

Bottle Boogie Flute!

by **The Oakland Toy Lab** on May 21, 2015

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Author: The Oakland Toy Lab

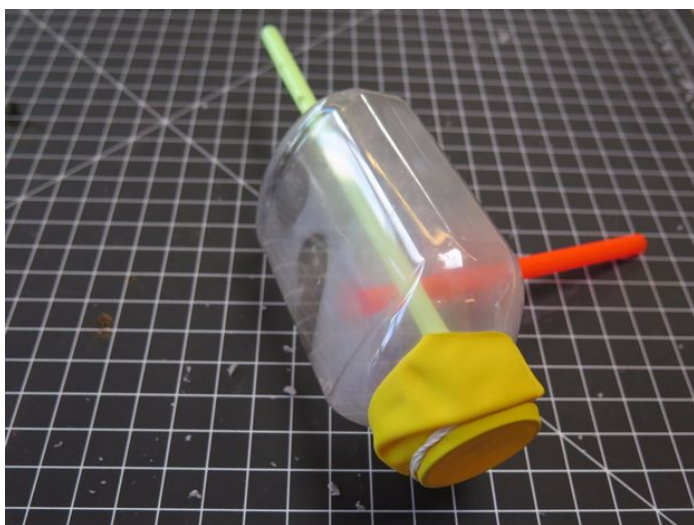
The Oakland Toy Lab is a community-based wonder lab for students to build, tinker, explore, make, break, and learn! We are writing up engaging science experiences so that educators, parents, youth, and families can have access to these anywhere in the world. Hope you enjoy and can't wait to meet you! (all built and documented by Sam Haynor)

Intro: Bottle Boogie Flute!

If you got some boogie bottled up, add this recycled rabble-rouser to your ruse! Whether you're in it for the physics of the phun, this is a great project with youth and adults alike to start getting an idea of resonance, vibration, and the way sound works. Put some science in your ears!

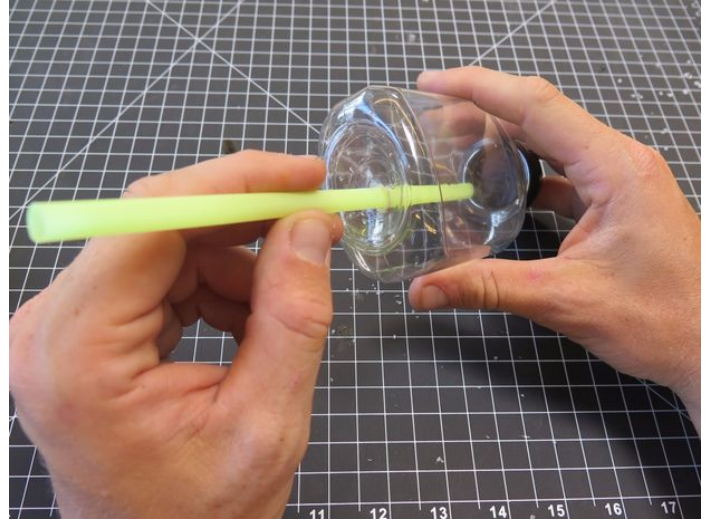
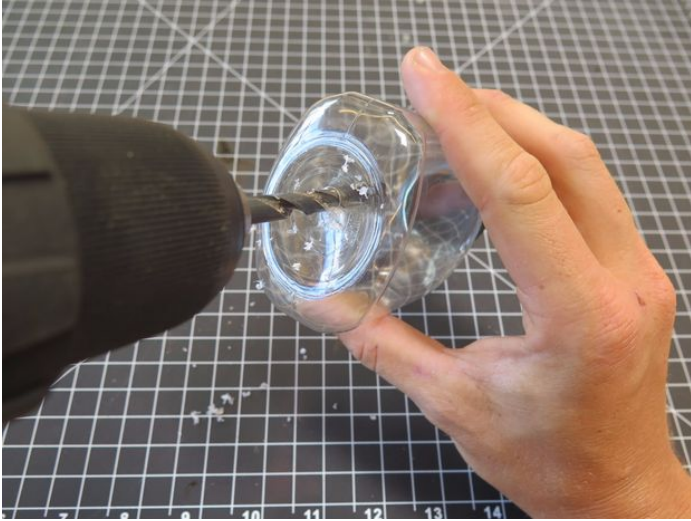
- What: Bottle Flute!
- Cost: ~\$0.05
- Concepts: resonance, vibration, sound, pitch
- Materials:
 - Plastic Bottle
 - 2 Fat Straws
 - Balloon
 - Rubber Band
- Tools:
 - Hot glue gun / hot glue
 - Drill

Let's get down!



