STEAM: Science, Technology, Engineering, Art, and Math
Workshop Lesson Plan for Middle School Students
2022–2023 School Year

What’s the Big Idea?
Empathy, Creative Problem Solving, and Design Thinking

STEAM Tour and Workshop Purpose:
Students will use the High’s collections as evidence of creative problem solving, learning directly from the objects and galleries how artists and museum professionals create innovative solutions to complex problems.

Essential Questions:
Use the following guiding questions as you lead your students through the workshop:
• How do artists, designers, and scientists use empathy to think about and solve problems?
• How is an artist like a designer, explorer, or scientist?
• How do artists use science, technology, engineering, and math?
• How are art and design important to our communities?
• What is the purpose of a museum? Who works at a museum?

Objectives:
Students will…
• discover how artists tap into empathy and global awareness to raise questions and offer solutions about issues that affect our world
• consider how art and design affect people in their community
• use creative problem-solving techniques to complete a design challenge
• work with 3D models to test solutions to a problem
• explore the skills used in various museum professions (curator, designer, preparator, etc.)

Procedures:
Introduction (5 mins)
Teaching Artists will lead students in a discussion regarding museums, museum exhibitions, and how museum professionals are problem solvers:
- What is a museum? What is its role in a community?
- What is a museum exhibition? How can an exhibition be important?
- Who makes an exhibition? What skills are required?

Curators experiment with displaying different works in a space together to create a narrative. They also write about the artworks, often engaging with social issues in the community. They work and problem solve with a team of designers, preparators, marketers, and educators to make an exhibition that displays artwork in the most effective and accessible way. Everyone brings their specialized skills to the table and works together!

Connections (10 mins)
Look at the following items from the High’s permanent collection. These items are displayed together. What possible narratives can you read between these items? Why do you think the curator displayed them together? Everything is a choice; why do you think this team of museum workers made the choices that they did?
Think about other things that can impact/enhance the display of a work art, such as frames, wall color, accessibility such as seating and viewing height, lighting, passageways, and the positioning of the art in a space (Is it next to another work? Does it have a special “conversation” with the works around it? Is it by itself?).

Ask students if they can think of other issues (like pollution/sustainability) that could be a powerful topic for an exhibition.

**Design Challenge (20 mins)**

Put students into groups of four or five and introduce the design challenge for the day. Students will pretend that they have been hired by the High Museum of Art to design an exhibition of art. Depending on their confidence, students can either draw a theme from a bucket to base their exhibition on, or they can brainstorm as a group and decide on a community issue they’d like to tackle themselves. Students will be assigned a role (artist, curator, designer, preparator, marketing coordinator, educator, interpreter, etc.) and will have to work with their peers in this capacity to brainstorm an exhibition. They will work with the 3D gallery model at their table and pick images from the pile of small, laminated images at their table that would be suitable for their exhibition theme. They don’t have to use all the images, but they should at least use ten!

**Project Logistics**

- Potential exhibition themes:
  - Allow students to brainstorm together about things they’re passionate about. Potential themes could be gun control, environmental safety, student loans, gender equality, mental health, future landscape, bullying, academic struggles, social media, etc.

- Roles and Descriptions:
  - **Curator**: You are a scholar and expert on your exhibition’s topic.
  - **Designer**: You are the person who plans how the exhibition and gallery space will look before it’s made, usually via drawings. You will work closely with the curator to create mock-ups of the exhibition that will help others bring it to reality.
  - **Preparator**: You make museum displays and helps safely install art in a space based on the designs created by the curator and designer.
  - **Interpretation/education team**: You help with the interpretation of the art that people see by writing wall labels that explain the artwork or by giving tours of the space. You are an expert in helping people connect the dots, especially across a wide range of audiences (K–12 school field trips, families, adults, etc.).
  - **Marketing coordinator**: You are the person who engages with the community to spread the word about the exhibition. You identify why people would be interested in coming and then create corresponding material (flyers, social media posts/videos, etc.) to help the exhibition gain traction.

**Share and Reflect (10 mins)**

When students have completed their exhibition design, they will reflect on the following:

- What is your exhibition about? How did your team build it?
- What challenges did your team encounter while designing this exhibition?
- What do you like about your exhibition?
- What would you change about your exhibition if you could make it again or add something to it?

If time permits, allow students to share their designs and reflections with the class or with the group closest to them.

**Clean-up (5 mins):**
Leave time for students to deconstruct their exhibitions and return materials to designated areas. Students may use their phones to briefly take pictures of their exhibition; they will not take any pieces of it home.

**Vocabulary**
Design  
Model  
Exhibition  
Gallery  
Curator  
Designer  
Preparator  
Education  
Interpretation  
Marketing

**Materials**
3D gallery models  
Small, laminated images of artwork in permanent collection  
Scrap paper and pencils (for potential sketching/brainstorming)

**Materials for the Instructor**
Visual schedule  
Timer  
Laminated examples of museum exhibitions, art install, etc.