

Connecting Art + STEM

HIS 5067 - Spring 2023

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Introduction

For centuries it has been human nature to capture and analyze the world around them by utilizing various art forms. By furthering their understanding of the natural world artists have not only more accurately and precisely portrayed the world around them in a more realistic fashion but are able to make connections between science and humanity. The works included in this selection show the parallels of humans and scientific advancements including but not limited to the natural world. Looking chronologically we can see how the advancements in science also coincide with advancements in the art world. This selection starts with classic painters and their interpretations of science and progress to a modern look at modern concepts. Each selection has an expressive narrative where the artist has something to say about the natural world and uses elements in their work to convey that message eloquently to the viewer. The human form, nature, spirituality and wildlife have inspired this collection of works: Connecting Art + STEM.

Blondel le Roman



The skill of this drawing makes it known that the author studied at an artistic academy in a major European city. Nude drawings were a strong component of artistic education during the 17th and 18th centuries. The “ideal human body” is a consistent theme of the period represented in this sketch. Drawings with the “ideal human body” can show us how different communities throughout time viewed how the body should look.

Accession Number: 2007.8

Title: *Untitled (Reclining Male Nude)*

Date: 18th century

Medium: Graphite on light blue prepared paper

Rights: Public Domain

KEYWORDS: Anatomy, Renaissance, Enlightenment, Nude, Natural Form

Question: How did the “ideal human body” affect the art and society of this period? Is there a similar trope that affects our modern society?

William Miller after Joseph Mallord William Turner



CALAIS PIER.

FROM THE PICTURE IN THE NATIONAL GALLERY.

Joseph Mallord William Turner is well known for his seascapes and landscapes. This particular engraving symbolizes man's struggle with the natural world. A theme that is often demonstrated through the contrast of light and dark also known as chiaroscuro. This piece shows the tumultuous connection of not only man and the sea but also of man and nature itself. The power of the sea and man's need to conqueror is a theme that is often portrayed throughout his works. Unique of this piece, this engraving, created after Turner's 1805 painting, highlights the work of one of his most dedicated principal engravers, William Miller.

Accession Number: 1940.20.3

Title: Shipwreck

Date: 1870

Medium: Engraving

Rights: Gift of George H. Sullivan

KEYWORDS: Intaglio, Etching, Nature, Landscape, chiaroscuro, natural phenomena, Seascapes

Question: How has the engravers use of chiaroscuro give a deeper meaning to the artwork? How can we use this technique to convey other dramatic imagery?

Georgia O'Keeffe



Georgia O'Keeffe's work, with its ultra-realistic depictions of landscapes and plants, and other organisms shows how artists can use expressions of light, shadow, and color to create accurate depictions of the natural world. Close-up depictions of organisms and their structures can shape how biologists analyze and understand the makeup of nature and can lead to discoveries of new adaptations, along with identifying new species.

Accession Number: 2006.4.8

Title: Banana Flower

Date: 1968

Medium: offset lithograph on Rives BFK paper on Rives BFK paper

Rights: © Georgia O'Keeffe Museum / Artists Rights Society (ARS), New York

KEYWORDS: specimen, technical illustration, structure, adaptation, biological diagram, anatomy

Question: How can creating accurate drawings, pictures, or paintings of the natural world enhance scientific understanding of organisms?

Salvador Dali



Salvador Dali's etching on paper depicts Adam and Eve and their first experiences with their natural world. This etching highlights the first moments of human interaction with paradise and alludes to how the world will shift over time. The connection between the curves of the bodies and the curves in the tree symbolize the similarities of man and their physical space. This is one of many depictions Dali has done of Adam and Eve. His fascination with the human form and its connection to spirituality plays an important role in the theme of these piece as well as its creation.

