Exploring Quiet Areas in Our City with Hush City

Scientix® is the community for science education in Europe. It is an initiative of European Schoolnet (EUN) that aims to promote and support a Europe-wide collaboration among STEM teachers, education researchers, policymakers and other educational stakeholders to inspire students to pursue careers in the field of Science, Technology, Engineering and Mathematics (STEM).

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Learning Scenario ID

Title

Exploring Quiet Areas in Our City with Hush City

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Hush City – EU Mission: Climate-Neutral and Smart Cities

Summary

In this Learning Scenario, students explore the soundscape of their city using the citizen science project Hush City. They identify, record, and evaluate “quiet areas” and learn how noise affects health and well-being. Their data contributes to the EU Mission for Climate-Neutral and Smart Cities.

Keywords

soundscape – noise pollution – quiet areas – urban environment – citizen science

Aim of the lesson

Students will understand how noise affects people in cities and will collect and submit real data to the Hush City project to help map quiet areas.

License

Overview

Citizen science project

Please indicate which citizen science project your Learning Scenario will be based on.

Climate Adaptation	
Budburst	☐
eBird	☐
European Butterfly Monitoring Scheme	☐
Observation.org	☐
Cancer	
Foldit	☐
Oceans & Waters	
Marine Debris Tracker	☐
Plastic Pirates	☐
DRYvER	☐
Eye on Water	☐
CrowdWater	☐
Climate-Neutral & Smart Cities	
Hush City	☒
HackAir	☐
Globe at Night	☐
BiciZen	☐
Soil Mission	
Soil Plastic	☐
TeaComposition Initiative	☐
LandPKS	☐

If you're using a different project (not listed above) but still related to one of the five EU Missions, please indicate the project name below:

Subject(s)	Science (Environmental Science / Physics of Sound) Geography (Urban environments, human impact) ICT (Using mobile apps and digital mapping)
Topic(s)	Urban soundscapes and identification of quiet areas using citizen science tools.
Age of the learners	15 years old (Grade 9)
Preparation time	2 hours
Total implementation time	6-7 hours (can be spread over several lessons)
Teaching material	Online resources: Hush City website Hush City app (Android/iOS) City noise pollution maps (if any) Padlet or Google Classroom for student sharing YouTube videos on sound and noise pollution (if any) Physical materials: Smartphones or tablets Headphones Printed worksheets: sound diary, reflection questions Maps of the local area
Responsible Use & Student Privacy	Use school- or teacher-managed Hush City accounts. Obtain parental consent for using mobile devices outdoors. Students must avoid uploading photos with faces or personal information. Do not publish exact home locations or personal identifiable data.

The Learning Scenario Activities

Activity Plan

Name	Procedure	Duration	STEM criteria codes
1. Introduction to Soundscapes	Teacher introduces noise vs. quiet areas. Students listen to short audio clips and discuss how sounds affect feelings, concentration, and health.	45 min	A3, B3
2. Learning About Hush City	Students learn what Hush City is, how it works, and why quiet areas matter. Teacher explains the data collection steps. Students practice in classroom with a mock observation.	45 min	A2, B1
3. Fieldwork: Mapping Quiet Areas	Students go outside in small groups to identify at least one potential quiet area. They use the Hush City app to measure sound levels, answer the questionnaire, and take optional photos (without people).	90 min	A3, B2, G1
4. Data Analysis and Comparison	Back in class, students compare their collected data: decibel levels, sound sources, feelings. They discuss what makes a place “quiet” and are encouraged to compare with other cities’ Hush City data.	45 min	B1, C1
5. Reflection and Communication	Students create a short poster, slide, or written reflection explaining their quiet area and why it should be protected. They present their findings to the class.	45 min	A2, B3, C2
6. Summary and Connection to EU Mission	Teacher reviews how the activity supports climate-neutral and smart city planning. Students discuss how cities can improve public well-being.	45 min	F5

Assessment

Formative assessment:

Teacher observations during discussions

Quick oral checks about procedures and understanding

Review of students' fieldwork notes and app screenshots

Summative assessment:

Final reflection poster or presentation (criteria: clarity, accuracy, understanding of noise/quiet concepts, proper use of Hush City)

