



**STEAM: Science, Technology, Engineering, Art, and Math  
Workshop Lesson Plan for Elementary School Students  
2023–2024 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 as to how artists create innovative solutions to complex problems.

**Learning Objectives**

*Essential Questions*

- How is an artist like a designer, explorer, or scientist?
- How do artists and designers create solutions to problems?
- What does the research process look like?

*Students will be able to . . .*

- Discover how artists use empathy to ask questions and explore solutions
- Create and test theories as to how a complex work of art was created
- Use creative problem-solving techniques to explore process
- Consider how art and design affect people in their community

**Vocabulary**

Artist  
Design  
Empathy  
Experimentation  
Research  
Scientific Method

Tissue Paper  
Tracing paper  
Pastels  
Glue  
Scissors  
Tape  
Stamps  
Stamp pads  
Cardboard tube stamps (for rolling)

**Materials**

Tagboard  
Acetate sheets (clear)  
Holographic sticker paper  
Construction paper strips (assorted paper)  
Collage paper

**Additional Needs per Classroom**

Visual schedule  
Visual timer  
Laminated images of *Bird Motif*



*Bird Motif* by Irene Rice Pereira

## **Procedures**

### Introduction (5 mins)

Explain how artists are like designers, explorers, and scientists; they all experiment and use creative problem solving! Students will become artist researchers by using the scientific method to deconstruct and investigate how artist Irene Rice Pereira made her artwork *Bird Motif*. Review the steps of the scientific method with students: making an observation, asking a question, creating a hypothesis, experimenting, analyzing results, and drawing a conclusion.

### Observation and Hypothesis (10 mins)

Guide grades K–2 students as a class through close looking of *Bird Motif*; grades 3–5 students will break into small groups to do so. What do they notice? What hypotheses do they have about how this work of art might have been made—what steps might the artist have taken and in what order? Write down these ideas for the class to see, or if students are discussing in small groups, write them on a scrap piece of paper at each table. For older students, ask a spokesperson from each group to briefly share some of their ideas.

### Experimentation (25 mins)

Students will now conduct their research. If their group or class came up with multiple ways in which this work of art might have been made, they can choose which method they'd like to test individually! Students will each have a piece of tagboard. In addition, they will find an assortment of different materials at their tables to experiment with—clear acetate sheets, strips of colorful construction/collage paper, stamps, tape, and markers. With these materials, students will explore how the artist made *Bird Motif*. Can they accomplish something similar? How will they layer their materials? At the end, have them compare and contrast their different hypotheses.

### Differentiation

- Extensions: For advanced students, additional materials can be provided to experiment with. Alternatively, students can be challenged with writing an artist statement.
- Adaptation: For younger students or students who need it, slow down and explore experimentation step by step with the class or group. Eliminate certain materials based on age or needs.

### Results and Conclusions (10 mins)

Allow students to present their works of art. If there is time, allow them to reflect on the following:

- What did we learn about the artist by researching their process? What skills must they have used?
- Can you use anything from this research experiment in your personal art?

### Cleanup (5 mins)

Leave time for students to tidy the materials at their tables. Students will place their works of art in a collective bag for their teacher to carry.

**Note:** If necessary or desired, *Bird Motif* can be replaced with Radcliffe Bailey's multilayered *En Route*, also on view in the museum. Similar principles apply, with the addition of collaging images.