Accession Number: 1984.11.8

Title: *Adam and Eve*

Date: 1975

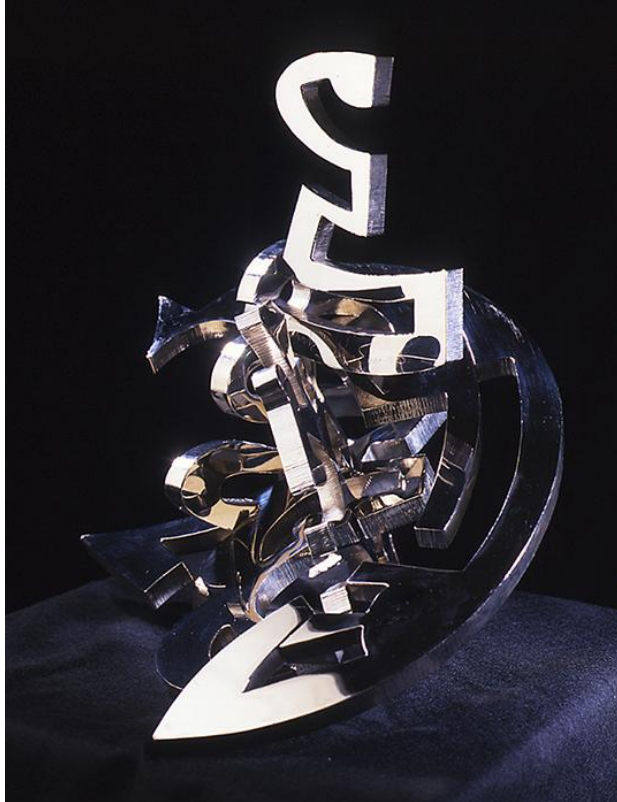
Medium: Etching on arches paper

Rights: © Year Salvador Dali/Artists Rights Society (ARS), New York

KEYWORDS: Religion, Ideology, Etching, Nature, Natural Form, Religion Iconography,

Question: How does artwork of the natural world and the human form parallel themes in religious paintings? How does the use of color and form enhance the artists message?

Mark di Suvero (American, b. 1933)



Mark di Suvero, with his expertise in and use of industrial fabricators and heavy machinery, uses the basic principles of engineering to create works that audiences can interact with. Moon Dog, although smaller than some of the other sculptures made by di Suvero, is able to be manipulated into a variety of configurations.

Accession Number: 1999.7

Title: Moon Dog

Date: 1981

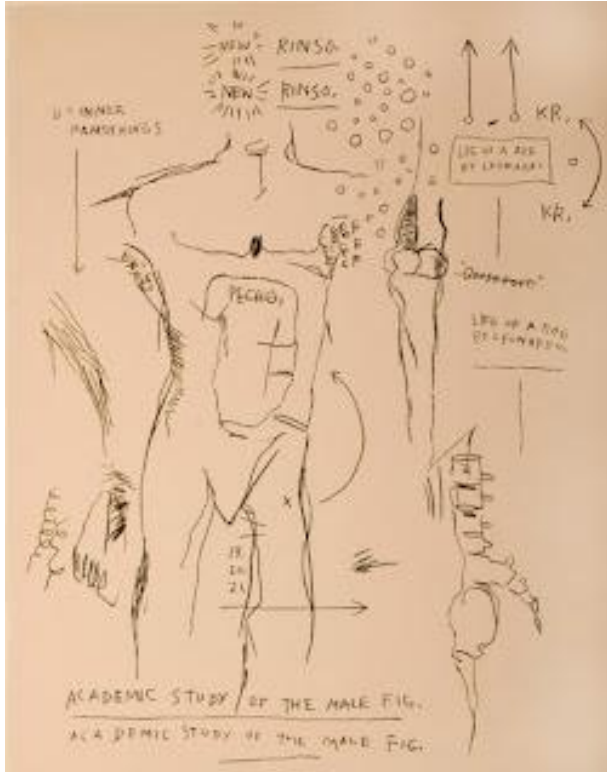
Medium: nickel plated aluminum

Rights: © Mark di Suvero

KEYWORDS: Abstract, engineering, industrialization, physics

Question: How can physical sciences and backgrounds in technical or engineering training aid in the creation of art?

Jean-Michel Basquiat



As a Neo-Expressionist, Jean Michel Basquiat created quintessential works of modern art in the 1980s. At a young age, Basquiat was involved in a traumatic car accident. His mother gave him a medical textbook, Gray's Anatomy, to read while he healed. Basquiat was clearly influenced by the anatomical drawings. This piece builds upon that as well as references the anatomical drawings by Leonardo da Vinci. In this drawing, Basquiat intersects identity and the natural/scientific world.

Accession Number: 2007.14

Title: *Academic Study of the Male Figure*

Date: 1983

Medium: Brown screenprint on Okiwara paper

Rights: Public Domain

KEYWORDS: Anatomy, Modern Art, Sketches, Science, Nature, Natural Form

Question: How does the loose sketch affect the way we see the artwork? Does this anatomy seem more realistic than traditional drawings of the male figure? Why or Why not? How do the writings affect the piece?

