



**SYDDANSK
MUSIKKONSERVATORIUM**
DANISH NATIONAL
ACADEMY OF MUSIC

Inspiration and teaching material for aesthetic
creative work with electronic music and sound art:

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IMPRESSION IMPRINT EXPRESSION

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Indholdsfortegnelse

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Introduction

What does the world sound like when we truly listen? And how can the sounds we often overlook become the source of artistic creation? Impression – Imprint – Expression presents an exploratory and experimental approach to electronic music and sound art. Through hands-on activities and dialogue, participants are given the opportunity to explore the world of sound and discover new aesthetic forms of expression that spring from their own surroundings and experiences. This approach follows the progression impression – imprint – expression, where participants, through sensing and reflection, open up an understanding of sound as creative material, while developing and strengthening their ability to shape their own aesthetic expressions. One of the particular strengths of this material is its ability to create barrier-free access to creative processes. It differs from traditional skill-oriented music education by opening up artistic work without requiring specific musical or technical prior knowledge. It is precisely this approach—where creative choices are not governed by established musical conventions but arise through chance and coincidence—that often produces surprising and entirely unique expressions. By making room for the unpredictable and letting it serve as a driving force in the creative process, works emerge that could not have been conceived in advance. Rather than reproducing familiar forms, intuitive and experimental methods are emphasized, where curiosity and meaning-making are united in the learning process.

A significant part of the course methodology is its grounding in the participants' immediate surroundings. By letting impressions from everyday sounds form the basis for artistic imprints, a strong connection is created between the participants' personal experiences and their creative expression. The structure is built around three interconnected themes, each exploring different aspects of creative work with sound. The course begins with active listening and poetic interpretation in Theme 1, moves on to digital sound creation in Theme 2, and concludes with historical sonification in Theme 3. Each theme can be used independently, but they are designed to complement and enrich each other.

The material rests on a solid theoretical foundation, inspired by three significant perspectives: Lene Tanggaard's research on the materiality of creativity (Tanggaard, L. 2010), John Dewey's experience-based learning theory (Dewey, J. 1938), and modern aesthetic learning theory. These theories form the basis for a practice that emphasizes the encounter between people and materials, experience through action and reflection, and aesthetic recognition through different forms of expression. Through the course's three themes, fundamental music and sound-art concepts and theory are naturally integrated into the work with listening, composition, and sound design.

When you read about the activities in the following sections, you will encounter RESONANCE boxes that elaborate on the content with practical tips, alternative perspectives, and creative possibilities.

Impression – Imprint – Expression invites you to explore the world of sound—with ears open, curiosity as the driving force, creativity as the method, and aesthetic recognition as the goal. This work begins with the most fundamental thing: listening.

Theme 1: Sound Walk – Poetry – Composition

The Conscious Listener

With ears wide open, we step into the diverse world of sound. Our sense of hearing holds a special position among our senses. It is fully developed months before birth and, unlike our other senses, cannot be switched off or shut. Studies even suggest that hearing is the last sense to disappear when we die. This special quality means that we must constantly sort through the sound impressions we receive, which unfortunately often results in our becoming inattentive to our sonic surroundings. To reopen the participants' ears to the varied soundscape of the surrounding world, the starting point is sound walks, developed by Hildegard Westerkamp and R. Murray Schafer from the World Soundscape Project in Vancouver in the 1970s. Westerkamp defines a sound walk as: "...any excursion whose main purpose is listening to the environment. It is exposing our ears to every sound around us no matter where we are."

RESONANCE: Additional material from www.hildegardwesterkamp.ca

"A soundwalk is a form of active participation in the soundscape. Though the variations are many, the essential purpose of a soundwalk is to encourage the participant to listen discriminately and moreover, to make a critical judgment about the sounds heard and their contribution to the balance or imbalance of the sonic environment. In order to expand the listening experience, sound-making may also become an important part of a soundwalk. Its purpose is to explore sounds that are related to the environment and on the other hand, to become aware of one's own sounds (voice, footsteps, etc.) in the environmental context. A soundwalk may be recorded in the form of a map, which the participant uses both to guide the route and draw attention to features of acoustic interest."



RESONANCE: The constant presence of sound

John Cage's work 4'33" (1952) challenges our understanding of sound and silence. The work consists of four minutes and thirty-three seconds of "silence," but rather than being about the absence of sound, it points to everything we normally don't hear. The room's hidden resonance, breathing, the gentle scraping of chairs, distant sounds from outside—everything emerges and becomes audible when silence is allowed to fill the space. 4'33" reminds us that sound is always present, and that it is our attention that determines what we hear. Video artist Bill Viola describes a related phenomenon, which he calls The Undersound—a fundamental sonic presence that cannot be defined as specific sounds, but rather as a universal resonance that always exists beneath the surface of everything. It is not a sound we can necessarily hear, but a sense that the world itself vibrates with a kind of fundamental tone—a sound that is there, even when everything else falls silent.

Preparation for the Sound Walk

Before the sound walk begins, the participants are gathered for a brief introduction and dialogue about the special qualities of hearing:

Fascinating Facts about Hearing:

- The difference between hearing and listening is fundamental: Hearing is a passive, physiological process, while listening is an active, conscious action.
- Hearing is our fastest sense—it reacts in just 8–10 milliseconds, while sight takes 20–40 milliseconds.
- Sound affects other senses: Our taste experience changes significantly depending on the sounds we hear while eating.
- The eardrum moves in sync with eye movements—in fact, small pressure changes in the ear can be measured even before we shift our gaze.
- You can hear the difference in the temperature of a liquid being poured—the acoustic difference between cold and hot water is clear when you listen attentively.
- In the film industry, sound designers often use surprising sources to create familiar sounds: Rain can be sizzling bacon; crushed bones can be snapped celery. These tricks work because our brain is more concerned with what the sound means than what it actually is.

Two Simple Demonstrations

Sound's path through space: A participant walks around a corner while continuing to speak. We can hear them clearly, even though we cannot see them—a simple but effective reminder of how sound can wind around corners and find its way.

Bone-conducted hearing: Using a tuning fork, it is demonstrated how sound travels through the body. When a vibrating tuning fork is placed on top of the head while covering the ears, the tone is clearly heard through the skull.

A simple exercise from R. Murray Schafer's *Ear Cleaning*—such as “Stand up without making a sound”—can sharpen attention to the surrounding sounds.

