A Didactic Guide

Sound UP!

The Neighborhood As A Concert Hall

Activities in Listening and Sonic Creation

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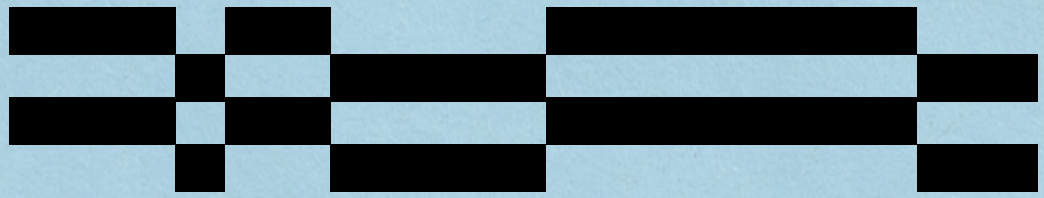

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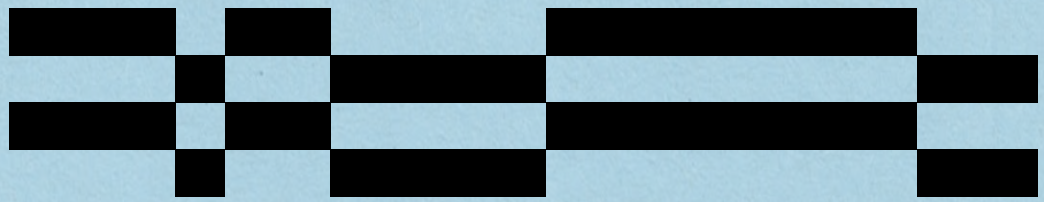

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And finally, to you, the curious creative reader: may these pages invite you to listen more attentively to the urban places you inhabit, to engage sound as a tool for reflection and creation, and to cultivate forms of education grounded in active, critical, and imaginative listening.

Introduction

Consciously listening to our everyday surroundings changes our understanding of them. Traffic, voices, animal and nature sounds, electronic devices, tools, and machines compose a continuously evolving soundscape in which we are immersed every day, often without being fully aware of it. This didactic guide proposes engaging with our neighborhood as if it were a concert hall, where listening becomes a form of attention, interpretation, and participation. Ambient sounds are no longer background noise but the manifestation of a living environment shaped by human and non-human activities, movement, presence,

and events. They become material for thinking, creating, and questioning. Listening becomes a powerful educational act.

Sound UP! is a practical and reflective guide for educators and artists who wish to work creatively and reflectively with sound and listening in educational settings. It is one of the results of the arts-based and interdisciplinary research project *Sounding Urban Places*, which investigated how sound influences urban experience, social interaction, identity, and wellbeing in two distinct urban environments undergoing deep transformation, Kiruna and The Hague.

The seven chapters in this guide translate artistic and theoretical insights from the research project into concrete educational practices specifically designed for adolescents. It approaches listening not only as a musical skill but as a social, cultural, and cognitive practice through which students can better understand their relationship to their surroundings.

The guide builds on pedagogical resources, activities, and reflections developed during a series of practical workshops with first-year secondary-school students (ages 12–13), held between February and April 2025 at John Dewey College in The Hague. Key questions revolved around how participatory sound practices can foster awareness of urban soundscapes, support identity formation and collective reflection among adolescents, and translate artistic research into accessible teaching methods. As such, the guide functions both as a pedagogical toolkit and as the documented outcome of an iterative, research-led educational process grounded in classroom practice.

Methodologically, *Sound UP!* combines project-based and challenge-based learning and it draws on Delalande's *pédagogie musicale d'éveil*, acoustic ecology, and critical sound cartography. All these approaches share the assumption that learning unfolds through doing: listening, recording, drawing, composing, mapping, and discussing. The guide is structured to support this process gradually, moving from sensory exploration to reflection, from individual listening to collective meaning-making, and from description to critical interpretation.

This guide is intentionally conceived as both a coherent methodological process and an open, adaptable pedagogical framework. The seven chapters are organized to follow a linear progression - from exploratory listening and awareness through to recording, analysis, composition, and cartographic representation - supporting students' gradual development of critical listening and sonic understanding. At the same time, this does not imply a fixed or compulsory sequence. The chapters function as flexible entry points within an overarching, coherent pedagogical logic. Teachers and educating artists are encouraged to adapt, reorder, combine, or extract activities from individual chapters according to their educational context, students' needs, and the evolving dynamics of the classroom. The "magic" happens in the classroom, in the street, or in the schoolyard, where and when activities are

adapted to the specific sonic, social, and cultural context of each learning environment.

Each chapter proposes specific activities that are first briefly contextualised, including background information on the pedagogical concepts used. The activities invite students to actively explore and gradually deepen their engagement with sound and listening. *Sound Explorers (Chapter 1)* introduces attentive listening and sonic curiosity, encouraging students to encounter their environment with openness and wonder. *Sound Detectives (Chapter 2)* develops students' sonic inquiry through an investigation of their neighborhood across memory and past, presence and present, and imagination and future. Guiding questions and short interviews are used to collect perceptions, compare perspectives, and generate ideas. *Sound Hunters and Makers (Chapter 3)* positions students as active recorders and producers of sound, emphasizing intentional listening through recording as an interpretative act. *Sound Thinkers (Chapter 4)* invites reflection on silence, attention, and listening positions, helping students to become aware of how a chosen listening perspective shapes what is heard. *Sound Collectors (Chapter 5)* guides students in selecting, classifying, and analyzing sounds, supporting the development of a sonic vocabulary and reflective listening. *Sound Designers (Chapter 6)* supports creative composition and sound collage, enabling students to organize sounds into expressive and meaningful forms. Finally, *Sound Cartographers (Chapter 7)* combines these experiences through visual mapping, allowing students to translate listening into spatial, symbolic, and relational representations of a situated sonic environment.

Ultimately, *Sound UP!* invites educators and students to trust listening as a process of learning and understanding. By working with sound, adolescents learn not only to listen differently but also to understand their environment as something that they inhabit, shape, and can imagine otherwise. This guide is an invitation to open ears, use imagination, engage in conversation, and ultimately realise that every neighbourhood already resonates like a concert hall, waiting to be listened to and played with.

Chapter One

The Neighborhood As A Concert Hall

Sound Explorers –
Active Listening and Sonic Imprints

Can we listen to the sounds of the neighborhood as if we were in a Concert Hall? This conceptual framework has its roots in the work of composer, artist, writer, music educator, and environmentalist R. Murray Schafer, whose pioneering work on acoustic ecology and the World Soundscape Project fundamentally shaped our understanding of sonic environments.

By examining soundscapes through the lenses of active listening and sonic imprints, more profound insights into neighborhoods' narratives can be revealed. In contemporary urban studies, neighborhoods are viewed as **multilayered sound entities** whose layers overlap dynamically much like music in a concert hall. For educational purposes, this perspective helps show how sounds around us contribute to meaning-making practices that support self-identification within communities (Page 2021).

The activities introduced in this guide are intended to help students navigate **their sonic environment** through

Keywords:

Soundscape
Active Listening
Sound Culture
Sonic Identity
Belonging
Self-expression
Soundwalk
Soundmarks
Imprints

soundwalks, active listening, and recording. Listening to everyday sounds reveals different aspects of a place and offers a creative way to understand oneself and one's neighborhood.

What Is... a Soundscape?

A **soundscape** is the total acoustic environment that surrounds us, comprising the collection of sounds – both natural and human-made – that define a place and a moment in time. As R. Murray Schafer described, "the soundscape is any field of study dealing with the acoustic environment as perceived and understood by people" (Schafer 1977: 7). Learning about soundscapes invites students to treat their surroundings not as background noise but rather as living compositions shaped by society, technology, and nature.

Active listening exceeds hearing: it involves awareness, attention, and imagination. Composer, educator, musician, and sound artist Pauline Oliveros developed the foundational concept of "deep listening." She defined it as "listening in every possible way to everything possible, to hear no matter what you are doing" (Oliveros 2005: xxiii). Active listening transforms everyday sounds into a learning experience, helping students to connect perception with empathy and analysis. It is both a **cognitive and an emotional practice**, teaching concentration, patience, and openness to difference. As such, it also cultivates cultural awareness and identity formation, helping people to identify sonic marks and distinctive sounds that are emblematic of their own neighborhood or community.

By transcending passive hearing, we can recognize the marks and layers of sound that permeate everyday life in a neighborhood. This practice aligns with the work of art educator and researcher Raúl Mestre, who fosters creativity and engagement in middle school students through sonic self-portraits, inviting them to explore

and reflect on their unique auditory experiences. This introduces a discovery process into listening that helps students to identify and articulate how the diverse sonic characteristics of their environments affect their listening habits and help construct their identity. Every community develops characteristic **soundmarks**, which are sonic elements that mark a place and give it character (Schafer 1977). Helping students to identify their own **soundmarks** fosters a sense of belonging and self-expression as they learn to recognize themselves as part of a shared auditory world. By composing with found sounds, recording their environments, or reflecting on what they hear, they transform listening into a creative act of meaning-making.

Sonic imprints possess significant emotional resonance, encapsulating memories, relationships, and cultural heritages. From the vibrant call of the churro vendor to the rhythm of padel players or the machinery of a factory, sounds become touchstones of identity. Researcher Jeanette Flores Fuentes expands on the concept of

belonging through sound in her work on soundscapes and sense of place, positing that individuals feel a stronger sense of attachment and connection when their auditory experiences align with community narratives.

> By adopting an **educational perspective that embraces the musicality of everyday life**, neighborhoods can be understood as dynamic concert halls where urban soundscapes, active listening, personal sonic imprinting, and meaning interact synergistically, revealing the narrative complexities of culture, identity, and community belonging (Jahandideh 2025; Reule 2024; Biçer 2019; Heine 2021; Michaud 2025).

The **soundwalk** is one of the most direct ways to experience a sonic environment. First popularized by the sound artist and composer Hildegard Westerkamp in 1974, a soundwalk can be described as a guided or self-directed walk during which participants focus solely on listening. In an

educational setting, soundwalks train attention and thoughtfulness, connecting students to their surroundings and to one another. Through such walks, the schoolyard, the street, or a hallway become sites for inquiry, reflection, and artistic exploration.

Additionally, soundscapes can profoundly influence well-being, as highlighted by researcher Megan Miller, who explores the potential for relaxation present in natural soundscapes through field recordings and meditation walks. Intentionally incorporating natural sounds (such as birds chirping and leaves rustling) into urban environments can enhance psychological and emotional well-being.

Consider These Questions

- If the sounds of your neighborhood were a composition or a song, which sounds would be more characteristic, predominant or musical? What sounds describe your neighborhood the best?
- Imagine, visualize, and listen to a situation in your neighborhood.
- What stories do the sounds tell (about the people, the activities, the environment, their ways of living, etc.)?
- Which sound makes you feel most at home, and which sound would you remove if you could?
- How do you affect your soundscape? And how does it affect you?

Is there music all around me?

Can the daily sounds around me be musical?

Description of the Activity

Estimated time: 1,5 hours
You can support the activity with a presentation, a data collection sheet, and student sheets

Inside

This activity begins with a classroom introduction that sets the tone for exploration and active listening. The teacher welcomes the group, introduces the teaching team, and explains that today's session is part of The Neighborhood as a Concert Hall project. They clarify that this project invites students to perceive their everyday environment as a living concert hall full of sonic textures, rhythms, and voices.

To establish focus and manage transitions, the teacher sets up simple cues, such as "If you hear me, clap twice!" or a call-and-response, like "Eo Eo!" followed by "Oé!" These cues will be useful when working outside where attention can easily be distracted by a busy soundscape.

The teacher then introduces the main idea of the day, for example by saying something like:

> *Today, we're going on a sound hunt during a soundwalk. But before we begin, do you know what a soundwalk is? Or what we mean by a soundscape?*

This opening invites curiosity and helps to connect the students' intuitive understanding of their environment with the upcoming experience.

1. Content Exploration – Introduction to Sound Awareness

Before leaving the classroom, the teacher facilitates a short **reflective conversation** to awaken students' auditory imagination. They are asked to form a sonic image rather than just think.

> *Close your eyes for a moment. Imagine your neighborhood early in the morning. What do you hear?*

After a minute of silence, the students are guided to shift their mental focus:

> *Now, imagine this neighborhood here in the morning. What sounds would you expect to hear there? What do these two soundscapes have in common? What do they tell us about the people, activities, and rhythms of life in each place?*

Through this brief sonic imagination and discussion, students begin to link sound with place, emotion, and identity. It also introduces the analytical aspect of the project, focusing on understanding how sound reflects human presence, time, and community.

2. Wake Up Your Ears – "Sounds Fun!"

Before making any recordings or doing outdoor work, students participate in a series of "ear wake up" exercises. The teacher explains that just like athletes warm up their muscles, listeners must warm up their ears to prepare for focused perception.
Some examples of these type of exercises:

a. Acupressure on Ear Points: Students gently massage the outer parts of their ears and head to activate awareness. This also works with some parts of the hands, like the muscle between the thumb and the index finger.

b. Filtered Listening Exercise, based on David Helbich's *Nº Music – earpieces* (2013): The teacher guides this exercise slowly, step by step, asking students to notice how sound changes as they alter their ear shapes with their hands:

1. Cover your left ear, then your right.
2. Open both ears and listen again.
3. Hold your hands flat in front of your ears (without touching them).
4. Cover your ears completely with your palms.
5. Press harder, then soften the pressure.
6. You can leave a small gap at the front, then at the back.
7. Place both palms facing forward at a 90° angle from your head; then turn them backwards.
8. Switch hands quickly and repeat.
9. Pause and keep the position for a few seconds.

c. Massage and Body Awareness: Students massage their ears and head again, followed by gently shaking their fingers away from their body and further exploring the sound of their hands and arms. The teacher prompts them to make these different gestures near one or two ears: *How far can you still hear the rub or shake of your fingers?*

d. Partner Exercise: Students close their eyes and repeat some of the previous gestures with a partner, learning to coordinate through listening rather than sight, a step toward collective auditory awareness and trust.

3. Outdoor Activity Preparation – Soundwalk and Sound Exploration

Once attention and curiosity are high, the teacher starts explaining the outdoor component.

> *Now that your ears are awake, it's time to explore. We'll go on a soundwalk, a silent walk where we listen carefully to the environment. We're going to become Sound Explorers, discovering, recording, and reflecting on the sounds that define our neighborhood.*

The teacher briefly explains the route (for example, from the school to a factory or a padel court) and clarifies behavioral requirements:

- The walk will be done in silence.
- Students will use gestures or written notes instead of talking.
- Each group will have a designated meeting point and a teacher or assistant nearby for support.

At the destination, each group will explore a specific location (such as a factory, a gym, or a park), taking turns inside and outside and engaging in two modes of listening:

- **Recording:** capturing sounds intentionally and selectively.
- **Observing:** for those without devices, focusing purely on perception and reflection.

The teacher may also propose a **short, blindfolded walk (optional and supervised)**, allowing students to concentrate entirely on listening without visual cues.

4. Outdoor Activity Explanation – Soundwalk and Sound Exploration

a. From the Starting Point (for example, the school)
The teacher can introduce the main idea and distribute or show the worksheets, if applicable:

> *We will begin the sound walk. We will walk together in silence, enjoying, listening, and discovering the sounds that this immense concert hall has to offer. Your mission will be to listen and record the walk, pointing in the direction you find most interesting, novel, noisy, extreme, pleasant, etc.*
>
> *Please try to avoid stopping the recording if possible, aiming for a single take.*
> *To do this, you can share recording devices or focus on the sound without any additional equipment. You can choose to use headphones or not. As we have seen, this will change your experience.*
>
> *Remember that all the sounds recorded must be clean so we can use them later. Remember to verbally label the recordings. [Audio labeling example: One. Soundwalk.]*

b. Arrival at the Destination
Stop just a bit before the location to keep the surprise. One group at a time enters the location for 5 minutes with the option to have their eyes closed or blindfolded. The

remaining groups stay outside doing other listening exercises.

c. Inside (5 minutes per group)

- With eyes open, blindfolded, or closed, the students make a chain, with one hand on the shoulder of a peer.
- In the other hand, they hold a recording device (with or without headphones).
- The teacher leads the chain; the students need to enter the location in silence.
- When the teacher find an interesting point, they stop to listen.
- The teacher asks them to open their eyes.
- The students get a minute to find and record the sounds they find most interesting.

The teacher could frame the activity by saying something like:

> *At the location, we'll make a line, like a little train. Put one handgently on the shoulder of the person in front of you. In your other hand, you'll hold your recording device. You can keep your eyes open if you want, or you can close them or wear a blindfold to help you focus more on what you hear.*
>
> *I'll be at the front, guiding you. We'll move slowly and in silence, staying connected as a group. Inside the place and around us, we'll listen together.*
>
> *When I stop, it means we've arrived at an interesting sound spot. We stay still for a moment and just listen. After that, you can open your eyes and take one minute to record the sounds you find most interesting. Use the name [Audio labeling example: Two A. Inside].*

5. Recording Devices and Technical Instructions

Before the activity outside, the teacher explains and demonstrates how to use the recording devices safely and effectively. Key points include:

- Label each recording verbally at the beginning (group name, sound name, location). This is what is needed for proper and systematic data collection.
- Handle equipment carefully; avoid touching the microphone or cables.
- Check recording levels: ensure the red light is on, monitor the counter, and avoid sound saturation (levels should be neither too high nor too low).
- Use splitters so that two students can listen at the same time.
- Protect the microphones as they are sensitive and fragile.

