VIEWING ARTWORK AT THE TELFAIR

When you visit the Telfair Museum and explore the galleries to view the collection, notice the identification labels next to each artwork. These provide a record of important information about a work of art, including the artist’s name; year they were born and if relevant, the year they died; the title of the artwork; the medium or materials the artist used to create the artwork; the size of the artwork; and the year the artist completed the artwork. If the artwork is on loan from one museum to another, you will find the name of the artwork’s permanent home as well.

If any of this information is unknown, an art historian will research the artist’s biography, other artworks created by the artist, and in the case of some artworks, by x-raying the actual artwork to approximate the date of creation. Art conservators use an x-ray process to reveal each layer of paint to expose any possible underlying sketches or changes the artist may have made. These practices help us to attribute a correct date, authenticate the artist’s style and understand the creative process.

Why is all this information important to know when studying a work of art? In addition to enjoying the visual pleasure of looking at a work of art and applying personal meaning to the experience, art serves as an historical record of a civilization. By knowing more about an artwork and what was going on in world history when the artist created the artwork, we learn how another human being was experiencing life during that time and place.

APPRECIATING THE ARTWORK

Use this four-step art appreciation process to increase your visual awareness skills, learn more about how an artwork was made, reveal important ideas the artist wants you to consider, and determine for yourself whether the artist was successful in conveying their idea to you in a visual work of art.

**Describe:** Become a detective and describe what you actually see when looking at the artwork. What size is the art, what is it made of, list the elements of art and principles of design the artist used, and the images—people, places, things—in the artwork. Be specific and detailed in your description, as these clues will provide answers as the process evolves.

**Analyze:** Think like an artist and examine each part of the painting in order to understand how the artist created it. How does the artist use the elements of art (space, light and color, line, shape, texture, pattern) and the principles of design (emphasis and focal point, scale and proportion, repetition and rhythm, balance, unity, variety and harmony) to compose the work and convey their idea? Why did they choose a specific media to create the work? How does the size and form respond to the artist’s other decisions?

**Interpretation:** Consider ideas and issues that may explain why the artist created the work.

**Judge:** Art critics form opinions about artworks and determine their quality by reviewing how the artist took an idea and made it into a work of art. Your Opinion Counts! What do you think about this work? Based upon your early work as a detective and analyst, identify why you think this work of art is successful, or not.
Art & Life

5 Connections

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4 Art & Geography

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70 Art & Science and Technology
Geography is the study of all the physical features of the Earth’s surface, including its climate and the distribution of plant, animal, and human life. Geographers, along with social scientists, provide an understanding of the physical place and its behavior. Artists record this activity of people, places and events through visual images and objects, often including their own perspective that expresses the social issues and the cultural values of a society. Artists, geographers and social scientists all use the methods of perception, criticism, and expression to study and express the who, what, when, where and why of cultures in order to understand how societies survive and flourish or become extinct. In this unit, students will investigate the union of art history, geography and social studies through mapping, economic principles, social relationships, cultural contributions, and environmental impact on various global cultures and societies.

TELFAIR ARTWORKS, GPS RELATED CONCEPTS and ART VOCABULARY ADDRESSED IN THIS UNIT:

Andrée Ruellan, Savannah, 1942
Port City
Bodies of Water, Rivers of the World
World War II
Native Georgian Culture
Demographics

Artist Unknown, Gullah Coil Rice Basket, Early 20th century
Continental Migration
Customs and Traditions
African Typography
Natural Habitats
Gullah Culture

Edwin Lord Weeks, Ship of the Desert, 1874
Topographical maps
Latitude and Longitude
How Physical Systems effect Human Systems
Region
Equator

Childe Hassam, Avenue of the Allies, 1917
Flags
European Nations
World War I

Artist Unknown, Curule Side Chair
Neoclassic
European Explorers
ABOUT the ARTIST

Andrée Ruellan was born in New York to French-émigré parents. Her artistic career spans the 20th century and can be divided into three themes: visits to the South, the Works Progress Administration period, and focus on racial discrimination. A child prodigy, Ruellan was inspired by European Modernism she saw at the New York Armory Show of 1913 and 1925 (at the age of 20), she had her first one-person show at the Galérie Sacre du Printemps in Paris. By the time she was a teenager, her work was exhibited with Ashcan School artists Robert Henri and George Bellows and her illustration, Spring, was published in the journal, New Masses. In 1920, Ruellan accepted a scholarship to the Art Students League, and traveled to Rome continue her studies. Settling in Paris in 1923, she formed part of an impressive circle of writers and artists, including novelist James Joyce, Gertrude and Leo Stein, and artists Stuart Davis, Man Ray, who photographed her, and Isamu Noguchi, who wanted to marry her. Ruellan returned to America in 1928 where she married John Taylor, also a painter. Ruellan now lives in Woodstock, New York.

