

Alert Sounds

Kindergarten

ELA Unit 1 – Colorful Time with Rhythm and Rhyme

Text Connections: *My Five Senses by Alik* and
Clang! Clang! Beep! Beep! Listen to the city by Robert Burleigh

Design Challenge Summary

Challenge: What will the students be required to do?

In *Clang! Clang! Beep! Beep! Listen to the City* there were many sounds to alert people to different things. Choose 5 items to create a tool that produces a sound to alert you to something. What is this an alert sound for? Is your sound a long sound (like a fire alarm?) or a short sound (like a beep on a cell phone?)

Standards: What standards are addressed?

Science:

- NS.1.K.1 Record observations pictorially, orally, and in writing
- NS.1.K.2 Ask questions based on observations
- NS.1.K.3 Conduct scientific investigations as a class and in teams
- NS.1.K.6 Collect empirical evidence as a class
- NS.1.K.7 Use age-appropriate equipment and tools in scientific investigations
- NS.1.K.8 Apply appropriate rules of safety related to daily activities
- NS.1.K.9 Apply lab safety rules as they relate to specific science lab activities
- LS.2.K.5 Name and describe the five senses.
- LS.2.K.6 Discuss the functions of the five senses

Math:

Mathematical Practice Standards

- K.CC.1 Count to 100 by ones and by tens
- K.G.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three three-dimensional ("solid")

ELA:

- W.K.3 Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
- W.K.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- SL.K.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups
- SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood
- SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.

Result: What will students know, value, and be able to do as a result of the lesson? What's the big idea?

- Know and apply the engineering design loop process.
- Demonstrate ability to modify designs based on observations and predictions.
- Work collaboratively on solving a problem.
- Create a device that produces a sound.

Assessment: What evidence will be used to determine student learning?

- Did they create a tool that produced a sound?
- Did they follow the design loop process?
- Did they work collaboratively?

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Prior Knowledge/Experiences: What prior content knowledge and skills will the students need?

Experiences with the Engineering Design Loop Process

Connections to the Mathematical Practices

Investigations/inquiry in Science

Experiences with different alert sounds (fire alarm, cell phone ring tone, emergency vehicle siren, etc.)

Summary/Connections: How will this design challenge connect with new/future learning, other content areas, real world experiences, etc.?

This lesson will help students develop problem solving skills and collaboration skills that are essential in succeeding in the 21st century. It will allow student the opportunity to transfer and apply skills from various content areas within one task.

As a summary activity, you could engage students in:

W.K.3 Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.

-Write to tell to what does your sound alert me?

K.G.3 Identify shapes as two-dimensional (lying in a plan, "flat") of three three-dimensional ("solid")

- compare and contrast different designs? Are any designs two-dimensional? Are any designs three-dimensional?

Extensions:

Can you make your tool produce a higher pitched sound? A lower pitched sound?

Can you make your tool produce a sound that echoes for 5 seconds?

Materials/Equipment/Preparation: What materials and equipment will students need to successfully complete this design challenge?

Allow students to choose 5 items from an assortment

POSSIBLE ITEMS: (use items available in class room)

plastic or paper cups

paper plates

paper sacks

small bag of beans

small bag of rice

small bag of salt

rubber band

paper towel tube/toilet paper tube

aluminum foil

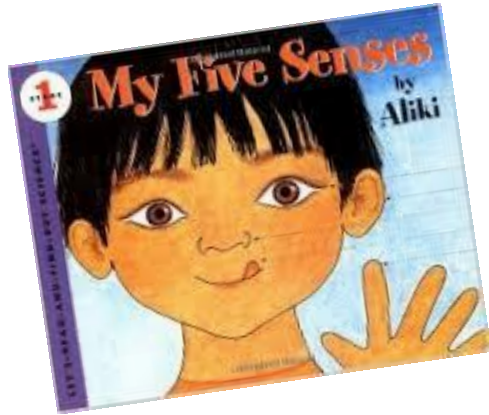
plastic spoons

paper

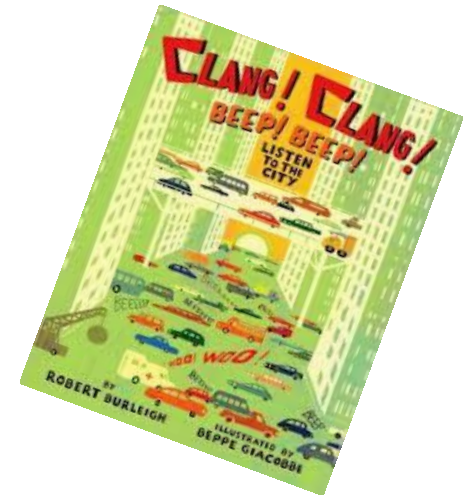
dice or teddy bears (or other math manipulative items)

ADDITIONAL INFORMATION

For practice identifying alert sounds, see the related SMART Notebook file – *Alert Sounds* linked online.



Alert Sounds



Sounds can alert us to many important things.
Today you are going to create a tool to produce
an alert sound.

You may choose 5 items to build your tool.
What does your sound alert me to?

Group Supplies:

Choose 5 items from the assortment available.