

Unit 4: Communicating with Sound and Light

WEEK 1 Studios




What is sound?


Children explore making, collecting, and representing sounds with a variety of media. At the Science and Engineering Studio, children continue making sounds, from lessons.


<p>Big Idea</p>	<p>Vibrating materials make sound. Sound makes materials vibrate.</p>
<p>Materials and Preparation</p>	<ul style="list-style-type: none"> ● Studios prompts, cut apart and added to each bin ● Studios Planner ● observation sheets <p>Bring to the whole group meeting only those bins needed for introductions.</p> <p><u>For the Art Studio:</u> Select a few audio clips, either those featured during Text Talk lessons or other music based on environmental sounds. Cue up the recording(s) so that children can access and play them independently.</p> <p>Decide which media to make available based on what will be most satisfying in relation to the chosen music or sound recording, as well as on children’s interest and experience.</p> <ul style="list-style-type: none"> ● technology to play audio recordings ● familiar media and tools, such as paint and brushes, oil pastels, crayons, or markers—one medium, or a choice ● paper of various sizes, weight, depending on media <p><u>For the Building Studio:</u></p> <ul style="list-style-type: none"> ● elastic bands <p>Collect several different materials around which children might place rubber bands (children will add others).</p>

	<p>Note: Activities in the Building and Science and Engineering Studios may overlap and could therefore be combined.</p> <p><u>For the Drama Studio:</u></p> <ul style="list-style-type: none"> ● recording device ● clipboards ● writing tools <p><u>For the Library Studio:</u></p> <ul style="list-style-type: none"> ● <i>Daniel Finds a Poem</i>, Micha Archer Flag pages 9 (“Poetry is when crisp leaves crunch”), 20 (“When the shadows are long...”), and 23 (“That night, moonlight...”). ● Unit 4 and other books ● Sound Categories cards ● clipboards ● writing and drawing tools <p><u>For the Math Studio:</u></p> <ul style="list-style-type: none"> ● music, either to be played from an ipad or other device <p><u>For the Science and Engineering Studio:</u></p> <ul style="list-style-type: none"> ● materials from Science and Engineering lessons ● science journals ● colored pencils <p>Note: Activities in the Building and Science and Engineering Studios may overlap and could therefore be combined.</p> <p><u>For the Writing and Drawing Studio:</u></p> <ul style="list-style-type: none"> ● Recording Sounds sheets ● writing and drawing tools ● sketchbooks <p>Review Studios descriptions below. Decide which studios to introduce explicitly. Prepare the Opening basket and materials accordingly.</p>
<p>Opening</p>	<p><i>This week we are starting a new study, about sound and light. We will be looking and listening carefully, and experimenting a lot!</i></p> <p>Describe and model each studio to the extent needed for children to begin their work.</p> <p><i>Because we are studying and playing with sounds, our classroom might get a little bit loud sometimes, especially during Studios. What do you think we should do about that?</i></p>

	<p>Make agreements and determine processes for checking in about noise level. Let children suggest and initiate a signal for a change in classroom noise level as needed.</p> <p>Hold up the Studios Planner for children to reference. <i>Take a moment to think about which studio you might want to start working in today. Then think about which studio you'll work in if your first choice is too crowded.</i></p> <p><i>Turn and tell your partner your plan and your backup plan.</i></p> <p>Ask a couple of children to share their plans, and dismiss all children to begin working.</p>
Facilitation	<p>As children work, circulate and engage them in conversation about their endeavors. Exploit opportunities to highlight children's connections to the Weekly Question and the unit's Big Ideas. Offer support in the form of material and print resources, strategies, adaptive tools, and consultation with peers.</p> <p>Listen in, observe, and take notes about children's experiences with and observations and questions about sound. Use these notes to plan for upcoming Studios sessions.</p> <p>While children work, consider which piece of work to bring to a Thinking and Feedback meeting.</p>
Closing Studios	<p>Support smooth clean up of studios materials and organization of works in progress. This may require extra time, as children are working with new materials.</p> <p>Facilitate a short, whole group meeting after Studios to discuss children's activities, discoveries, and questions.</p>