Short quiz on sound, noise pollution, and Hush City data collection

Group evaluation: quality and completeness of the submitted Hush City observation

Reflect on your Development Process

1. **Choosing your project:** I chose the Hush City project because it is simple, accessible, and directly connected to students' everyday experiences. It fits well with the EU Mission for Climate-Neutral and Smart Cities and allows learners to collect meaningful environmental data without needing advanced equipment. The focus on well-being and urban planning made it highly relevant for 15-year-old students.
2. **Designing activities:** I designed the activities to follow the Hush City protocol closely while also supporting inquiry, collaboration, and hands-on learning. I added preparation and reflection steps to ensure students clearly understand how to collect high-quality data and why their contribution matters.
3. **Inquiry in action:** The scenario includes all phases of inquiry: asking questions about noise in the city, forming ideas about what makes an area quiet, collecting real data, analysing results, and communicating findings. Students take part in real scientific tasks and develop data literacy.
4. **Learning from the process:** If I were to design another Learning Scenario, I would include a comparison with other international Hush City datasets or invite a local urban planner for a discussion. This would deepen the real-world application and strengthen community engagement.

STEM Alignment and Competency Development

STEM Strategy Criteria

Please indicate which criteria correspond to your specific Learning Scenario and how they contribute to the broader development of a STEM School strategy. Brief explanations for each criterion are optional but can help clarify your choices. For more details, visit:

https://www.stemschoollabel.eu/criteria.

A. Instruction

★ [A1] Personalization of learning

★ [A2] Problem and project-based learning (PBL)

★ [A3] Inquiry based Science Education (IBSE)

Optional: reflect on how you addressed these criteria in your lesson plan

A1 – Personalization of learning
Students can choose which quiet area to explore and how to present their results (poster, slides, written text). This gives them control over their learning and supports different learning styles.

A2 – Problem and project-based learning (PBL)
Students work on a real problem: noise in their city. They collect data, analyse it, and propose solutions. The project is meaningful because their results support Hush City and can help improve the community.

A3 – Inquiry-Based Science Education (IBSE)
Students follow the inquiry process: they ask questions about noise, collect real data, analyse their results, and communicate what they discovered. They learn by doing science, not just reading about it.

B. Curriculum implementation

★ [B1] Emphasis on STEM topics and competencies

★ [B2] Interdisciplinary instruction

★ [B3] Contextualization of STEM teaching

Optional: reflect on how you addressed these criteria in your lesson plan

B1 – Emphasis on STEM topics and competencies
The lesson includes scientific concepts (sound, health), geography (urban areas), ICT skills (using the app), and data interpretation. Students develop critical thinking and collaboration skills.

B2 – Interdisciplinary instruction
The lesson connects Science, Geography, and ICT. Students understand noise pollution from many angles: physical, environmental, technological, and social.

B3 – Contextualization of STEM teaching
Students study noise in their own city, in places they know. This helps them understand how science is used in real life to improve well-being and city planning.

C. Assessment

★ [C1] Continuous assessment

★ [C2] Personalised assessment

Optional: reflect on how you addressed these criteria in your lesson plan

C1 – Continuous assessment
The teacher observes students during discussions, fieldwork, and group work. Feedback is given at each step, not only at the end.

C2 – Personalised assessment
Students can present their findings in different formats, and the teacher considers each student's abilities and learning style during evaluation.

D. Professionalisation of staff

☐ [D1] Highly qualified professionals

☐ [D2] Existence of supporting (pedagogical) staff

☐ [D3] Professional development

Optional: reflect on how these criteria are addressed at your school

E. School leadership and culture

☐ [E1] School leadership

☐ [E2] High level of cooperation among staff

☐ [E3] Inclusive culture

Optional: reflect on how these criteria are addressed at your school

F. Connections

☐ [F1] with industry

☐ [F2] with parents/guardians

☐ [F3] with other schools and/or educational platforms

☐ [F4] with universities and/or research centers

★ [F5] with local communities

Optional: reflect on how these connections were made in your lesson plan.

F5 – Connections with local communities

Students explore real locations in their community and think about how quiet areas help people. Their collected data becomes part of a global database that can support city planners and residents.