The teacher also **models** what *not to do*, for example, shaking the microphone, breathing too close to the microphone, or speaking while recording. Before setting off, each group assigns roles:

- **The recorder** - operates the device.
- **The microphone holder** - ensures positioning and stability.
- **The leader** - keeps the group organized and controls the time.
- **The note-taker** - documents location, time, and impressions.

When everything is ready, the teacher gives the command: ***Silence!*** and the soundwalk begins.

Students record only the sounds that they find meaningful, unique, or representative of the environment. The teacher emphasizes making thoughtful recordings and correct labeling:

> *Don't record everything and label **each recording** properly. Each sound that you capture might later become a part of your composition.*

During the walk, the teacher circulates among the groups, ensuring both safety and concentration, while quietly reminding them to listen attentively.

Outside

6. Soundwalk and Sound Hunt

Once outside, students become Sound Explorers. In silence, they walk slowly through the neighborhood until they arrive at a chosen location, listening carefully to the changing soundscape along the way.

Students take turns using the recording devices. Before each take, they record a brief verbal label that includes the group name and location. They must handle the microphones gently, check volume levels, and avoid saturation.

Communication happens silently, using gestures or notes.

Below you can find an example of the student sheets for this activity.

TIP: Remember to label the recorders and fill in the student sheets.

The Neighborhood As A Concert Hall...

Choose a name for your group:

Names of the members:

Names of the Recording devices:

Names of the teachers:

1. Starting Point – Soundwalk

What are the coolest sounds around me?

MISSION:

Walk together in silence and record the walk,
pointing at the sounds you find most interesting, new,
noisy, extreme, pleasant, etc.

Don't stop the recording!

YOU CAN USE:

recording devices (sharing) // your phones // nothing.
With or without headphones.

Label: "One. Sound Walk."

2. Inside

Do machines make music?

MISSION:

With your eyes open, closed or
blindfolded, make a silent chain.

Follow the teacher or your chain leader. Listen.

When the leader tells you, open your eyes
and record the coolest sounds!

Label: "Two-A. Inside."

7. Debriefing

After recording, when back in the school, groups gather briefly to reflect.

How did your listening change today? And why?

Which sounds best represent the places we have visited?

Which sounds were most surprising?

Goals

- Cultivating active and thoughtful listening: students are trained to notice, describe, and interpret the sounds that shape their daily life
- Developing an understanding of how soundscapes influence belonging and identity, connecting personal memory with community soundmarks
- Learning how to record sounds with care, purpose, and technical accuracy, valuing quality over quantity
- Fostering collaboration and respect within groups through shared silence, curiosity, and nonverbal communication
- Inspiring creativity and reflection: students are encouraged to listen to their neighborhood as if it is a living composition and to recognize their own role within it

The Skills We Practice

- Auditory and sensory awareness
- Critical and creative listening
- Observation and documentation
- Collaborative and social skills
- Technical literacy
- Language and expression
- Cultural and emotional literacy

Materials

- Tags or stickers on which to write the students' names
- Recording devices (or phones)
- Headphones and splitters
- Bands, cloths, or eye covers (to blindfold)
- PowerPoint Presentation
- Student sheets

Pedagogical Recommendations

- Take the time to try all the equipment and have extra materials available before the workshop starts.
- Label each device. Good technical organization allows for creative freedom in the future.
- Before going out, practice the cues to gather or regain focus (e.g. clap, Eo Eo).
- Knowing the names of the students strengthens the bond: write their names on name tags and attach them to their coats.
- Help students to be proactive when problems arise. Make clear that they can always reach out to teachers for assistance.
- Offer students quiet solutions and examples if they need to communicate (e.g., by using their hands, assigning communicator roles to specific students, offering whiteboards or paper for writing questions, etc.).
- Distribute the devices and headphones in advance.
- Give instructions indoors. Outdoors, attention can wander easily. Explain everything inside first. Keep the instructions short and precise.
- Show how to hold the microphone, how close to stand from what needs to be recorded, and how to label recordings

verbally – followed by a brief demonstration of what not to do – to guide them away from common mistakes.

- Maintain silence and respect to ensure proper recordings. Explain that silence is part of the teamwork: everyone's quiet helps others to record better. Mention the consequences of breaking this shared silence.
- Encourage thoughtful and intentional recording by guiding students to seek quality, meaning, and purpose in the sounds they choose, and to avoid random recordings without having critically listened.
- Use reflection and imagination. Ask reflective questions before, during, and after the walk.
- Check the roles. Rotate tasks (recorder, mic holder, note-taker, leader) so that all students participate and learn various parts of the listening and recording process.
- Supervise strategically. If possible, position yourself to oversee multiple groups ("umbrella system").
- Care for the environment. Listening also means caring for the place being listened to.

Integrate humor and creativity. Use light energy and playful curiosity to maintain engagement. Sound exploration should feel like a journey of discovery, not an assessment.

If You Want To Expand

Meet the artist: R. Murray Schafer

R. Murray Schafer was a Canadian composer who wanted people to listen to the world more carefully. Among many other resources, sound artworks, and educational projects, he also created "ear cleaning" exercises to train the ears: simple activities that help one to notice, enjoy, and describe everyday sounds. Explore this resource by opening the link:

Ear Cleaning

Beyond the location: Radio Aporee

Platforms like Radio Aporee enable anyone to upload and explore sound recordings from around the world, creating a global map where everyone can travel through sound rather than sight. Explore this resource by opening the link:

Radio Aporee

Assessment Opportunities

- Can you observe how students listen, collaborate, and respect silence during the activity?
- Can you assess care and intention in the recordings and notes?
- Recording quality: Evaluate clarity, length, and labelling to assess evidence of a thoughtful and selective sound capture.
- Critical reflection: Check notes or group discussions for detailed, emotional, or analytical sound descriptions.
- Participation and teamwork: Assess role rotation, respect for others' listening, and shared responsibility.

TIP: Encourage self-assessment: *What did you notice differently or learn about listening today? Did a specific sound surprise you?*

Differentiation, Equality and Attention to Diversity

- Offer varied ways to participate: for example, some students can record sounds while others draw, write, or describe what they hear.
- Rotate group roles (recorder, microphone holder, note-taker, leader) to ensure each student has an equal voice and responsibility during the activity.
- Be aware of the different sensitivities and backgrounds that students have. Consider them as valuable strengths that students can use and build on as something unique and special.
- Provide alternatives for students who find loud or crowded soundscapes overwhelming (use headphones, quieter zones, or observation-only roles).
- Accept multilingual words or personal expressions – sound transcends language barriers. Encourage students to bring examples of sounds that represent their homes or backgrounds, framing diversity as a source of richness.
- Provide step-by-step guidance, repeat demonstrations, and adjust to varied comfort levels with silence and attentive listening.

Emphasize **teamwork and listening to one another,** making inclusion an integral part of the learning goal.

Chapter Two

Memory // Presence // Imagination.

Past // Present // Future.

Sound Detectives –
Sonic Memory and Perspective

How can we trace the sounds that live in our memory, present, and imagination? Sound plays such a fundamental role in shaping our memories and imagination that it merits in-depth exploration, particularly in the context of urban environments. The relationship between auditory stimuli and psychological responses is multifaceted, encompassing emotional, social, and creative dimensions. As educators engage students in activities that explore this relationship, it is essential to recognize how sound functions as an activator of memory and imagination.

The **interactive activity** in this chapter is designed using the methodology of **Challenge-Based Learning (CBL)** with Narrative. The core idea in this activity is that students engage with real-world challenges embedded in a story by impersonating Sound Detectives, requiring them to think critically, creatively, and collaboratively to solve these challenges. For example, instead of just analyzing soundscapes, students go on a mission to recover a lost sound, reconstruct a soundscape, or create an interview. The challenge

Keywords:

Perception
Sound Marks
Urban Planners
Sound Memory
Imagination
Sound
Composition

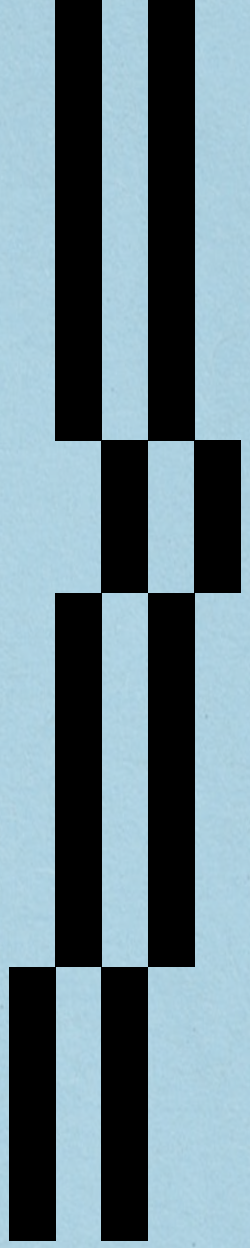
unfolds across three stages – past/memory, present/presence, and future/imagination – where answering one question is essential for unlocking the next. Students collect ideas, analyze audio, and make decisions that will guide the development of their final project: a soundscape composition or sound collage (for further information about this final project, see Chapters 6 and 7).

Why Do We Need to Understand Our Sonic Memory and Perspective?

Sound and memory are deeply connected: Sound serves as a vessel for memory. In *The Memory of Sound: Preserving the Sonic Past*, writer and poet Seán Street emphasizes the significance of sonic memory in preserving our past, stating that sounds in specific environments are directly linked to former experiences. Street explores our capacity to remember through sound and how maintaining continuity with our memories helps us preserve a coherent sense of self. Street suggests that when we revisit or recognize familiar sounds, we reinforce the narratives that shape who we are, allowing our identity to remain more or less intact across time. In urban settings, distinct soundscapes – such as busy streets and distant sirens – become vital memory markers. Within a learning environment, this relationship between sound and memory can help students to understand relationships between their personal and collective identities and to reflect on how shared sonic experiences create space for connection and deeper mutual understanding within their communities.
In considering the social dimensions

of sonic memories, rhetoric scholar Janine Butler explains that an embodied sonic rhetoric – an approach exploring how sound is felt, interpreted, and communicated through the whole body – enables a deeper engagement with the socio-cultural contexts in which sounds occur. Butler's work examines how individuals perceive and engage differently with sounds through imagination and interconnected mental and physical experiences. **Sonic interactions thus strengthen social bonds** and create shared experiences. In an educational setting, students can explore how their social networks and collective memories shape and are shaped by auditory recollection, thereby helping them to understand how shared sonic experiences influence their communities.

Creativity is another significant aspect of our imaginative landscape informed by sound. In *Sonic Virtuality*, sound scholars Mark Grimshaw and Tom Garner explain how, because sound constitutes an emergent perception, our auditory environment is deeply intertwined with our creative expression (2015).



When students engage in sound-based activities, they can experiment with audio recordings, discovering the potential of sound as a form of sentimental memory capture (cf. Oleksik and Brown 2008). Recordings can go beyond a simple factual record to evoke feelings and associations that transport them or other listeners back to meaningful connections, times, places, or events.

> Instructors guide students in exploring recording-based activities, encouraging them to use sound creatively to convey narratives that resonate deeply with their community.

The significance of sonic memories in urban environments is not to be underestimated. The diverse soundscapes of cities do not merely provide a backdrop against which personal and community narratives are constructed, they actively participate in and co-create those narratives. Sound studies scholar Justin St. Clair highlights that sound contributes directly to narrative construction by influencing emotional resonance, spatial aware-

ness, and temporal perception (St. Clair in Bull and Cobussen 2020). Approaching sound in a storytelling way encourages students to listen critically to their everyday environments and to recognize sound as a formative element of urban storytelling. By engaging with sound as an expressive and analytical medium, students are invited to capture aspects of their realities that might otherwise remain unnoticed or unarticulated.

Consider These Questions

- Is there music all around us? Can the daily sounds around us be considered music?
- What does silence feel like?
- How have the sounds of your neighborhood changed over time?
- If you could design the sounds of the future what would you keep, and what would you change?
- Which sounds from the past would you retain in your environment?
- How do different people experience the same sound differently?
- What can listening teach us about ourselves as well as others?

What is the emotional and creative power of sound in shaping memories and imagination?

Description of the Activity

Estimated Time: 1 hour
You can support the activity with a presentation
and a data collection sheet

Inside

This activity is designed to be completed individually – that is, each student with their own laptop – while still collaborating with other group members. The activity is designed across three levels (memory, presence, and imagination) using questions that incorporate different perspectives and various response formats (recordings, preferences, narratives, multiple choice, ordering). Each question serves as a key to unlock the next one. In this case, the activity presented below is contextualised within the Binckhorst neighbourhood (The Hague). The teacher can modify the questions by accessing the Microsoft Forms questionnaire through the links provided below.

Building on this structure, the following activity introduces a narrative framework that situates students as active agents. By stepping into the role of sound designers, students are invited to investigate urban soundscapes, critically analyze their characteristics, and imagine alternative sonic futures. This framing provides a clear purpose for the listening tasks that follow and sets the stage for the challenge described below:

Welcome, Sound Designers!
The challenge: *You have been hired by*

the city to design the soundscape of a new neighbourhood. But before making any decisions, you must investigate the existing urban sounds and gather advice for real urban planners.

Your mission: *Explore, analyze, and redesign the sound of a neighborhood. Your choices will shape the final design.*

Choose wisely!

Ask the students to open their laptops. Each student accesses the activity through a shared link or QR code (see next page), follows the steps on the form, and reflects individually. Although the work is personal, students collaborate by sharing ideas and discussing their choices with their peers or with their group members from other activities, supporting one another as they record and articulate their answers.

For teachers to access the Microsoft Forms with the questions, they will need a Microsoft Account.

[EN] Link to collaborate

[NL] Link to collaborate

This is the original Form, do not modify! You can use it if you want to see the teacher's view with all the questions and get access to the responses. You cannot do this with a student link: each question is a key to unlock the next one.

[EN] Link to duplicate or use as template

[NL] Link to duplicate or use as template

Use this link if you want to make changes or modify the activity.

PLAY!

Students can also get access to the interactive activity questionnaire with the QR code. The teacher will need to create a new QR code or link if the template is duplicated or modified, because previous links will no longer function.

[EN] Link to play as participant – for students

[NL] Link to play as participant – for students

Open access – no need for a Microsoft account.

[EN]

[NL]

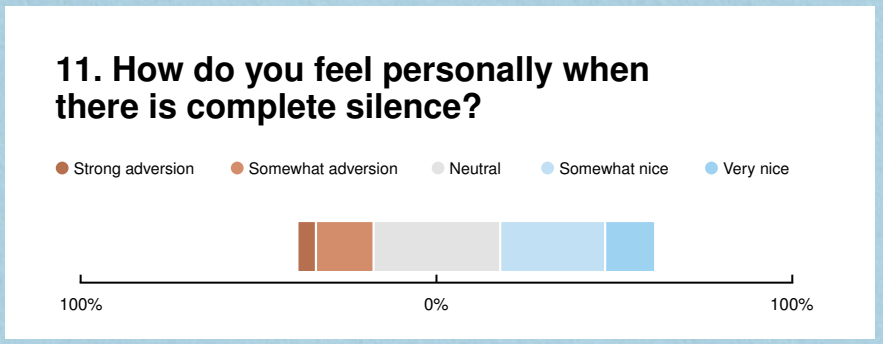
TIP: Students sit together with their group members. They should have printed copies of the activity ready in case of technical problems or limited device access.

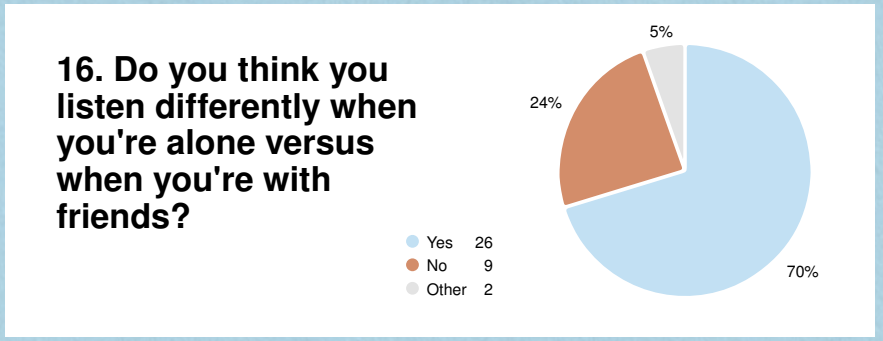
Extra Activities Based on the "Sound Detectives" Interactive Activity

Once students have completed all the questions and interviews about the past, present, and future of their neighborhood, the teacher can extend the activity with several follow-up projects. For example:

Analyze the Data and Audio Transcriptions:

Encourage students to closely examine the results of the questionnaire by comparing answers (similarities and differences), discussing the reasons behind the answers, and describing what the data reveal. This can lead to group debates or written summaries exploring why people perceive a neighborhood in different ways. Below you can see some of the data collected during workshops at the John Dewey College in The Hague (the Netherlands), which can serve as a trigger or inspiration for additional activities:





Compose with Audio:

Students can listen to their interviews and identify strong ideas, key words, or emotions. They then explore how these elements can be reused creatively in a sound composition – such as the one proposed in Chapter 6, *My Composition* – by transforming them into layers, rhythmic material, narrative ideas, or background textures.

