

# The Water Drum: The Channel to Connect One's Spirit with Earth



## Overview

For centuries, the water drum has been used during Native American ceremonies. It represents the circle of life and allows one to connect with the earth. During this lesson, students will have an opportunity to explore sound energy, by examining the structure of the most influential drum of the Cherokee Tribe, the water drum. Students will discover how water inside a drum can affect the pitch of the sound waves and how sound differs depending on the amount of liquid in the drum. Students will put together a model of the water drum to compare the sounds of the drumbeats.

## Education Standards:

### TEK 5.6A

**Force, motion, and energy.** The student knows that energy occurs in many forms and can be observed in cycles, patterns, and systems. The student is expected to:

(A) explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy

## Materials Needed:

Per group (2-4 students):

- Press 'N Seal plastic wrap
- 20 ounce plastic tumblers (each group will need 2)
- Rubberbands (2 per group)
- 2 unsharpened pencils to use as drumsticks
- Water (12 ounces)
- [Cherokee Drum Music](#)

## Vocabulary

Pitch

Sound waves

Vibrations

Air molecules

Membranophone

Membrane

## Student Objectives

- Students will learn that air molecules vibrate against each other to form sound waves on a drum.
- Students will construct a drum with water and a drum without water.
- Students will determine the amount of water inside a drum to alter the pitch.
- Students will identify high and low pitch sounds.
- Students will understand the relationship between the impact of a hit (hard or soft) to the sound of the drum (loud or not so loud).

## Activity

1. Have students listen to the Cherokee Drum music for a couple of minutes. Ask students to share with an elbow partner: **How does this music make you feel? What instruments do you hear?** Guide students to identify the drums and to discuss how they work.
2. Teacher will then have students do a quick vocabulary word/meaning match to review the vocabulary words. And to do a mini lesson on sound waves and vibrations. Teacher will show diagram of sound.
3. Teacher will then have students follow the directions on how to construct a drum:

First you will need a rubber band, a pen or pencil, a plastic tumbler (20 ounce cup) and a sheet of plastic cling paper, large enough to cover the top of the cup. To assemble the drum, lay the plastic Press 'N Seal wrap across the top of the cup and secure it with the rubber band. Students will then make a second drum, but this time will add 12 ounces of water to the cup before securing the wrap. Have the students use pencils as drumsticks to strike the plastic wrap paper.

4. Ask the students to drum on both and to share with their partners what they notice about each drum. Students will complete a Venn Diagram to compare the drums.
5. Teacher will have the students test different amounts of water and have students take turn hitting the drum hard and soft. Students will compare the pitch of the drums.
6. Closing: Exit Ticket-- share 3 things that you learned about Sound energy with drums.

## Extension

Students can test other drum “membranes” such as balloons, wax paper, and other materials to observe how the sound changes.