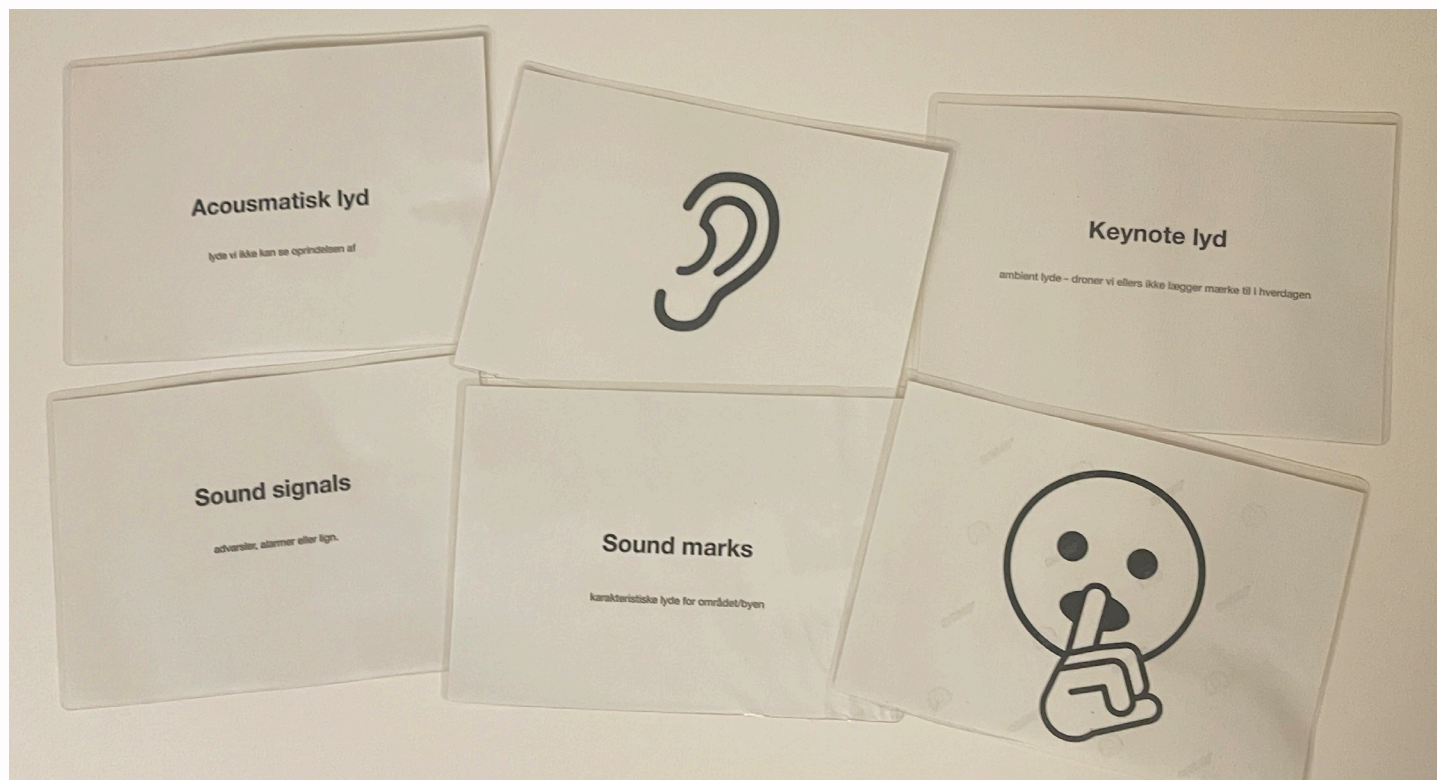


RESONANCE: “Listen and Note”

Another effective exercise is “Listen and Note,” where participants sit quietly for 5–10 minutes and note all the sounds they hear in their surroundings. An open window or door can enrich the soundscape with sounds from outside. After the listening period, a dialogue is facilitated about the experience, with particular focus on: how attention to sounds possibly changed throughout the exercise;

whether participants experienced a sharpening of their hearing; which sounds emerged first and which were noticed later.

This exercise gives participants the opportunity to experience how active listening can develop over time, and how different layers in the soundscape gradually emerge.



Sound Categories

It is also important to introduce the four fundamental sound categories that participants should be particularly attentive to during the sound walk:

Keynote sounds form a constant sonic carpet in our everyday lives. It could be noise from a highway or the hum of ventilation systems—sounds we typically filter out, not because they are inaudible, but because the brain sorts them out in our daily perception.

Soundmarks are characteristic of a particular place, such as church bells for a town or seagull cries at the harbor. These sounds help give places their special identity and recognizability.

Sound signals are sounds that step into the foreground and carry meaning or messages. It could be a dog's bark breaking the silence, an ambulance siren cutting through the city, or a cell phone suddenly calling for our attention.

Acousmatic sounds have a hidden or unknown source, which often arouses our curiosity and imagination. It could be the sound of birds behind us or distant industrial sounds whose origin we cannot place.



Tips for Planning a Sound Walk

It is recommended to find a suitable route of approximately 2–3 km (1–2 miles), which can be completed in about 45 minutes with stops along the way. The route should be tested in advance, and one must be aware that time of day, day of the week, season, and other factors can have a significant influence on the sounds present. By taking these conditions into account, you ensure that participants get the best possible experience and opportunity to discover a wide variety of sounds on the walk.

Conducting the Sound Walk

RESONANCE: Tip before departure

It can be helpful to start by becoming aware of one's own sounds—footsteps, clothing, breathing. Then move attention outward to the group's sounds, further to the near surroundings, and finally out to the most distant sounds. Should attention wander along the way, it is a good idea to return to the starting point—one's own sounds.

During the walk, which should take place in silence, several strategic stops are made where participants are given time to listen attentively and perhaps note their impressions. At a selected stop, participants are given the task of exploring the area visually. They should find interesting lines, patterns, or shapes in their surroundings—it could be the horizon line, the silhouette of trees against the sky, or patterns in fences, wooden panels, or paving. These visual impressions are recorded as drawings on distributed paper strips, which will later form the basis for an exciting musical composition.



RESONANCE: Visual transformation

At selected points during the walk, participants can stop to transform sound impressions into visual expressions. This work of “drawing the sound” is not about creating realistic depictions, but about capturing the essence of the sound experience in graphic form. Drawing methods include:

Linear expressions

- Continuous lines for sustained sounds
- Dots/dashes for discrete sounds
- Waveforms for rhythmic patterns
- Directional indicators for sound movement

Structures

- Textures for sound qualities
- Patterns for repetitions
- Layers for simultaneity
- Density for intensity

Abstract forms

- Geometric figures
- Organic shapes
- Symbolic representations
- Personal expressions

Post-processing and Reflection

After the sound walk, participants are divided into smaller groups of 4–5, where they collectively categorize the observed sounds. The groups are given time to discuss their experiences and reflect on what they have heard. Then a plenary session is held where each group shares their most important observations and insights. Finally, a collective discussion is facilitated to reach a shared understanding of the sound categories and consolidate the learning from the experience.

RESONANCE: Worksheet
Document with the categories and their explanations, along with lines for each category where participants can write the sounds they observed.

Soundwalk

Noter herunder dine opdagelser:

Akusmatiske lyde (de mystiske lyde vi ikke kan se kilden til):

Keynote lyde (byens eller stedets konstante lydtaeppe):

Sound marks (de lyde der gør dette sted særligt):

Sound signals (beskeder og signaler i lydmiljøet):

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[Worksheet: Soundwalk—Note your discoveries below: Acousmatic sounds / Keynote sounds / Sound marks / Sound signals.

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From Sound Experience to Poetic Expression

To capture and process the sound impressions, participants work with different poetic forms—preferably in the same groups as before. Poetry provides the opportunity to express both concrete observations and more atmospheric sensory experiences. Three different poetic forms are used, each with their own special qualities and challenges.

Haiku

Haiku is a classic Japanese poetic form, particularly well-suited for capturing snapshots and nature experiences. The form follows these characteristics:

- Three short lines with a fixed syllable pattern (5-7-5)
- Often nature-focused with snapshots
- Often with seasonal references or nature themes

Example of a haiku capturing sound experiences:

Wind gusts through the trees
Leaves rustle soft and gentle
City's pulse behind



Cinquain

Cinquain is a five-line poetic form with a precise structure that gradually builds up an image or atmosphere. The form is particularly well-suited for describing sound experiences, as it provides the opportunity to develop the description step by step.

