

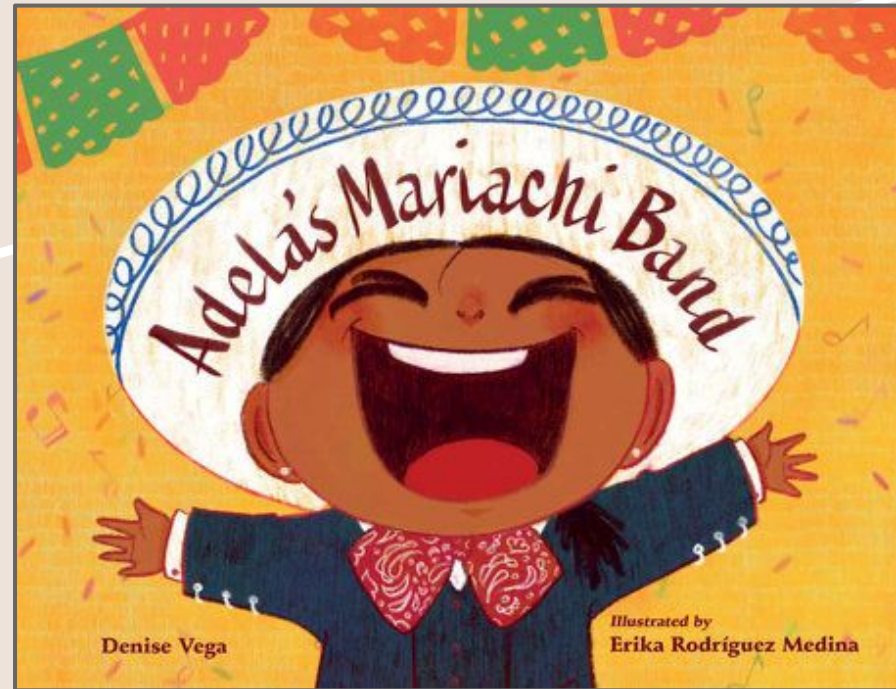
Children's Book Festival Educator Resource: “Rubber Band Guitar Vibration Activity”

Adela's Mariachi Band

Written by: Denise Vega

Illustrated by: Erika Rodriguez Medina

Developed by Alina Severson, Ella Bode, & Hadley Smith for CU Boulder's Children's Book Festival 2025, Open Education Resource, Creative Commons.
Available at colorado.edu/event/bookfest



Grade and Colorado Academic Standard

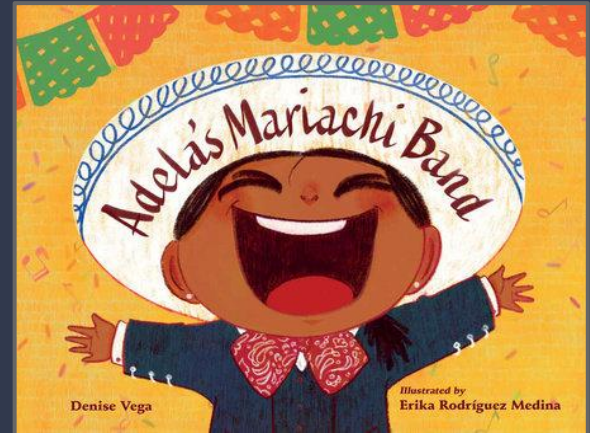
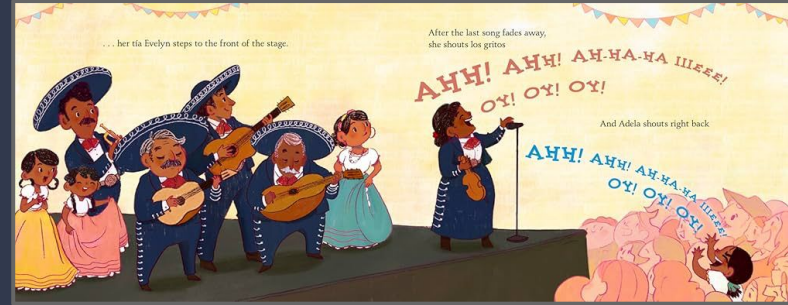
Grade Level: 1st

Standard: Physical Science

Grade Level Expectation: Sound can vibrate and vibrating matter can make sound.

