

My Group

Our Task

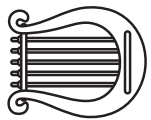
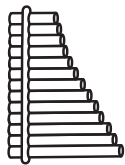
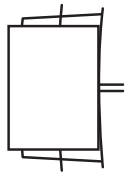
Name

Tools We Used

How Did We Do?

Our Plan

What We Designed



Really Good Stuff® Instructional Guide
STEM-tivity™ Class Kit - Silly Sounds

This Really Good Stuff® product includes:

- 250+ Rubber Bands, assorted
- 100 Milkshake Straws
- 4 Harp/Banjo Cards
- 4 Work Mats
- 12 Task Cards (4 each of 3 different tasks)
- Storage Box
- This Really Good Stuff® Instructional Guide

Congratulations on your purchase of this Really Good Stuff® **STEM-tivity™ Class Kit - Silly Sounds**—a hands-on activity kit utilizing the inquiry method to heighten your students’ imaginations and engineering skills with engaging activities about sound.

Meeting the Standards

The Really Good Stuff® **STEM-tivity™ Class Kit - Silly Sounds** aligns with the Next Generation Science Standards for Science below. For alignment with other state standards, please refer to our website’s Standards Match.

1-PS4 Waves and their Applications in Technologies for Information Transfer

Students who demonstrate understanding can:
1-PS4-1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
1-PS4-4 Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

K-2-ETS1 Engineering Design

Students who demonstrate understanding can:
K-2-ETS1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
K-2-ETS1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
K-2-ETS1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Displaying and Preparing the STEM-tivity™ Class Kit - Silly Sounds

Before displaying the **STEM-tivity™ Class Kit - Silly Sounds**, make copies of this Really Good Stuff® Instructional Guide, and file the pages for future use. Or, download another copy of it from our website at www.reallygoodstuff.com.

This kit includes enough materials to divide your class into four working groups of up to four students each. The groups can work on the same *Task Card* at the same time allowing them to compare and contrast their designs and models. Or, the groups can work on different *Task Cards* and then present their designs to the class. Divide the materials accordingly.

Each *Task Card* features a main activity on the front and extended activities on the back for each STEM component. Depending on your students’ level, you may need to lead the activities due to text complexity and task difficulty. In addition to the text on the back of each *Task Card*, the text on the front of the *Card* is color-coded to identify steps in the task as Science based (blue), Math based (red), or Engineering based (green). Store all of the materials in the *Storage Box* when activities are completed.

Introducing the STEM-tivity™ Class Kit - Silly Sounds

Gather students together and review the basics of how vibrations make sound. Present the following scenario as background for why students will be working with the **STEM-tivity™ Class Kit - Silly Sounds**.

Miss Melody is a music teacher at an elementary school, and she helps with the school band. She wants to make the band the best it can be and add more instruments to make new sounds.

Explain to students that as they complete different tasks from the Kit, they will be working with vibrations to help Miss Melody solve her problems. Introduce new vocabulary to familiarize students with words they will encounter on the *Task Cards*:

All instructional guides can be found online.

Really Good Stuff® Instructional Guide

STEM-tivity™ Class Kit - Silly Sounds

- *vibrate*: to move back and forth or from side to side rapidly to produce sound
- *sounds*: vibrations that travel through the air and can be heard when they reach the ears
- *pluck*: to create sound by pulling strings of a stringed musical instrument
- *device*: a piece of equipment to serve a special purpose
- *signal*: an act, event, or word that starts an action
- *fret*: a ridge that is fixed across the fingerboard of a stringed musical instrument
- *fingerboard*: the part of a stringed instrument that the fingers press against to change the pitch

String a Harp Task Card

Copy and distribute the *Silly Sounds Reproducible* as well as the *Task Card* with the green header, a *Work Mat*, a *Harp/Banjo Card*, several *Rubber Bands* (excluding the small white and tan rubber bands), a *Straw*, and *scissors* to each group.

- **Essential Question:** Read the header at the top of the *Task Card* to create a setting before asking the essential question of *What kind of instrument can you create to make new musical sounds for the band?* Read the instructions on the *Task Card* aloud to students. Answer any questions students may have about their task.
- **Available Tools:** Introduce the groups to the *Rubber Bands*, *Harp/Banjo Card*, *Straw*, and *scissors*, explaining that they are to use these tools to complete the task. Have them fill in the *Tools We Used* section on their reproducibles. If desired, distribute additional materials, such as tape, poster putty, and glue sticks.
- **Make a Plan:** Tell each group to discuss a plan for making their harp. Ask them to draw or write their plan on the *Silly Sounds Reproducible*. Circulate and check the plans as students begin the task.
- **Conduct the Task:** Instruct each group to use the materials to build the most interesting musical harp that they can. Encourage them to test the “strings” and arrange them in the order they find most pleasing.
- **Evaluate:** Direct each group to fill in the *What We Designed* section on the *Silly Sounds Reproducible*

with a drawing or photograph of their harp. Ask them to evaluate their task by writing or telling what worked and what didn’t work in the *How Did We Do?* section. For young students, have them draw a simple smiley or frowny face to evaluate. Have each group compare and contrast their harp with other groups.