Marianela de la Hoz



Marianela de la Hoz piece draws the viewer in asking them to pay attention to the details of her piece as she makes a commentary on the lives of these particular humans and the choices they make. This piece is a narrative about human nutrition. "The need for flesh" in the title forces the viewer to wonder if this is about the human instinct to eat flesh or is it about choosing a different path away from a need. Her narrative style encourages the viewer to question social narratives of today and look at today's troubles through a different lens.

Accession Number: 2015.5

Title: *Estoy Necesitado de Carne (I Am in the Need of Flesh)*

Date: 2010

Medium: egg tempera painting and mixed media assemblage

Rights: Gift of Pierrette Burbank Van Cleve

KEYWORDS: nutrition, Social commentary, mixed media, dark humor, modern art

Question: What is the message Marianela's work is trying to convey? How does her use everyday objects enhance her message?

Brian Burkhardt (American, b. 1971)



This work, displaying mushroom-like specimens, utilizes the aesthetic of industrialized agriculture to show how organisms have adapted to modern methods of growth when manipulated by agricultural scientists and biologists. As technology continues to advance, understanding different organisms and how they can be modified has also changed. Brian Burkhardt's understanding of the pesticides and chemicals used in agriculture, along with the adverse effects that these chemicals could inflict on humans, shows the continued complex relationship and debates surrounding scientific alteration of arable farming methods and how much human manipulation of the environment can alter it for better or worse.

Accession Number: 2013.34.139

Title: *Mushroom Plug Tray 100*

Date: 2013

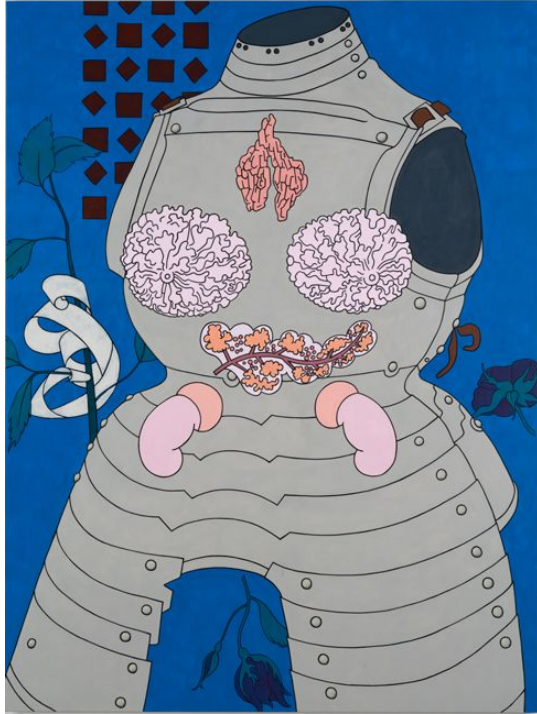
Medium: Carved resin, faux grass and reclaimed barnwood

Rights: Image courtesy of the artist

KEYWORDS: monoculture, entomology, mushrooms, adaptation, food movement, organic, agriculture, agro-business

Question: How can art be used to approach discussions of how science and technology interact and manipulate the natural world?

Caitlin Keogh



This piece by Keogh asks the viewer to consider female anatomy and gender identity. The strong Renaissance armor with the flower patterns speaks to how those with female anatomy must take a protective stance on their organs in the context of our current society. However, the represented organs on the outside of the armor shows both protection and vulnerability. With this work, Keogh creates conversations on anatomy and activism.

Accession Number:2016.3.15.

Title: *Renaissance Painting*

Date: 2016

Medium: Acrylic on canvas

Rights: Image courtesy of the artist and Bortolami, New York.

KEYWORDS: Renaissance, Anatomy, Female Body, Activism, Modern Art

Question: What message does Keogh send in this depiction of female anatomy and identity? How does this piece engage in the combative dialogue surrounding women's bodies?

Nathan Budoff (American b. 1962)



Conversations about climate change and its effects on nature have been heavily debated throughout the scientific community, with conversations about the environment making its way into the public and visual art world. Nathan Budoff, whose work focuses heavily on concerns of the imbalance between humanity and the environment uses works such as *Cosmic Love* to introduce questions about the treatment of the environment against the backdrop of his home of more than 25 years, Puerto Rico.

