

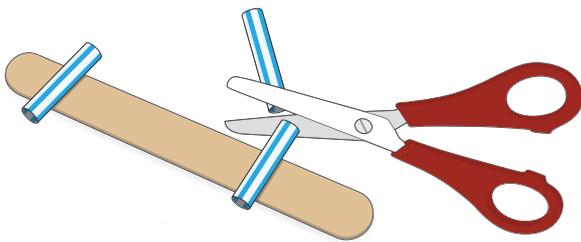
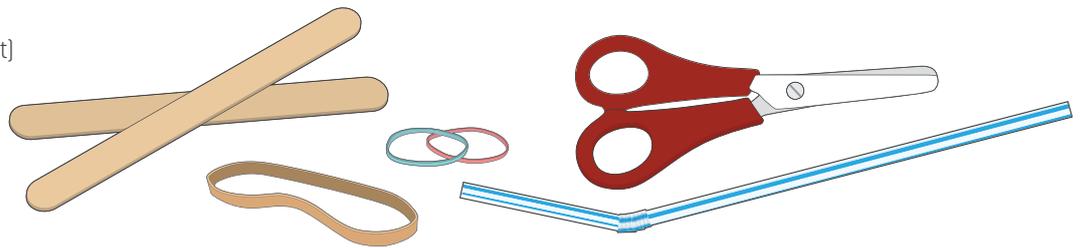
GENERATION SCIENCE

AT HOME ACTIVITY

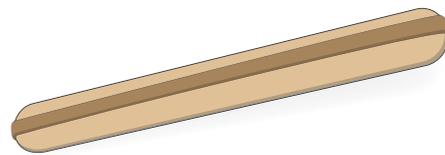
Lollipop Player

You will need:

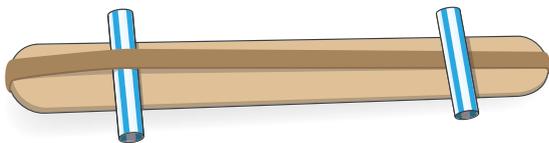
- 2 lollipop/craft sticks (flat)
- 1 large rubber band
- 2 small rubber bands
- 1 drinking straw
- Scissors



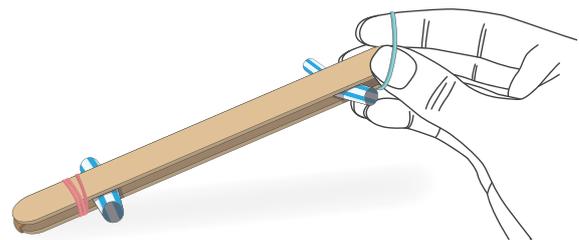
1. Cut two pieces off the straw which are each slightly longer than the width of the lollipop stick.



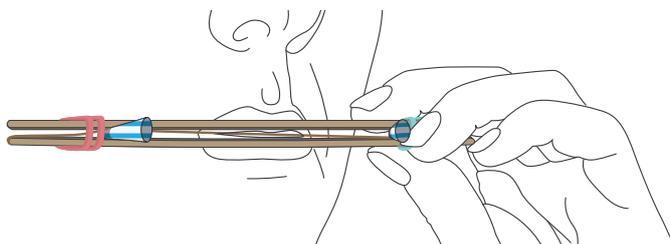
2. Take one of the lollipop sticks and stretch the large rubber band over it lengthways.



3. Slip one piece of the small straw cut-offs underneath the rubber band, around 2cm from the end of the stick. Place the other piece of straw over the rubber band in the same position at the other end of the stick.



4. Place the other lollipop stick on top of the first so that the straws are sandwiched between. Secure the sticks together at each end using the small rubber bands, but not too tight.



5. To play, hold your Lollipop Player at each end and blow between the lolly sticks, the same way you would a harmonica.

Extension

Try moving the piece of straw up and down the lollipop. Does it make a difference to the sound you produce? Blow harder. What does this do to the noise?

Explanation

Sounds are produced when objects vibrate. When you blow between the lollipop sticks it causes the rubber band to vibrate and produce a sound. Lots of vibrations happening every

second produce high sounds and fewer vibrations happening every second produce lower sounds. Blowing harder makes the rubber band vibrate more and so produces a higher pitched noise.