- **Share Ideas:** Have students present their finished task to the class and talk about what worked and what they might be able to do better.

Extension: Encourage each group to create their own simple tune by placing dry-erase colored notes, the same colors as their harp “strings,” on the music-staff side of the *Work Mat*. Have the groups share their tunes.

Choose from the Science, Technology, Engineering, and Math activities on the back of the *Task Card* to enhance your students learning.

Panpipe Parade Task Card

Copy and distribute the *Silly Sounds Reproducible* as well as the *Task Card* with the pink header, 20 *Straws* (5 for each student), a permanent marker, *scissors* (to cut the straws to varying lengths), and tape to each group.

- **Essential Question:** Read the header at the top of the *Task Card* to create a setting before asking the essential question of *What kind of instrument can you make that vibrates and makes sound when you blow into it?* Read the instructions on the *Task Card* aloud to students. Answer any questions students may have about their task.
- **Available Tools:** Introduce students within groups to the *Straws*, *scissors*, and tape, explaining that they are to use these tools to complete the task. Discuss how they will need to use the *Ruler* on the *Work Mat* as well. Have them fill in the *Tools We Used* section on their reproducibles.
- **Make a Plan:** Tell each student to discuss a plan for making his or her panpipe. Ask each student to draw or write his or her plan on the *Silly Sounds Reproducible*. Circulate and check the plans as students begin the task.

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STEM-tivity™ Class Kit - Silly Sounds

- **Conduct the Task:** Instruct students to use the materials and have each student create his or her own panpipe from the *Straws*. Have students return the unused *Straw* pieces to the *Storage Box* for activities on another *Task Card*. Instruct each student to use the permanent marker to write his or her name on the panpipe. Encourage them to test their panpipes by blowing into the *Straws* to create sounds and then discuss what they hear with other group members.
- **Evaluate:** Direct each student to fill in the *What We Designed* section on the *Silly Sounds Reproducible* with a drawing or photograph of his or her panpipe. Ask students to evaluate their task by writing or telling what worked and what didn’t work in the *How Did We Do?* section. For young students, have them draw a simple smiley or frowny face to evaluate. Have students compare and contrast their panpipes with one another.
- **Share Ideas:** Have students present their finished panpipe to the class and talk about what worked and what they might be able to do better.

Extension: Encourage students to have a panpipe parade to show off their work and then take their panpipes home to share with their families.

Choose from the extension activities on the back of the *Task Card* to enhance the task with additional activities featuring Science, Technology, Engineering, and Math.

Start a Song Task Card

Copy and distribute the *Silly Sounds Reproducible* as well as the *Task Card* with the blue header, assorted *Rubber Bands*, assorted-sized *Straws*, and *scissors*. Provide additional materials, such as flex straws, small boxes, oatmeal boxes, water bottles, or cardboard for creating sounds with vibration.

- **Essential Question:** Read the header at the top of the *Task Card* to create a setting before asking the essential question of *What kind of sound-making device can you create to let everyone know it’s time to start a song?* Read the instructions on the *Task Card* aloud to students. Answer any questions students may have about their task.

- **Available Tools:** Introduce the groups to the *Rubber Bands*, *Straw* pieces, and other collected materials, explaining that they are to use these tools to complete the task. Have them fill in the *Tools We Used* section on their reproducibles. If desired, distribute additional materials, such as tape, poster putty, and glue sticks.
- **Make a Plan:** Tell each group to discuss a plan for creating a sound-making device for Miss Melody. Ask them to draw or write their plan on the *Silly Sounds Reproducible*. Circulate and check the plans as students begin the task.
- **Conduct the Task:** Instruct students to use the materials to create a sound-making device for Miss Melody. Have them take digital photographs of their designs and make two copies.
- **Evaluate:** Direct each group to fill in the *What We Designed* section on the *Silly Sounds Reproducible* with one copy of their digital photograph, and have them provide a caption to identify it. Ask them to evaluate their task by writing or telling what worked and what didn’t work in the *How Did We Do?* section. For young students, have them draw a simple smiley or frowny face to evaluate. Have each group compare and contrast their sound-making device with other groups.
- **Share Ideas:** Have students present their finished task to the class and talk about what worked and what they might be able to do better. Make a color copy of the back of the *Work Mat* to use as a book cover. Have students share their ideas for a title of the booklet, and then write it on the musical staff. Compile the groups’ second digital photograph copies (from the **Conduct the Task** step above) into a booklet to place in your Science Center.

Choose from the extension activities on the back of the *Task Card* to enhance the task with additional activities featuring Science, Technology, Engineering, and Math.