Create a Mural:

Invite students to collaborate on a collective mural that captures their key reflections and recommendations for urban planners. The mural can include quotes from the interviews, drawings, symbols, or color codes to represent emotions, memories, or ideas about change in the students' neighborhood. Below is an example of possible reflections and

recommendations made by students of the John Dewey College about the neighborhood De Binckhorst.

Urban Soundscape
Recommendations from Children

1 Add More Nature to Cities

"There should be more nature... It's more relaxing."
"I want more trees so I can hear them rustling."
"Birds and water sounds are the best, they should stay."

Recommendation:
Integrate green zones, parks with trees, and water features to amplify calming natural sounds and reduce acoustic stress.

2 Reduce Car and Traffic Noise

"Too many cars... you hear them all the time."
"Cars are loud and annoying, they ruin the peace."
"Fewer roads so you can work outside more quietly."

Recommendation:
Limit car traffic in residential and school areas; implement traffic-calming infrastructure and acoustic barriers where needed.

3 Create Mixed Sound Zones

"You need silence to work, but noise when you're doing things together."
"I want a place to be loud, and another place to relax."

Recommendation:
Design zones with specific acousic purposes: quiet areas for concentration (like libraries or green spaces) and dynamic zones for play, sport,

4 Design for Domestic Quiet

"I want a skatepark."
"More playgrounds that aren't boring."
"A place where you can make a lot of noise."

Recommendation:
Ensure housing zones are buffered from traffic and commercial noise, and include access to quiet outdoor areas.

Goals

- Investigating how **sounds connect memory, presence, and imagination**
- **Listening actively** and understanding the **link between sound, time, and the mind**
- Developing **thoughtful recording habits** – guiding students to record sounds with intention and to avoid random, unfocused recordings
- Reflecting on **how sounds influence place, culture, and daily life**
- **Imagining and expressing future soundscapes creatively** by taking on different roles and understanding how urban planning affects the soundscape
- **Collaborating respectfully** by listening to the voices and experiences of others

The Skills We Practice

- Active listening and critical observation
- Emotional awareness and reflection
- Sound analysis and description
- Creative and speculative thinking
- Teamwork and role-based collaboration
- Sound recording and labeling
- Developing a vocabulary and expressive skills to describe, analyze, and communicate about sound

Materials

- Laptop or tablet for each individual student
- Headphones for each student (with splitters if needed)
- Recording devices or phones (per pairs or small groups)
- Optional: Presentation slides
- Optional: Printed instructions
- Optional: Data collection sheet

Pedagogical Recommendations

- **Test and label equipment** in advance. Clear labeling avoids confusion. Check batteries and have spares ready.
- **Keep explanations short.** Use metaphors and stories. A concept like “Sonic Detectives” makes the task clear and playful.
- **Value silence.** Emphasize that maintaining silence is a shared responsibility that helps the whole team to record effectively.
- If technology fails, ensure that there is a **backup plan.**
- For activities such as the interviewing that require recording, remind students to **add a verbal label at the start of each take.**
- **Rotate roles.** Everyone takes a turn recording or being recorded.
- Offer **one-to-one guidance** whenever possible and necessary.

Record thoughtfully.
Fewer, shorter, well-labeled recordings are better than many long ones.

If You Want To Expand

Meet the project: Tuning In NYC.
Tuning In is a creative sound education project where you become a “sound artist” in your own city. You learn how to listen deeply, record sounds around you, and then use them to build a sound album or a short audio piece that tells a story about your neighborhood and yourself. Use the link below:

Homepage | Tuning in NYC

Meet the website: Sounds of the Forest.
This interactive soundmap is filled with recordings from woodlands and forests from all over the world. Click on a marker, listen to sounds like chirping birds in Slovakia or rustling leaves in Australia, and imagine how your own

local green space might sound. You can also add your own one-minute recording of a nearby outdoor place. Click below to explore:

Sounds of the Forest – Timber Festival

Assessment Opportunities

- Analyze the data from different perspectives, drawing on the results of the Microsoft Forms questionnaire as well as the recordings.
- Observe how students collaborate and maintain silence during fieldwork.
- Analyze the critical and creative thinking demonstrated in students' answers to the questions.
- Check the quality, clarity, and labeling of the students' recordings, as well as the speech they use.
- Evaluate reflections: can the students describe how a sound made them feel, or why they chose it?
- Compare the three stages (past, present, and future) in a final discussion or presentation.

In Microsoft Forms, open the Form that you have used to do the activity and click "Responses" to view summaries, charts, and statistics for each question. Select "Open in Excel" for a **detailed analysis, filtering, and comparison of the results.**

Differentiation, Equality and Attention to Diversity

- Adapt the level of challenge: for students who need more support, the task can focus on identifying and naming sounds, while students who are ready for more complexity can adapt the questions in order to interview each other.
- Some students may have hearing difficulties or, conversely, may be very sensitive to (certain) sounds. Offer options such as using one headphone only, lowering the volume, or taking observation roles like "sound mapper" or "note-taker."
- Listening and being silent can feel vulnerable. Acknowledge discomfort and validate students' experiences without forcing participation.
- When working with neurodiverse students (e.g., those with ADHD

or autism spectrum disorders), pair them with patient peers, provide concrete timing cues, and assign structured roles that reduce uncertainty (e.g., a timer or an equipment monitor).

- Make space for every student's cultural and personal associations with certain sounds. Encourage sharing home sounds, languages, or sonic traditions as part of the collective soundscape.

In all cases, the aim is to **celebrate diverse ways of listening, feeling, and thinking.**

Chapter Three

Sound Field Recording

Sound Hunters and Makers – Position, Choice, and Capture

How can I give life to the sounds around me? Active listening and field recording offer unique interactions within the realm of sound exploration. At the heart of effective field recording lies the practice of active listening, which encourages practitioners not just to listen, but to engage with their auditory environment. This commitment amplifies awareness of even the faintest sounds, enriching the overall recording process and encouraging creative expression.

The activities in this chapter introduce students to **field recording**, exploring the environment through **microphones, silence, and curiosity.** By alternating between **Sound Hunters** (observing and recording existing sounds) and **Sound Makers** (interacting and creating new sounds), students learn that recording is not only a technical task but also a form of active listening, imagining, and creating.

Keywords:

Active Listening
Recording
Techniques
Microphones
Soundscape
Silence
Soundmarks

What Is... Field Recording?

Field recording is the art and technique of capturing environmental sound – the wind in a street corner, the echo of a corridor, the hum of a machine, or the rhythm of footsteps. It transforms listening into an act of discovery, exposing how every sound carries information about time, space, emotion, and activity.

Recording sounds helps students develop attention, patience, and curiosity. A microphone is a magnifying glass for sound, and when we hold it, we hear things differently: distant sounds come closer, quiet textures become clearer, and silences become more meaningful. Actively listening makes the recorder highly aware of subtle auditory textures that may contribute to the uniqueness of a place.

Field recordings can help students to craft more personal sonic journals, fostering an enhanced sensitivity to everyday sounds and social connections. This echoes the work of musicologist and historian Jean-Baptiste Masson, who investigated the history of sound recording as a large-scale hobby in France and Britain between 1948 and 1978. He followed amateur "sound hunters" to investigate the technologies they used, their social ties, their knowledge transmission, and the aesthetic choices they made when capturing sonic environments. Masson describes how these "sound hunters" created clubs and networks that cultivated a shared culture of experimentation, blurring the boundaries between music, noise, and ambient sounds (Masson 2022).

Field recording is a fundamentally creative and interpretive act, shaped by the recordist's choices and technical practices. Sound scholar Marcel Cobussen reminds us that field recordings are not transparent windows onto reality: they operate simultaneously as documentation and as creative transformation, preserving

traces of a site while also generating new ways of experiencing it (Cobussen 2022).

In field recording, the social, technological, ecological, and acoustic interweave. Technical tasks such as deciding microphone placement, managing recording levels, avoiding noise, and diligent labelling underscore the subjective nature of the recording process. Field recording is therefore not merely a technical skill but at the same time a creative endeavor. Sonic realities are also sonic fictions (Eshun 1998; Schulze 2020), actively constructed by the recordist.

And What About Silence?

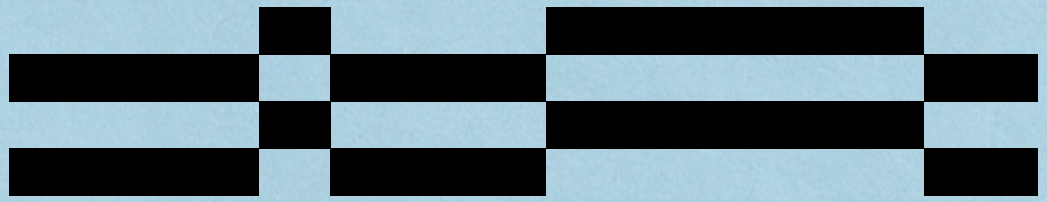
Silence promotes a richer auditory awareness, enabling a re-sensitization to the hidden significance of everyday sounds. Moments of quiet attune the listener to easily disregarded mundane sounds, making one aware of how the everyday sonic environment is not a passive backdrop but an active force with profound cultural, social, ecological, and political influence. Being silent sharpens our ability to listen to and critically engage with the world around us.

> A committed and **active listening in silence** amplifies awareness of even the faintest and most subtle sounds in the surroundings, thereby enriching the field recordings.

In the activities presented in this chapter, silence operates as a **shared responsibility**, encouraging everyone to record, reflect, and listen together. As noted by anthropologist and ethnologist Agata Stanisz, sharing field recordings opens a cultural dialogue enriched by collective silence and active listening. Collective silence is therefore a kind of activity and not just a state of inactivity. It strengthens how listeners interact with sounds, encourages community reflection, and creates joint experiences.

Consider These Questions

- What can a sound tell us about the time of the day, the period of the year, a person, the activity taking place at a certain site, or the nature of that site?
- Which sounds are always there but rarely noticed?
- How can a microphone change what we hear? And a pair of headphones?
- How does the sound change when I pause for a moment and listen carefully?
- What is the difference between hearing and listening?
- Do all neighborhoods sound the same? And all schools?



How can I give life to the sounds around me?

How can I learn to “read” my sonic environment to understand the stories it tells?

Description of the Activity

Estimated time: 2 hours
You can support the activity with a presentation and Student Sheets

Inside
Intro & Framing

1. Welcome & Context

Welcome the students and introduce the project:

> *Today you will become Sound Hunters and Sound Makers, artists and explorers who will listen carefully to the world, record it, compose it, and discover how sound tells stories about places and people.*

Explain that this activity is part of **The Neighborhood as a Concert Hall**, where the environment is treated as if it is a large concert hall full of sound objects.

> *“Why is it important to listen? How does the world sound when we pay attention to it? And how do we affect the soundscape just by being a part of it?”*

2. Discussion – Thinking Together

Invite students for a short collective discussion of their personal experiences and imagination:

- *Do all neighborhoods sound the same?*
- *What do sounds tell us about a neighborhood?*
- *How do you want your neighborhood to sound?*
- *Which sounds make you feel safe or, conversely, uncomfortable? Why?*
- *How can a place sonically change depending on the time of day or season?*
- *How do you contribute to your soundscape?*

Then, introduce sound as an element in storytelling. *"Every sound can help reveal...,"* e.g.:

- *Time of day: morning birds versus evening traffic.*
- *Season: wind, rain, or ice.*
- *Culture and activities: markets, sport, celebrations, etc.*
- *Social context and power: who creates sound? Who controls it? Who decides what will sound and where?*
- *Emotion: what sounds make us feel peaceful, stressed, or excited?*

Encourage students to think of sounds as characters that help to tell a story about a place.

3. Sound Awareness Exercises

Before recording, students should "wake up" or "clean" their ears. The following short sensory activities train attention and prepare for the fieldwork. Choose one or two of the following.

a. Counting Sounds in Silence
Ask everyone to sit or stand quietly.

> *Close your eyes and listen carefully. Count how many different sounds you can identify.*

After 30-60 seconds, ask, e.g.:

- *What did you hear first?*
- *Which sounds were far away?*
- *And which were close?*
- *Which ones surprised you?*

b. Sound Memory
Ask, e.g.:

- *What was the first sound you heard this morning? And the next one?*
- *Can you remember a sound from your home or family?*

c. Filtered Listening (based on David Helbich's exercises)
Guide students through playful ear-filtering gestures:

cover left ear / right ear / open both
cup hands in front of and then behind the ears
press ears gently, then release slowly
cover ears and make a tiny gap with your hand to the front or back

4. Explaining the Next Activity and the Recording Process

Now we're going outside to become Sound Hunters and Sound Makers!

First, as Sound Hunters, *you'll search for the sounds that already exist around you - the quiet ones, the hidden ones, the everyday ones, those that we usually ignore. Listen carefully and choose wisely: only record the sounds that really matter, the ones that you would like to keep and use later in your composition or sound collage.*

Then, as Sound Makers, *you'll create new sounds using what you find - sticks, stones, metals, or your own body. Try to make sounds that are interesting or unique, that tell a story.*
Be very thoughtful about the length and quality of your recordings: short, clean, and clear is better than long and noisy. Remember, these sounds will be a part of your final project!...

... We will work in silence, so use gestures to communicate. Be careful with the microphones. Before each recording, say your group name and describe the sound, then stay completely quiet while recording. Let's see who can capture or create a beautiful, strange, crazy, or surprising sound!

The Recording Process

Introduce the **recording devices** and **microphones** that will be used. Demonstrate how to hold the microphone and clarify the purpose and correct use of the recording device. Explain to the students how to regulate the levels on the recording device while recording to get the best quality and remind them to double check these levels while recording.

Demonstrate and tell students what not to do: touching cables, talking near the mic, walking very fast, making sudden movements.

Explain the labelling: Each recording must start with a short verbal ID, including the group name, a description of the sound, the microphone, the location, and the activity (e.g., "Group 2, Loud Sound, Contact Microphone, Factory, Sound Maker").

Remind them that only recordings made carefully and respectfully will be used in the final project.

Assign the groups and the group roles: the recorder, the microphone holder, the leader, and the note-taker.

Explain the Rules for Recording:

- **Stay silent at all times:** Communication should occur through gesturing.

- **Handle the equipment** with care.
- **Record intentionally** and think carefully before pressing the record button.
- **Label every file** both verbally and in writing.
- **Respect** the recordings of others.

Silence is a shared responsibility!

Outside
Intro & Framing

Once outside, splitting into groups and then distributing the materials. Each group must have the student sheets for Sound Hunters and Sound Makers, a recording device with splitters, and headphones for all group members. If possible, use different types of microphones (e.g., stereo, contact, shotgun) to allow for comparing the results. Remind the students that **the recordings they create will be used for their final composition or sound collage.**

Mark a **designated point** to attend to any needs, change devices, or report to a person in charge.

After the **command SILENCE**, the challenge is not to talk at all. Students should only communicate using gestures or paper!

a. Sound Hunters – Listen Up!
Together with their group, each student identifies one interesting sound and records it without disturbing it.

After each recording, students complete their sheet (see example below). This will help them to handle their recordings thoughtfully, analytically, and professionally. The challenge is to notice the unnoticed: small, hidden sounds that are often ignored (e.g., the rustle of leaves).

Student sheet examples in the next page.

b. Sound Makers
As *sound makers*, the students interact with the environment to create sounds, using materials around them (e.g. sticks, stones, metal, or their own bodies). Each student records one original sound.

Students classify the sound in their sheet (e.g. high/low, short/long, intense/soft) and describe what image or emotion it evokes.

SOUND UP!
MY NEIGHBORHOOD AS A CONCERT HALL

Names of ...

The group:

Each participant:

Recording device:

SOUND UP!
MY NEIGHBORHOOD AS A CONCERT HALL

1. **Where did you record this sound? Mark it on the map.**

2. **Sound title:**

3. **About this sound I can say that...:**

It is unique because...:

It reminds me of...:

I would keep...:

I would remove...:

And I would add...:

The control of this sound belongs to...:

What information does this sound give us? For example, the time of day, danger, a positive atmosphere, food...

4. ***What did you hear? You can underline more than one option.***
Indoors - Machines - Music - Mixed - People/Animals - Nature/Weather - Traffic - Other: _____

5.

	Strongly dislike	Somewhat dislike	Neutral	Somewhat like	Strongly like
The experience of this sound is					
I recommend this sound					
Is this sound musical?					
Is the sound human?					

