

STEAM

Science, Technology, Engineering, Art, Math

Grades 6–12

Apply STEAM concepts in real world situations. Look for and describe evidence of artist experimentation, invention, and imagination.



George Rickey, *Horizontal Column of Five Squares, Excentric II*

Student Learning Goals

1. **Communication:** Students observe and discuss works of art, using visual evidence to theorize about how an object was made and why it matters.
2. **Real World Experience:** Students analyze the applications of STEAM concepts as they relate to the creation, exhibition, and conservation of works of art, and the maintenance and security of the museum facility. Students learn about careers within the museum.
3. **Global citizenship:** Students discover experiences of people different from themselves, historically, geographically, and culturally.
4. **Creativity:** Students describe how artists develop new ideas and identify, test, and solve problems to bring them to reality. Students discuss how artists collaborate, share, and inspire each other.

Connections to Texas Essential Knowledge and Skills (TEKS)

Middle School

1. Investigate and explore original artwork outside the classroom in museums. (Art 4C)
2. Relate the impact of research on scientific thought and society. (Sci 3D)
3. Explain how changes in technology throughout history have impacted various areas of study. (Tech App 6H)

High School

1. Identify and understand the elements and principles of art including line, shape, color, texture, form, space and value as well as emphasis, repetition/pattern, movement/rhythm, contrast/variety, balance, proportion, and unity. (Art 1 B, C)
2. Evaluate the impact of research on scientific thought, society, and the environment. (IPC 3 C)
3. Develop an understanding of elements, principles of art and evaluate works of art. (Prin. Art/AV/Comm. 11B, D)
4. Describe how technology affects individuals, societies, cultures, economies and environments and influenced past events. (Con. of Engn. & Tech 4A, B)
5. Analyze digital art designs. (Dig. Art & Anim. 1F)
6. Research the history of 3-D modeling and animation. (3-D Mod. & Anim. 3B)

Key Questions for STEAM exploration

1. How was this work of art made?
2. How is it cared for?
3. What could it mean?
4. What are you curious about?

Works of Art to Consider

1. Architecture of the McNay
2. Tim Bavington, *She is Love*
3. Erik Benson, *Dead Air*
4. Chakaia Booker, *Position Preferred*
5. Albrecht Bouts, *Moses and the Burning Bush and Gideon and the Fleece*
6. Tim Burton, *The Nightmare Before Christmas*
7. Alexander Calder, *Four Winds*
8. Arthur B. Davies, *Listening to the Water Ouse!*
9. Leonardo Drew, *Untitled (33A)*
10. El Greco, *Head of Christ*
11. Carl Rice Embrey, *Confederate Jasmine*
12. Paul Gauguin, *Portrait of the Artist with the Idol*
13. George Grosz, *The Gymnast*
14. Robert Indiana, *LOVE*
15. Luis Jimenez, *Man on Fire*
16. Alexander Liberman, *Ascent*
17. Ken Little, *Dawn*
18. Oppenheimer 3 Stop
19. Camille Pissarro, *Haymakers Resting*
20. George Rickey, *Horizontal Column of Five Squares, Excentric II*
21. Kate Ritson, *In Balance*
22. Joel Shapiro, *Untitled (Blue Man)*
23. David Smith, *Stainless Network I*
24. Tony Smith, *Asteriskos*
25. *St. George*

Vocabulary

acrylic paint	kinetic sculpture
art conservation	light sensitive
bronze	oil paint
climate control	optical mixing
found objects	patina
infrared light	stop motion
installation	tempera
	weathering