Accession Number: 2021.89

Title: *Cosmic Love*

Date: 2017

Medium: Oil shellac-base ink on canvas

Rights: Image courtesy of artist

KEYWORDS: environmentalism, biology, climate change, urban expansion

Question: How can visual art contribute to the discussion of climate change? Do scientific visualizations or hypotheses utilize artistic techniques to portray their experiments surrounding environmental changes?

Hiroshi Sugimoto



Hiroshi Sugimoto's seascapes are meant to be calming and complacent while spinning a narrative about the world in which we live. This calming sea and visual of a manatee and her child may look like a serene image but Sugimoto asks us to look deeper and see that this endangered creature is highlighted with hope that the world above will change their ways and save them from extinction. Sugimoto's use of light is prevalent throughout his works and are usually to draw focus to the subject in need of something from the viewer. In his own words he "welcomes you on a voyage of seeing".

Accession Number: 2014.1.42

Title: *Manatee*

Date: 1994

Medium: Gelatin silver print

Rights: © Hiroshi Sugimoto

KEYWORDS: Endangered, nature, natural world, environmentalism, seascapes, climate change

Question: How is the use of an endangered species exemplifying the statement Sugimoto is trying to make?

Other works

Albert Bierstadt, *Shoshone Indians Rocky Mountains*, 1859

Amer Kobaslija, *Red Tide*, 2019

Tanja Softic, *Continuum of the Other*, 2001

Eadweard Muybridge, *Plate No. 602 from Animal Locomotion*, 1887

Joseph Cornell, *Untitled (Derby Hat)*, 1972

Frances Gallardo, *Javier*, 2021

Curriculum References

Natural Science

Kindergarten - SC.K.N.1.2, SC.K.N.1.4, SC.K.N.1.5

Grade 1 - SC.1.L.14.1, SC.1.L.14.2, SC.1.L.14.3, SC.1.E.6.3

Grade 2 - SC.2.L.14.1, SC.2.N.1.1, SC.2.N.1.5

Grade 3 - SC.3.L.14.1, SC.3.L.17.1, SC.3.P.10.3, SC.3.P.10.4, SC.3.E.5.1, SC.3.N.1.1, SC.3.N.1.2, SC.3.N.1.3

Grade 4 - SC.4.L.17.2, SC.4.L.17.4, SC.4.P.9.1, SC.4.E.6.5, SC.4.N.1.2, SC.4.N.1.8

Grade 5 - SC.5.L.14.2

Grade 6 - SC.6.E.7, SC.6.N.1, SC.6.N.2,

Grade 7 - SC.7.E.6, SC.7.N.1, SC.7.N.2

Grade 8 - SC.8.E.5, SC.8.N.1, SC.8.N.4

Grade 9-12 - SC.912.L.15, SC.912.L.16, SC.912.L.17, SC.912.P.8, SC.912.N.1, SC.912.N.4

Visual Arts

Kindergarten - VA.K.C.1, VA.K.S.A.3, VA.K.O.2, VA.K.O.3, VA.K.H.2

Grade 1 - VA.1.C.1, VA.1.S.3, VA.1.O.1, VA.1.O.2, VA.1.O.3, VA.1.H.1, VA.1.H.2, VA.1.H.3,

Grade 2 - VA.2.C.1, VA.2.S.3, VA.2.O.1, VA.2.O.3, VA.2.H.1, VA.2.H.2, VA.2.H.3, VA.2.F.2

Grade 3 - VA.3.C.1, VA.3.S.3, VA.3.O.1, VA.3.O.3, VA.3.H.1, VA.3.H.3, VA.3.H.3, VA.3.F.2

Grade 4 - VA.4.C.1, VA.4.S.3, VA.4.O.1, VA.4.O.3, VA.4.H.1, VA.4.H.3, VA.4.H.3, VA.4.F.2

Grade 5 - VA.5.C.1, VA.5.S.3, VA.5.O.1, VA.5.O.3, VA.5.H.1, VA.5.H.3, VA.5.H.3, VA.5.F.2

Grade 6-8 - VA.68.C.1, VA.68.C.3, VA.68.S.3, VA.68.O.1, VA.68.O.3, VA.68.H.1, VA.68.H.2, VA.68.H.3, VA.68.F.3

Grade 9-12 - VA.912.C.1, VA.912.C.3, VA.912.S.3, VA.912.O.1, VA.912.O.3, VA.912.H.1, VA.912.H.2, VA.912.H.3, VA.912.F.3