

Science of Sound

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Basic Information

Summary	Students will explore the science behind sound; why and how it happens, what makes pitch and tone, and how different materials produce different sounds.
Grade/Level	Kindergarten, Grade 1
Time Frame	Lessons will be conducted over five days, two hours each day. Each daily lesson will include direct instruction, independent explorations, group activities, and a brief break/snack time.
Subject(s)	Art, Music, Science
Topic(s)	
Notes	

Standards And Key Concepts

Standards	AK- Alaska Content and Performance Standards for Students Type of Standards: Content Standards Subject: Arts Standard: A student should be able to create and perform in the arts. Indicator: 1) participate in dance, drama, music, visual arts, and creative writing; Indicator: 3) appropriately use new and traditional materials, tools, techniques, and processes in the arts; Indicator: 5) collaborate with others to create and perform works of art;
Understandings	
Essential Questions	What is sound and where does it come from?
Knowledge and Skills	Students must have a basic understanding of what sound is; it can be loud or quiet and it is made when an object or objects are moved in some way.

Performance Tasks And Assessment

Performance Task	Students will use recycled materials to create a musical instrument that will be used to perform in a group concert at the conclusion of the lessons. Students will use their understanding of how sound is created through movement and vibration when designing their instruments as well as consider the material they are using.
Performance Prompt	
Assessment/Rubrics	Students will be assessed on their design and plan to create an instrument (not on the success of construction or the sound it produces), as well as their dedication to the process of making sound/music.

Learning Experiences And Resources

Sequence of Activities	Day One thru Five: Welcome (repeat each day) <ul style="list-style-type: none">• 5 Minutes: allow time for students to put belongings away and visit with friends (this also provides a window for those who may be running late)• 10 Minutes: set-up the day, provide expectations and the plan for activities (what we are going to learn and why) Exploration (repeat each day) <ul style="list-style-type: none">• 10 - 15 Minutes: students will explore the sounds made through different activities and materials<ul style="list-style-type: none">◦ introduce annoying sound of the day during this time (students will be provided with different objects throughout the week to use and take home) Gather and Focus (individual lesson each day) 15 - 20 Minutes <ul style="list-style-type: none">• Day One: Begin work on K-W-L Chart<ul style="list-style-type: none">◦ ask students what they know about sound - record under K◦ ask students what they want to know about sound - record under W<ul style="list-style-type: none">▪ do not provide answers to questions or make corrections at this point• Day Two: Sound Experiment<ul style="list-style-type: none">◦ metal clothes hanger and string - tie a piece of string to each end of the hanger, hold the string to ears, have a partner tap the hanger
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- what happens?
 - revisit the K-W-L chart and make any changes based on student input
- **Day Three:** Sound Experiment
 - students will make a string telephone and explore how the sound travels along the string
 - revisit K-W-L chart and make any changes based on student input
 - Introduce Instrument Construction Project
 - students will make a plan (a sketch, list of materials, or verbal description based on ability)
 - introduce the activity in which students will design and construct their own instrument
- **Day Four:** Instrument Demonstration and Instrument Construction
 - high school band/orchestra students demonstrate the sound produced through different instruments
 - students will continue/complete the instrument they started during the previous lesson
- **Day Five:** Family Concert and Celebration
 - families will be invited to watch a concert performed with the instruments students created

Movement Break (repeat daily with different noise making objects, music videos, songs)

- **10 Minutes:** students will find the rhythm/beat and replicate with objects while moving about the room (get the wiggles out)

Snack/Break (repeat each day)

- **10 Minutes:** students will eat a small snack, use the restroom, visit with friends

Gather and Focus (individual lessons each day)

- **Day One:** Introduction to Sound
 - **10 Minutes:**
 - read the first 5 pages from *All About Sound*
 - students will explore each of the do it yourself ideas in the book
 - **5 Minutes:**
 - Vocabulary; vibration, sound waves, frequency, echo, resonance, etc.
 - as a group create movements that represent each word
 - **5 Minutes:** video on sound waves
- **Day Two:** How Sound Is Made
 - **10 Minutes:**
 - read the remaining pages in *All About Sound*
 - stopping periodically to check for understanding
 - sound demonstrations (Ric's different instruments)
 - **5 Minutes:**
 - review vocabulary adding any new words with movements
- **Day Three:** Building Instruments
 - **30 Minutes:**
 - students will begin work on their instruments based on their plan and list of materials
- **Day Four:** Building Instruments (continued)
 - **30 Minutes:**
 - students will continue/complete their instruments
- **Day Five:** Jam Session
 - families will be invited to watch a concert put on by students using their instruments

Art (individual lessons each day)

- **Day One:** Blow Painting
 - students will drop paint onto a large piece of paper and use a straw to blow the paint around
- **Day Two:** Sound Wave Painting
 - students will paint different sound waves demonstrating an understanding of long and short waves lengths and the sounds they carry
- **Day Three:** Vibration Art
 - students will make oobleck
 - experiment with dancing oobleck
- **Day Four:** Decorate their instruments
 - students will paint their instruments
- **Day Five:**
 - Family Concert

Clean - up/Dismissal (repeat each day)

- **10 Minutes:** students will clean their area of any mess and gather their belongings before leaving

Differentiated Instruction

Resources

- Materials and resources:
 Instruments/Art Materials:
 recycled cereal boxes (or other small cardboard boxes)
 recycled paper towel/toilette paper rolls
 recycled glass jars
 recycle yogurt/sour cream containers
 rubber bands (various sizes)
 masking tape (various widths)
 wooden craft sticks
 wax paper
 sand paper
 string
 clear tape
 rulers
 markers, crayons, colored pencils
 paints and brushes
 corn starch
 food coloring

straws
Ziploc bags

General Materials:

snacks (granola bars, fruit leather, cheese sticks, apple slices, cupcakes)
water bottles (label and reuse for the week)
Clorox wipes, paper towels
speaker/amplifier

Student Supplies:

noise makers (bubble wrap, slide whistles, referee whistles, whoopie cushions)
piano kits

- Technology resources:
Computer and projector system for videos
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