

## The Mindful Rainstick Project

Subject: The Mindful Rainstick Project

FCS Sub-clusters: Human Services, Human Development, Education & Training, Health Sciences, Arts, Audio-Visual Technology, Hospitality & Tourism

Targeted Grade Level: 5-12

Main Topic: Resource Management, Wellness, Consumer Sciences, and Creative Expression

Sub-Topics: music, art, recycling, cultural understandings

List of Materials:

- Recycled Paper Towel/Wrapping Paper Tubes
- Toothpicks (lots!) or Bamboo Skewers
- Cardboard and Duct/Masking Tape
- Filler (Rice, dried beans, small pebbles, dry pasta)
- Paper Mache supplies (flour, water, newspaper)
- Acrylic Paint, Brushes, Sealer/Mod Podge
- Push Pins
- Scissors, Wire Cutters (for snipping toothpicks)
- Projector/Smartboard

Targeted Learning Objectives:

**Resource Management:** Apply principles of reduce, reuse, and recycle by transforming a waste material (paper tube) into a functional and decorative item.

**Human Development:** Recognize and apply auditory sensory techniques (sound) as a tool for stress management and mindful relaxation.

**Consumer Sciences:** Demonstrate safe and effective use of tools (e.g., awls, scissors, glue guns) and materials (paper mache, toothpicks) to complete a design project.

**Creative Expression:** Plan and execute a personal decorative design (art) that reflects cultural appreciation or personal aesthetic.

Lesson Plan:

Day 1:

Introduction (10 min): Hook: Play a recording of an authentic rainstick. Show a short video of the sound. Ask students: "How does this sound make you feel? What does this sound remind you of?" Introduce the project and the cultural/wellness background.

Discuss the origin of the rainstick, often attributed to the indigenous people of Chile and Peru (Atacama region), and similar instruments used in other cultures (like Aboriginal communities in Australia). Emphasize that we are using this instrument to honor cultural

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history while practicing recycling and wellness. (Hispanic Heritage Month is September 15 - October 15)

Discuss the cost and environmental impact of purchasing a rainstick vs. making one from upcycled materials.

The Science of Sound (10 min): Explain the structure. The sound is created by seeds or beans cascading around internal pegs. Introduce the Fibonacci Sequence (1,1,2,3,5,8,13... ) and the Golden Ratio. Explain that arranging the internal toothpicks in a Fibonacci spiral (or helix) within the tube creates the most natural, random, and continuous sound of rain by maximizing the interaction points. Show short video of rainstick project and how it sounds when finished.

Construction Demo (10 min): Live or video demonstration of how to spiral the push pin holes, emphasizing safety (pushpins/glue) and then inserting the toothpicks.

Construction Phase (30 min):

Instruct students to lightly mark a spiral path down the tube or follow the natural folds in the tube.

Using a pushpin thumbtack to poke holes along the spiral path following an increasing Fibonacci sequence density (e.g., 5 pins in the first segment, 8 in the next, 13 in the next, etc., depending on tube length).

Insert the toothpicks into the holes. Apply glue to each toothpick and let dry overnight. Snip off the sharp exterior ends flush with the tube surface.

Day 2:

Filling and Sealing (15 min): Secure one end of the paper towel tube with cardboard and cardboard circle from recycled cereal box and heavy tape or layers of masking tape. Add the filling (rice, beans, lentils, navy beans, limas) or pebbles—various fillings produce different sounds). Seal the final end cap securely.

Students add the "rain" (fill) and test the sound, adjusting the amount of rice/beans to achieve the desired effect. They seal the final end. Acoustic Check: Discuss how more fill/more pins changes the "rain" duration.

Paper Mache Prep (15 min): Review paper mache technique (flour/water paste and newspaper strips). Discuss how this step adds strength, seals the holes, and creates a smooth, recycled base for painting. Paper Mache Recipe

Construction Phase 2 (35 min): Students paper mache the entire tube, ensuring the ends are completely sealed and the exterior is smooth. (Allow to dry overnight/next day).

Day 3:

Decoration (30 min): Once dry, students paint a base of brown tones to represent wood grains and let dry. Then students decorate their rainstick using paint, yarn, jute, acrylic markers or

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other art supplies. Encourage designs that are personally calming or inspired by nature/cultural patterns (avoiding appropriation).

### Reflection Component:

Wellness Introduction (10 min): Mindfulness Practice: Use the completed rainsticks for a 3-minute guided breathing/grounding exercise. Practice using the rainstick mindfully. Close eyes and focus only on the sound. Discuss how this sound can serve as an auditory anchor during stressful moments. Students journal a 3-sentence reflection on: 1) What was the most challenging step? 2) How does the sound affect their mood? 3) How can they use this object for wellness at home?

### Independent/Guided Activities:

Instructions: Now that you have completed your rainstick, please reflect on the process, your use of resources, and the mental health application of your finished instrument. Write your answers in full, thoughtful sentences.

#### Part 1: Resource Management and Creation

Describe one specific challenge you encountered during the construction of your rainstick (e.g., getting the toothpick pattern right, managing the paper mache, or sealing the ends).

How did you apply problem-solving skills to overcome it?

Your rainstick was made using a recycled paper tube. In what other areas of your daily life (at home or school) could you apply the "reuse" principle of resource management to save money, materials, or time?

#### Part 2: Math, Sound, and Mindfulness

How did following the Fibonacci pattern impact the final sound quality of your rainstick? If you changed the pattern, what was the outcome? (Be specific about the sound—e.g., Is it a continuous stream, or does it sound more like individual drops?)

Take a moment right now: Hold your finished rainstick and slowly turn it over twice. Close your eyes while doing this.

Describe the feeling or emotion you experienced while listening only to the sound.

How could the use of this auditory stimulus serve as a grounding technique or a momentary break when you feel stressed, overwhelmed, or need to reset your focus during a busy day?

### Other Labs/Activities:

Used in conjunction with the BBBR curriculum.

### Notes:

Read over the lesson plan, be familiar with the artistic work from Fibonacci for the spiral shape he is famous for in his work. Read through the accommodations. I had to use just about all of them a lot or a little.

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Printable/Resources: [The Mindful Rainstick Lesson Plan - Carrie Snyder-Renfro](#)