

A STEM in the Park Take Home Activity

STEM in the PARK

Ages 6 and up

Science, Technology, Engineering, and Mathematics

Make your own World Cup Soccer Stadium Noisemaker – The Vuvuzela

The vuvuzela is the name of stadium horn used by soccer fans to cheer on their team; it sounds like a swarm of bees. You can make an instrument at home that makes a similar sound with just a few simple materials.

What You Need

- A 9-11 inch latex balloon
- A ¼" hex nut
- Adult supervision



What To Do

1. Squeeze the hex nut through the mouth of the balloon making sure the nut goes all the way into the balloon so that it won't get sucked out while you are blowing up the balloon.
2. Carefully blow up the balloon and tie it off so the air stays inside.
3. Grip the balloon at the stem end like you would a bowling ball. The neck of the balloon will be in your palm and your fingers and thumb will extend down the sides of the balloon.

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What To Do cont.

4. Hold the balloon with your palm down and swirl it in a circular motion. Eventually the hex nut, which bounces at first, will roll around the inside of the balloon. (Be careful not to spin the balloon too hard, you don't want the hex nut to burst the balloon)
5. Once the hex nut begins to spin, use your other hand to stabilize the balloon. Your hex nut should continue to spin and buzz for about 10 seconds.

Learn...

Your vuvuzela works because of centripetal force – it's the force that causes the nut to move in a circular path inside the balloon. The vuvuzela buzzing sound comes from the hex nut as it vibrates by rubbing against the sides of the latex balloon as it moves in a circle. A real vuvuzela is a long horn that uses air pressure to create its sound. Its pitch depends upon how people blow into it.

Investigate...

- Try changing the size of the balloon or the size of the hex nut? How does that change the sound that's created?
- Use something smooth like a marble or penny inside a balloon. How does that change the sound you hear?

This activity is brought to you by the BGSU Early Childhood Methods