**Rainstick — the sound of raindrops**

**Grade Level:** 4-6  
**Classroom Time:** 45 minutes  
**Materials:**  
- Sample Rainsticks (1 wooden, 1 paper)  
- Yarn needles (6)  
- Glue (7)  
- Cardboard Tubes*  
- Toothpicks*  
- Fill material: rice, corn, beans*  
- Materials to decorate the outside*: feathers, foam shapes, colored thread, beads  
- Paper cups to hold supplies*  
- Masking tape**consumables

**Objectives:**  
1. Students will learn to follow a step by step procedure while making a rainstick.  
2. Students will experiment with materials to produce a desired sound.  
3. Students will learn about Native American rainsticks.

**Teacher’s introduction to the activity:**  
The Sound of a Rainstick: The rainstick is a tubular rattle that early people used as a sound-producing instrument. In some places the rainstick is used as a percussion instrument and in other places it is a traditional instrument associated with the onset of rain.

The rainstick is a hollow tube with an unusual internal structure. The internal structure is made by inserting pegs into the tube in a spiral stair step formation. The tube is filled with dry materials such as corn, rice, beans, pebbles, seeds, shells. The ends of the tubes are sealed. The sound made by the instrument varies depending on what is used for the tube, tube length, tube circumference, the internal design of the pegs and the materials within the tube. The pegs mute the sound – the more pegs the more the sound resembles a light rain. How the instrument is played influences the sound – shaken versus tilted.

The source of sound when a raindrop hits a liquid surface is the resonance of the excited bubbles that are trapped underwater. These oscillating bubbles are responsible for most liquid sounds, such as running water or splashes, as they actually consist of many drop-liquid collisions.

The shape of raindrops was studied by Phillip Lenard in 1898. He found that small raindrops (less than about 2 mm diameter) are approximately spherical (round). As they get larger (to about 5 mm diameter) they become more spherical. Beyond about 5 mm they become shaped like a parachute; a less stable shape. On average, raindrops are 1 to 2 mm in diameter.
**Instruction:**
1. Draw a spiral line around the tube with dots ½ inch apart.
2. Poke a toothpick hole on each dot. If you want a string hanger, make the holes for that too.
3. Cut 2 circles of paper to cover the ends of the tube. Tape or glue paper circle to one end.
4. Stick toothpicks into each hole all the way across the inside of the tube and touch the opposite side. Break off any toothpick ends that protrude from the tube.
5. Wrap the exterior of the tube with masking tape, overlapping each consecutive row.
6. Add filler such as corn or rice.
7. Thread string for a hanger through the holes.
8. Tape or glue paper circle to cover the open end.
9. Decorate the exterior of the tube.

**Variations:** Decorate your rainstick with Native American symbols, or make it out of all natural materials.

**Rainsticks**

Native Americans have made rainsticks from dried cactus stems. The thorns are pulled out of the dried cactus stem, reversed, and then pushed back in. Small pebbles or gravel are used inside of the rainstick. The pebbles striking the thorns produce the sound of falling rain. Below are Native American symbols that students may use to decorate a rainstick.

**Myths, dreams, symbols.** Retrieved from:
Build Your Own Rainstick

As people build rainsticks from materials found in the environments in which they live, you too can create your own rainstick with things available within your home.

What you'll need
- **Cardboard tubes** from paper towels or gift wrapping, mailing tubes
- **A tool to punch holes in the tube**, such as a drill or awl
- **Small hammer**
- **Toothpicks or flat head nails** (1 inch diameter tube, 7/8 inch nail)
- **Glue**
- **Masking tape**
- **Wire cutters or sturdy scissors**
- "Fill" seeds, pebbles, rice, dried beans, shells, beads and so forth.

**Materials to decorate the outside of the tube:**
- paint, crayons, sparkles, sand, etc.

The Steps
1. Drill or poke holes in the cardboard tube. Be careful not to collapse the tube by pressing too hard. Creating a spiral staircase pattern, place the holes about one inch apart. Drill the holes through one side only or all the way through both sides of the tube. If you are using nails, it is not necessary to drill holes.

2. Push the toothpicks through the holes. Leave a little bit of the toothpick (a nub) remaining outside the tube. If holes were drilled straight through the cylinder, push the toothpick all the way through the tube. Inserting the toothpicks to different lengths will produce a variety of sounds.

If you are using nails, insert nails that are slightly shorter than the diameter of the tube in a spiral pattern. A small hammer may be useful.
3. Apply glue to the nubs and allow to dry. Cut off the nubs if they stick out more than 1/4 inch from the tube. Or, seal the nail heads with glue or wrap the entire tube with masking tape.

4. Seal one end of the tube with masking tape. Pour in the fill. Cover the open end of the tube with your hand and invert it. Close your eyes and listen. Add more fill or take some away to create a sound that is pleasing to you. Cover the other end of the tube with masking tape.

5. You may wish to decorate your rainstick by coating it with glue and rolling it in sand. (Messy, but it provides a wonderful texture for the surface of your instrument.) After it dries, you may paint and decorate it with natural objects from your own part of the world. Be creative!

When you slowly turn your rainstick end to end, listen for the sound of the rain. What stories do you hear?

Rainstick Instructions taken from The Rainstick a Fable