

DESIGNING NOISE

Section

Use a calm and reassuring tone throughout.

Creating a classroom environment where students feel safe to ask questions, share ideas, and make mistakes is just as important as the experiment itself.

If any student feels uneasy, gently guide them back to curiosity and discovery. Remind them that science gives us tools to better understand our world, and that caring for the Earth is something we can all do together. Small actions, like reusing materials or reducing noise, can make a big difference, both for the planet and for our sense of peace.

Lesson

Science

Grade

4-5

Learning Objectives

Students will apply principles of environmental conservation, such as recycling and noise reduction, to develop solutions for managing resources and minimizing environmental impact.

Duration

1 class (40 Minutes)

Required Materials

Paper

Pencils

A variety of recycled materials such as cardboard, fabric scraps, or plastic containers.

Marker or tape

Preparation and Implementation

Set up a calm and friendly classroom. Tell students this is a safe and fun science activity. Prepare small group kits (3-4 students). This activity aims to apply key environmental conservation practices such as recycling and noise reduction, help students recognize their ability to positively impact their surroundings, raise sensory and emotional awareness (especially about noise as a trigger), encourage students to imagine and create peaceful, safe spaces, support a sense of control, safety, and belonging in students who have experienced trauma.

ACTIVITY DESCRIPTION

1 INTRODUCTION (10 Minutes)

Trauma-Sensitive Note:

Let students know that it's okay to feel curious, uncertain, or even a little uneasy. This activity is not about fixing everything at once—it's about imagining small, peaceful changes.

“Some people are more sensitive to noise or mess, and that's okay. Today we're exploring how to make both our environment and our feelings feel a little more peaceful.”

Remind students that the classroom is a **safe space** where they can share ideas, ask questions, and express themselves without fear of being wrong.

Write these questions on the board:

“What things in your environment bother you?” (e.g., trash, noise, clutter)

“How can we change or fix these problems?”

Discuss basic ways to protect the environment (recycling, reducing noise, avoiding waste).

Ask: “*Can we also clean and protect our inner world?*” → transition into the main activity.

Let students know that it's okay to feel curious, uncertain, or even a little uneasy. Reassure them that the classroom is a safe space for learning together.

Local Examples:

Istanbul Technical University (ITU) – Istanbul, Türkiye

In ITU's architectural engineering faculty, students studied the acoustic properties of Ottoman mosques and built small models using recycled materials to mimic sound absorption in domes.

“ITU students recreated traditional acoustics using cardboard and cloth to learn about sustainable sound design.”

Ankara Metropolitan Municipality – Ankara

According to a recent report, Ankara Metropolitan Municipality has made soundproofing mandatory in new residential buildings, with special by-laws enforced in districts like Çankaya, Yenimahalle, and Etimesgut. The municipality requires the use of insulation solutions that reduce sound transfer between apartments, enhancing residents' quality of life and wellbeing. As urban living intensifies, this regulation ensures new developments include effective acoustic design from the start.

Website: https://www.esgazete.com/turkiyede-ses-yalitimi-talebi-artiyor-ankara-ve-izmir-one-cikiyor?utm_source=chatgpt.com

Global Examples:

Fuji Kindergarten – Tokyo, Japan

This award-winning school is built in a circular shape with noise-reducing wooden interiors. It uses soft recycled rubber flooring that helps create a quiet and calming atmosphere.

“Fuji Kindergarten is famous for combining child-friendly architecture with noise-conscious, sustainable design.”

2 DISCUSSION (5 Minutes)

Introduce the idea of recycling, noise pollution, clean environment, safe and quiet spaces. For example, we can turn plastic bottles into new toys or clothes!”

Ask students:

Have you ever noticed that carpets or curtains make a room quieter?
Why might noise reduction be useful in places like libraries or hospitals?

Visual idea:

- Before/after image of a plastic bottle turning into a t-shirt
- Recycling bins with labels: paper, plastic, glass
- A child sitting in a messy room looking upset → same child in a peaceful garden looking happy

Trauma-Sensitive Note: Our environment can change how we feel.

A clean and quiet place helps us feel relaxed and happy. A noisy or dirty place can make us feel upset.

Let students know:

“Today we’ll build a model or design a living area that helps reduce noise, using only reused and recycled items.”