The structure follows this precise pattern:

Line 1: One word (noun – the subject being described)

Line 2: Two words (adjectives – description of the subject)

Line 3: Three words (verbs – action or movement)

Line 4: Four words (a sentence expressing feeling or observation)

Line 5: One word (noun – summary or synonym of the first line's word)

Example of a cinquain capturing a characteristic city sound:

*Bell
Deep, resonant
Rings, swings, calls
Tones fill the space
Echo*

The Eleven (Elveren)

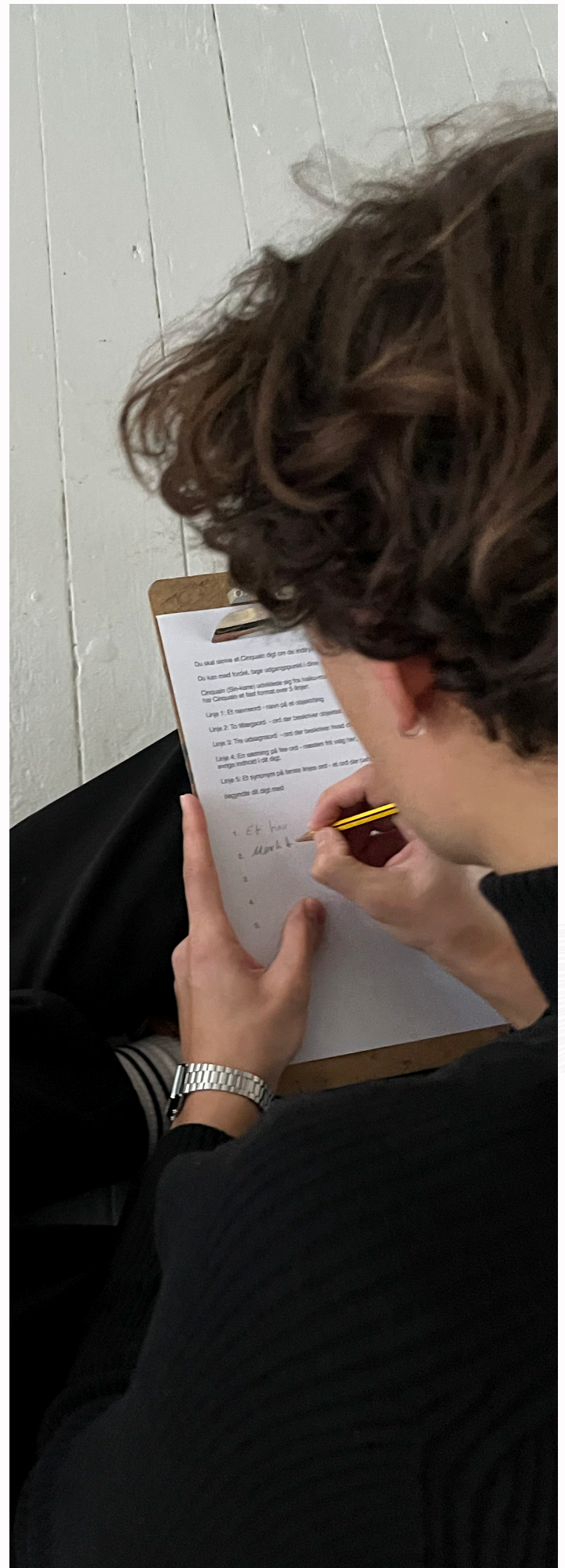
For beginners or when time is short, "The Eleven" can be a good starting point. It is a more accessible poetic form with a simple structure:

- Consists of exactly 11 words
- Distributed across five lines (1-2-3-4-1)
- Freer word choice than haiku and cinquain

This simple form allows participants to focus on content without having to deal with too many formal requirements, while the fixed structure creates a framework for creative work.

Example of an "Eleven" poem:

*Rain
Gentle drops
Silver strings sing
Light clouds drift in
Refreshment*



From Visual Forms to Musical Expression

During the sound walk, participants drew lines and patterns from their surroundings on distributed paper strips. These drawings are transformed into music through working with mechanical music boxes. By cutting holes in the paper strips based on the drawn lines, participants create a composition that the music boxes can play. This process directly connects the participant's visual expression with the musical one.

It is often magical not to reveal the drawings' musical potential before the holes are cut. When participants first hear their visual expressions become music, moments of wonder and joy often arise, and a fascination that motivates further experimentation and actual composition. This curiosity should be encouraged, as it strengthens the participants' understanding of the connection between visual and musical expression.

RESONANCE: Mechanical music boxes with punch cards (15 notes) are used in this course as a tool for translating visual patterns. These music boxes can be purchased from various online sources, e.g., at <https://www.grand-illusions.com/> or by searching for: "music box with punch cards" or "mechanical music box 15 notes." The strips can be cut from card stock or good-quality drawing paper of approximately 180–200 gsm.

RESONANCE: Alternatives to drawn patterns Besides basing patterns on impressions from the sound walk, you can also experiment with:

- Eco prints, frottage, and printmaking (visual patterns from printing techniques can be perforated as punch cards)
- Written expressions (words, e.g., from poems, can form the basis for hole patterns)
- Graphic experiments (drawings or diagrams from one's own ideas can be used as inspiration)

This diversity of methods provides the opportunity to express oneself individually and explore new paths within creative composition and sonification. Another possibility is to work with staff lines as a starting point for composition. By drawing five staff lines across a drawing, print, or text, you can let the intersection points between lines and staff lines define the pitches. The rhythmic dimension can be added by observing the distance between points—the closer the points, the faster the rhythmic values. These points thus form the basis for a new composition with both melodic and rhythmic elements.

This approach can be particularly valuable in music and instrumental education, where it offers a different and creative entry point into composition.





From Composition to Performance

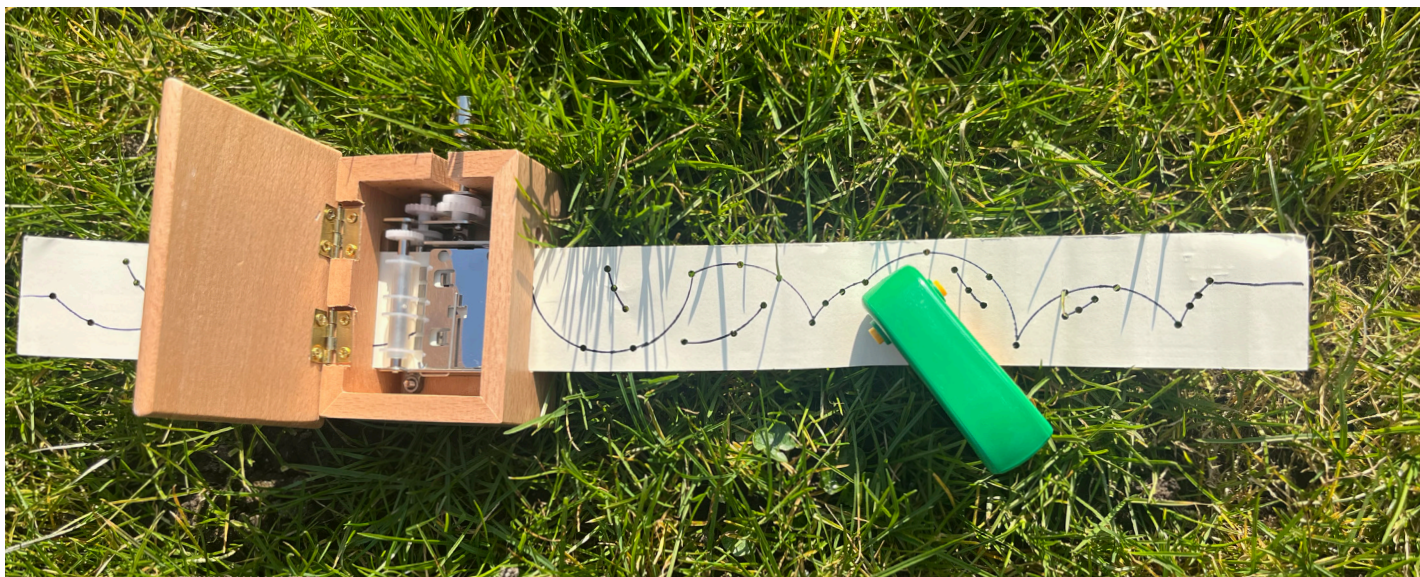
The music box melody can be played in four different versions, providing rich opportunities for variation and artistic expression:

- The original version plays the melody forward, exactly as the holes are cut. This gives the most direct rendition of the visual forms from the sound walk.
- The retrograde version is created by running the paper through the music box backward. This creates an entirely new melody that is still closely connected to the original.
- Inversion is created by turning the paper upside down, resulting in a mirror-inverted version of the melody. This version can yield surprisingly new perspectives on the composition.
- Retrograde inversion combines the two previous techniques and gives yet another variation of the original material.

