wedge another toothpick in at that end.

Using scissors, carefully trim the toothpicks and discard the extra pieces. Make sure the paper is flat, not crumpled, then hold the harmonica firmly between your lips and blow. Try sucking, too.





Wrap a rubber band several times around one end of the two lollipop sticks so that it holds them together.

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HOW IT WORKS

The toothpick pieces hold the paper firmly at each end. When you blow or suck, air rushing past the paper makes it vibrate, and the vibrations create disturbances in the air that travel outward in all directions as sound waves. If you blow harder or pinch the sticks as you blow, the paper vibrates faster. This creates a higher-pitched sound.



REAL WORLD: SCIENCE VIBRATING REEDS

Real harmonicas work in a similar way to your lollipop harmonica. Instead of paper, they have metal sheets called reeds that vibrate when the player blows or sucks through a set of holes. There is at least one reed behind each hole, and each reed is tuned to a different note.