Goals

- **Listening like sound designers:** identifying foreground and background layers, tonal contrasts (high/low), and textures (soft/rough, intense/dull) in the environment
- **Recording with awareness:** handling microphones correctly, setting gain levels to avoid saturation, and capturing sounds intentionally – short and clean
- Labeling precisely: **beginning each take with a verbal ID** that includes the group name, the sound, the type of microphone, the location, and the exercise (e.g., “Group 2, Loud Sound, Contact Microphone, Factory, Sound Maker”)
- Being **silent**: communicating through gestures and respecting quietness as a common condition for recording
- **Comparing technologies:** noting differences between stereo, contact, shotgun, or phone microphones and how these different mics change the recording result
- Hunting and making: capturing environmental sounds **without interfering in the production** (Sound Hunters) and creating new sounds **through interaction** and experimentation (Sound Makers)
- **Critical writing:** using the listening and reflection sheets to describe and classify each sound (high/low, short/long, intense/soft) and to note its emotional or narrative quality
- **Collaborating effectively** by rotating group roles (recorder, mic holder, note-taker, leader), caring for the equipment, and supporting one another through (silent) teamwork
- **Thinking like a storyteller:** analyzing how each sound reflects time, space, emotion, and activity – beginning to imagine how this might fit into a future composition or sound collage

The Skills We Practice

- Active and focused listening
- Technical competence
- Critical listening and reflection
- Creative soundmaking
- Self-regulation
- Teamwork and collective responsibility
- Language and sound identification and classification
- Sound vocabulary
- Observation and storytelling

Materials

Per group:

- Rigid folders containing the student sheets
- Several copies (at least one per group member) of the sheets for Hunters and Makers
- If needed, tools for making sound (mallets, brushes, etc.), blindfold
- Pens
- Recording devices
- Headphones for all team members
- Headphone splitters
- If possible, different microphones
- Timer

Pedagogical Recommendations

- **Divide students into small groups and place yourself strategically** between them (“umbrella system”) to supervise and support.
- **Help them swap microphones and manage time.**
- Encourage groups to **stay silent and communicate non-verbally.**
- **Assign one assistant** (teacher or student) **for documentation** (taking photos, making notes, or conducting short interviews).
- **Test and label equipment beforehand.** Check batteries and cables. Have extra resources.
- Give **instructions indoors;** outside, focus is easily lost.
- Keep **explanations concise** and pair them with relevant examples or active learning exercises.
- **Model** by demonstrating and showing how to use the microphones and recording equipment. For example, demonstrate distance, gain levels, and direction.
- **Stress silence as teamwork:** everyone’s quiet helps everyone’s recording.
- **Be consistent!** If students break the rules, the consequences (explained in advance) must be applied to avoid interfering with the work of other groups or the technical equipment.
- Encourage **thoughtful recording:** few, clean, and short takes.

- **Label verbally before each take,** so that students can find their own recording with ease.
- Let students **rotate roles** (recorder, mic holder, note-taker, leader).
- End the outdoor session with a **collective feedback/ reflection** moment. Discuss which moments were most surprising or beautiful.

At the end of all activities presented in this Guide, you will have many recordings to download, sort, organize, edit, systematize, and upload again.

Planning, clear instructions, and clear labelling in an early stage will save you a lot of work later!

If You Want To Expand

Meet the Artist: Francis Alÿs

Sound artist Francis Alÿs explores everyday actions and city life through sound and movement. Watch how he turns ordinary walks and objects into poetic sound artworks using the link:

Fitzroy Square
The Collector

Meet the Artist: David Helbich

David Helbich creates playful listening scores that invite people to use their body, buildings, and cities as instruments. Explore one of his works with its graphic representation via the link:

Scores for the Church, the Building, the Body and the Audience

Assessment Opportunities

- Assess the sheets for clarity of description, use of emotional vocabulary, and precision in sound classification (high/low, short/long, intense/soft).
- Assess engagement through awareness, silence, attention, and care for equipment.
- Assess the quality of the recordings.
- During the critical discussion, note how students articulate insights. For example, do they identify details in sound? Assess how students describe what a sound means, not just what it is.
- Assess the students' responsibility regarding their own role and the equipment.

Evaluate if students can critically describe what they have heard.

Differentiation, Equality, and Attention to Diversity

- Offer multiple forms of participation. E.g., recording, guiding, listening, drawing, writing, or mapping.
- Rotate roles to ensure that everyone experiences both technical and reflective aspects.
- For students who are very sensitive to sound, adjust the volumes of the headphones and recorders, use single-ear headphones, or choose a quieter and calmer

type of microphone. You can also assign quieter roles, such as writer, assistant, or the person choosing the sounds to record.

- Provide clear steps and repeat instructions.
- Offer structured timing and clear cues for neurodiverse learners.
- If instructions become too abstract, simplify and explain them clearly. For example, set up a clear expectation of what you mean by a high sound.

Make yourself available for the students as much as possible.

Chapter Four

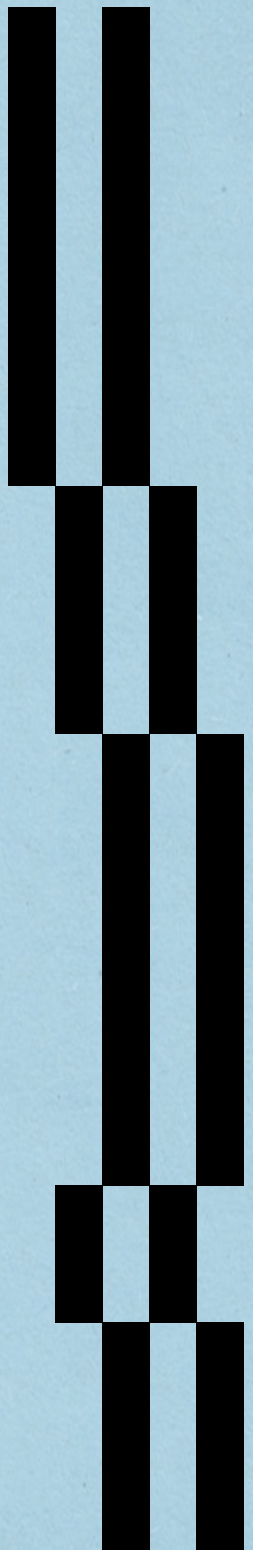
New Listening

Sound Thinkers –
Sound Awareness and Creative Listening

Can music and soundscapes share soundmarks? In an increasingly noisy world, the concept of “New Listening” appears as a vibrant manifesto, inviting us to engage deeply with our sonic environment. Instead of treating sounds as a background, we should listen to them carefully and discover that every place, person, and object has its own acoustic identity. According to the composer, artist, writer, music educator, and environmentalist R. Murray Schafer, **soundmarks** are acoustic landmarks – the unique sounds that define a location (1977). Similarly, in *Deep Listening: A Composer’s Sound Practice*, composer, musician, and sound artist Pauline Oliveros described listening as an act of awareness that connects us to our environment and to one another (2005).

The activity in this fourth chapter trains:

- **Critical Listening** – understanding where sounds come from and what they can mean.



Keywords:

Sound Awareness Silence Soundscape Attention Critical Listening Reflection Imagination Soundmarks

– **Creative Listening** – expressing sounds through color, gesture, and imagination.

The activities in this chapter invite the students to experience **listening as a creative and critical act**. Through a series of guided listening exercises, drawing activities, and explorations of silence, students will discover that sound is not only something we hear but something we can feel, imagine, and understand as well.

What is... New Listening?

New Listening means listening consciously, curiously, and creatively. It is about tuning in to our surroundings, our feelings, and the sounds that usually escape our attention.

The **deep connection between sound, listening, and place,** plays an important role in the works of composer and writer Barry Truax, who addresses listening as a broad cultural and environmental practice. Truax stresses the importance of cultivating attentive listening in everyday life in order to perceive the richness, complexity, and specificity of acoustic environments, particularly within social and ecological contexts (2012).

Developing this skill can be a transformative experience, especially for young learners. In focusing on ways to introduce children to music, researcher David Holland developed the concept of heightened listening as a creative tool. He emphasized how engagement with sounds can open up avenues for self-expression and environmental appreciation. By focusing on the aesthetic qualities of sounds, we cultivate a richer understanding of the world around us (Holland 2016).

Creative listening exercises can take many forms, including critical sound mapping – a structured pedagogical

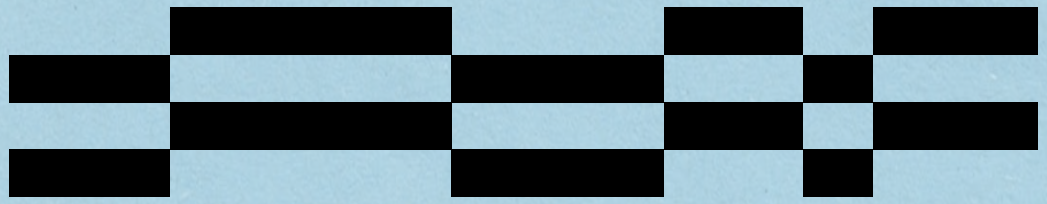
framework used to augment the production of knowledge and reinforce connections with social and historical contexts. Researcher Daniel Walzer suggests that **“Sonic Thinking”** – a thinking that integrates cognitive, embodied, and intuitive ways of engaging with sound – can act as a catalyst for creativity, communication, and sensory awareness. It emphasizes personal connection, resonance, and critical listening, allowing someone to communicate ideas non-verbally and to respond more sensitively to their environment. Walzer argues that incorporating sonic thinking into education can cultivate more nuanced and interconnected creative skills than traditional technical training alone. Each individual perception enriches a collective understanding, encouraging a deeper appreciation of the diversity of experiences and interpretations (Walzer 2021).

Critical listening is another essential aspect of developing sonic awareness. Educator Stephane Elmosnino highlights didactic strategies to foster critical listening in sound engineering, arguing that this encourages a deeper engagement with our environment (2023). Critical listening enables students to develop a nuanced understanding of sound as both a means of artistic expression and a prism through which to experience, for example, cultural and environmental issues.

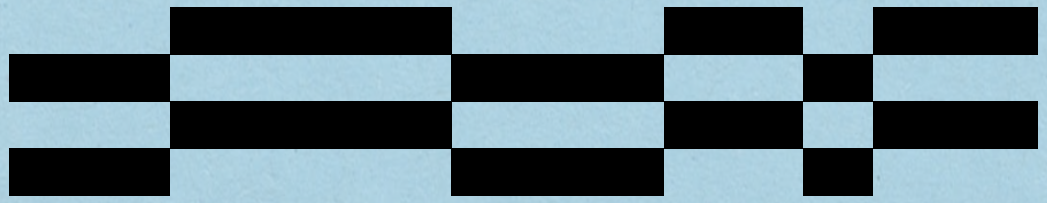
Consider These Questions

- What happens when we really pause for a moment and listen carefully?
- Does silence exist?
- Which colors, textures, or movements can describe what we hear?

- How do you differentiate between sound, music, and noise?
- What story do you think the sounds around us tell?
- How does your body sound when you listen closely?



How do I feel within silence?



Description of the Activity

Estimated time: 2 hours
You can support the activity with a presentation

Inside
This activity is connected to *Critical Sound Cartography* (see Chapter 7).

1. The World as a Composition

Welcome the students and introduce the activity. Organize the space in a way that facilitates a quiet environment for listening.

This activity introduces sonic awareness and critical listening. The students learn to notice how sound, silence, and attention interact. Explain that they will listen not only to music but to all sounds around them:

> *We will listen to two quite different compositions. One is made of silence, which is to say, it is made of the sounding world around us. The other is made of recordings of animals, mixed into music. Both pieces invite us to listen differently, not only to what is recorded, but to what is alive.*

4’33’’ by John Cage → Watch here

Nightjar by Cosmo Sheldrake → Watch here

After *4’33’’,* ask (quietly):

- *Does silence exist?*
- *Were there moments you became more aware of yourself, your breathing, your thoughts?*
- *Which sounds were closest? Which were furthest away?*
- *How did this silence feel?*
- *Why did John Cage create the piece? What do you think was his intention? And how do you think that the audience reacted?*

After *Nightjar,* ask:

- *What kinds of sounds did you recognize? Were they natural or human? Familiar or foreign?*
- *What story do you think this piece tells?*

2. Colors and Lines of Sound

This exercise develops creative listening by connecting sound to imagination through sensory translation – the process of interpreting information from one sense and expressing it through another. Rather than aiming for literal representation, students are encouraged to explore how **sonic qualities** such as rhythm, texture, density, movement, and intensity, or **embodied responses**, such as emotion or the physical gesture suggested by the sound, can be transformed into visual elements. In this way, sound is approached not only as something to be heard, but as something that can be felt, shaped, and visually articulated.

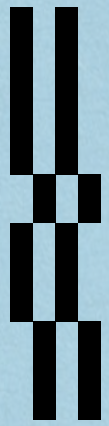
Through this activity, students learn that sound can suggest shapes, colours, and gestures, and that listening can generate visual responses that reflect personal perception rather than objective accuracy. Each student takes two A4 or A3 sheets and coloured pencils or markers and is invited to translate what they hear into a drawing.

To guide the process, students can reflect on questions such as:

- ***How can we translate sounds into a drawing?*** *Try not to draw what you see; draw what you hear. Instead of objects or scenes, focus on how the sound behaves. Does it move smoothly or sharply? Does it feel heavy, light, calm, tense, repetitive, or unpredictable? How can you represent your emotions along the music?*
- ***Which colours belong to this music?*** *Think about brightness, darkness, warmth, or contrast. Are the sounds soft or intense? Do they suggest light colours, dark tones, or strong*

contrasts?

- ***Which shapes or lines could represent the sound? And which physical gestures does the music suggest you to use?*** *You might use long flowing lines for sustained sounds, strong, short or broken marks for rhythmic patterns, dense and fast areas for loud or complex textures, or empty spaces for silence.*



Listening:

Edvard Grieg – Peer Gynt → Watch here

Edvard Grieg – In the Hall of the Mountain King → Watch here

Ask students to sit comfortably and listen carefully to the first piece. After having listened, they get some five minutes for sharing their impressions in pairs and comparing the differences in their visual representations.

- *What colors did you hear? What sounds did you choose?*
- *What kind of movement did you draw: slow or fast, calm or chaotic? And why?*
- *How was the physical gesture of your traces connected to the sounds? And why?*

3. The Sound of Silence

This is an exercise in critical and thoughtful listening, discovering that silence is actually never really silent but rather full of life, full of sounds.
Invite the students to find a personal spot in the room. Ask them to stay still, with their eyes closed.

> *Now we are all going to be silent. Listen carefully. What do you hear outside the room?*
> *What do you hear inside this room?*
> *What do you hear inside yourself?*

Let the silence last for at least one or two minutes.
Then ask the students to express their experience in their own way – through a drawing, in words, or in a small diagram.

Group discussion:

- *Was it really silent?*
- *Which sounds were closest? Which were furthest away? How did the "silence" feel?*

4. The Sound of Materials

Here, the idea is to introduce that materials, spaces, and textures have their own "voices." This will be the foundation for understanding the concept of soundmarks.

Ask students to walk around quietly in pairs in the classroom and experiment with the sounds of different materials. E.g.:

- Tap a wall, a chair, or the floor gently.
- Rub, knock, or scrape textures (wood, metal, glass, plastic)

Tell them to **draw and describe** each sound they have made, and discuss the sound qualities of what they heard, how they have drawn it, the gestures they have used when playing and drawing, etc. You can use the five basic thinking skills: observation, comparison, relation, description, and classification. As a source of inspiration, they could make use of the following terms:

Long - Short - Echo -
Click - Attack - Duration -
High - Low - Glass -
Wood - Heavy - Light -
Warm - Cold - Fabric -
Metal - Dull - Sharp
Soft - Electric - Elegant -
Clear - etc.

5. Reflection and Peer Sharing

After these listening exercises, gather the group. You can summarize the most interesting aspects of each exercise.

Encourage students to share their drawings, notes, and experiences. You can highlight to the students that critical listening involves investigating and analyzing the way sounds exist as they already are, while creative listening involves interacting with sounds and exploring what new sounds, images, or thoughts they evoke in you.

Additional questions can for example be:

- *Which exercise changed how you listen the most?*
- *What did you notice about your surroundings or yourself?*
- Can you name one soundmark of this classroom, that is, a sound that characterizes this space?

Goals

- Developing a sonic **awareness** and investigating the emotional, physical, and spatial qualities of sound
- Explore the concept of **soundmarks**
- **Connecting listening to imagination** through color and form
- **Cultivating patience, curiosity, and reflection** through silence and attention
- Preparing students for **future sound recording, sound drawing, and composing**

The Skills We Practice

- Creative and critical listening
- Vocabulary for describing sounds and its link to sensory experiences
- Sonic thinking
- Abstract thinking
- Collaboration and empathy
- Emotional reflection and communication
- Imagination and interpretation

Materials

- Speakers
- A4/A3 papers (at least 2 sheets per student)
- Colored pencils or markers
- (Optional): Other materials for the visual translation of sound (collage materials, clay...)
- A calm space/classroom

Pedagogical Recommendations

- Frame the session gently. Speak slowly, induce curiosity, and remind students that **there are no wrong answers.**
- (Optional): Invite students to find a **comfortable spot** in the classroom, sitting or lying down.
- **Alternate listening and sharing.** After each listening exercise, allow for quiet reflection, followed by brief peer exchanges.
- Use **spatial awareness.** Encourage students to spread around the room. Distance helps them to listen individually.
- **Value silence as a collective act.** Make clear that silence is a shared responsibility.
- **Encourage emotional language.** Words like “warm,” “light,” or “rough” connect feelings to perceptions.
- **Link to identity.** Discuss how different musical pieces or places (classroom, park, city) have their own soundmarks.

Integrate humor and surprise. Some sounds will make students laugh – that is part of learning to be open.

If You Want To Expand

Meet the Artist: Pauline Oliveros

Extend “New Listening” with simple exercises from composer Pauline Oliveros to deepen awareness and empathy through creative and critical listening. Try one of these exercises after the main session:

- **Sonic Awareness:** Close your eyes. Listen for the farthest sound, then the nearest, then one from inside yourself.
- **Sonic Meditation:** In a circle, each student adds one quiet sound. Listen as it grows and fades.
- **Listening Walk:** Walk silently for five minutes, indoors or outdoors. From which direction do the sounds come? What kind of rhythms do they create? What texture or quality does each sound have? Is it smooth, rough, sharp, soft, continuous, broken, etc.?
- **Sound Circle Reflection:** Describe one sound you heard today that changed your way of listening.