Integration of Music and Poetry

When both the music box melody and the poem have been created, the work begins of combining the two elements into a unified artistic expression. This can be done in several ways, either through digital production or as a live performance. For digital production, the music box melody is recorded in GarageBand. Then the poetry reading is recorded, and the two elements can now be balanced and integrated precisely in relation to each other. (Instructions for using GarageBand for recording follow later in the text under the heading “Practical Work with GarageBand.”) Decisions must be made about which version of the melody best supports the poem’s mood and expression.

RESONANCE: Multiple melody versions
You can also experiment with several versions of the music box melody—either by playing them one after another, exploring the canon form where the same melody is played offset in time, or creating polyphony by letting different melodies sound simultaneously. This can be done both with multiple music boxes in a live performance or by working with multiple tracks in digital production. In this way, you can explore different polyphonic dimensions in the composition.



Live Performance

For live performance, thorough practice of the interplay between reading and music is required. Tempo, phrasing, and timing must be carefully coordinated so that the two elements complement each other. It can be helpful to mark special places in the text where the music should be highlighted or recede into the background. Regardless of which performance form is chosen, the following elements should be worked with consciously:

- Balance between words and music
- Timing of the poem's lines in relation to the melody
- Use of pauses and silence as artistic devices
- Transitions between different parts

The completed works should be thoroughly rehearsed before the final performance. This gives participants the opportunity to refine their expression and become familiar with the interplay between the different elements. The concluding performance thus becomes the culmination of a process that has moved from sensing through various creative processes to a finished artistic expression.

Through this process, participants experience how their different creative expressions—from the first drawing through the poetic work to the musical composition—can merge into an entirely new and personal work. This supports the material's fundamental idea of the transformation from impression through imprint to expression.

RESONANCE: Recording the sound walk

Recording the sound walk constitutes an additional dimension that can enrich and deepen the activity, particularly in relation to dissemination beyond the participant group. The recording, or selected parts of it, can advantageously be integrated into the subsequent works, where it can interact with poetry and music box melodies. These recordings can also form the basis for further work in Theme 2, where they can, for example, be sampled and creatively processed in Koala Sampler, or used as ambience as part of the digital composition.

Summary of Theme 1

This theme takes participants through a process from active listening through poetic interpretation to musical composition. Here follows an overview of the course's main components:

Purpose and Activities:

- Sound walk – active listening to the surroundings
- Transformation of sound impressions into poetry
 - Translation of visual impressions into music via music boxes

Progression:

Preparation:

- Introduction to listening and hearing
- Review of sound categories
- Hands-on demonstrations

Sound walk:

- 2–3 km route, approx. 45 min
- Strategic listening stops
- Visual documentation on paper strips
- Group-based post-processing

Poetic processing:

- Haiku (5-7-5 syllables)
- Cinquain (5 lines with fixed structure)
- The Eleven (11 words across 5 lines)

Musical composition:

- Transformation of visual patterns into music
- Four playback variations with music boxes
- Digital production or live performance

Evaluation of Theme 1: Sound Walk, Poetry, and Music Box

After completing the first theme, it is important to gather the participants and evaluate the course.

Dialogue-based evaluation could focus on:

- Discoveries from the sound walk
- Experiences with translating sound into poetry
- Experiences with music box composition
- the interplay between the different forms of expression

Written reflection

Written reflection could have participants reflect on questions such as

- What new discoveries have you made about sound in your surroundings?
- How did you experience the process of creating poems from sound impressions?
- What surprised you most in working with the music box?



Theme 2: Digital Sampling and Music Creation

From the Analog to the Digital

After working with analog approaches through active listening, poetic interpretation, and mechanical music boxes, the material now opens up to the possibilities of the digital sound world. Where Theme 1 focused on sharpening participants' listening ability and translating sound impressions into various artistic expressions, the exploration now turns to how modern technology can expand the creative possibilities for sound creation.

Exploration with Koala Sampler

In this part of the course, participants go on a discovery in their local environment to capture and work creatively with sounds through the app Koala Sampler. This digital sampler functions much like a tape recorder that can not only capture sounds but also provides the opportunity to manipulate and compose with them. When you start a new project in Koala, you begin with a completely empty app—a blank canvas waiting to be filled with the participant's own sound recordings.

Working with Koala Sampler

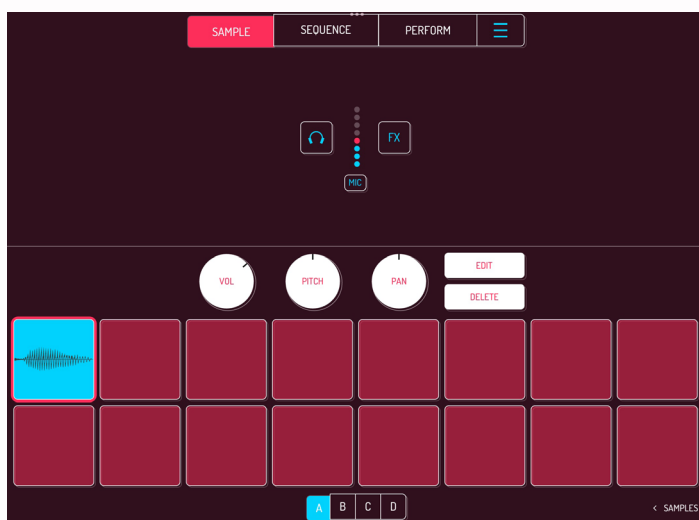
The work is organized most effectively with participants divided into smaller groups of 2–4 people. This group size ensures that everyone can be actively involved in the process, while there is room for creative collaboration and shared discoveries.

The Sample Tab

In the Sample tab, participants encounter 16 red pads, each of which can contain one sound recording—a sample. These pads are organized in four pages, providing space for a total of 64 different samples. Recording is done by holding a pad while the sound is recorded and releasing when the recording is finished—a very intuitive process. Above these pads are three central control elements:

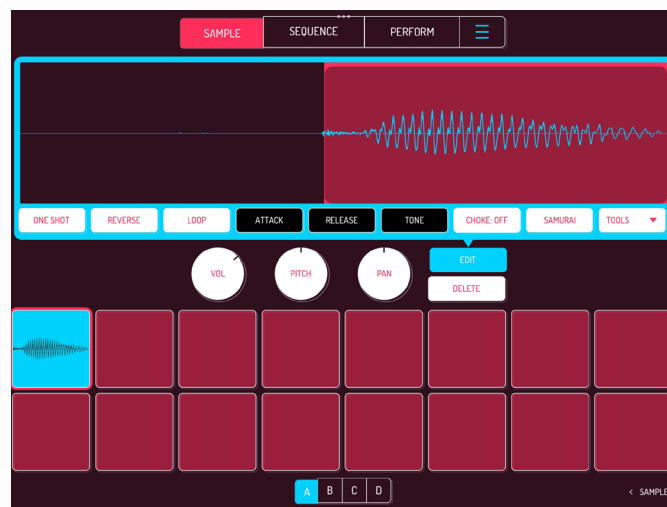
- A knob for volume.
- One for pitch
- and one for panning that controls the sound's placement in the stereo image.