<p style="text-align: center;">Art</p> 	<p>Representing Sounds in Art</p> <p><u>Objective:</u> I can represent sounds and how they make me feel in visual artwork.</p> <p><u>Introduction:</u> <i>Often when we listen to music or other sounds, an image is created in our imagination. It might be movement or colors or shapes... Musicians and visual artists use their media to communicate messages, feelings, and moods.</i></p> <p><i>In the Art Studio, you can listen to some sounds/music, and</i></p>
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	<p><i>paint/draw whatever you imagine.</i></p> <p><u>Process:</u> Children play the audio recordings and, while listening, create visual art in response.</p> <p><u>Facilitation:</u> <i>What are you hearing here? How does this music make you feel? Why have you chosen this color/way of painting/etc. to represent these sounds?</i></p> <p><u>Ongoing Assessment:</u> Without interrupting children’s listening, inquire after they complete their artwork about their feelings, impressions, and resulting decisions. Note their use of vocabulary.</p> <p><u>Thinking and Feedback Possibilities:</u> Children might present their visual artwork accompanied by the music by which they created it. Classmates can give feedback about whether the visual representation captures the mood or ideas they hear in the music. Encourage children to accept that people hear different things and make different interpretations from a single piece of music.</p>
<p>Building</p> 	<p>Making Sounds</p> <p><u>Objective:</u> I can use available resources to make instruments.</p> <p><u>Introduction:</u> <i>We have a good collection of materials around our classroom, and today we’ll add one more: elastic bands. Elastic is the property of being able to stretch. We have already seen that stretching an elastic band around another object can create a way to make sounds, like an instrument.</i></p> <p><i>Use the resources that you can find in our classroom to make instruments that make different kinds of sounds.</i></p> <p><i>Once you have made at least one instrument, take it to the Writing and Drawing Studio.</i></p> <p><u>Process:</u></p>

	<p>Children try various materials combined with elastic bands to create different kinds of sounds. They experiment with objects of varying sizes and materials, with more than one object stacked together, and with various sizes and widths of elastic bands. They compare and try to change the sounds they make.</p> <p><u>Facilitation:</u> Interesting sounds can be achieved by simply wrapping an elastic band around a book or an empty tissue box. Encourage children to try many different combinations of materials to make some discoveries about what produces different kinds of sounds. <i>Why did you use those materials?</i> <i>What do you notice?</i> <i>Why do you think it made that kind of sound?</i> <i>What else can you try?</i></p> <p><u>Ongoing Assessment:</u> Record observations about how flexibly children approach use of materials. Note the vocabulary they use to compare and describe their processes, materials, and results. What do children already know about sound and instruments?</p> <p><u>Thinking and Feedback Possibilities:</u> Invite children with different kinds of instruments to share their strategies and results. Invite the group to suggest alternate materials to achieve different or stronger results (a louder sound, multiple sounds from a single instrument).</p>
<p>Drama</p> 	<p>Collecting and Acting Out Sounds</p> <p><u>Objective:</u> I can collect sounds from my environment. I can act out the sounds I collect. I can name and act out differences among shades of meanings of sound words.</p> <p><u>Introduction:</u> <i>There are sounds all around us, all the time... Listen!</i> Allow a full minute of quiet listening. <i>What did you hear?</i></p> <p>Name a sound the children identified. <i>How could we silently act out that sound?</i></p>

Invite several children to act out, soundlessly, their interpretations of the sound. They may show the action that produced the sound—such as miming someone laughing—or they may embody the sound itself—such as with a dance-like movement that gives the feeling of laughter. Affirm all interpretations.

Ask children to differentiate among shades of meaning, such as from tapping to banging, or whispering to talking to shouting.

What if that sound were very loud? What would we call that sound? How could we act it out?

What if it were very soft? What would we call that sound? How could we act it out?

Today in the Drama Studio you will first collect sounds, and then act them out.

