
Instructor: **Ailen Borres** ***Week:*** **6**

Subject: **Science**

Sound and Vibrations 1: Rubber Band Guitar

Description of Activity

- Young students know that they can hear sounds, but do they know what *causes* sounds? In this lesson they will learn that sounds are caused by vibrations, and they will build a fun musical instrument of their own.
- In the Sound and Vibrations 2: Make Sprinkles Dance, students will learn that sounds can also cause vibrations.

Learning Objectives:

After this lesson, students will be able to

- Understand that vibration causes sound
- Make a sound and identify what vibrates to cause the sound

Standards:

STANDARD: 3	Students investigate energy and how it is transferred and transformed within and between systems.
BENCHMARK: PS1 3.4	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

Materials Required:

For each group:

- Tissue box with single hole in the top (not the kind with a hole that wraps around two sides), or small cardboard box with hole cut in the top. If using cardboard boxes, you will also need a box cutter or scissors (adult use only) and tape.
- Rubber band that is big enough to stretch around the box and over the hole
- Pencils, markers, or crayons (2)

Learning Activities:

- In this lesson plan, students will first explore how sounds cause vibrations using vibrations that are easy to see (with rubber bands). Then they will explore other vibrations that are harder to see, like knocking or talking. Finally, they will make their own sound and explain what vibrates and causes the sound.
- Prep Work (10 minutes)
  If you are using tissue boxes, make sure all the tissues are removed.
  If you are using cardboard boxes, use a box cutter to cut a hole in the top, and tape the lid flaps shut.
    - https://www.sciencebuddies.org/teacher-resources/lesson-plans/sound-vibrations-rubber-band-guitar

Safety:

Always wear a Safety glass in a lab setting.

References:

- https://www.sciencebuddies.org/teacher-resources/lesson-plans/sound-vibrations-rubber-band-guitar
- Website: www.guitarbuilding.org
- ASDOE Curriculum

Assessment: *Formative/Summative*

- Have students experiment with their rubber band guitars to see what different types of sounds they can make. What happens if you pluck the rubber band harder? What happens if you move the pencils closer together or farther apart?

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