ABOUT the ARTWORK

Savannah is a major painting of Ruellan’s mature period, painted when she was 37 years. This painting is just one of many paintings Ruellan painted from her travels to the South. A familiar scene to all who visit Savannah, this river front image is timeless, capturing the beauty of the landscape and the work that takes place on the river. The image reveals riverfront buildings framing the Savannah River as a steamboat visibly passes through the port side of the city that bustles with activity. Savannah also reveals what the city was experiencing in the World War II era. It was intended as a public image depicting a local community at a time when artists across the country were painting the American Scene. Ruellan’s image show a view looking down one of the city’s distinctive cobblestone ramps on Bay Street toward the Savannah River.

APPRECIATING THE ARTWORK: Describe, Analyze, Interpret, Judge

Use this four-step art appreciation process to increase your visual awareness skills, learn more about how an artwork was made, reveal important ideas the artist wants you to consider, and determine for yourself whether the artist was successful in conveying their idea to you in a visual work of art.

Describe

Look at the artwork for three minutes and make an inventory of what you see. Be prepared for your teacher to take the poster reproduction away, and be able to remember at least five things you see in this painting. As a class you may make a list of this artwork’s visual inventory.

What are the people doing?

What season is it? How can you tell?

Analyze

Name all the colors you see in this painting. Are they warm or cool? What questions does the color scheme prompt you to ask? What season or time of day is it?
Describe how the artist has depicted the foreground, middle ground and background to provide an illusion of depth in the landscape. How does this affect your response to the image?

What has the artist included in this scene to illustrate that there is much activity taking place (i.e. cloud movement, rippling water and moving people)? In contrast, what other clues can you identify that describes the quiet or lonely aspects of the scene?

Interpretation

How would a social studies teacher use this painting to discuss Savannah in the 1940s? How does this painting represent the economy, geography and social class of Savannah at that time when World War II was underway? How did World War II affect the lives of Georgians? Of Savannah?

Where was Ruellan standing when she painted this landscape? If you were standing on the far right you would be facing the building and would crook your neck to see the river. What do you think inspired Ruellan to paint this landscape from that angle? Why did she want us to see such variety in this landscape?

What does the tugboat suggest? What does a tugboat do? What kind of industry does a tugboat support?

Judge

As her biography reveals, Andrée Ruellan traveled from the North to the South. At the time she painted this, the American South had experienced great social changes as the geographic migration of African Americans to the North from the South for economic prosperity was changing the culture of the South. Is this painting more of a tourist's view of a beautiful place? Is Ruellan trying to describe the results of historical events? Does the city look bustling or sleepy?

DISCUSSION TOPICS

The Names of Bodies of Water
Identify the body of water in the painting Savannah, (Savannah River) and trace its source and mouth. The Savannah is a large river with a watershed extending into the foothills of the Appalachian Mountains. Name and explain the varied bodies of water. The smallest body of water is the brook, a natural stream of water that is found aboveground and is often called a creek. Brooks, creeks, streams can be tributaries of rivers. A river is a larger body of water that flows aboveground, in a particular direction, and usually has a large volume of water in it. Rivers often flow into other bodies of water. For instance, the Mississippi River flows into the Gulf of Mexico. A gulf is a large area of a sea or ocean that is partially enclosed by land. Rivers also flow into lakes. A lake is a large body of water that is totally surrounded by land. A pond is the same thing, only smaller. Moving up in size, a sea is a large body of water that is surrounded by land or attached to another body of water. The Caspian Sea is surrounded by land (Iran and Russia ect.). To the south, the Mediterranean Sea is attached to another body of water, in this case the Atlantic Ocean. An ocean, which is the largest body of water on Earth, is generally thought of as having no boundaries. Although the Atlantic Ocean has the continents of Europe and Africa to the east and North America and South America to the west, but the ocean is still considered to have no boundaries because there is more water to the north and south.

Question: How many different bodies of water have you personally seen in your travels? Which was your favorite? Why?