You can explore Oliveros’ book, Sonic Meditations, a collection of exercises that can be done individually or in groups, via the link:

Sonic Meditations

Assessment Opportunities

- Students’ focus and participation during the listening exercises
- Creativity and effort in visual, spoken, and written responses
- Vocabulary and descriptive accuracy in peer discussions
- Evidence of reflection (e.g. the ability to articulate the difference between hearing and listening)
- Ability to identify specific soundmarks

Curiosity and engagement!

Differentiation, Equality, and Attention to Diversity

- Some students may be very sensitive to either (certain) sounds or silence. Offer other options, such as allowing them to draw, move, or focus on one sense at a time.
- Provide large markers, different craft options, digital formats, or pre-printed sound templates for students with fine-motor difficulties.
- Break activities into short, clear steps and repeat instructions visually and orally.
- Translate abstract concepts into

more concrete actions.

- Accept responses in any language and encourage the use of gestures, drawings, or symbols when words are difficult.
- Welcome examples of sounds from home or community environments to value different identities and cultures.
- Pair expressive students with quiet observers; mix listening styles to promote empathy and equality.

№rmalize laughter, surprise, or discomfort during silence. These reactions are part of learning to listen!

Chapter Five

Layers of Listening

Sound Collectors –
Time // Layering // Spatialization

How can we utilize time organization, sound layering techniques, and sound spatialization in sound design for storytelling? In sound design, these elements work together to enhance storytelling in and through sound, providing depth and richness that engage audiences both emotionally and intellectually. Composers can use sound design to invite audiences inside a narrative, transporting and transforming the listener.

In the activities in this chapter, students develop critical listening skills by becoming sound designers, **exploring how sound moves through time and space and learning sound layering techniques.** After gathering soundscapes composed by different sound artists, other recordings, and/or historical sounds, they compare and combine these various sound sources to create a short composition by themselves (see Chapters 6 and 7).

Keywords:

Sound
Composition
Time
Spatialization
Layers
Directionality
Sound Collage

What Are... Time, Layers, and Spatialization in Sound Design?

Every sound exists in time: it begins, develops, and fades away. But sounds also relate to one another in space (occupying different depths, distances, evolutions, and movements). When several sounds overlap, they form layers, like instruments in an orchestra. Listening to these interacting layers helps to understand something about balance, rhythm, and contrast, and to gain knowledge about the stories that can be told through a soundscape composition. For example, sounds can reveal something about the life and identity of a site and the activities taking place there.

Time in sound design is not simply a chronological sequence but an essential tool for narrative pacing and texture. The development of a story can be profoundly affected by how and when temporal elements appear within an unfolding soundscape. By controlling these tempos and transitions, the composer determines how the story progresses, for example, by modulating duration, rhythm, anticipation, and the perceived flow of events. Time or timing affects the narrative because changes alter how listeners interpret causality, emotion, and emphasis. When narrative elements are positioned, stretched, interrupted, or layered temporally, they can redirect attention, reshape meaning, and transform the listener's sense of movement through the story. For example, the interaction between sound and silence can amplify anticipation or evoke reflection.

Spatialization refers to where sounds come from and how they move through a space: from near or far, from left or right, from inside

or outside. By placing sound within a three-dimensional space, the composer can create an immersive experience that invites listeners to enter the imaginary world of a composition.

Researcher Minoru Kobayashi demonstrated that temporal events may be mapped onto different positions in space to facilitate non-linear audio navigation. His concept of a “dynamic soundscape” shows how space can function as an interface for time, allowing listeners to perceive multiple moments at once and thereby understanding a sonic narrative through movement rather than linear progression (Kobayashi 1996).

Sound designer and researcher Marije Baalman emphasizes how “reflective positioning” – an intentional spatial arrangement of sounds that prompts listeners to consider their physical relationship to a source – can deepen spatial awareness and strengthen their engagement with the narrative (2010). In this sense, directionality, distance, and movement do more than just situate sounds in space: they actively shape storytelling by guiding perception, highlighting meaning, and evoking specific emotional and experiential responses.

Layering is another crucial aspect of sound design, **describing how** multiple sound elements can coexist to create a more complex auditory field. Sound layering implies the overlapping and combining of audio elements in order to build a coherent sonic narrative. Each layer can signify different narrative threads or emotional undercurrents. Composer and researcher Kerry L. Hagan highlights the aesthetic significance of layering in high-density loudspeaker arrays, noting that each layer contributes its own textural identity, enabling listeners to perceive and differentiate intricate narrative structures (2017). This complexity becomes even more pronounced when layers are dynamically shaped through spatialization, as spatial movement and distribution allow layered materials to interact, separate, or blend in ways that deepen a composition’s narrative potential.

Combining temporal and spatial elements through layering and directionality in a composition requires significant creative consideration. When composing with recorded sounds that mix memories, places, and imaginary events, the composer creates a sonic story that travels through time and space.

> Learning to work with time and space through layering and directionality helps make an environment audible and expressive.

Layering sounds with precise timing and spatialization, allows the composer to evoke specific emotional responses and spark imaginations.

Media artists Ryan McGee and Matthew Wright state that the spatialization of sound elements provides a navigable narrative landscape that listeners can actively explore. They describe spatialization as a tool that enables the deliberate placement and organization of sounds within an environment, allowing the listener to move through this sonic field and uncover relationships between its components. Rather than merely filling space with sound, they aim at constructing a dynamic environment in which the listener's attention and position shape a personal path through a sonic narrative. A distant or subtle sound, for instance, may only become perceptible as the listener moves toward its spatial location, mirroring processes of discovery in real-world environments (McGee and Wright 2011).

Through sound design, directionality, distance, and movement become narrative devices: spatial arrangements carry meaning, guide interpretation, and contribute to how a story unfolds. Sound design makes compositions immersive, perceptually rich environments that resonate on a deeply personal level, fostering a heightened sense of engagement with the composed narrative.

Consider These Questions

- What happens when several sounds overlap? Does one lead or do they blend?
- How can silence make a sound more powerful? And vice versa?
- Does rhythm exist in our every-day soundscapes? And how can we create or shape it?
- Where do specific sounds come from: inside, outside, close, far, left, or right?
- How does the way I listen change a soundscape's story?

Can a composition tell a story?

Description of the Activity

Estimated time: 2 hours
You can support the activity with a presentation

Preparatory Work

All the sounds recorded in previous activities (as well as the input of historical recordings, when available) must be organized using specific file names and color-coded folders on the platform where it is shared.

Students should be able to easily access, download, and rename the sound files. Printed or digital versions of the data collection should be ready for students to draw or list the sounds they select. This visual systematization helps students navigate the sound library more efficiently and supports their reflective work. Also, if the students write, draw, map, or describe their sounds, the visual schema becomes a useful reference for remembering, comparing, and structuring their choices.

Inside

1. Present the Three Key Terms:
Time, Layering, and Spatialization

As the students work towards a composition or a sound collage (see Chapters 6 and 7), the exercises that they will work on in this activity are essential for building familiarity and competence with sound design.

The teacher explains and contextualizes the relevance of the three concepts – time, layering, and spatialization – using reflective conversations and brief audio examples, for instance, a single bird chirp to show time, overlapping street noises to demonstrate layering, or moving footsteps to illustrate spatialization.

2. Ear Warm Up – Auditory Memory Guided Recall

Is the sound in our head real or imagined? Do sonic memories and sonic imagination share the same territory? Is there a (virtual) space where the real and the imagined overlap or converge?

Guide students through an exercise in sonic memory and sonic imagination. For example:

> *Close your eyes and imagine a moment when you were delighted, maybe a birthday party.*
>
> *Which sounds do you remember? Can you name two or three?*
>
> *Now imagine the voices of your family, then those of a friend, an object in the room, or people singing "Happy Birthday."*
>
> *Suddenly everyone turns into animals. What do you hear now?*
>
> *Finally, the house becomes a beach. What new sounds appear?*

3. Audio Analysis and Comparison

Play a selection of Creative Soundscape Compositions by different composers, for example:

Havel River – Ale Hop

Creepy Crawly – Felicity Mangan

These will serve as inspiration when the students explore different ways of using sound for their own compositions. Guide the discussion with the following prompts:

How many layers did you hear?

Did the soundscape develop or repeat?

Would you like to be in a space where this is the soundscape?

How do you imagine this space looks and feels?

Encourage students to use a variety of descriptive tools and to pay attention to how sound unfolds through time, layers, directionality, and dynamics (e.g., “I heard cars moving from left to right” or “the sound got smaller”).

4. Audio Selection from All the Folders

This activity is carried out individually. Now students need to think as sound designers. They will leaf through the library folders and choose the sounds they want to use in their composition (see Chapter 6).

The instructions may be something like this:

You are going to listen and select the sounds you would like to add to your composition.

Think of a (real or imagined) place that inspires you, and design its soundscape.

Be patient. Don’t always start from the first file: explore the folders randomly and take the time to listen to the recordings until the end (sometimes good things don’t reveal themselves right at the beginning).

Rules:

- Choose at least one sound from each folder.
- Use 10-15 sounds in total.
- Save everything in your personal folder with clear names.

Goals

- **Understanding how time, layering, and spatialization shape a composition**
- Practicing **critical and reflective listening by comparing different soundscapes and the stories they tell**
- Identifying **and describing how sounds narratively evolve and interact** over time
- **Composing creatively by combining sounds** (see Chapter 6).
- Creating a **personal sound library** and strengthening technical and organizational skills in sound selection and archiving
- **Analyzing sounds through the feelings, memories, and senses of place they can evoke**

The Skills We Practice

- Critical listening and aural analysis
- Creative thinking
- Organizing and decision-making: selecting, (re)naming, and cataloguing recordings
- Technical awareness: to become conscious of the technical choices that influence the creative work
- Reflection and expression: describing sonic experiences by using a clear vocabulary
- Cultural and environmental awareness: analyzing and understanding how different elements of a sound reflect, reveal, and help us perceive the specificity of a place

Materials

- Laptops or tablets with headphones
- Historical recordings (if available)
- Data collection paper (for sound selection and visual mapping)
- Colored markers or pencils (matching the folder colors)
- Speakers for the audio analysis

Pedagogical Recommendations

- **Demonstrate listening strategies.** Show how to focus on one sound at a time, then on several sounds interacting.
- **Encourage metaphorical thinking.** Ask students to describe sounds as if they are textures, colors, or movements.
- Use **guided listening questions:** What moves? What repeats? What disappears?
- **Support independent work**. Allow students to choose and rename sounds and to create their own organizational system.
- **Recommend a thoughtful sound selection** by choosing only 10 to 15 sounds.
- Thinking about sound can sometimes be rather abstract. **Help students to anchor their listening by thinking**

about concrete contexts and situations.

- **Relate to earlier activities**. Link the activities of this chapter to the Sound Hunter and Sound Maker activities (see Chapter 3) in order to establish and ensure continuity.
- **Encourage silence.** When analyzing sounds, ensure quiet in the classroom so that subtle details can be noticed.
- Conclude with a **collective reflection** by listening to some of the students' sound selections.
- Have a **backup plan** for technical problems: extra devices and an alternative option to access the folders (e.g., a USB stick or access through another platform).

If You Want To Expand

Meet the Center of Pedagogical Practices IRCAM [FR]
The Groupe de Recherches Musicales (GRM) is a French institution based in Paris, founded by Pierre Schaeffer and known for pioneering musique concrète and electroacoustic research. CREAMUS is GRM's pedagogy department, offering creative resources that connect contemporary musical education and sonic experimentation. It provides educational resources, sound-based projects, and practical examples to support sound creation and exploration in schools. Check out this resource via the following link:

CREAMUS

Explore Different Soundscape Compositions.
Listen to inspiring examples of layered and spatial sound works by using the links:

Symposium Musicum – Mappa Editions

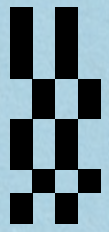
Soak: Submersion H_2O – Pablo Sanz

Possible Moistures – F.O.M.

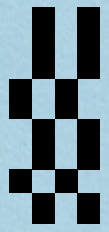
38°41'55"N 9°10'45"W – Pablo Sanz

Soundscape Composition Playlist – YouTube

Assessment Opportunities



- Sound selection and organization: Evaluate how students navigate the sound library, listen critically, classify recordings, and (re)name files.
- Data Collection Sheets: Assess how they describe the sounds they have



selected for their compositions.
- Critical reflection: During the group discussion, note the students' ability to compare the audio files that they have listened to and analyzed as well as to explain their aesthetic and emotional choices in selecting their audio files.

Vocabulary: evaluate the accuracy with which students identify, name, and describe the characteristics of each sound.

Differentiation, Equality, and Attention to Diversity

- Provide multiple ways and materials to engage with the current activity, such as listening, writing, drawing, or arranging sounds visually by using, for example, collage techniques, stickers, printed images, symbols, or other graphic elements.
- Allow students to listen at a comfortable volume level and insert short breaks if they become overwhelmed.
- Use visuals and color coding to scaffold complex tasks, such as layering or folder organization.
- Provide step-by-step instructions for those who need extra support, or pair students strategically for peer support.
- Cultural diversity: recognize how cultural backgrounds may shape listening habits, interpretations, and emotional responses to sound.

Some sounds can feel overwhelming. Give students the option to express how they feel about or even to skip certain sounds if they feel uncomfortable.

Chapter Six

My Composition

Sound Designers – Sound Collage

How can we create an immersive soundscape through sound collage? Through the 20th and 21st centuries, sound collages have evolved to become significant means of creative expression. By utilizing these techniques of recording, overlaying, and editing sound, students can create their own immersive soundscapes of either real or imagined places. This enables them to explore the complex relationships between sound, place, and time in and through auditory works (Holbrook 2022).

In the activities presented here, students will compose their own **sound collage** – a short piece built from the sounds they have recorded and selected in the activities from the previous lessons (see Chapters 1 to 5) – **with a real or imaginary place in mind.** By organizing, layering, and editing sounds from their folders, students will learn how to shape sound as form of creative expression. By combining field recordings, creating new sounds, and using silences, they are taught to tell a story about a place of their choice.

Keywords:

Soundscape
Composition
Sound Collage
Editing
Sound Design
Layering
Spatialization
Time
Soundmarks
Sound Cartography

The focus remains on creativity, reflection, and thoughtful editing, rather than technical perfection.

What are... Sound Collage and Soundscape Composition?

A **sound collage** is a composition made from recorded sounds, arranged like pieces in a puzzle to create a coherent whole – a new soundscape or a sonic story. A good example of this practice is Pierre Schaeffer's *Étude aux chemins de fer* (1948), one of the first works of *musique concrète*. In this piece, Schaeffer created a collage from railway recordings (engines, whistles, wheels, and metallic resonances) by cutting, splicing, and reorganizing them into a sound composition. When making a sound collage, the composer can experiment with the transformative potential of layered and edited pre-recorded sounds. As students navigate the intersection of sound, space, and time, they engage in a form of sonic storytelling that can be understood as *sonic fiction*: a practice in which sound is used to construct speculative, experiential, and meaning-making worlds rather than to objectively document reality (Schulze 2020; Holbrow 2021).

Sound collages also provide a foundation for examining how recorded sounds from the environment help to construct or interpret a sense of place. By carefully selecting sounds that resonate with particular environments, composers can construct immersive auditory experiences that evoke real or imagined locations.

Layering refers to an audio editing technique that plays back several recordings simultaneously, creating a single, cohesive auditory narrative. The individual tracks may be recognizable environmental sounds, fragments

of speech, instrumental excerpts, or even raw noise. Because these various sounds are not organized according to conventional pitch, rhythm, or harmony, they can be sculpted into textures that blur the boundaries between “musical” and “nonmusical” material. As the researcher Jonathan Higgins has shown, treating noise as a *generative tool* allows composers to shape a soundscape that moves beyond traditional musical parameters, letting the accidental and the chaotic become purposeful material for storytelling (2021). Sound editing programs such as Bandlab, Audacity, GarageBand, Soundation, Soundtrap, Ocenaudio, and Adobe Audition, among others, let creators experiment with these elements – cutting, looping, filtering, and layering – without requiring advanced technical training. Combining recognizable recordings with noisy textures, educators show that a narrative can be built from sound itself, not just from words, beats, or melodies.

By refining and manipulating recorded sounds, **sound editing** implies engaging with both sonic and technical processes in order to bring specific ideas to the foreground. For example, juxtaposing the ambient sounds of a busy city with the peaceful chirping of birds can evoke a stark contrast that highlights the duality of urban life. As jashen edwards observes in his work on sound-based pedagogy, such contrasts can function as reflective tools that prompt listeners to become critically aware of social, environmental, and experiential dimensions embedded in sound (2023). If this contrast is introduced, varied (e.g., filtered or time-stretched), or recapitulated later in a collage, it can function as a *thematic tone*, a recurring sonic signature that carries a specific idea or mood throughout the piece. Through sound editing, a deliberately chosen sound (or cluster of sounds) can operate as a musical theme or leitmotif, providing cohesion – in this example, the tension between urban bustle and natural calm. Collaborative platforms for sound editing also contribute to social interaction. As noted by musicologist Holly Rogers, who studies

cyberculture and the role of listening interactively through social media, **soundscape compositions** often thrive on collaboration; multiple artists can enhance, augment, or transform each other's work through shared recordings and ideas. By encouraging diverse perspectives that ultimately enrich a sound collage's potential for cooperative listening and creating, This collective approach also provides a means and starting point to reflect on identity, place, and connected narratives (Rogers 2023).