G. School infrastructure

★ [G1] Access to technology and equipment

☐ [G2] High quality instruction and classroom materials

Optional: reflect on how these criteria are addressed at your school

G1 – Access to technology and equipment
Students use smartphones or tablets to collect sound data with the Hush City app. This supports digital literacy and helps them use technology as a scientific tool.

About Scientix® and CROPS

Scientix® is the community for science education in Europe. An initiative of European Schoolnet (EUN). that aims to promote and support a Europe-wide collaboration among STEM teachers, education researchers, policymakers and other educational stakeholders to inspire students to pursue careers in the field of Science, Technology, Engineering and Mathematics (STEM).

CROPS is an EU-funded Horizon Europe project that will help citizen science projects grow and have a greater impact across Europe. The project will identify citizen science initiatives with the potential to expand their impact across the 5 EU Missions — Climate Change Adaptation; Cancer; Healthy Oceans and Seas; Climate-Neutral and Smart Cities; and Soil Health — and develop practical tools, protocols, and strategies to support the expansion of these initiatives. By connecting research with society, CROPS aims to tackle major challenges and contribute to Horizon Europe's vision of open, impactful innovation.

Annex(es)

ANNEX 1 — Fieldwork Observation Sheet (Hush City)

Title: *Quiet Area Fieldwork Sheet*

Group Members: _____
Date: _____
Location (description): _____

1 1. Basic Information

- **Time of the observation:** _____
- **Weather:** ☐ sunny ☐ cloudy ☐ rainy ☐ windy ☐ other: _____
- **Is this place quiet?**
  ☐ Yes
  ☐ A little quiet
  ☐ Not quiet

2 2. Sound Level Measurement

- **Measured sound level (dB):** _____
  (*Write the number from the Hush City app.*)

3 3. What sounds do you hear?

Tick all that you hear:

Nature sounds:
☐ birds
☐ wind
☐ water
☐ insects

Human sounds:
☐ voices
☐ footsteps
☐ music
☐ playground

Traffic sounds:
☐ cars
☐ buses

☐ motorbikes
☐ trains

Other: _____

4 4. How do you feel in this place?

Tick one or more:

☐ calm
☐ relaxed
☐ stressed
☐ uncomfortable
☐ happy
☐ focused
☐ other: _____

5 5. Why do you think this place is (or is not) a quiet area?

_____

_____

6 6. Optional Photo Notes

(Write what the photo shows. Do NOT include people.)

_____

_____

ANNEX 2 — Student Reflection Sheet

Title: *My Quiet Area Reflection*

Name: _____
Date: _____

7 1. About the Quiet Area

- Where is your quiet area?

  _____

- Why did you choose this place?

2. What did you learn about sound and noise?

Write 2–3 sentences explaining what you learned about how sound works or how noise affects people.

3. What surprised you during the activity?

4. How do you think this quiet area helps people?

(For example: health, concentration, stress relief.)

5. What would you do to improve this place?

6. How did using Hush City help your learning?

ANNEX 3 — Student Instruction Sheet (B1 English)

Title: *How to Use the Hush City App — Simple Guide*

This guide helps you use the Hush City app during fieldwork.

Step 1: Open the App

- Turn on GPS/location services.
- Open the **Hush City** app.

Step 2: Choose "New Observation"

- Tap **“+”** or **“Create new observation.”**

15 Step 3: Measure the Sound Level

- Hold your phone still.
- Stay quiet for 5–10 seconds.
- Press “Measure.”
- Wait until the app shows a number (dB).
- Write this number on your Fieldwork Sheet.

16 Step 4: Answer the Questions

The app asks:

- How quiet is the area?
- How pleasant is it?
- What sounds do you hear?
- How do you feel in this place?

Answer everything honestly.

17 Step 5: Take an Optional Photo

- Do NOT include people or personal information.
- Take a photo that shows the environment.

18 Step 6: Save and Upload

- Click **Save**.
- Your data is sent to the Hush City project.

19 Important Rules

- Stay with your group.
- Be careful near roads.
- Respect private property.
- Do not take photos of people.
- Follow your teacher’s instructions.