

SYMPHONY HACK LAB



Whistl-o-phone

Time: 15 Minutes
Difficulty: Intermediate

Nothing completes an orchestra like a swelling woodwind section, and now you have the chance to make your own 'woodwind' instrument. Who needs a saxophone when you have paper, Popsicle sticks and a little creativity?

What You Need:

- Two Popsicle sticks
- Pencil
- Two elastic bands
- Construction paper
- Glue
- Small piece of cardboard or a toothpick
- Scissors

Make It:

1. Cut your piece of cardboard or toothpick into two small pieces about the size of a tic-tac. These will be spacers.
2. Place one piece about 2 cm away from the end of the Popsicle stick, and glue it there. Repeat on the other side with the second piece.
3. Cut a thin strip of construction paper a bit longer than a Popsicle stick.
4. Sandwich the paper strip between the two Popsicle sticks, with the pieces of cardboard or paper on the inside.
5. Wrap an elastic tightly around the Popsicle stick sandwich in line with the spacers. Repeat on the other side. Verify that the paper on the inside is still lined up and flat.
6. Turn it on its side and blow into it like a harmonica. Does it make noise?
7. Decorate!
8. Bonus step: Add an amplifier. Hot glue a plastic cup on the sticks, place it perpendicular so that the air you blow goes into the cup.

Test it:

Blow in, and hear the noise it makes. Can you make it louder, softer, higher or lower?

Explain It:

As the air passes over the paper strip, it causes it to vibrate. This vibration makes the loud noise you hear.

See It In Use:

Woodwind instruments use the exact same concept to make sound – they just use a wooden reed instead of a paper strip to vibrate and make noise!

Hack this template:

Try mixing up the design. Add parts, make the sticks smaller or longer. Test another material to vibrate such as a candy wrapper, or try another type or size of amplifier. Modify anything... it's all up to you!



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