

Discover Art Tour 2: Sound & Color Curriculum Guide

Department: Public Engagement

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Prepared for: 4th grade teachers participating in Discover Art

Op art, sound art, color and contrast as an academic inspiration

In this curriculum guide, 4th grade teachers will find information on integrating op art, sound art, and elements of color theory into lessons. This guide features points of inquiry, background information, vocabulary, and activity ideas. This guide can be used as a framework to create lessons specific to mathematics and science.

Big Ideas:

How does understanding the science of the body help artists when creating art?

How do artists use science and math when creating works of art?

How can students apply scientific ideas and experimentation into other areas of life?

Points of Inquiry:

How is understanding sound important to how we interact with the world?

How does sound affect your life?

If musicians didn't understand sound, would they be able to make art?

How do you make sound, and why is that important to you?

Background:

Artists think creatively when they make works of art, but experimentation is another vital area for artists. Art, music, and science are interconnected. By incorporating elements of math and science to understand the world around them, and all of the possibilities of the materials they work with, Artists can transform creative works. Artists achieve amazing results through research, experimentation, and trial and error.

Vocabulary:

Sound

Sound wave

Vibration

Volume

Medium

Pitch

Conductor

Activities and Lesson Starters

Sounding Forks

Prompt students to look through their homes to find an item made of wood, glass, and metal as well as a metal fork. Explain how sound travels through sound mediums, and how different materials conduct sound differently. Have students guess which medium will make the loudest sound when struck by the fork. Prompt students to tap each material with their fork. Discuss the results of the experiment and how they differed from the student's predictions.

Resonating Gong

Ask students to gather four feet of yarn (Approximately their height), a metal spoon, and a metal fork. Tie the spoon at the center of the yarn. Have students hold both sides of the yarn piece up to their ears. Tap the dangling spoon with the fork. The student will hear a clear, high pitched ringing noise through the string. Have students compare the sound when using the yarn near their ears and without.

The yarn acts as a conductor, bringing the sounds right to their ears instead of travelling through the air. Prompt students to try the experiment with other sizes of forks and spoons, or other small metal objects.

Creating a Drum

Explain how sound mediums, like gas, liquids, and solids, channel sound differently. Many percussion instruments, like drums, use a hollow space filled with a medium. Different mediums affect the sound that an instrument makes.

Have students gather a drinking glass, a rubber band or string, a piece of paper, and a pencil. Show students how to use the string or rubber band to bind the paper onto the glass to make a simple percussion drum. Instruct students to tap the drum with their pencil and listen to the noise it makes. Have students try different amounts of force when striking their drum.

Ask students to take apart their drum, and fill the bottom of the glass with water. Ask students to predict how the sound will change. Re-cover the glass with paper to create the drum, and observe how the sound changed. Ask students to predict how the sound would change with more water added to the glass.