STEAM Education & Leadership Workshops

Student Activity Lesson Plan - Clean spaces, Bright ideas: Building a better school

Developed by Mariana Crespo - Enseñá Por Argentina alumna

Age range
10-12 years old

Learning objectives

- Understand the importance of architecture and cleanliness in fostering a healthy and functional learning environment.
- Explore how temperature and storage systems affect the preservation of food and beverages using basic principles of Natural Sciences.
- Apply mathematical concepts (e.g., measurement and scale) to calculate areas for repair or renovation. -
- Create designs for upgraded school spaces using artistic tools.
- Practice group discussions and oral presentation skills.
- Develop leadership skills by working in teams to identify school improvement needs, organize ideas, and present actionable solutions to peers and school administration.
- Collaborate to present actionable ideas for improving school conditions involving families in the proposed activities.
- Foster social responsibility and problem-solving skills by exploring how clean and functional spaces impact the broader community and discussing ways to inspire positive change locally and globally.

Structure of the lesson

- Day 1: Observation, Analysis, and Problem Identification (80 minutes)
    Introduction and Purpose (10 minutes)
    Observational Walk and Data Collection (30 minutes)
    Group Discussion and Problem Mapping (40 minutes)

- Day 2: Designing Solutions and Presenting Ideas (80 minutes)
    Generating Ideas and Sketching Solutions (40 minutes)
    Collaborative Presentation (30 minutes)
    Reflection and Closing (10 minutes)

Duration
160 minutes

Note to Educators

Engage with Relevance
Start with relatable questions like, "What would make our school better?" to connect the topic to their daily lives.

Guide Observations
Use structured checklists and roles during the walk to help students actively identify issues in the school.

Encourage Collaboration
Use problem mapping to organize findings into categories like cleanliness or safety, fostering teamwork.

Combine Math and Art
Incorporate measurements for accuracy and artistic elements for creativity in design solutions.

Provide Practical Examples
Share simple solutions, like recycling bins or murals, to inspire achievable ideas.

Timing	Facilitator's actions	Students outcomes	Technical notes
0-15 min	**Slide 2:** *"Improving Our School Spaces Together"* – Introduce the project with engaging visuals of modern school spaces. **Slide 3:** *"Why Does It Matter?"* – Discuss the connection between school conditions, health, and learning outcomes. **Slide 4:** Present the project's objectives and overview.	Students will gain awareness of the topic. Students connect their daily school experiences to the importance of clean and functional spaces, developing social awareness and purpose.	Be mindful to provide information while checking for understanding at this early stage. Start with open-ended questions: *"What do you like about our school spaces?"* and *"What would you change?"* to engage students. Include a visual slide with before-and-after examples of upgraded spaces.
16-35 min	**Slide 5,6:** *"How to Observe and Record Issues"* – Simple guidelines for inspecting walls, floors, ceilings, and storage areas. **Slide 7:** A checklist template to guide students.	Observational walk and data collection, exploration. Students identify areas needing improvement and begin analyzing problems critically.	Divide students into groups and assign areas of the school. Provide clipboards, checklists, and pencils. Ensure all groups have defined roles (e.g., observer, recorder). Allow time for questions before the walk.
36-50 min	**Slide 8:** *"What Did You Observe?"* – Groups share findings. **Slide 9:** Create a collaborative *Problem Map* on the board to organize issues into categories.	Group discussion and problem mapping. Students practice teamwork, organizing their observations and discussing shared concerns.	Use sticky notes or a whiteboard for a dynamic problem-mapping session. Encourage students to add their observations under relevant categories.
51-75 min	**Slide 10:** *"How Can We Solve This?"* – Examples of simple, realistic upgrades (e.g., murals, easy-to-clean flooring). **Slide 11:** Introduce design tools and encourage sketching ideas.	Idea generation and sketching solutions, creativity, and problem-solving practice. Students apply math (scaling, measurements) and art to sketch solutions, fostering a sense of agency.	Provide rulers, graph paper, and colored pencils for accuracy and creativity. Display an example of a scaled design. Assist groups as needed with calculations or brainstorming.
76-95 min	**Slide 12:** *"Presenting Our Ideas"* – Explain the presentation structure: Problem, Solution, Impact. **Slide 13:** Examples of student searches and images gathered from the school.	Students refine and organize their ideas, preparing to present confidently to their peers for a collaborative presentation.	Offer sentence starters or a basic outline for students struggling to articulate ideas. Encourage concise and clear communication.
96-115 min	**Slide 14:** Title slide for group presentations. Groups present their findings and solutions by choosing a couple of options.	Leadership and teamwork. Students gain confidence as they present their ideas and provide constructive feedback on others' solutions.	Ensure a supportive environment for presentations by setting ground rules for listening and respectful feedback.
116-130 min	**Slide 15:** *"What Did We Learn?"* – Facilitate a reflection circle with prompts: *"What surprised you? What challenges did you face?"* **Slide 16:** Summarize key ideas and discuss potential next steps (e.g., organizing a mural or proposing changes to staff).	Students consolidate their learning, develop optimism about creating change, and identify steps to implement ideas.	Use a talking stick or other tool to ensure all students get a chance to share. End with a class commitment to take one small action from their proposals.
131-160 min	Students vote on the best idea to implement or draft a proposal to share with the school administration.	Students will feel empowered knowing their ideas could lead to real change in their school environment.	Provide templates for drafting proposals. Consider involving other school staff to discuss the feasibility of implementing students' ideas.