Two important buttons - Edit and Delete - respectively provide the ability to edit recorded sounds and delete them if they need to be re-recorded.



The Creative Process with Sound Recordings

Experience shows that it is most effective to start with a limited introduction to the app's functions. Participants begin by recording and experimenting with 3–4 different sounds. They can practice trimming sounds in length, adjusting their volume, and exploring the basic editing options in the edit window.

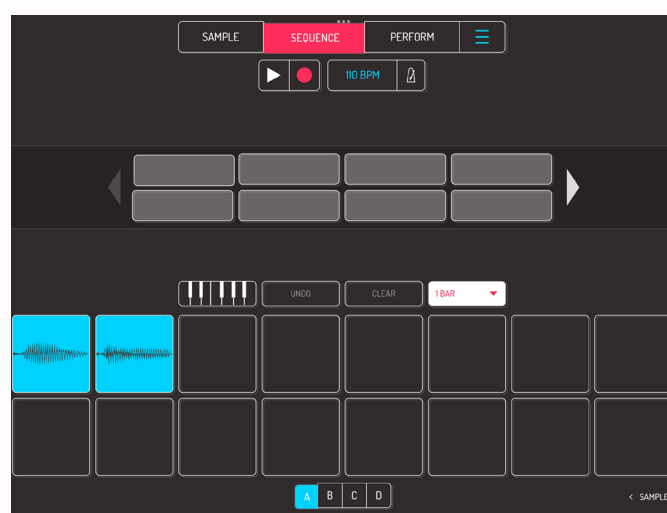


RESONANCE: Copying samples

Samples can be copied by dragging them from one pad to another. If the pad you're dragging to already contains sound, the app offers three options: mixing the sounds together, adding the new sound after the existing one, or replacing the old sound with the new one. This copying function is particularly useful when a sample contains several usable sounds—copy it to a new pad, and then trim the individual sounds in each sample.



When the group has gained familiarity with these basic functions, it is time to explore the Sequence tab. In the Sequence tab, participants can arrange their recorded sounds into musical sequences. At the top of the screen are transport controls (play and record) and a menu for setting the tempo and turning the metronome on/off. At the bottom of the screen, the recorded samples from earlier are displayed. Above them is a keyboard that can be used to play melodies with the recorded sounds, an "Undo" button, a "Clear" button that deletes the content of the selected sequence, and a dropdown menu where the length of the selected sequence can be changed.



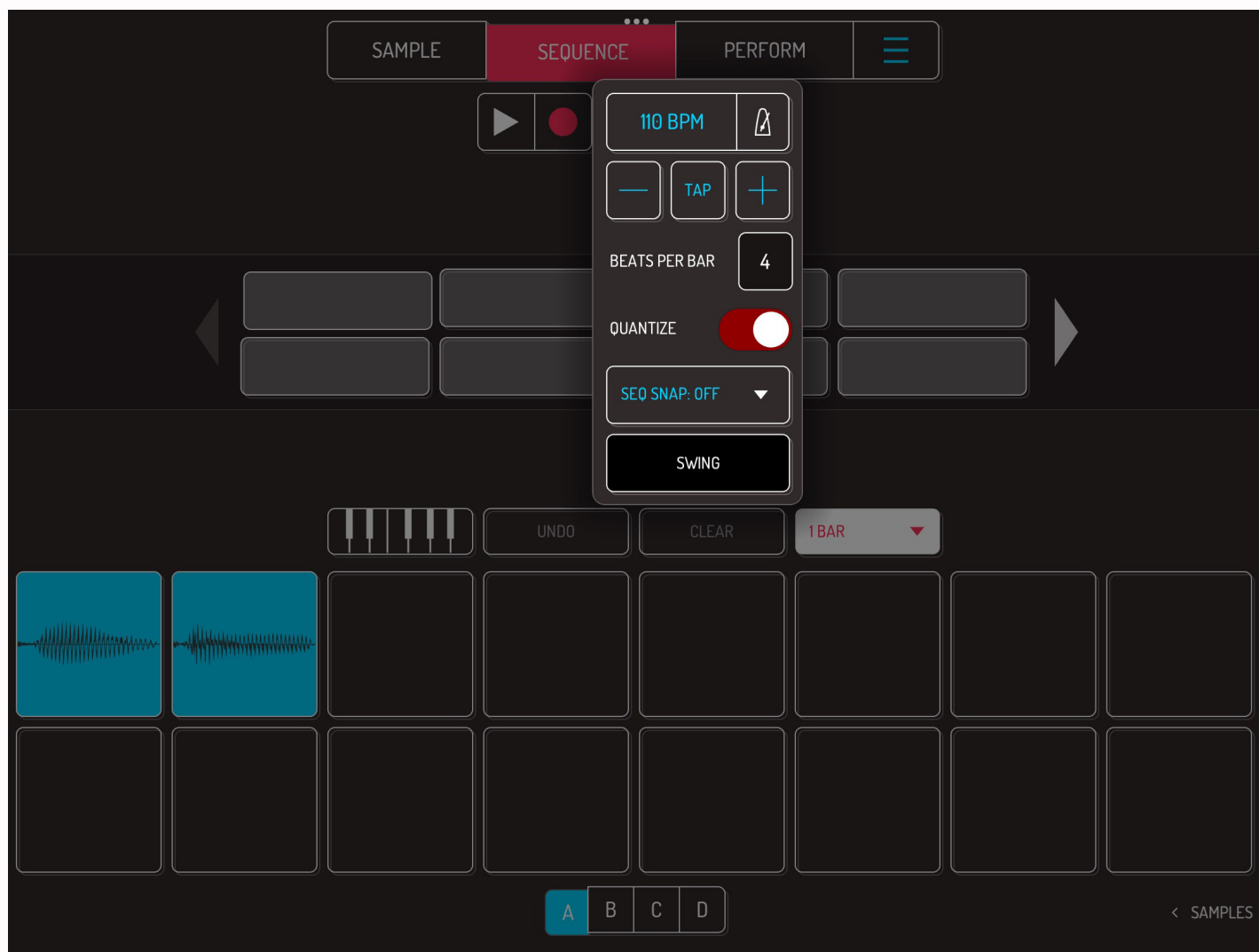
From Individual Sounds to Musical Sequences

Work begins by setting the tempo and length of the sequence via the dropdown menu. Then, using the record button, you can begin recording your sound sequences. It is recommended to build up the composition layer by layer, starting with one element—for example, a rhythmic ground figure—and gradually adding more layers. Koala has a built-in quantize function that helps adjust the timing of musical elements when recording. A particularly creative possibility arises when participants discover that they can use the Keyboard or Grid to play melodies with their samples. By choosing between scales in the settings, they can limit the number of tones, making it easier to create harmonic melodic sequences.

