

Make your own double-reed instrument from a straw, and learn the names of double-reed instruments in the orchestra!

Standards listed on next page

Supplies:

***Supplies Available, order [here](#)**

- Straws*
- Spoon or something to flatten with
- Scissors
- Science log or notebook

Objective

Learn the qualities of reeds and double reed instruments by crafting a straw double-reed.

Outline of Video

1. We will use a straw, scissors, and spoon to make a our own type of “double reed”
 2. Use your fingers to flatten one end of the straw
 3. Use your spoon or flattening tool to smash down the same end further
 4. Trim off the corners of the flat end of the straw– just barely! (2:15)
5. To play your new instrument, curl your lips over the teeth, and press your lips tightly around the flat end, blowing a lot of air. If you have difficulty, make adjustments to where you place your mouth or how flat the straw is. (3:16)
6. Make a hypothesis: if we cut the straw shorter, will it change the sound? If so, would the new pitch be higher or lower? Write this down in your log. (4:00)
 7. Watch Miss. Liz demonstrate cutting the straw shorter (4:25) and revisit your hypothesis. The pitch is now higher.
 8. Why do you think the pitch became higher when the straw was cut? (5:09)
 9. The shorter the air column, the higher the note.
10. Make another hypothesis: if another straw is inserted into the mouthpiece of the current straw, would the resulting pitch be higher or lower? (5:48)
 11. Listen to the example of this and discuss why the pitch became lower when another straw was added. (6:17)
 12. The air column became longer which causes the pitch to lower (because more air is in the column vibrating at a slower pace).
13. Play along on your double reed instrument. (6:48)
14. Consider which orchestra family you think a double reed instrument would belong to: strings, percussion, brass or woodwinds. (8:00)

15. The double reeds are in the Woodwind family.
16. Examples in the orchestra: oboe, bassoon, English horn, contrabassoon
17. Watch Principal Oboe Dwight Parry discuss the oboe.
18. DIY: Make a few double-reed instruments using straws and scissors, but with different lengths and order them from lowest pitch to highest.

Kentucky Standards:

- K-PS2-1, K-PS2-2. Simple tests can be designed to gather evidence to support or refute student ideas about causes.
- KPS2-1. Scientists use different ways to study the world.
- KLS1-1. Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
- K-LS1-1. Patterns in the natural and human designed world can be observed and used as evidence.
- K-ESS3-3. Events have causes that generate observable patterns.
- K-PS3-1. Make observations (firsthand or from media) to collect data that can be used to make comparisons.
- K-LS1-1. Scientists look for patterns and order when making observations about the world.
- 1-PS4-1 Science investigations begin with a question. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
- 2-PS1-4. Scientists search for cause and effect relationships to explain natural events.
- 3-LS1-1. Patterns of change can be used to make predictions.
- 3-LS2-1. Construct an argument with evidence, data, and/or a model.
- 3-LS3-2,3-LS4-2. Cause and effect relationships are routinely identified and used to explain change.
- 4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.
- 4-PS3-4. Science affects everyday life.

Ohio Standards:

- K.PS.2: Some objects and materials can be made to vibrate and produce sound
- 3.PS.3: Heat, electrical energy, light, sound and magnetic energy are forms of energy.
- 5.PS.2 Light and sound are forms of energy that behave in predictable ways.