Step 1: The Flute Stem

First up is to drill a hole in the bottom of your bottle. You'll want this as close to the size of your straw as possible, since ideally you'll want the straw to be adjustable. Stick your straw in and make sure it can reach all the way to the top of your bottle with some sticking out.



Step 2: Thar You Blow!

Drill a hole in the side of your bottle and put the other straw (in this case the orange one) in. This one we'll hot glue in place so you have a solid place to blow wind into your instrument.

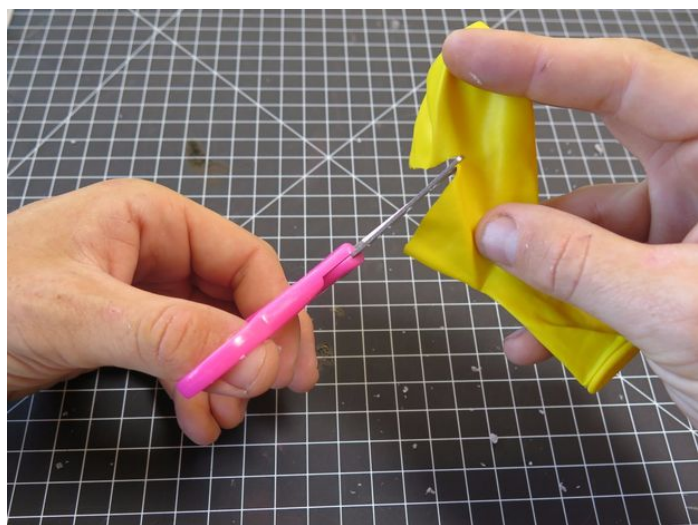


Step 3: The Balloon Soundmaker

Cut off the top of a balloon (I know, it's tragic), and stretch it over the top of your bottle. Use a rubber band to hold it down, and pull at the skirt around the edge to make it tight. Then push the flute stem (the yellow straw in this case) up so that it makes contact with the balloon.

The sound is going to come from you blowing air into the bottle, and the balloon expanding and contracting as it lets little amounts of air through where it touches the flute stem. These vibrations will resonate your flute stem to make some boogie!

A good explanation of how this works can be found [here](#)!



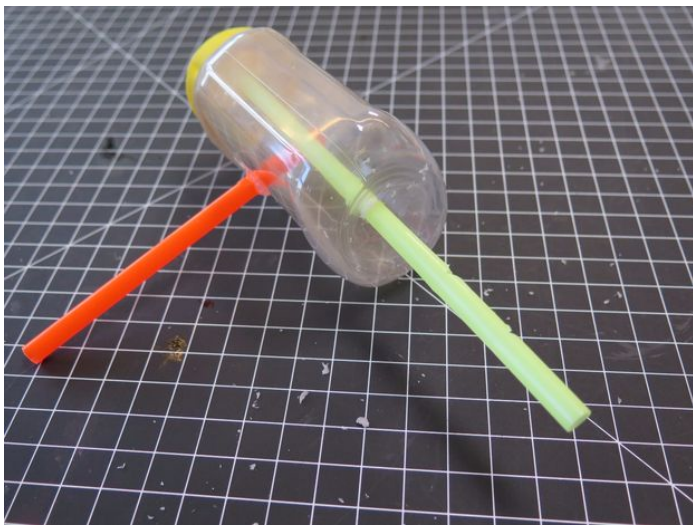
Step 4: Adding Notes

Fold your flute stem (the yellow straw in this case) in two and cut a triangular hole in the side. When you unfold it, it will be a diamond, and the perfect place for you to cover and uncover with your fingers. This will make your Bottle Boogie Flute have different notes available.

If you want to see a more detailed example on how to cut out notes, check out our [straw flute instructable](#).

Experiment with which combinations of finger holes change the sound in which ways. Does it make difference how many you cover? Which makes the lower note? Or the highest note? Learning this is fundamental in understanding how many wind instruments work!





Step 5: Time to boogie!

With a little practice, you're ready to join the band. A recycled band anyways. Play around with the height of the flute stem, and where you cut your notes to get different sounds. You can try lengthening the flute stem by linking straws together to get some really low notes. If you're working with kids, this is a great way to introduce the way resonance, sound, and vibration works.

Have fun, and as always, keep exploring!



Related Instructables



Straw Flute by
The Oakland Toy
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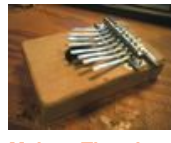
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Comments

2 comments

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DachsieMommie says:
Next you could design a Kazoo ÷)

May 21, 2015. 12:57 PM [REPLY](#)



DachsieMommie says:
Now that's just hilariously funny. I love it! I have all the bits already at hand, so I am going to make one.

May 21, 2015. 12:56 PM [REPLY](#)
