

ArtReach Curricular Connections and Extensions (with State Standards)

3D Sculpture and Non-traditional Media

Technology

ICT Standard 1: Empowered Learner

ICT Standard 3: Knowledge Constructor

ICT Standard 4: Innovative Designer

ICT Standard 6: Creative Communicator

- Have students visit the Pixar and DreamWorks websites to learn about how two-dimensional, hand-drawn characters are transformed on the computer into realistic three-dimensional characters.
<https://www.youtube.com/watch?v=YnyINfHxtAE>
- Have students visit <http://www.karmatoons.com/drawing/drawing.htm> to learn how to draw 3-D animated objects and characters.
- Create a digital photo library of two- and three-dimensional objects found in your neighborhood, town, or school building. Take a walking tour of these locations and snap digital photographs of different objects (these could range from windows, doors and walls to bridges and birdhouses). Use the images to create a digital library that can be accessed by other students at your school, or print the pictures and create a class collage illustrating two- and three-dimensional objects.

Language Arts

CCRA.R.4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

CCRA.R.1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

CCRA.W.3: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

CCR.W.7: Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

- Talk about ways to describe shapes using words such as sides, corners, lines, and angles. Analyze familiar 2-dimensional plane figures, such as squares, triangles, and rectangles. Identify properties that make each shape unique. Compare familiar 3-dimensional figures, such as cubes and pyramids. What properties make these forms unique? Use these words to add to a class spelling or vocabulary list. Have each student select one shape and one form to describe

with words, either out loud or in writing. Discuss how the descriptions are the same and different.

- Have students create stories in three-dimensional form by using their story pages and fashioning cubes or pyramids so that each side tells or illustrates a part of the story.
- Read the story of Mount Rushmore. Discuss why this three-dimensional monument is an important part of American history citing evidence from the text. Keep track of this evidence on a large poster. Have students illustrate the poster with their drawings of Mount Rushmore.
- Have students choose a famous/significant sculpture to research (Example: The Statue of Liberty.) Write a short illustrated story about it.

Math

Measurement and Data

Geometry

- Learn how mathematics is used as a tool to construct artwork. Have students learn about the Golden Mean, Golden Ratio, The Divine Proportion, Phi and Fibonacci Sequence by studying various artworks. Refer to the website <https://news.artnet.com/art-world/golden-ratio-in-art-328435> to view artworks throughout history using the Fibonacci Sequence. Then, follow the activity <https://www.education.com/download-pdf/activity/26905/> to develop your students hands-on understanding of the Fibonacci Sequence.
- Have students learn the difference between shapes and forms. Have them use shapes to create their own paper forms. Begin by printing off polyhedron paper templates. Use these templates to cut and fold geometric forms. Visit <https://www.polyhedra.net/en/> as a reference.
- Take the three-dimensional classroom and translate it into two dimensions. Measure your own classroom as a class project. Calculate its square footage. Practice taking measurements by recording the size of windows, doors, and other three-dimensional elements within the room. Use these measurements to draw an accurate two-dimensional floor plan of the classroom. Use ratios and scale to create an accurate design. For example have students use the ratio of 1/4 inch = 1 foot. The design of the room, the furniture, and the objects should all fit into this ratio.
- Explore how three-dimensional design exists all around us. Find a variety of lesson plans at <https://www.teachingbydesign.org/> to introduce students to architecture.

Science/Physics

PS: Structure and Properties of Matter

PS: Motion and Stability: Forces and Interactions

- Have students create shapes and forms using toothpicks and mini-marshmallows. Which shapes and forms are structurally the strongest? Which forms are most difficult to construct? Why?
- Have students use simple wood or plastic blocks in a variety of forms and sizes to create structures.
- Use the *ArtReach* visit as a springboard for science lessons on mass, volume and space and/or states of matter (solids, liquids, gases). Sculptures can be created as solid forms or can be made of curved or flat planes that enclose space to create volume and suggest mass. Masses exist within space, occupy it, are surrounded by it and some even allow space in.
Can the students determine which sculptures are thick masses, hollow masses, slender masses, etc.? Have students describe the masses (rounded, angular, one mass, a collection of separate masses, etc.) Are there areas where space can move around the outside of the masses? Are there openings where space can move through the masses? Is the sculpture mostly about space, mostly about mass or balanced between the two?