

# Upcycled Science: Create your own musical instrument



**Traditionally made** from the skeletons and spines of cacti, rainsticks recreate the sound of falling rain and were believed to be used by ancient cultures to summon rainstorms. With just a few household items, children can create their own version of this great percussion instrument.

## Items Needed:

- 1<sup>3</sup>/<sub>4</sub>-inch diameter cardboard tube (paper towel roll, aluminum foil or plastic wrap tube, wrapping paper tube, etc.)
- 50 one-inch finishing nails for every 10 inches of tube
- Paperboard (old cereal box, cardstock, etc.)
- Scissors
- Marker
- Tape
- Handful of uncooked rice (dried corn, beans, or seeds will work, too)
- Optional: paint, decorative tape, stickers, stick-on jewels

## Directions:

- Grab your cardboard tube. If you only have short toilet-paper rolls, tape two or three together. The longer the better!

- Make two end caps by tracing the end of the tube onto paperboard and cutting out the circles.
- Seal off one end of your tube by taping on one circle cap. Make sure there are no gaps.
- Carefully push all the nails into the tube randomly, about an inch apart all the way up, down, and around the tube. Note: If you're using a thicker cardboard tube, like from a foil roll, you may need a hammer.
- Pour all the rice into the tube.
- Close off the open end of the tube by taping on a second circle cap. Make sure there are no gaps.
- Wrap the entire tube in tape to secure all the nails.
- Optional: personalize your tube with gems, paint, stickers or tape. Then, enjoy your new musical instrument by turning your stick over to hear the "rain"!

**What's happening?** When the rainstick is tipped, the grains of rice hit the nails, creating vibrations we hear as sound. Different-sized grains create different vibrations or different sounds. Since the many grains of rice in your tube hit the nails at random intervals, these sounds simulate the sound of rain.

**Challenge:** Try creating patterns with your nails, or mixing different-size grains or pebbles together in one stick to see how the sound changes.