Hunting for Sounds

With this basic understanding in place, participants can now be sent out to collect sounds for their compositions. It can be helpful to give some concrete tasks or categories to work from. For example:

- Transient (short) sounds that can form the basis for beats
- Resonant or metallic sounds for melodic elements
- Atmospheric sounds that can create mood and depth
- Characteristic sounds from special places or situations that can be used as effects



Composition and Arrangement

When the groups return with their collected sounds, the actual composition work begins. The arrangement should contain the following elements:

- A clear introduction presenting the basic elements
- Different sections (A, B, C) with variation in expression and intensity
- A clear ending that rounds off the work

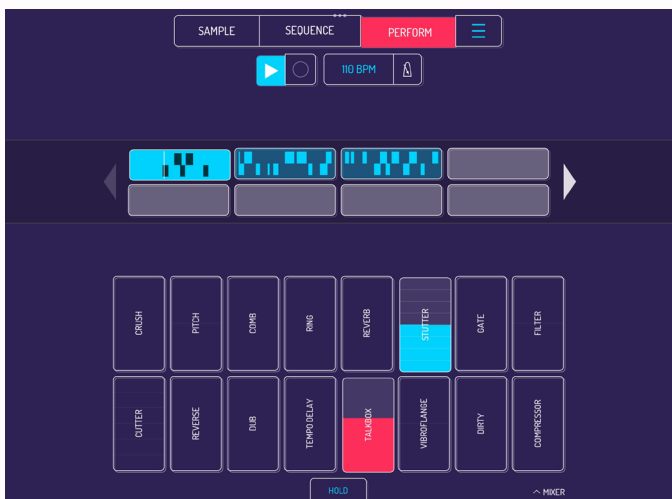
As a final dimension, participants can explore the Perform tab, where 16 different “real-time” effects can be used to add further variation and dynamics to their compositions. These effects are activated and controlled through faders that can be combined in various ways to create interesting effects and manipulations—both tonally and rhythmically. The groups’ works are performed—preferably with examples of some of the individual sounds and their transformation. There is ample opportunity to “jam” with the different sequences—the selected one plays, and you can jump between them simply by tapping and selecting a new one.

Koala Sampler also provides the ability to export entire works by selecting “Record Song” in the dropdown menu under the three horizontal lines.



RESONANCE: Ideas for other activities with Koala Sampler

Koala Sampler can be used as a tool for exploring sound in many different ways, regardless of participants’ background or experience. An immediate activity could be letting participants record sounds from personal objects—school bags, pencil cases, bicycles, scooters, etc. In music education, the app can be used as a creative break, where students explore alternative sound possibilities/extended techniques of instruments—clicks, clattering, bowing, and knocking become a new sound library. These samples can then be used to create an electronic composition that forms the basis for further (instrumental) musical work. Students can improvise over their electronic composition on their instruments or use it as inspiration to compose new pieces. This approach opens up a playful and exploratory approach to instruments’ many timbral possibilities. In my own practice, this approach has formed the basis for creating film music for stop-motion films, where the instruments were the animated characters in the story.



Evaluation of Theme 2: Digital Sampling

As with the first theme, it is important to evaluate the process after working with digital sound creation and composition. Here are suggested focus areas for the evaluation:

Technical discoveries and challenges:

- How was the experience of working in the digital format?
- What new possibilities did the technology open up?

Creative choices and processes

- What guided the choices in sound collection?
- How did the composition develop along the way?

Collaboration and development

- How did the creative collaboration work?
- What roles naturally emerged in the groups?



Theme 3: Sonification of Historical Photos



From the Present to the Past

After exploring the present-day soundscape through both analog and digital tools, attention now turns to the past. The listening skills and technical understanding that participants have developed through the first two themes are put into play in the work of recreating historical sound environments.

Giving the Past a Voice

In this theme, we connect history and sound through creative sonification of old photographs. By working with historical photos from the local area, found on arkiv.dk, participants are given the opportunity to bring past moments to life through sound. We use the same techniques as professional sound designers in the film industry, where everyday objects are used creatively to create convincing sound effects—a technique known as Foley, after Jack Foley, who originated the art.

The Historical Soundscape

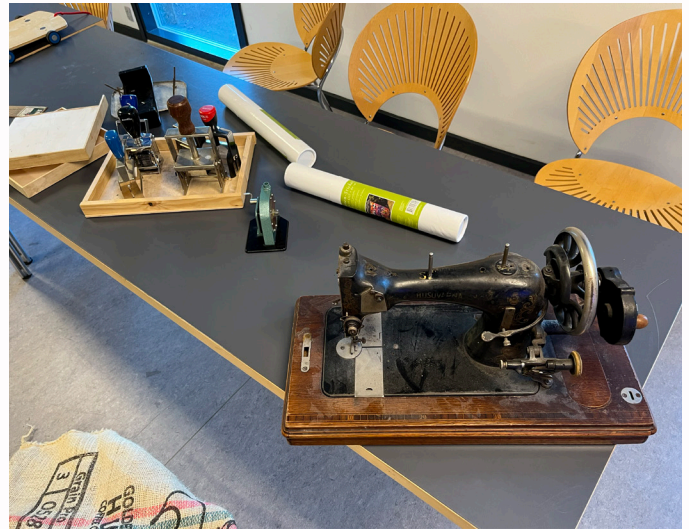
Working with historical photographs is about more than simply adding individual sound effects. It is an artistic reconstruction of entire soundscapes that brings the past to life. This requires both historical research and creative sound production. A church bell from the 1920s may have sounded different in an environment without modern background noise, and the sound of horse hooves on cobblestones gave streets a completely different atmosphere than today's car tires on asphalt.

Preparation and Materials

To be able to recreate the sounds of the past creatively and convincingly, it is important to have a diverse collection of sound-making materials available. The following basic elements have proven particularly useful:

For Vehicles and Machines:

- Metal plates and tubes for recreating industrial sounds
- Various types of wheels and ball bearings for vehicles
- Belts and buckles for harnesses and machine parts
- An old hand sewing machine for various mechanical sounds



For People and Animals:

- Gravel and sand for footsteps and road sounds
- Fabric and leather for clothing and footwear sounds
- Coconut shells for horse hooves (a classic Foley technique)
- Gloves or chamois leather for bird wings



For Surroundings and Ambiance:

- Wood and paper for different textures—the wind's play in tree leaves
- Bird calls and whistles
- Field recordings—a recording from the schoolyard's buzzing life during recess can create the perfect illusion of a crowded square
- A tub of water for wave splashing and beach environments
- Cellophane or plastic for the crackling of fire
- Potato starch in a canvas bag for footsteps in snow



The Creative Process: From Analysis to Sound Creation

The work is organized most effectively in groups of 4–5 participants, where each team is assigned a historical photo to work with. The creative process begins with a thorough analysis of the image, where the group first identifies all potential sound sources. This includes both the obvious elements such as people, animals, and machines, but also more subtle aspects such as the buildings' acoustics and the season's influence on the sound environment.

The groups create a detailed list of all the sounds they imagine could be present in the image's moment. This may include:

- Directly visible sound sources such as machines and people
- Contextual sounds from the surroundings
- Periodic sounds such as church bells, trains, or factory whistles



From Analysis to Sound Creation

Based on their sound lists, the groups begin experimenting with different materials to recreate the historical sounds. This unfolds as an intuitive and playful process, where participants discover how different materials can be manipulated to create surprising sound effects. For example, a bicycle pump and a whisk can become the sound of a steam engine, or a handful of rice in a paper bag can recreate the sound of rain. The resonance of a hamster cage can illustrate the meeting of train wheels with rail joints.

When the groups have found and practiced their various sound effects, the work of recording and arranging the sounds in GarageBand begins. It is important to work methodically with building up the soundscape. Start with the fundamental background sounds that create the overall atmosphere, and then gradually add more layers of sound. For creating a convincing historical soundscape, it is recommended to work with at least 10–12 different sounds in each composition. The sound sequence should have a duration of at least one minute, which gives time to establish the mood and preferably develop a small narrative through the sounds.