> Music educator jashen edwards emphasizes the ability of sound to catalyze critical consciousness, especially among teenagers and music education students. Engaging with sound collages not only enhances creative skills but also fosters a broader engagement with listening experiences that can comment on social and cultural issues.

Consider These Questions

- What story, mood, or emotion do I want my sound collage to express?
- Which sounds or atmospheres should appear first, and which should come last?
- Can I hear rhythm or melody in everyday sounds, or can I create rhythmic or melodic patterns using them?
- What kinds of processing could I apply to sounds (reverb, filters, pitch shift, delay, distortion) to create different effects or meanings?

- In my sound collage, should certain sounds move across space or remain static?

- How can I organize or transform sounds? Which ones could be repeated, and in what way – with regular or irregular intervals, louder or softer, overlapping or isolated, with or without effects?

- Which sounds should feel close to the listener, and which should come more from a distance?

- Where could I use silence to create balance, contrast, or emphasis?

What time does my soundscape represent?

Past, present, future... all together?

Description of the Activity

Estimated time: 4 hours
Support the activity by projecting each step of the program on the screen.

As an option, students may benefit from using a printed guide of the program that includes all the tools and clearly outlines each step of the activity.

Preparatory Work

There are several sound editing software programs, for example, Soundtrap, Audacity, BandLab, GarageBand, or Soundation. For making a sound collage, all of them can be used in more or less the same way.

Create an account before the session. Each student needs to have one.

This activity is really fun, interesting, and engaging! At the same time, it requires careful attention and coordination. An editing program is a powerful tool, but it can feel overwhelming or lead to impatience the first time students use it.

The **teacher's primary role** is to guide the group through each step slowly and clearly, ensuring that no one gets lost or rushes through without critical thinking.

Once students understand the workflow and the different steps and tools for composing, they will have plenty of time to explore freely and create independently.

This activity can be carried out in parallel with creating a Critical Sound Cartography (see Chapter 7). Explain to your students that they can also create drawings, annotations, graphs, and notes about the sounds they choose and how they use them.

Inside

Begin the class by creating a calm and focused atmosphere. Inform your students that this session is different from the previous ones: it will combine creativity and technology. For it to be effective, everyone needs to remain fully attentive.

> *Today we're going to compose our own sound collage using BandLab. We'll go slowly, one step at a time. Please, stay with me. If you get lost at the beginning, it's very hard to catch up later. I'll show you everything first, and then*

you'll try it yourself. Ask questions as soon as you need to; I'd rather stop and help you along the way than have you lost in the next step.

Encourage a collaborative and curious atmosphere but also emphasize patience and discipline. Tell students that the first and last steps are the most important: creating an account and sharing the project by exporting the final mix. If either of those are skipped, it may be impossible to access or save their compositions properly.

1. Project Setup

Ensure that everyone can see the screen. You will now demonstrate what they need to do.

First, watch me.

Go to the sound design platform, for example www.bandlab.com and guide them through the process of logging in or creating an account.

Walk slowly through the classroom, checking that each student logs in successfully. Once everyone is inside the selected sound editing program, guide the students:

Now we're going to create a new project. Click "Create," then "New Project." Please name it properly so we can locate it later. (Show examples or requisites for naming.)

Pause and ensure that all students have caught up (their screens should all be at the same stage). Then introduce the next step: sharing.

You must share your project now. If you don't, we might not be able to open or listen to your work later.

Show them how to click "share," add your teacher email, and, if applicable, the accounts of the students' group members. Check that everyone can see the project under "Shared with me."

Remind them to save regularly while working, at least every 5-10 minutes. Use a collective cue such as: *Everyone, save check now!*

2. Learning the Tools

You will now go through the editing tools together. Tell them to watch first before practicing after each demonstration.

Let's learn how to use this editing program wisely. We'll go step by step. I'll show you each tool first, and then you'll try it yourself. When we're done, you'll be free to experiment on your own.

You may frame each step as an inviting question – ***Do you want to…?*** – or impersonating the role of the student while composing – ***What if you want to…?*** For example: *Do you want to cut and move clips?; Do you want to make your sound softer or louder?; Do you want to place it on the left or right?; Do you want to add special effects like reverb, delay, distortion, or filters?; Do you want to turn the sound around?; Do you want to make a rhythm?; Do you want the sound to feel bigger?; Do you want an echo?; Do you want the sound to be rough and noisy?; Do you want it muffled or sharp?; Do you want the volume to stay even?* This question-based approach encourages students to understand

each action as a creative choice rather than a technical obligation, reinforcing exploratory learning.

Demonstrate how to:

Import and organize sounds

- Import sounds from their saved folders (e.g., by clicking on “Drop an audio file” or similar).
- Create one track per sound or per sound category.
- Rename each track and explain how important it is to stay organized and name sounds clearly in order to work more efficiently.

Edit and transform audio

- Trim a sound by dragging its edges to make it shorter or longer.
- Cut a sound into pieces (e.g., by placing the cursor and using the “split” function) to move or repeat fragments.
- Move clips by dragging them left or right on the timeline to change when they are heard.
- Show how to duplicate and delete clips so that students can repeat or remove material quickly.
- Show basic processing tools such as **denoise, reverse, playback rate** (speed), and **pitch shift,** so students see how a sound can be transformed.

Control volume, space, and effects

- Adjust **track volume** so some elements are softer and others are louder.
- Use **panning** (left to right) to place sounds across the stereo field.
- Introduce **mute (M)** and **solo (S)** so that students can focus on one track at a time.
- Add gentle effects, such as:
  - **Reverb** to make a sound feel bigger or as if it is in a larger space (e.g. a room, hall, or cave).
  - **Delay** to create echoes or rhythmic repetitions.
  - **Filters** to make the sound more muffled or brighter.
  - **Compression** to keep the volume more even and controlled.

While you do all of the above, invite them to listen to the differences and then add reflective questions:

> *Listen to the difference. Do you hear that the sound seems to come from far away because of the reverb? Do you hear what happens when I move the sound to the left with panning?*

After each demonstration, let the students practice the same step for a few minutes. Walk around, answer questions, and maintain a calm yet focused energy.

If some students get lost, stop the class and repeat that step together. Emphasize again: *If you lose track now, it will be hard to catch up later. Don’t worry, we’ll wait until*

everyone is ready before we continue.

3. Structuring the Sound Collage

Once everyone understands the tools, guide them to start structuring their composition. Ask them to think like artists.

> *Think of a place - real or imaginary - that you want to bring to life through sound. What story does it tell? What happens there?*

Explain that a sound collage should have a **structure**, even if it is abstract. Ordering sounds will give the piece direction. For example, you can show how to:

- Place lengthy sounds first to create a background.
- Add shorter, foregrounded sounds to introduce actions or rhythms.
- Add brief moments of silence to let the ear rest.
- Use layers (separate tracks) so that each element can be edited, balanced, and organized independently.
- Apply spatialization (panning and reverberation) to position sounds within a virtual space and to create depth.
- Adjust sound levels to maintain a clear and intelligible balance between background, foreground, and transitional elements.

Encourage students to use contrast and variation: loud and soft, near and far, real and virtual, and so on. Remind them not to overload the project with too many tracks: six to ten sounds are more than enough.

As they work, circulate through the classroom to check that they are saving and staying organized.

4. Reflection and Documentation

Before finishing, tell the students to document their work for the next step of the project:

> *While you work, you can take notes about the sounds you use: where they come from, how you have transformed them, which effects you have added. You can also draw or sketch the space you're creating. (These notes will help you later when you make the sonic cartography.)*

Encourage students to think of their composition as both creative and analytical work.

If some students finish early, invite them to help others (for example, by partnering up) or ask them reflective questions: *What kind of place does this sound like? What do you imagine when you hear it?*

5. Finalizing and Exporting

When the time is almost up, gather everyone's attention again. This step is just as important as the beginning – without it, the compositions might get lost. Make sure every student follows along.

> *Please stop working for a moment and watch the screen again. We're going to save and export your pieces. This step*

is essential. If you don't export, your work might not be accessible.

Demonstrate how to:

1. Save.
2. Click the three lines (menu) → Project → Download → Mixdown as WAV.
3. Rename the file clearly (for example, MyComposition_ StudentName).
4. Upload the WAV file to the class folder.

Walk around and ensure that everyone completes these steps. Help them check that the file has been exported correctly.

6. Independent work (after the demos)

Now that you've tried each of these steps, you have an opportunity to keep working or to start a new piece from scratch. For now, the important thing is to replicate the process, learn different techniques, foresee results, discover, experiment, and make sure you can create what you're imagining.

From that moment on, they can work on their own project at their own pace, based on the examples they have done under your guidance or from scratch.

Congratulate the students on their patience and focus and conclude with a brief collective listening or other reflective activities, individually or collectively, such as:

- Reflective conversation: *What were some of the decisions you made and technqiues you used, and why, specifically, did you choose them? What changed? What does it mean for your collage?*
- Listening in pairs and sharing thoughts about each other's collage
- Reviewing the student's own written reflections and notes: What do your choices reveal?

Goals

- **Composing a sound collage** by envisioning an existing or imaginary space, utilizing both raw and edited sounds
- Applying the concepts of **time, layers, and spatialization** in the sound collage
- Using sound editing programs as **creative and reflective tools,** guiding students to listen back, compare versions, adjust their choices, and analyze how each transformation (re)shapes their collage – the editing process encourages a cycle of listening, interpreting, adjusting, and listening again, turning technical manipulation into a form of creative inquiry
- Helping students to become independent, patient, and reflective creators
- Developing autonomous, patient, and critically attentive makers who can plan and complete a sound collage independently
- Strengthening critical listening by helping students to recognize and justify their choices in sound composition
- Connecting sound, imagination, and sense of place by exploring both how field recordings shape the character of a location and how composing can reimagine it

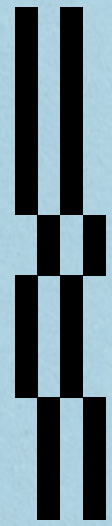
The Skills We Practice

- Critical and creative listening
- Digital audio editing
- Reflection on and articulation of aesthetic and emotional choices

- Thoughtfulness, attention, careful listening, and using silence intentionally
- Awareness and understanding of the complexity of acoustic or digital sonic environments

Materials

- Laptop or tablet with an internet connection
- Headphones (preferably a closed type)
- Program accounts and access to shared project folders
- Students' recorded and selected sounds (from previous activities)
- A structured Student Guide that supports students in working independently
- Optional: The cartography paper (see Chapter 7) and reflection sheets
- Projector and classroom speakers



Pedagogical Recommendations 1: General Remarks

- **Prepare and test** devices before class; verify access to the editing program.
- **Explain each tool visually** or through short demos.
- **Alternate** guidance and creation. Explain one feature at a time and let students try it immediately.

- Use **metaphors** like “painting with sound” or “building invisible landscapes.”
- **Promote silence** and thoughtfulness. Include short moments for listening and rethinking.
- Assign **rotating roles** (editor, listener, note-taker, archivist) in groupwork.
- Close the session with **shared listening.** Collective reflection reinforces learning and emotional connection.

Highlight curiosity over perfection. Celebrate exploration, not just final results.

Pedagogical Recommendations 2: Before the Lesson

- Check the internet connection and ensure that each device has working headphones.
- Open the sound editing program on the projector and have a **test project ready** to demonstrate.
- Keep a **printed copy** or open the tab of the **student guide.** It helps both you, other teachers (if applicable), and students to troubleshoot quickly.
- Have a **plan B** ready: technology can fail. Ensure that you have extra USB sticks with the sound library, extra laptops, extra headphones, extra student guides...

Get to know the sound editing program well; find interesting and fun examples that help triggering curiosity.

Pedagogical Recommendations 3: During the Lesson

- Explain that these activities combine creativity and technology, and that attention and patience are key.
- If necessary, **ask them to close their laptops** when you give instructions.
- Tell students to **stay with the teacher and not to rush ahead.** If they get lost early, it can be very difficult to catch up later.
- Always **alternate** between showing one step on the projector and letting students immediately try it out. This rhythm keeps everyone aligned.
- After each demo, pause to check screens to **ensure every student is on track.**
- **Encourage questions throughout** and try not to move

forward if some students seem unsure.

Remind everyone to save frequently (every 5 - 10 minutes). Use callouts like “Save check!”

Pedagogical Recommendations 4: Critical Steps to Emphasize

- Please make the steps that you deem necessary **non-negotiable:** stop the class and confirm completion before continuing. For example:
  - **Account creation and login:** without this, students cannot save or share their work.
  - **Project sharing:** show this step clearly and confirm that everyone has shared their work with you or with their group.
  - **Final export and upload:** if they don’t export and share, no one will be able to access the sound collage later.

Pedagogical Recommendations 5: Classroom Environment

- Foster a **quiet space** for listening.

- Maintain a tone that is both **relaxed and structured:** humor helps, but keep rhythm and order.
- Walk **around the room to assist the students.**
- Offer **one-to-one** feedback to students who are struggling; small clarifications can prevent major confusion.

Pedagogical Recommendations 6: Teaching Strategy

- Keep verbal instructions **short and concrete;** interweave them with immediate practice.
- **Model each step** slowly and out loud while explaining what happens. For example, “№w we cut the track. Listen to the change.”
- **Students are responsible for the activity, and owners of their work!** Praise focus and curiosity, not just results. Reward thoughtful listening and problem-solving.
- When students finish early, ask them to **help others or to reflect on their own work** using the student guide.
- Remind students that **they will have time later** to make another composition from scratch once they have mastered the editing techniques.

Editing is very appealing for students! Create fun examples, use tools creatively

for interesting results, and communicate joyfully.

Pedagogical Recommendations 7:
Encourage Reflection and Documentation

- Ask students to keep short notes or sketches while editing and composing. These notes will feed into their subsequent exploration of **sound cartography** (see Chapter 7) and help them to explain their creative choices. Notes can include:
  - Which sounds have been used and where they came from
  - Which transformations or effects have been applied
  - Small drawings showing how the sounds move or are layered

If You Want To Expand

Meet the BBC Sound Library
You can explore and add new sounds to the project from online sound libraries, such as the BBC Sound Effects Archive.

BBC Sound Effects Archive

Meet the Sound UP Map
Explore and listen to sounds uploaded on the Sound UP Map from the Binckhorst neighborhood in The Hague (the Netherlands). You can also explore a selection of sound collages from students of the John Dewey School, located in De Binckhorst, on the website, included in the collection *New Neighborhood Soundscapes – John Dewey College*. Visit the link to dive deeper into this resource:

Sound UP Map

Meet BirdNET
BirdNET is an app, a website, and a citizen science platform that recognizes bird species by their songs and calls. Developed by the K. Lisa Yang Center for Conservation Bioacoustics at the Cornell Lab of Ornithology, it enables people to upload audio files to receive species identification or contribute to the database. See this resource in action by using the link:

BirdNET

Meet Aifoon
Aifoon is a Belgian art organization that promotes listening as a lived, embodied experience. Through installations, sound walks, theatre projects, and workshops, Aifoon

explores auditory imagination by drawing attention to sounds that often go unnoticed. The organization works to foster a more conscious listening culture through artworks, outreach, and research. By encouraging collective participation and communal dialogue, Aifoon helps people to understand how listening shapes their cultural and historical awareness, offering valuable inspiration for creative and educational practices. Check out this resource via the following link:

Aifoon

Assessment Opportunities

- The compositions: their coherence, balance of layers, and sense of time and space.
- Technical handling and organization: proper file naming and exporting.
- Reflections on listening and making the sound collage: the students' written or oral analyses.
- Creativity: originality and expressiveness of the chosen sounds and effects.
- Collaboration: observation of teamwork and mutual support during the editing process.

Differentiation, Equality and Attention to Diversity

- Adapt tasks to individual pace. Some students can focus on a small number of tracks, whereas others can experiment with effects and more complex layering.
- For students with auditory sensitivity, adjust the volume and allow regular pauses for rest.
- Accept multilingual vocabulary so that students can explain ideas in the languages they know best
- Clarify technical terms by giving short, simple definitions (e.g., "pan means moving the sound left or right," "reverb makes a sound feel like it is in a bigger space").
- Support students who struggle with abstract concepts by splitting larger operations into concrete tasks and outlining the editing workflow with clear, time-based steps.
- Assign structured mini-goals to help learners who benefit from more guided, step-by-step progression.

Chapter Seven

Sound Cartography

Sound Cartographers – Representing Sonic Environments Visually

How can students map their sonic environment? Sound cartography is an artistic, educational, and research-based approach to sound mapping that is both descriptive and reflective. It articulates how a sonic environment is perceived, interpreted, and valued from a particular listening position. Simultaneously, it can be understood as a practical philosophy of listening: rather than asking students to document "what they have heard," sound cartography invites them to analyze how a place is experienced by addressing **critical questions**: *Which sounds matter to me? Which sounds stand out? How do they relate to one another? What do they reveal about social life and power relations? What does this place sound like to different listeners?* In this sense, sound cartography becomes a form of processing sound and the sonic environment, translating acoustic perception into other modes of thought, sensation, activity, and response.