Evidence Outcome: Plan and conduct investigations to provide evidence that vibrating materials can make a sound and that sound can make materials vibrate. (1-PS4-1)
(Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string)

- Colorado Academic Standard information retrieved from <https://www.cde.state.co.us/apps/standards>.
- View the full standards at <https://www.cde.state.co.us/standardsandinstruction/standards>



Adela's Mariachi Band

Activity

Rubber Band Guitar Vibration Activity



In this hands-on activity, first graders will explore how sound is created by vibrations. After listening to a read-aloud of *Adela's Mariachi Band*, students will build a simple rubber band guitar using a tissue box and rubber bands. Through this activity, they will be able to hear, feel, and see that sound is produced by vibrations. Students will experiment with the tightness and thickness of the rubber bands to observe how these factors change the pitch, and they will test how plucking the strings harder affects the volume. Finally, they will explain how Adela's instruments make sound using key vocabulary such as *vibration* and *pitch*.

What is a Mariachi Band?

Video Example:

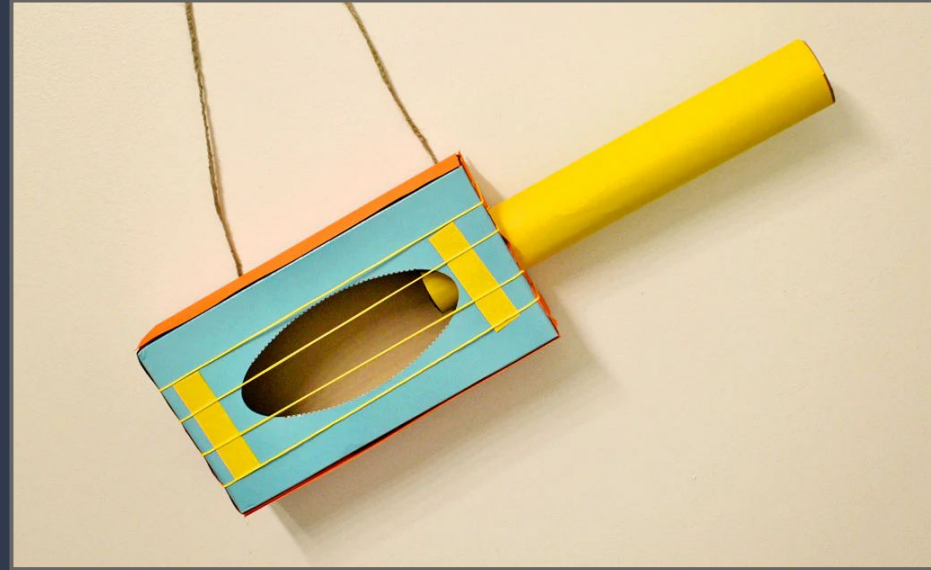


Things to think about while watching the video:

- What kinds of instruments are they playing?
- Did you connect any of their instruments in the video to the instruments in the book?
- How did the mariachi players play the guitar?

Materials:

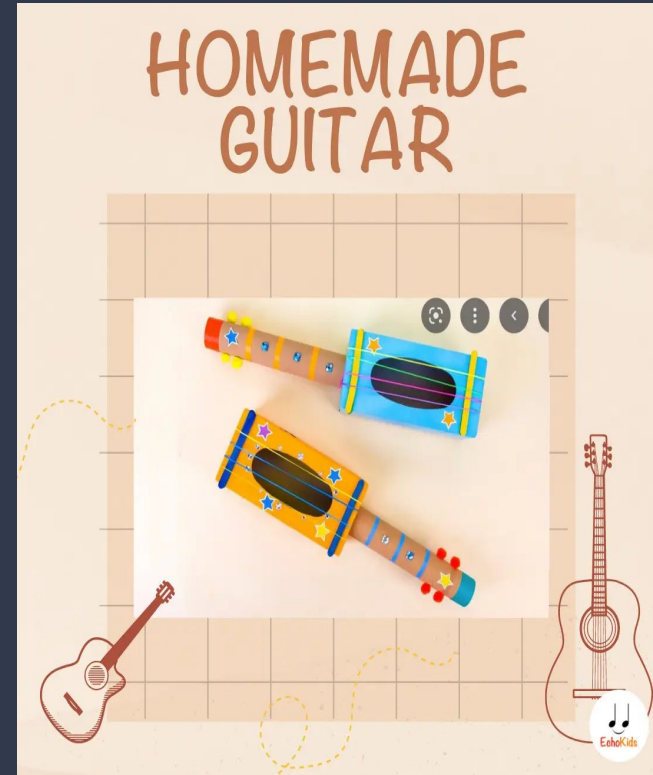
- Rubber bands (6)
- Empty tissue box and empty paper towel roll **Class set needed
- Crayons (to decorate)
- Tape or glue
- Scissors