Process:

Either in or outside the classroom, children go on a sound expedition. If an audio recording device is available, children record sounds in this way.

Alternatively, children can go out with clipboards and writing tools and simply write down or draw the sounds they hear (door closing, feet walking, person sneezing, traffic outside, adults talking).

Once they have a collection of sounds, children listen back to or read their list of sounds. They take turns and/or work together to act out some aspects of these sounds.

Facilitation:

What sounds did you collect?

Where do you think this sound came from?

How can you show this sound?

What's another way to show that sound?

Ongoing Assessment:

Observe and record what children notice about their sound environment and how they communicate about their findings.

Thinking and Feedback Possibilities:

Invite children to describe their sound collecting expedition.

Make space for a small group to act out their sounds.

Ask classmates to suggest other ways they might show the same sounds.

Library



Sound Search

Objective:

I can categorize sounds.

Introduction:

What sounds can we find in our books, and what categories could we put them in?

Show the two related Sound Categories cards, such as Loud and Quiet. Invite children to give examples of sounds in each category.

Let's look back at some of the sounds in this book from Unit 2, Daniel Finds a Poem.

Turn to the flagged pages, and determine together whether the sounds on each page—leaves crunching, cricket singing, owl calling—belong in the Loud or Quiet category. Children may not all agree, depending on their experience and interpretation. Allow for this.

This is interesting: we don't all hear sounds in the same ways!

Talk through the other cards to solicit and give definitions, as needed.

You can look for sounds in any of our books! Choose two Sound Category cards and see which category the sounds fit into. Talk about what you find.

Process:

Working together or independently, children first choose two related sound categories and set those cards down in front of them. Then they choose a book in which to find sounds. They may look at more than one text in their sound search. As they find each sound, children describe it, name its source, and then assign it to a category.

Facilitation:

What sounds are you finding?

Where do those sounds come from? What makes them?

How are you deciding how to categorize each sound?

Ongoing Assessment:

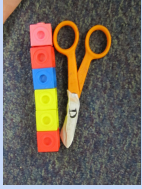
Take notes and reflect on children's observations, language, and experiences that inform the categorization of various sounds. What surprises arise? What misconceptions?

Math

Three Noses

Objective:

Children will form groups with specific criteria in mind.



Introduction:

We will be using music to play a math game today called Three Noses. It is similar to musical chairs, except you have to work with a group to get the right number of body parts for each round."

Process:

Here is a [video](#) to explain the game further, if needed.

1. Music plays as the children move about the space. The music stops, and the children freeze.
2. The leader will call out a number and body part. For instance, *20 fingers!*
3. Children quickly find groupings where they can show 20 fingers. Once all the groups are made, the round is over.
4. Debrief with children.
5. Anytime someone doesn't make it into a grouping, they can jump right back in during the next round. The point of the game is not elimination, but swiftly finding groups with the correct number.

Facilitation:

How many are in your group? How did you count?

What strategy can you use?

What can you do if you don't have the correct number?

How many more/fewer do you need?

How can you check?

Considerations:

- The leader can also name a way to move (sneak, jump, twirl, etc) in each round. Use a rhythmic pattern or sing the verbs to a familiar tune like the ABCs.

Ongoing Assessment:

Watch to ensure children are forming groups that fit the description. For instance, if 4 kids are in a group instead of 3 for noses, check for understanding.

Science and Engineering

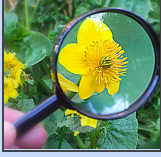
Making Sounds

Objective:

I can make a model of an instrument to demonstrate how sound is made by vibrating materials.

Introduction:

We started using these materials in our Science and Engineering



lessons. You can continue experimenting with them in the Studio.

Process:

Children continue working with the cups/rubber bands and tuning fork. As they work, they talk about how the materials look, sound, and feel as they vibrate to produce sound. Encourage children to record drawings, along with their discoveries and questions, in their science journals.

Facilitation:

What can you see when you pluck this instrument?

How does it sound?

What does it feel like?