This chapter describes activities in which students create their own visual sound cartography based on the soundscape of a **specific place**, whether real or imagined. In this case, reflection takes shape through drawings and visualizations rather than written text.

> Each cartography becomes a reflection of how the student listened to, remembered, and imagined sound, transforming invisible experiences into visual forms.

Why Sound Cartography?

Sound cartography does not aim to represent the world "as it is." It uses sound and listening to map a territory not only as a **physical space**, but also as a **network of social, cultural, political, and personal relationships**. Sound cartography seeks to critically question how environments are constructed, who inhabits them, who decides what can be heard and what is silenced, and how these environments could sound in the (near) future.

In educational and artistic contexts, Vika Kleiman, Amudena Ocaña-Fernández, and Daniel Gutiérrez Ujaque (2023) define **critical sound cartography** as a process that combines **active listening, artistic creation, and critical reflection**. In their work, mapping and drawing are pedagogical devices that enable students to explore their environment, debate meanings, share perceptions, and (re)construct social identities. According to Kleiman, critical sound cartography prioritizes the listener's subjective and situated experience. It fosters collective listening and dialogue and understands sound as a form of knowledge that traverses memory, body, and imagination.

In this sense, it is not just about visually mapping sounds, but about undertaking an act of conscious listening – a way of reading and rewriting territory based on sounds that places the visible, the audible, and lived experience in dynamic interplay. It involves taking a position and making decisions regarding which sounds are visualized and from which listening position they are perceived. Critical sound cartography thus transforms listening into a tool for analysis and creation rather than a neutral act of documentation.

This perspective is complemented by Norie Neumark's (2015) which extends critical sound cartography by proposing *soundfields* as relational and experiential constructs. In Neumark's approach, soundfields are shaped by the listener's position and movement, attention and memory, emotional and bodily responses, and the social and cultural context of listening. A soundfield is therefore not simply "where sounds are," but how they are encountered and made meaningful by listeners. When applied to educational activities – such as asking students to draw a sonic environment – this perspective shifts the focus away from representational accuracy toward a more subjective and situated listening. Differences between student maps are therefore not errors but meaningful expressions of diverse listening positions. This reinforces a core principle shared with critical sound cartography: **there is no neutral listening position**.

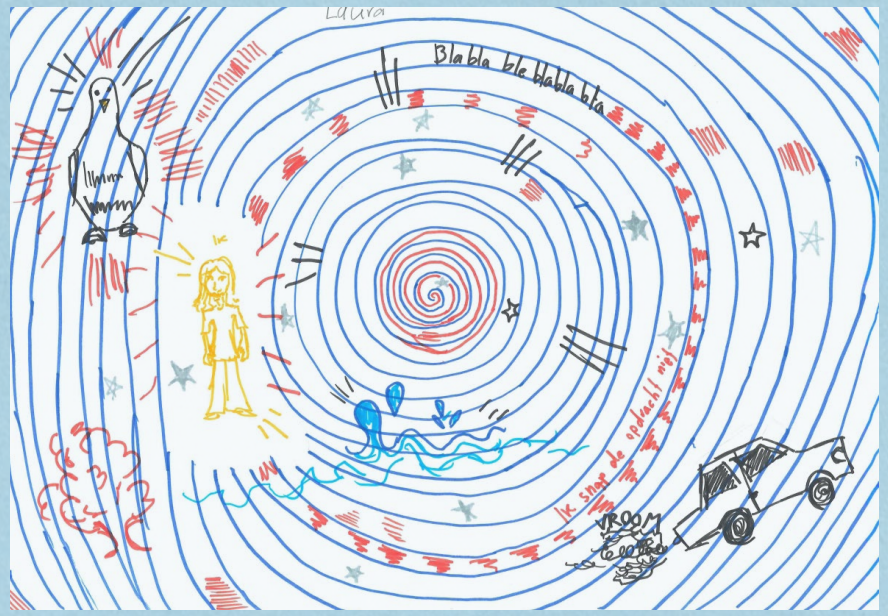
Neumark also frames mapping as a process of *thinking through making*. Drawing is not an illustrative step added after listening, but a continuation of listening itself. Visual marks – lines, shapes, density, color, or empty space – can respond to sonic qualities including intensity, duration, movement, or silence. For students, this approach supports non-verbal reflection and sensory translation from sound to image, helping them to understand that sounds have texture and display spatial behavior even though they are invisible.

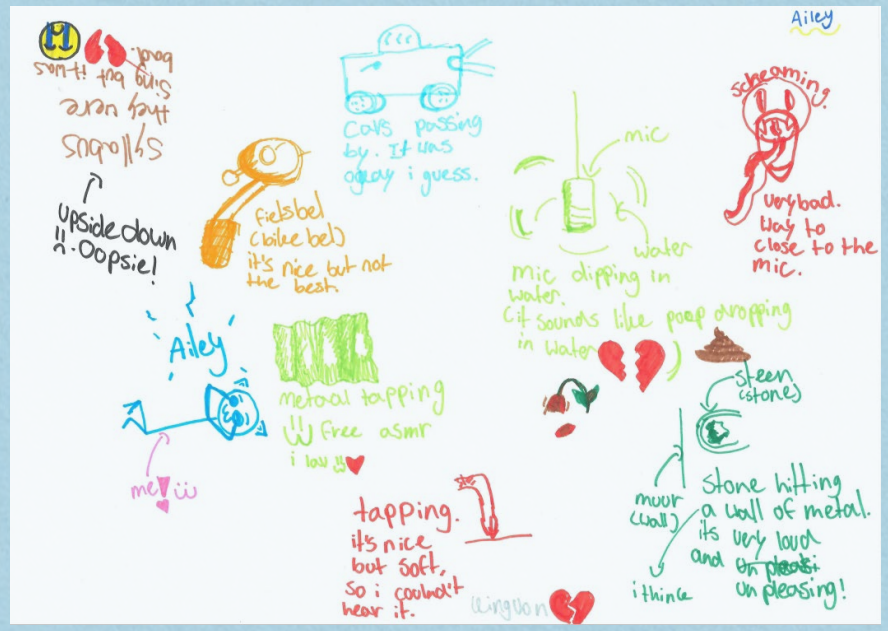
A key contribution of Neumark's work – in connection with the concepts and activities presented in Chapters 2, 4, 5, and 6 of this guide – is her reflection that sound mapping always involves **memory and imagination**. Soundfields may include remembered sounds, anticipated sounds, imagined or speculative sounds, as well as absent sounds or silences. When integrated into sound cartography, this supports an engagement with what is missing, silenced or desired in an environment.

The **process** of creating a sound cartography combines **listening, recording, analysis, representation, and critical discussion**. It emerges from the convergence of multiple theoretical frameworks: R. Murray Schafer's work on conscious listening, Barry Truax's ecological and socially embedded soundscape theory, the participatory and critical framework developed by Kleiman, Ocaña-Fernández, and Gutiérrez Ujaque, and Nørie Neumark's concept of soundfields as embodied and relational listening experiences. Together, they support a process-oriented approach in which sound cartography unfolds through (and can bypass) cycles of perception, interpretation, and dialogue. In an educational context, sound cartography is therefore understood less as a final representation and more as a pedagogical process.

Visual cartographic representations – the focus of the activities in this chapter – are understood as interpretive representations that make audible experiences visible through spatial and symbolic means (Schafer 1977; Truax 2012).

The following visual cartographic representations were created by 12- and 13-year-old students from John Dewey College in the De Binckhorst neighborhood (The Hague, 2025). The students engaged in a process of listening, analysis, and selection of previously recorded sounds – as well as sounds drawn from a shared sound archive – to create a sound collage. These visual cartographies functioned as tools to project and imagine themselves within a specific sonic space that they would later compose, operating in part as a form of graphic score. In addition, each student developed a personal system of analysis in which relationships between sounds were established through visual elements such as color, spatial organization, symbols, and line density. The drawings reveal recurring strategies, including the use of concentric shapes to represent sound source, intensity, or proximity; lines and arrows to suggest movement or sound direction; and color coding to differentiate sound categories (e.g., sounds from the past, sounds recorded by themselves, foley sounds, or sounds of the future).





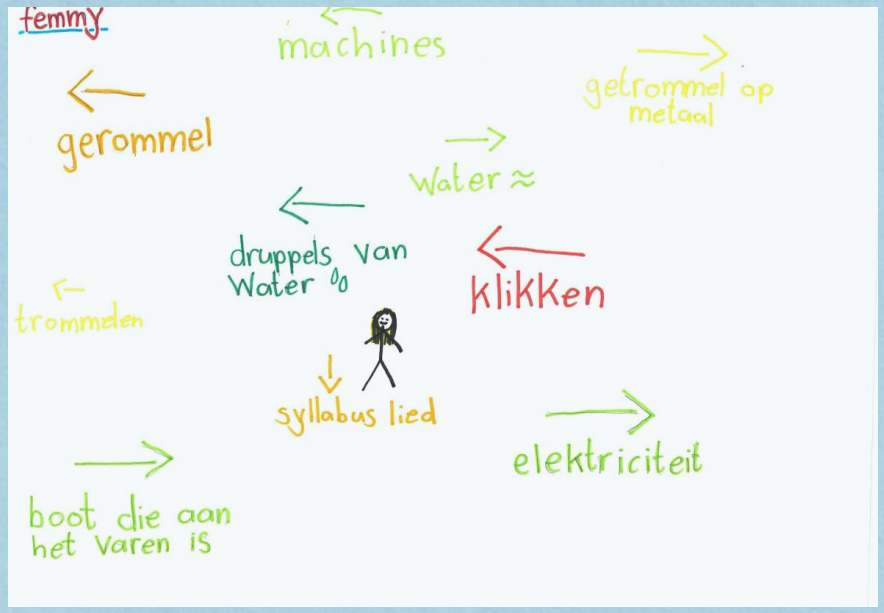
In an educational context, comparing various students' maps can reveal that even within the same environment, listening experiences differ.

Students are also invited to reinterpret the territory: *How could it sound differently? What needs protection? Which sounds would we like to remove or transform?* These questions link critical sound cartography to the imagination and design of possible sonic futures.

Consider These Questions

- Where do I position myself in my visual sonic cartography? Am I in the center or to the side? And how big is the space?

- What is my listening posture or activity (lying, standing still,



moving, playing, recording)? And how does my listening position influence what I place at the center or edges of the map?

- Which sounds are closest to me, and which are further away?

- Which sounds shape my experience of this place the most, and why? How do I connect with a particular sound? Is this sound important to me?

- Do I move? Or is the sound moving?

- Which sounds make me feel calm, excited, or uneasy?

- How do sounds interact or overlap? And how can I represent this?

- What story does my sound environment tell?

- Can different sounds be connected? How?

How can I represent a sound through drawing or writing?

Description of the Activity

Estimated time: 1,5 hours
You can support the activity with a presentation and illustrating each step on the board.

Preparatory Activities

The following activities can help guide the students through the first phases of making a sound cartography – listening, recording, and reflection – before translating it into a visual sound map.

1. Situated Listening and Awareness

In the previous chapters of this educational guide, listening is framed as a situated and critical act. Students are invited to start not by simply listing sounds but by asking critical and reflective questions about how sounds relate to one another, to space and time, and to their own listening position; for example: *Which sounds become dominant or fade into the background from my listening position? How do sounds shift as I move, pause, or listen at different moments in time? Which sounds interact, overlap, or mask each other? How does my focus influence what I notice or overlook, and how do these sounds affect my experience of the space?*

These questions may inform the recording, mapping, and interpretation activities, such as those described in chapters 1 to 6. Critical listening may be further enriched through one or more of the following activities from previous chapters:

Chapter 1 – The Neighborhood as a Concert Hall – Sound Explorers: activities such as *guided listening in place and sound identification tasks* introduce students to attentive listening from a fixed position, encouraging them to notice dominant and subtle sounds in their immediate environment.

Chapter 2 – Memory // Presence // Imagination. Past // Present // Future – Sound Detectives: activities focused on *foreground/background listening, sound movement, past/present/future*, and *sound sources* deepen awareness of how sounds change over time and space, and who or what produces them.

Chapter 4 – New Listening – Sound Thinkers: reflective listening prompts and silence-based exercises invite students to question their listening position: what they notice, what they ignore, and how their attention shapes what they hear.

2. Sound Recording as an Interpretive Act

The activities in **Chapter 3 – Sound Field Recording – Sound Hunters and Makers** make a transition from listening to recording. Here, the teacher guides the students toward an understanding of recording as an intentional and interpretive practice rather than a neutral technical task. As highlighted throughout Chapter 3, the pedagogical focus is not on technical perfection but on **attention, intention, and meaning**. Recording becomes a way for students to assign sonic value to specific aspects of a place, directly preparing material for their composition, sound collage, and sound cartography.

Activities in this chapter – such as *field recording with defined roles, focused recording tasks, and short recording missions* – support students in making conscious decisions about what to record, where to record, and how long to record. Teachers can emphasize that each decision reflects a particular way of listening to the environment.

3. Selection, Classification, and Reflection

Processes of selection, organization, and reflection are explicitly addressed in **Chapter 5 – Layers of Listening – Sound Collectors**. In this phase, teachers help students to slow down and listen back to their recordings in a structured way.

Activities such as *sound analysis, sound sorting, listening comparison, and categorization* tasks allow students to group sounds according to different criteria (e.g., sound qualities, sound sources, emotions, contrasts, etc.). The questions in this chapter help students to articulate why certain sounds stand out and others do not.

This stage is crucial for developing **sonic metacognition**. Questions such as *"Why this sound?"* and *"What does this sound reveal about the place?"*, prepare them conceptually for their composition, their sound collage (Chapter 6), and their visual sound cartography.

Main Activity
Creating Visual Cartographies

4. Free Visualization of a Soundscape

For this activity, use sound collages crafted in Chapter 6, audio analyzed in Chapter 5, or a soundscape chosen from other sources such as the SoundUP map.

Each student receives an A3 paper (or a large cardboard sheet) and several colored pencils or markers. This sheet of paper (or drawing surface) will serve as a representational field where sounds can be positioned, related, and organized in space. Drawing becomes an interpretative act and helps students to realize that even free visualization involves decisions about position, scale, movement, relevance, relationships, and meaning – core elements of visual sound cartography.

Tell the students that after listening to a soundscape, they will have to draw a map based on the audio file. At this stage, students listen without drawing, focusing only on imagining the aurally presented place.

> *This blank sheet will represent the entire environment that we are going to listen to. Everything you place on the page exists inside that space.*
> *Do not draw yet. Just try to visualize the sounds on the paper.*

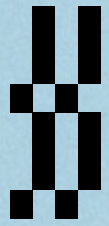
While listening to the audio file once more, invite students to begin mapping what they hear. They may draw, write words, make symbols, sketches, or simple marks – any visual strategy that helps them translate their listening into a visual-spatial representation.

> *Now imagine the place where this soundscape could exist.*
> *Place sounds on the page as if you were mapping where they are, how close or far they feel, whether they surround you or come from a specific direction, how loud or silent they are, whether they are static or moving, combined or isolated, continuous or momentary, etc.*

You can think about the position you are listening from, and if it helps, draw yourself somewhere on the map.

Once the drawing is complete, guide a reflective discussion using questions that anticipate later cartographic steps. You can ask questions such as:

Position and listening



- *Where were you listening from within this environment?*
- *Were you standing still or moving?*
- *Did you place yourself somewhere on the page, or did you listen from outside the scene?*

Spatial organization

- *Which sounds are close, and which are far away?*
- *Why are some sounds placed higher, lower, or more centrally than others?*

Form and representation

- *What kinds of shapes, lines, or marks did you use to represent different sounds?*
- *Are some sounds loud and dominant, while others are soft or subtle?*
- *Did you use similar forms or colors for similar sounds?*

Layers, movement, and simultaneity

- *Are there layers of sound happening at the same time?*
- *Do any sounds move across the page?*
- *Does your drawing visualize rhythmic, repeated, or continuous sounds?*

Belonging and relevance

- *Which sounds feel most representative of this place?*
- *Are there sounds that do not seem to belong here?*
- *Which sounds would you like to remove, and why?*
- *Do any sounds feel connected to the past, the present, or the future of this place?*

Relations and meaning

- *Do some sounds seem connected or dependent on others?*
- *If someone else looked at your drawing, what relationships between sounds might they notice?*

5. Guided Construction of a Visual Sound Cartography

In this new activity, all students work on a soundscape chosen by the teacher, with a focus on explicitly structuring and creating a code or legend. The aim is to help students intentionally construct **systems and relationships**, which

often require more guidance and shared examples.

At the outset, it is important that the teacher **explains and demonstrates the process**, as creating legends and visual connections can be challenging.

At this stage, you may:

- briefly sketch a simple example on the whiteboard,
- briefly sketch a simple example for each step (see below),
- show anonymized examples from students' previous work,
- develop an example legend together with the class.

Emphasize throughout that this modelling is **illustrative, not prescriptive**, and that students' individual solutions may differ.

Step-by-step guided process

Step 1. Visualize the environment
Each student receives an A3 paper or a large cardboard sheet and several colored pencils or markers. Students listen to the selected audio file and imagine its environment.

Step 2. Situate the listening position
Students indicate where the listener is located within the environment.