Online Resources: <https://www.youtube.com/watch?v=bVmVVR9gU-s>

Steps Part 1:

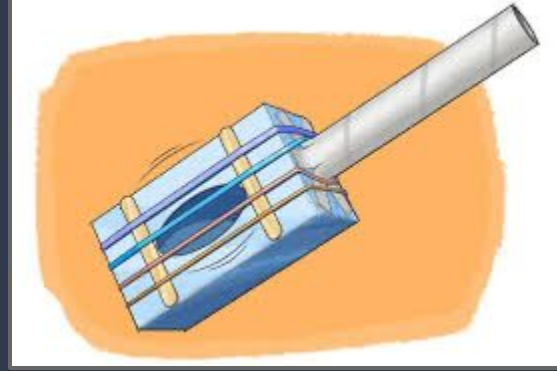
- **Connect to the story**
 - After reading the story, discuss how Adela's guitar makes sound when the strings move. Explain that the movement of sound is called a vibration.
 - You can show how clapping moves air which is also considered a vibration.
- **Prepare the Guitar Box**
 - Give each student an empty tissue box, making sure that the hole at the top is open (This will act as the hole in a guitar).
 - You can let your students color and decorate their boxes with crayons.
- **Add the strings**
 - Stretch about 5 rubber bands of different widths around the box, making sure to put them over the hole in the box.



Steps Part 2:

- **Test the vibrations**
 - Have your students pluck each band one at a time (explain that they should see the band vibrating or “shaking”).
 - Ask questions like, “What do you notice about the bands?” or “What can you feel when you pluck the band?”
- **Connect what they have created back to real instruments and how they vibrate**
 - Ask questions like “How is our box guitar like Adela’s guitar?” emphasizing that musical instruments make sound because their parts vibrate.

Additional Suggestions



Extending the activity further or for a higher grade level:

- When choosing rubber bands, have some thicker ones and some thinner ones to vary the sound of the strings.
- Attach the rubber bands (guitar strings) to small bolts that can turn, so the strings are able to tighten or loosen, which will adjust the sound of your guitar.



We hope you can join us on Saturday, November 8 at the Boulder Public Library to meet Denise Vega and hear more about *Adela's Mariachi Band* in-person...along with other authors and illustrators! For more information, visit <https://www.colorado.edu/event/bookfest>

The CU Boulder School of Education and Boulder Bookstore present the

2025 Children's Book Festival

Saturday, November 8 | Boulder Public Library



SALINA YOON
I Like Cheese!

NYASHA WILLIAMS
Once Upon a Wanzania

DENISE VEGA
Adela's Mariachi Band

PAM MUÑOZ RYAN
El Niño

RITA WILLIAMS-GARCIA
One Crazy Summer

SHAREE MILLER
One Crazy Summer

Join us on Saturday, November 8, 2025 | 10 a.m. - 4 p.m.

 **Boulder Public Library (Main Branch) - 1001 Arapahoe Ave.**
Free parking available

This **free event** includes author talks, a panel for educators, book sales and signing, children's activities and more. Come for part of the event, or stay for the day!

Free educational resources available on our website. Continuing Education Units (CEUs) available for teachers and librarians.

The CU Children's Book Festival is supported by a grant from the CU Office for Public and Community Engaged Scholarship (PACES)



See the schedule & register:
colorado.edu/event/bookfest

BOULDER PUBLIC LIBRARY

 School of Education
UNIVERSITY OF COLORADO BOULDER

 **Boulder Bookstore**