The Straw Flute

**Objective**
Participants will create their own straw flutes and investigate how changing distance affects the sounds that are produced.

**What You Need**
Straw
Scissors

**To Do and Observe**
1. Use the scissors to cut the tip of the straw to a point.
2. Gently chew on the pointy end of the straw to soften the tip, and get the edges to be bending together. Stop when the tips are almost touching each other.
3. Put the pointy end of the straw in your mouth and blow really hard. Don’t touch you’re your tongue or teeth to the pointy ends. Allow them to vibrate. This might take some practice, but when it works you will hear a really loud sound from the flute.

**What's Going On**

When you blow on the end of the straw, the two pieces of the tip vibrate together. Vibration is necessary to make sound. The vibration travels down the straw, and reflects up from the end. This sets up a wave in the air in the straw; the vibration will bounce back and forth between the two ends. The vibration moves through hair molecules in the atmosphere until it hits your ear drum. It is this vibration that you are hearing! Changing the length of the straw (by clipping it off, or by making a sliding straw trombone) changes the time necessary for the vibration to travel up or down the straw, and so changes the pitch. And making a hole in the straw, so it is like a real flute, lets the vibration bounce off from where the hole is, which will also change the pitch!

**Parent/Teacher Tips**

Try cutting the non-pointing end of the straw off. What does this do the tone that is created? Participants can also try cutting holes in the straw to make it more like a real flute. You can also have the participants this activity using straws that have different diameters. Does this make a difference? Another possible variable would be to change the angle at which you cut the tip of the straw to see if it alters the sound that is produced.