What happens if you change the instrument in some way? Does it still produce sound? Is it the same sound? Why do you think so?

Ongoing Assessment:

Observe and talk with children as they work. Note how they are connecting observable vibrations with produced sound. Review children's science journals.

Writing and Drawing



Recording Sounds

Objective:

I can record and describe the sounds I have created.

Introduction:

Once you have made an instrument in the Building Studio, you can come to the Writing and Drawing Studio to record what you have made.

Show the Recording Sounds sheet and talk through each part.

*Here, it says "Notation." **Notation** is a system for recording something in writing. Musicians use a special written language to show music on a page, but you can use any symbols or marks you like to show something about the kind of sound your instrument produces. For example, how might I show the sound of feet going up stairs? How about the sound of wind blowing?*

As always, you can also continue to work in your sketchbooks. You might write and draw a story that features sounds, like in The Sound of Silence.

Process:

	<p>Children bring the instruments they have created in the Building Studio to record and describe the sounds they make. On the recording sheet, children draw the instrument and label the drawing; create a graphic representation of the sound (notation), use adjectives to describe the sound, and make associations.</p> <p><u>Facilitation:</u> Encourage children to work together. Comparison between instruments might help children clarify their descriptions and ways of recording what they hear.</p> <p><i>How will you show all the parts of your instrument? How will your viewer know what each part is made of and why it's important?</i></p> <p><i>How will you show on paper the sound your instrument makes? How might someone else describe this sound?</i></p> <p><i>What does this sound make you think of?</i></p> <p><i>What would it sound like to play your instrument at the same time as your classmate's?</i></p> <p><u>Ongoing Assessment:</u> Review children's Recording Sounds sheets. How do they indicate the parts of their instruments and the materials they used for each part? What kind of symbols do they employ to notate the sounds of their instruments? What adjectives do they use? What music experiences and associations do they bring to the study of sound?</p> <p><u>Thinking and Feedback Possibilities:</u> Children might share their Recording Sounds sheets <i>before</i> showing their instruments. This way, classmates can reflect on how useful are the graphic representations (drawings, notation) in understanding something about the instrument. Children whose instruments use similar materials or make similar sounds can share their various approaches to notation, and the group can discuss the effectiveness of these representations in describing sounds.</p>
<p>Standards</p>	<p>Standards addressed will depend upon the studios in which children work. Possibilities include those listed in the Studios Introduction (Part 2: Components) and the following studio-specific standards.</p> <p><u>Art:</u></p>

	<p>Visual Arts 1.2 (Boston) Create artwork in a variety of two-dimensional (2D) and three-dimensional (3D) media, for example: 2D – drawing, painting, collage, printmaking, weaving; 3D – plastic (malleable) materials such as clay and paper, wood, or found objects for assemblage and construction.</p> <p>SA 1.1 (Boston) Label and recognize emotions. Express understanding of emotions using different forms of representation.</p> <p><u>Drama:</u></p> <p>L.5.1.d Distinguish shades of meaning among verbs differing in manner (e.g., look, peek, glance, stare, glare, scowl) and adjectives differing in intensity (e.g., large, gigantic) by defining or choosing them or by acting out the meanings.</p> <p><u>Library:</u></p> <p>L.5.1.a Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.</p> <p>L.5.1.b Define words by category and by one or more key attributes (e.g., a duck is a bird that swims; a tiger is a large cat with stripes).</p> <p><u>Math:</u></p> <p>NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p>MP2 Reason abstractly and quantitatively. Mathematically proficient students make sense of quantities and their relationships in problem situations.</p> <p><u>Science and Engineering:</u></p> <p>1-PS4-1. Demonstrate that vibrating materials can make sound and that sound can make materials vibrate. Clarification Statements: • Examples of vibrating materials that make sound could include tuning forks, a stretched string or rubber band, and a drum head. • Examples of how sound can make materials vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.</p> <p>Practice 1. Asking questions and defining problems Practice 2. Developing and using models Practice 6. Constructing explanations and designing solutions</p>
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