Presentation and Dissemination

The finished soundscapes can be presented in different ways. An effective method is to combine sound and image in iMovie, where the historical photo is slowly panned or zoomed while the soundscape plays. This creates a dynamic experience that helps the audience immerse themselves in the historical moment. The finished productions can be used in many contexts:

- As part of local history exhibitions
- In connection with history education
- At the local library or museum
- As part of a digital dissemination of local history

It is fascinating to experience how the addition of sound can transform a static, historical photograph into a living experience of the past. Through this creative process, participants gain not only technical skills in sound production but also a deeper understanding of history and its sonic dimension.

Evaluation of Theme 3: Sonification

After the final theme as well, evaluation is an important part of the process. The evaluation could focus on:

The creative process:

- From historical analysis to sonic reconstruction
- Choice of sound sources and techniques

Technical and artistic integration:

- The interplay between analog and digital tools
- Balance between historical authenticity and artistic freedom

Presentation and dissemination:

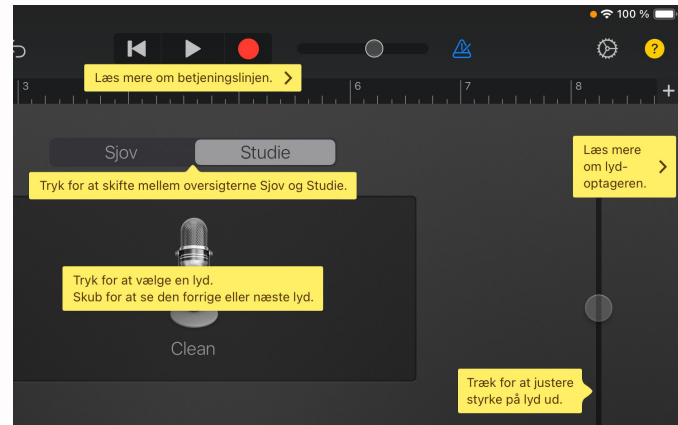
- The effect of combining sound and image
- The audience's experience of the works



Practical Work with GarageBand

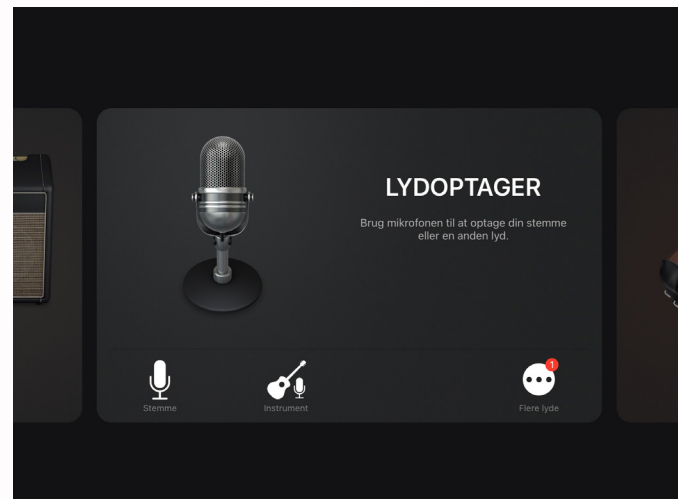
GarageBand on iPad is a powerful tool for sound production that can be used throughout all parts of our creative sound work. The program allows us to record, edit, and produce both poetry readings, music box music, and historical soundscapes with professional quality. In the following, we review the central working processes and techniques that are particularly relevant for our creative projects.

Tip: GarageBand has a built-in help function—press ? in the upper right corner, and small text boxes appear with various basic functions.

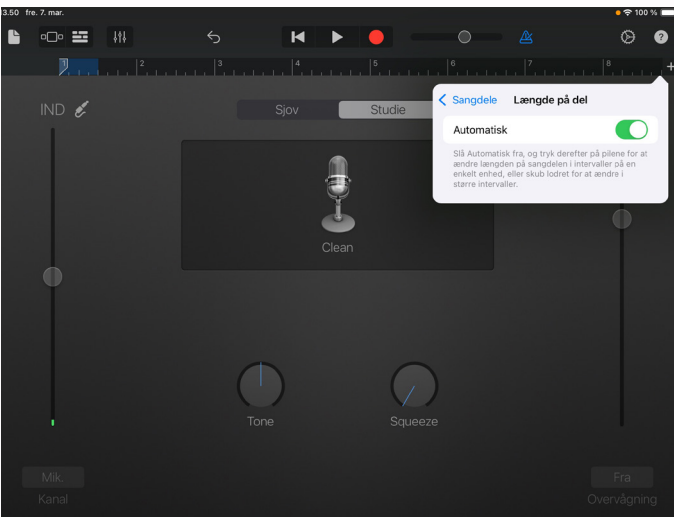


Getting Started with Recordings

When starting a new project in GarageBand, you are met with a range of options. For this purpose, choose “+ New Project” and then “Audio Recorder,” which gives access to the iPad’s microphone. On first use, you must give GarageBand permission to use the microphone—this is a one-time setting that the program remembers going forward.

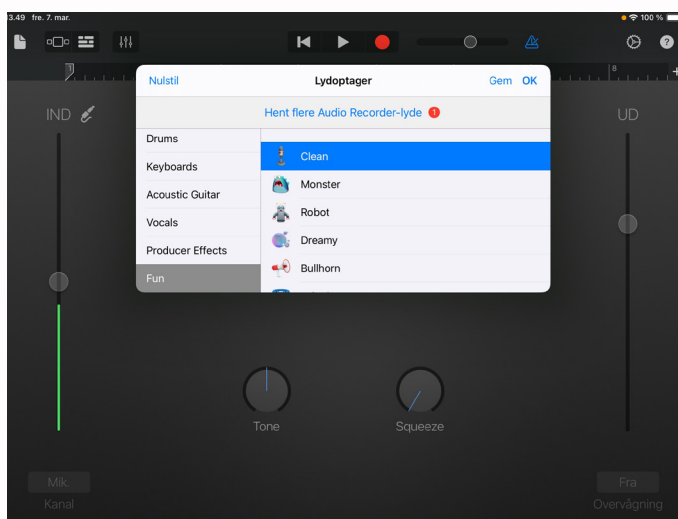


In the top menu, there is a timeline with a plus sign. By setting section A to “automatic,” you gain the freedom to record without being bound by a fixed number of bars. This is particularly useful when working with poetry readings or natural sound sequences that do not follow a fixed rhythmic structure.



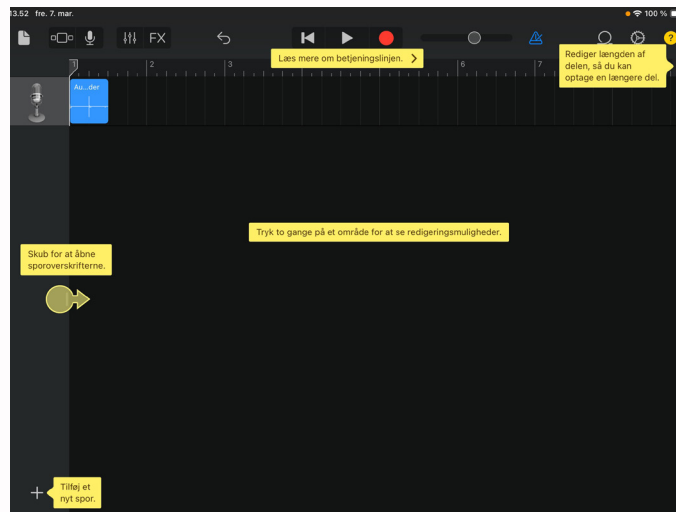
Recording Sound

The recording process itself is straightforward, but there are some important techniques that can significantly improve quality. Before beginning the recording, it is a good idea to press “reset” in the audio recorder’s presets. This gives the cleanest starting point without preset effects.