From which position are you listening? Are you moving or standing still? Are you lying or standing? How big is the space? Is your presence audible in the soundscape?

Step 3. Represent sounds visually
Students use shapes, lines, textures, or symbols to represent the sounds.
Think about size, distance, intensity, repetition, etc.
Which sounds dominate? Which ones are in the background?

Step 4. Identifying categories and building a meaningful system
The teacher helps students to **recognize patterns, relationships, distinctions, and roles** that are already present in their listening experience and in their visual representation. The legend or coding system should be introduced not as a technical requirement, but as a thinking tool that helps explain how the sound environment is structured and experienced.

You may begin by framing this moment as a collective reflection, with questions such as:

- *When you look at your map, are all the sounds the same type, or can you group them into different categories?*
- *Do certain sounds feel stronger, closer, or more important?*
- *Are there sounds that you immediately associate with this place, and others that you would not expect here? Do some sounds belong to this place more than others?*

Explain that a sound environment can be analyzed in multiple ways, depending on what aspects we attend to. By grouping sounds according to time, space, source, intensity, or personal experience, students can begin to understand how a place functions sonically, how its soundscape can be organized, and how their own listening position shapes what they perceive as important. Identifying categories, therefore, becomes a tool for analyzing both the soundscape itself and the listener's perspective on it.
Rather than asking students to invent categories straight away, guide the process through discussion, using questions such as:

Sources and context

- *What is the sound source?*
- *Which sounds come from people, nature, machines, or unknown sources?*
- *Which sounds clearly belong to this place, and which seem out of place?*

Space and movement

- *Which sounds feel near, which feel far away, and which sounds do you miss but would like to hear?*
- *Are the sounds located in a closed or an open space?*
- *Are some sounds static, while others move or circulate?*

Sound qualities

- *Which sounds are soft, medium, loud? Are some imperceptible or overwhelming?*
- *Which sounds are short, long, or continuous?*
- *Are there many sounds layered together or just one at a time?*
- *How do these sounds feel? Smooth, rough, or noisy?*
- *Can you hear regular and/or irregular rhythms?*

Time and experience

- *Do some sounds connect you to the past or the future of this place?*

Feelings and preferences

- *Which sounds feel comfortable or calming to you?*
- *Which sounds create tension, stress or surprise?*
- *Which sounds do you enjoy, feel neutral about, or dislike?*

From these discussions, categories begin to emerge organically. Then, invite students to **formalize their thinking visually by assigning colors, symbols, or graphic conventions** to the distinctions they have identified. You can give an example on the whiteboard. Three categories can be enough.

Possible categories may include (without presenting them as a checklist):

- **Time** (past / present / future)
- **Experience** (memory / what I hear now / imagination)

- **Feeling** (comfort / tension / curiosity / stress / surprise)
- **Preference** (like / neutral / dislike)
- **Distance** (near / far / absent)
- **Place** (inside / outside / in-between)
- **Movement** (still / moving / circulating)
- **Loudness** (soft / medium / loud / too loud)
- **Length** (short / long / continuous)
- **Layers** (single sound / many sounds together)
- **Rhythm** (regular / irregular / repeating)
- **Importance** (main sound / background sound)
- **Source** (human / nature / machine / unknown)
- **Control** (who has agency over the sound: controlled / shared / uncontrolled)
- **Familiarity** (familiar / new / strange / imaginary)
- **Any others that you can think of!**

Students may define their system before applying it to the map, or they may infer it afterward by **circling or marking the drawings** they have attributed to the different sounds. In both cases, the teacher's role is to support clarity and coherence, helping students refine distinctions. Once they have created their legend, invite the students to **assign colors, symbols, or graphic conventions to the categories in their maps:**

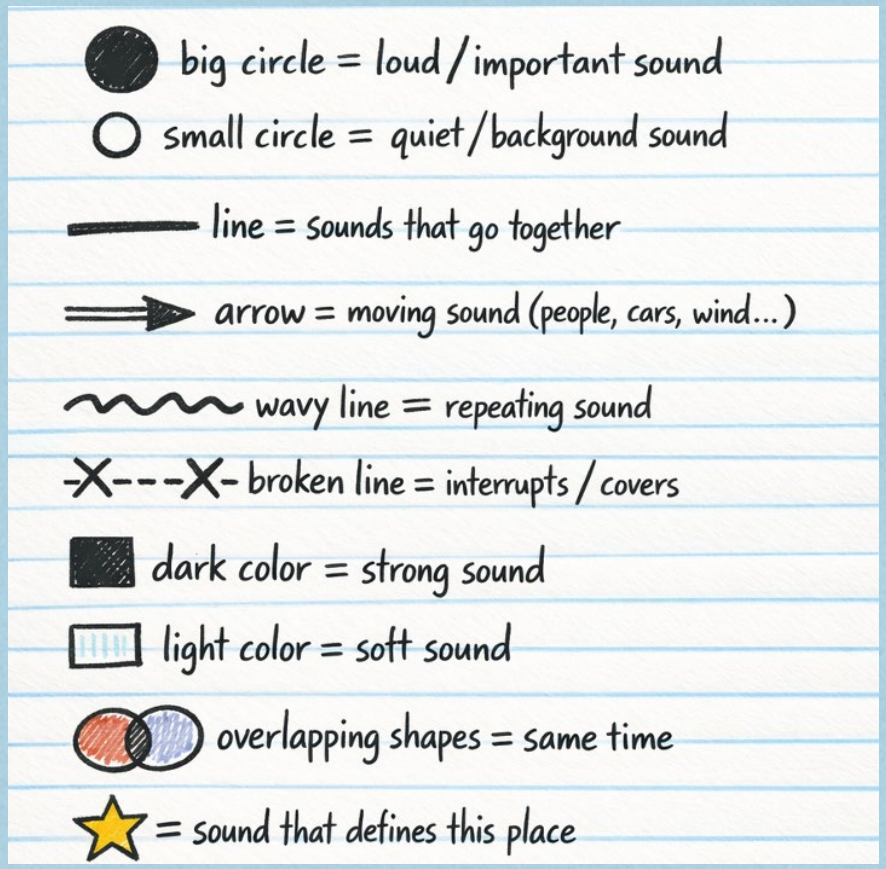
Step 5. Mapping Relationships, Interactions, and Dynamics

Once students have identified meaningful categories, let them focus on how sounds relate to one another. In this last step, students move from identifying and grouping sounds to connecting sounds that could belong together or influence one another. Unlike the previous activity, which focused on categorizing individual sounds, this exercise focuses on relationships: **how sounds interact, overlap, and move**. Explain that the goal is now to link sounds that tend to appear together, affect each other, move, or shape the experience of the place as a whole.

Guide the discussion with questions such as:

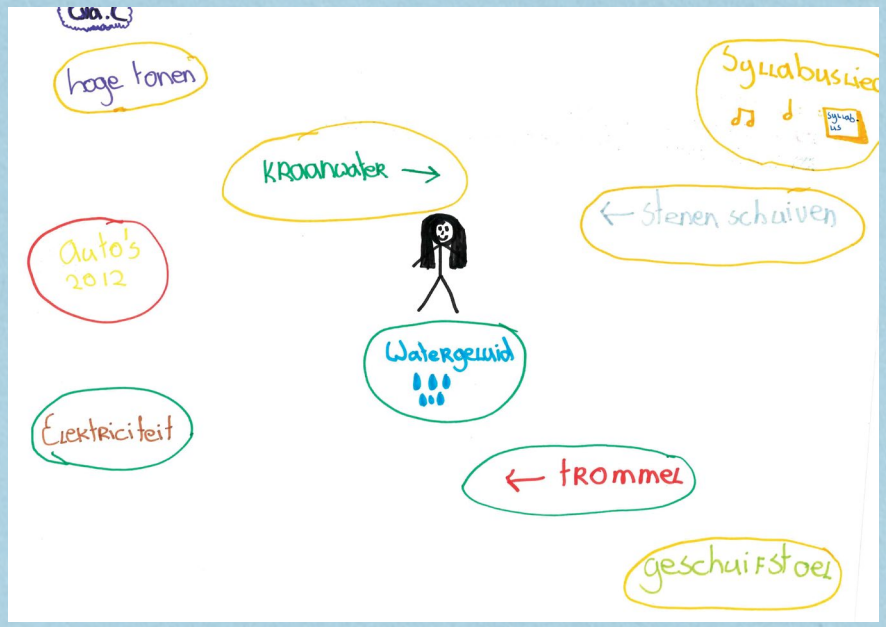
- *Could some of these sounds be connected to each other? Which ones belong together, and why?*
- *Which sounds tend to happen together or at the same moment?*
- *Are there sounds that feel stronger or more dominant, and others that depend on those or are harder to hear?*
- *Do some sounds cover, interrupt, or change how other sounds are perceived?*
- *Are there sounds that follow one another in time or repeat in a pattern?*
- *Do any sounds suggest movement of people or objects?*
- *If you connect two sounds with a line, what kind of relationship are you showing: support, contrast, repetition, or conflict?*

Invite the students to **connect sounds on the page using simple visual elements,** for example:



Encourage students to think about what these connections reveal:

- how sounds organize space
- how activities coexist or conflict
- how the environment is experienced through listening



6. Independent Visual Sound Cartography

In this activity, the students independently create a complete visual sound cartography based on a place they have recorded, analyzed, or composed). The aim is to bring together all previous steps – listening, positioning, mapping, categorizing, and connecting sounds – into one single visual sound cartography. Each student receives an A3 paper or a large cardboard sheet and several colored pencils or markers.

- *First, **decide which place** you are mapping and where you are listening from. You may **draw yourself** on the page or simply keep your listening position in mind.*
- *Then, place the sounds you hear, remember, or imagine on the page. You can draw, write words, use*

symbols, or make simple marks. Think about where sounds are located, how close or distant they feel or whether they are static or moving.

- *Next, organize your map by creating a small **system or legend**. Choose a few categories that help explain how this place works sonically – for example, different types of sounds, emotions, distances, or moments in time.*
- *Finally,* **connect sounds that belong together**. *Use lines, arrows, zones, spirals, waves, pathways, or overlaps to show relationships, movement, repetition, or interaction between sounds.*

5. Collective Dialogue, Critical Rereading, and Projection

The purpose of this activity is to use the maps as tools for collective listening, comparison, and reflection. Therefore, display the cartographies around the classroom. Invite students to walk through the classroom and let them observe each other's cartographies carefully.

Invite the students to reflect on some questions, helping them to direct their attention. You can use the same questions for the discussion, such as:

Noticing attention and focus

- *What caught your attention when looking at other people's maps?*
- *Did anything surprise you?*
- *What similarities and differences do you notice between maps of similar places?*
- *Which sounds are central in some maps but secondary or absent in others?*

Observing similarities and differences

- *What do these maps have in common?*
- *Are there sounds that appear in many maps? Which ones?*
- *What differences do you notice between maps?*

Listening attitudes

- *What do these maps reveal about how different people listen?*
- *Do some maps focus more on details, while others focus more on a general atmosphere?*
- *Can you see different ways of listening in the maps? Are some forms of listening more careful, more selective, more instinctive, or more emotional?*

Categories and coding systems

- *Which categories are used to organize sounds?*
- *Did many people use similar categories, or did they favor very different ones?*
- *Which categories helped you to*

understand a map more easily? Why?

Strategies for connections

- *How did people connect sounds on their maps?*
- *Do you see lines, arrows, zones, overlaps, or other strategies?*
- *Which connection strategies show relationships between sounds more clearly?*

Reflection and projection

- *Would you have placed sounds or objects differently on the map?*
- *Which maps focus more on detail, and which focus more on the sonic atmosphere or give an overall impression?*
- *How does each map reveal what the listener finds important, disturbing, comforting, or meaningful?*

Goals

- Creating a **visual sound cartography** that represents a sonic environment from a **situated listening position.**
- **Translating listening experiences into a coherent visual composition** using symbols, spatial organization, words, and color.
- Encouraging **reflection on the identity of the environment** as expressed through sound.
- Designing a meaningful personal legend or coding system that explains **relationships between sounds.**
- Encouraging reflection on **individual ways of listening,** highlighting the sonic identity of the listener.
- Using the **cartography as a reflective tool** to support sound composition, sound collage, or further analysis.

Celebrate diversity in listening and self- expression through distinct visual outcomes.

The Skills We Practice

- Active and reflective listening.
- Visual organization and symbolic representation
- Codification and associative thinking.
- Sonic metacognition (thinking about how and why we listen).

- Critical and creative mapping.
- Expression and imagination.

Materials

- A3 paper or large cardboard sheets.
- Colored pencils or markers.
- Playback devices (laptops) and headphones.
- Scissors, glue, and rulers
- Students' recordings, notes, sound collages, or selected soundscapes.
- Optional: collage materials (magazines, stickers, thread, icons, printed symbols, or templates).

Pedagogical Recommendations

- You may demonstrate the process live but should avoid constraining students' outcomes: offer multiple examples rather than a single one, so that students feel free to develop their own approaches rather than follow a fixed example.

- Guide vocabulary. Offer thematic contrasts (e.g., past/future, inside/outside, calm/tense) but encourage students to modify them or add new ones if they want to.

- The process of sound cartography can be approached and integrated as a continuous, **coherent and connective process** across sessions and chapters of this guide or in other situated listening activities.

- Make space for divergent strategies in the students' cartographies and **value differences as a source of analytic material.** Treat variations between students' cartographies as evidence of different listening positions, experiences, and priorities.

- Use shared reflection to support vocabulary, categories, and connections.

- **Connect cartography to future-making.** Use the maps not only to reflect on existing soundscapes but also to imagine alternatives or as a tool for proposing change.

Emphasize process over outcome: the map is a thinking tool, not a final product.

If You Want To Expand

Meet the website "Sound Cartography" – Different soundmaps from all over the world.
Sound Cartography is a rich blog and educational resource dedicated to sound mapping. It shows international projects alongside examples of how local scholars, artists, and communities have created their own sound cartographies, all blending geography, sound, and imagination. Teachers can use it to show students how mapping sounds can also

entail reimagining places through listening. Some projects are based on precise and data-driven maps, while there are also examples of sound cartographies created by children, as well as other more creative and personal approaches. Teachers are encouraged to seek out and select examples that resonate with their own educational context and experience. Explore this resource by opening the link:

Sound Cartography

Meet the camera app Phonopaper

Phonopaper is a fascinating tool that transforms drawings into sound through a mobile app. Students can draw waveforms or patterns, scan them, and experience how their own graphic cartography is transformed into sound. See this resource in action by using the link:

Phonopaper

Assessment Opportunities

- Evidence of **meaningful categories and intentional relationships between sounds,** showing that the cartography functions as a system rather than a collection of isolated elements.
- **Coherence and clarity:** the degree to which the visual cartography aligns with the sound material and the student's listening decisions, demonstrating internal logic and consistency between listening, representation, and explanation.
- **Visual and symbolic articulation:** effective use of visual strategies such as symbols, color, spatial organization, and connections to translate sonic qualities and relationships into a readable cartographic form.
- **Reflection and listening awareness:** annotations, verbal explanations, or participation in discussion that reveal awareness of listening position, emotional responses, preferences, and interpretive choices.
- **Creativity and interpretive originality:** inventive and personal ways of translating listening into visual form, including original use of symbols, spatial arrangements, connections, or representational strategies.
- **Engagement and process involvement:** care, attention, and presence throughout the activity, including openness during collective dialogue and willingness to revise or rethink the cartography.
- **Connection to previous or further sound work:** how the cartography is a process that can support or inform other activities, such as sound collage, composition, or critical discussion, reinforcing continuity across the learning process.

Differentiation, Equality, and Attention to Diversity

- To make the cartographic task easier when starting from a blank sheet, the teacher could supply ready-made visual resources – printed icon sheets, template pages, or laminated “starter kits” that already contain basic symbols for ears, microphones, arrows, and sound source silhouettes. The icons and templates give students a concrete entrypoint so they do not have to invent every symbol themselves.

- To provide more structure, a step-by - step approach can be provided, for example, via a four-part worksheet:

  – Self-position: mark where the recorder stood.

  – Main sounds: place icons for the dominant audible elements (e.g., traffic, birds, voices).

  – Legend: assign a colour or shape to each sound type.

  – Connections: draw lines or arrows that show spatial or temporal relationships.

- For students who find abstract representation difficult, individualized support is important. Offer brief one-to - one moments in which the teacher or a peer mentor walks the learner through the worksheet, explains the purpose of each step, or points out how to reference or connect sound material (e.g. helping to draw specific sounds, creating a color system).

- Learners who are sensitive to visual overload can work on structured grids (e.g., a 5 × 5 matrix) and limit their palette to two or three contrasting colors.

- The cartography should be multilingual-friendly: students may write their notes in any language they are comfortable with. At the same time, the primary communication channel remains visual. By emphasizing icons, color coding, and simple line work, the map stays accessible even when the accompanying text varies across languages.

- Because some recorded sounds may be unsettling (e.g., sirens, harsh machinery), the activity must respect sensorial and emotional security. Students can either replace a “problematic” sound with a neutral symbol (e.g., a grey circle with a question mark) or omit the sound entirely from the map; either choice is valid. It could also be recorded in the legend.

- Collaboration (optional): pair students who think differently. For example, pair a verbally-oriented student with a visually-oriented partner. The verbally-oriented partner might suggest descriptive tags and narrative connections while the visually-oriented partner handles icons, layout, and color decisions.

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Colophon

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