3 IMPLEMENTATION (20 Minutes)

A. Imagine a Peaceful Place

Students close their eyes and imagine a place where they feel completely safe, calm, and clean.

(Guided imagery example: “There is no garbage, the air is fresh, birds are singing softly, and there’s no loud noise...”)

This is their “quiet and clean world.”

Trauma-Sensitive Note: Encourage students to notice how they feel in this space. What sounds—or silences—make it peaceful? What materials or colors surround them? Who else is there, or is it a space just for them?

Let them know that even imagining such a place can help us understand what kind of real environments we want to help create.

B. Creative Design

Students draw or create a model of this imagined world (individually or in groups).

They write or explain what this world includes:

- What kind of recycling bins are there?
- How is noise controlled or reduced?
- How are resources shared?
- How is peace and quiet maintained?

Their environmental solutions are integrated into their designs.

Trauma-Sensitive Note: *They can include calming spaces like quiet corners, green areas with soft textures, or gentle sound zones. Their solutions may be simple or imaginative—what matters is that their designs reflect care, creativity, and environmental thinking.*

This step allows students to transform their emotional vision into practical action, linking inner calm with outer design. Their imagined “quiet and clean world” becomes a model for real-life change.

FEEDBACK

- **Duration:** 5 Minutes

Distribute worksheets with the following:

Draw and label your sound-reducing model.

Reflect:

“One thing I learned today”, “One way I can reduce noise in my environment”, “How did working with my team make the task easier?”

Each student or group presents their design.

How do you feel in this world you created? Which of these ideas could be applied in real life? How can returning to nature or quiet help you when you feel overwhelmed?

RECOMMENDATIONS

1

Use kind and simple language throughout the activity.

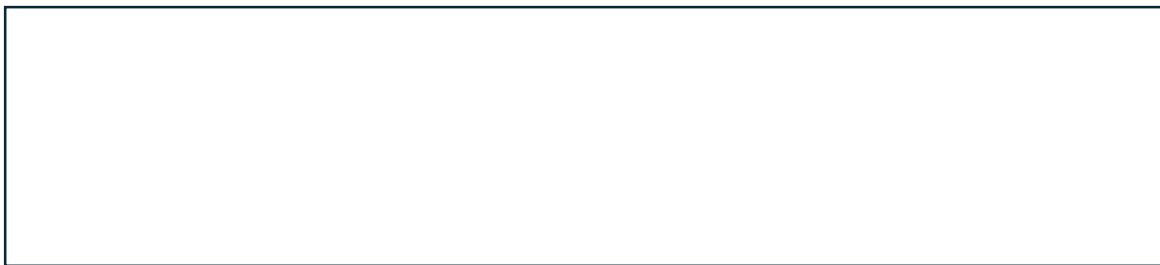
- If any student expresses anxiety or concern, respond with empathy: "It's okay to feel that way. Learning helps us feel more in control."
- Keep the pace steady and predictable. Clearly explain each step before moving on.
- Use group roles
- Incorporate small mindfulness moments.
- Include positive reinforcement: highlight teamwork, careful observations, and respectful listening.
- Consider following up with an art or story activity to let students express what they learned creatively.

ANNEX

WORKSHEET – Sound Solutions- Designing Noise-Reducing Barriers from Recycled Materials

PART A – Imagine It

Close your eyes and imagine a place where you feel safe, calm, and peaceful.
Draw what you see in your mind: (*Draw your "quiet and clean world" here*)



PART B – Describe It

Answer the questions below to describe your imagined space:

1. What do you hear in your quiet world?

2. What do you see around you?

3. What makes this place feel peaceful and clean?

PART C – If You Built a Model (Optional – Fill this part only if you made a model)

If you created a 3D model instead of drawing, answer the questions below:

1. What materials did you use in your model? Were they recycled or reused?

2. Which part of your model helps reduce noise? How?

3. What part of your model are you most proud of?

4. If you could add one more feature to your model, what would it be and why?

PART D – Reflection

How did it feel to imagine a peaceful place?

Calm Curious Happy Unsure Other: _____

One way I can make my real world more peaceful is:

Something I learned today is:

Bonus (Optional)

Write a message to your future self or your community:

"In the world I imagine, we take care of each other and the Earth by..."