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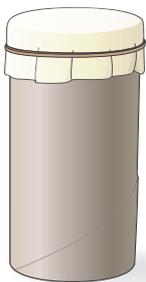
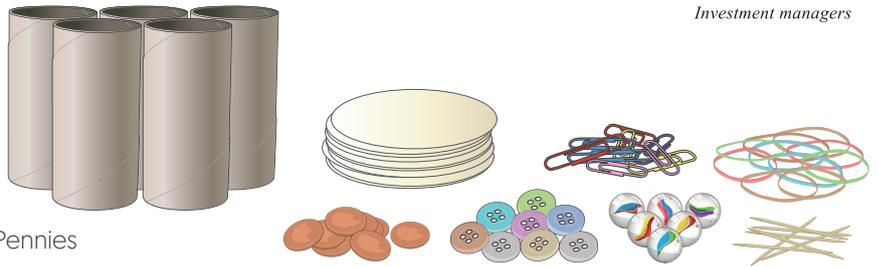
Shorter objects vibrate faster than longer ones and so produce a higher sound. Moving the straw changes the length of the rubber band vibrating and therefore changes the sound.

AT HOME ACTIVITY

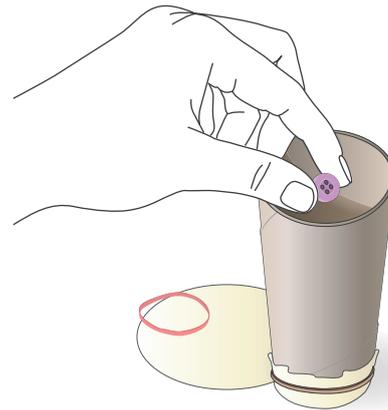
Mystery Sound Tubes

You will need:

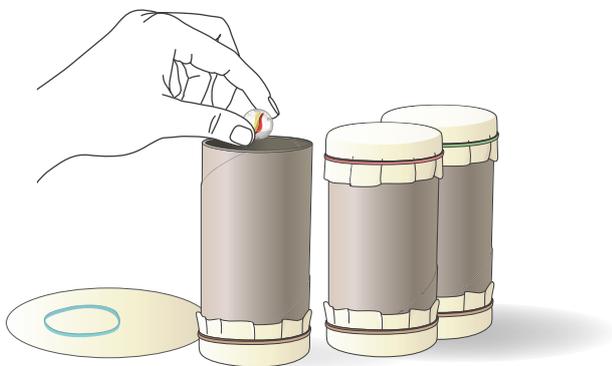
- 5 toilet roll tubes or disposable cups
- 10 rubber bands
- 10 paper or fabric circles
approx. 3cm wider than the tube tops
- Marbles, Buttons, Toothpicks, Paperclips, Pennies



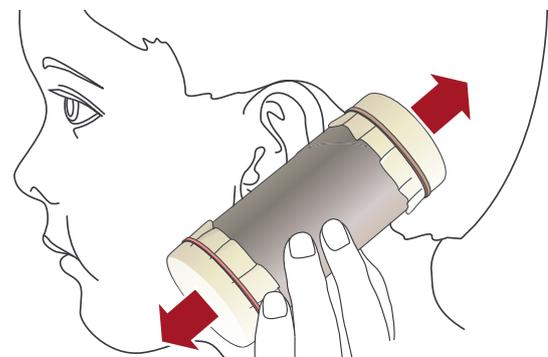
1. Place a paper/fabric circle over the end of a tube. Secure it to the tube with a rubber band.



2. Drop a few of the buttons into the tube. Close the top of the tube with another paper/fabric circle and rubber band.



3. Repeat for every tube, putting different objects in each.



4. Mix the tubes up. Give the tubes to a friend and have them shake them. Can they figure out what's inside by how it sounds? If they are struggling, give them a few options to help.

Extension

Take a vote on what the tubes contain
Draw a picture of what objects you think are inside the tubes

Explanation

Sounds are produced when objects vibrate. The vibration produces a sound wave which travels through the air and into your ear where your brain

converts it into a noise. What noise the sound makes depends on the vibration that produced it.

In this experiment, when the tubes are shaken, the objects hit against the

sides of the tube and the paper ends causing them to vibrate and produce a noise. The different shapes, weights and materials of the objects each cause a different vibration and so make different sounds.

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