The red record button at the top of the screen starts the recording. During recording, it is important to be aware of the distance to the microphone—too close causes distortion, too far away gives too much room reverberation. It is important to experiment with different microphone placements. The optimal distance is typically 20–30 centimeters (8–12 inches) for speech and most sound effects. It may also be worth mentioning the ability to adjust the input signal level with the Ind fader.

In the track overview, which can be opened via the track view icon, new audio tracks can be added by pressing ‘+’ in the lower left corner. To create balance between tracks, you can pull the track headers forward on the left side. Here you will find a volume fader for each track, which gives precise control over the audio mix. This is particularly important when combining different elements—for example, music box melody with poetry reading, or several historical sound effects in the same scene. The same location also has a Solo and Mute button for each track, which are very useful when editing the works.

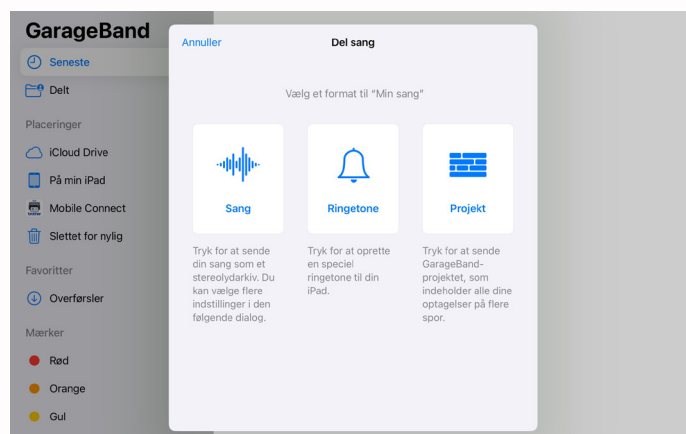


Specific Techniques for Our Projects

For poetry reading with music box accompaniment, it is often effective to record the music box first and then add the reading. This provides the opportunity to time the words precisely in relation to the melody. Try experimenting with different microphone placements for the music box—closer gives more detail, farther away gives a more natural sound.

Saving and Sharing Your Work

GarageBand automatically saves the project continuously. Press the document icon in the upper left, select “My Song,” and give the project a descriptive name. GarageBand automatically saves all tracks and settings, so you can always return and refine the work later. When a project is finished, it can be exported in different formats depending on the intended use. For integration with historical photos in iMovie, it is most appropriate to export as a high-quality audio file, while sharing via different platforms may require other formats.



Overall Evaluation of the Course

As a conclusion to the entire course, it is essential to evaluate both process and result. Here follow suggestions for different focus areas and methods for the concluding evaluation:

Learning Aspects

The professional development could be illuminated through:

- Development of technical skills
- Understanding of sound as an artistic medium
- Ability to combine different forms of expression
- Collaboration skills and creative problem-solving

Documentation

It is recommended to collect material that illuminates the process:

- The created works from all three themes
- Photo documentation of working processes
- Possible video documentation of performances
- Exhibition or concert with the finished works

Forward-Looking Perspective

To strengthen continued development, one could focus on:

- Ideas for further work with the material
- Suggestions for adaptations of the course
- Possibilities for building on the acquired competencies
- Integration with other subject areas

The evaluation methods can be varied and adapted to the specific group and context. The important thing is to ensure that all participants get the opportunity to reflect on and express their experiences and learning throughout the course.



Aesthetic Learning Processes and Pedagogical Foundation

The three themes in this material constitute a coherent course where aesthetic learning processes are central. Throughout the course, participants develop their ability to sense, experience, and create through different artistic forms of expression. In working with sound as aesthetic material, participants move through several layers of sensing and recognition:

- From the immediate listening experience to conscious perception
- From sonic observation to poetic interpretation
- From visual patterns to musical composition
- From digital experiments to conscious sound design
- From historical images to sonic reconstructions

This work with aesthetic learning processes is supported by well-established research and theory in the field of creativity and learning. Two particularly significant research perspectives underpin the material's fundamental principles and methodological approach.

Lene Tanggaard's research on the materiality of creativity shows how creative processes arise and develop in the interplay between people, materials, and the contexts they are part of. She emphasizes that creativity is not solely a result of individual abilities but is shaped through the encounter with materials' resistance and possibilities. Materials' resistance does not function as a barrier but as a catalyst that challenges participants to experiment, reflect, and find alternative solutions.

In this material, Tanggaard's perspective finds expression through participants' work with sound and technology, where the creative process is not just about shaping sound but also about letting sound shape the process. When participants experiment with sound recordings, digital tools, or analog techniques, they are confronted with materials' limitations and unpredictabilities. It is in this encounter—where things do not go as expected—that creativity finds space to unfold. Through this practice, participants learn that mistakes and surprises are not obstacles but part of the creative process that opens up new aesthetic possibilities. (Tanggaard, L. 2010).

John Dewey's experience-based learning theory supports the material's progression from sensing to creation. His fundamental idea that genuine learning occurs through active experience and reflection informs the course's structure. When participants move from sound walk to artistic expression, they work not only with gaining experiences but also with understanding and transforming these experiences into new forms of expression. (Dewey, J. 1938).



Through 10 years of development and practical testing of this material, I have experienced how the combination of aesthetic learning processes, material-based creativity, and experience-based learning forms a solid foundation for artistic work with sound. This approach has proven valuable across age groups and prerequisite levels, which is particularly reflected in participants' engagement in creative processes, their ability to combine different forms of expression, and the high quality of their aesthetic expressions. At the same time, the course supports continuous development of both technical and artistic competencies that strengthen participants' creative practice.

The material's theoretical foundation is continuously developed and nuanced through practical experiences from the courses. This dialectical relationship between theory and practice ensures that the material remains both professionally well-founded and practically applicable. This is particularly reflected in:

- The flexible approach to different target groups
- The ability to adapt activities to different contexts
- The balance between structure and creative freedom
- The integration of different competency areas

OPSAMLING

Impression – Imprint – Expression presents a structured and theoretically well-founded approach to working creatively with sound and music. The material thus offers both concrete tools and methodological approaches for working with sound as an artistic form of expression. It supports an exploratory and experimental practice where participants' own discoveries and creative choices are central to the learning process.

The three interconnected themes give participants the opportunity to develop both technical skills and artistic understanding. The material can be used and developed in several ways:

- The digital dimension can be expanded with new technologies
- The craft dimension can be enriched with more analog techniques
- The activities can be adapted to different age groups and contexts
- The course can be integrated with other subject areas

The methodological principles can be transferred to other artistic areas.

The fundamental progression from sensing through processing to expression can inspire similar courses in areas such as visual arts, drama, or dance. At the same time, the material holds significant interdisciplinary potential, where work with sound and aesthetic processes naturally connects with subjects such as language arts (in the poetic work), history (through sonification of historical photos), science (in exploring sound's physical properties), and visual arts (in working with visual representations of sound). This interdisciplinary dimension opens up exciting collaborations across subject boundaries and enriches both the academic and artistic learning.

In an era of dominant visual focus, this material contributes a conscious and creative approach to our sonic surroundings. Through concrete tools and methods, participants are invited to:

- Develop as conscious listeners
- Experiment with sound shaping
- Explore different artistic expressions
- Combine analog and digital production

Experiences from practice show that this approach effectively sharpens participants' attention to their sonic surroundings, strengthens their technical skills in sound production, and develops their ability to express themselves creatively. At the same time, the work with the material contributes to increasing participants' historical awareness and cultural understanding, which enriches their artistic practice.

Read more about Impression – Imprint – Expression and find further inspiration at www.rizzi.dk

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