Locate the Longest Rivers in the World
Use a world map to identify the location on the continents of these powerful and important rivers as you discover interesting facts about them. Did you know that the longest river in the world is the Nile? Egypt's greatest river is 4,160 miles long! In fact, Africa has two of the ten longest rivers. The Congo, which flows through central Africa, is Number 8 at 2,718 miles long. The Amazon is the second longest river. It is about 4,000 miles from start to finish, winding its way through most of South America. China lays claim to Numbers 3 and 4: The Yangtze River is 3,964 miles long, and the Huang He is 3,395. How do we measure these rivers? Geographers calculate the distance from the source of the river to its mouth. North America's longest river is Number 9: the Mackenzie, in Canada, at 2,635 miles.

Question: How long is the Savannah River?
Native Georgia Culture
Like the other original 13 Colonies in America, Georgia was initially inhabited by Native Americans, among them the Creek and Cherokee. The Cherokee called Georgia “The Enchanted Land.” European exploration of Georgia is thought to have begun with Juan Ponce de Leon, in the early 16th Century. Spanish and French explorers followed, for about a hundred years. Spanish missionaries succeeded in converting many Native Americans to Christianity during this time. In 1724 Jean Pierre Purry proposed a settlement named Georgina, in honor of newly crowned King George. Nine years later, in 1733, the colony of Georgia was born. The driving force behind the success of the Georgia colony was James Oglethorpe, who intended the colony to be a home for people who couldn’t pay their debts and would work the new colony to pay them off and start a new life.

By the time this painting by Ruellan was created, Savannah had established itself as a major port city on the east coast. Explain the significance of a port city (a place by the sea, or waterway where ships and boats can dock, load and unload).

Question: Have you seen the large boats that travel on the Savannah River? What do you think the boats are loading and unloading? Can you name another port city on the East coast? On the West coast?

ASSIGNMENTS and PROJECTS

1. Industry, Technology and Population Statistics Research Report. During the Industrial Revolution, people left their farms and rural homes to work in city factories. Have students conduct demographic research to determine what percentage of the United States population lived in cities versus the countryside during the world War II era or today. How does this figure compare with the percentages in other countries?

Research the local and regional statistics and demographics of those who live in cities and work in manufacturing to those who work in more rural areas at non-industrial jobs. Describe how the natural environment and products of industrialization (i.e. factories, malls, skyscrapers and other intrusions of industry) influence where a person lives and how they live. Discuss economy and cost of living in the region where students live.

Question: Why would a person move from a rural environment to a city environment? What costs would they incur in a city environment that would be different than a rural one? Make a comparison chart and identify where you think it is less expensive to live.

2. Box City. Savannah was painted at the time of World War II to record the atmosphere, nobility and beauty of the city. Create a replica of Savannah’s Riverfront with empty cardboard containers (cereal, cracker, toothpaste, beverage, toilet paper, paper towel, posters rolls). By gluing the boxes together, students can create any kind of building: wide like a hotel building, tall like a tower, or stacked. Add other cardboard containers to make chimneys, tunnels, and balconies. To make your first building, glue two sides together, and wrap rubber bands around them, or lay them down under a book. While that part is drying, build another section of the riverfront. When the parts are dry, you can glue them together for one big block, or move them around to change the waterfront. Have students identify every building. The project can be painted to better distinguish building materials and vegetation. Remember Savannah sits on a bluff, so that you may want to make two levels to your box city using shoeboxes to create the higher level. Buildings have one visible story on the side facing the upper level of the bluff and several stories facing the river.

3. Personally Topographical Map. What types of topographical features are shown in this work? From foreground to background you can see the bluff that Savannah was built on, the Savannah River and Hutchinson Island. Artists use contour lines to show the edges of an object and to separate areas within an object. Mapmakers use contour lines to show the shape or relief of the land. Contour lines show where hills, valleys, coasts, and cliffs are. The contours show heights and depths measured above and below the average sea level. On a topographical map, if contour lines are close together, it means a steep slope. If lines end suddenly along a coast, there are cliffs. A round contour shows the top of a hill. Practice “reading” a topographical map in school. Make a topographical map of your home or school block.

4. Pictographs. A Pictograph is a graphic symbol or picture that represents a word or idea in some writing systems as opposed to a symbol such as a letter of the alphabet representing an individual sound. Create a pictograph for these symbols in geographical landscape: land; plants; mountain; rain; river; sun; snow; tornado; ocean; beach; island. Then put them all together to create a Pictograph Landscape.
ASSESSMENT

- What is Savannah considered a port city?
- What are the names for different bodies of water?
- Name the longest rivers of the world.
- How did World War II effect Savannah and Georgia?
- Discuss the development of native Georgian culture.
- What are demographics?
- What topographic features are visible in this view of Savannah?

RESOURCES

Books


Websites

- Atlapedia Online at [http://www.atlapedia.com/](http://www.atlapedia.com/) contains key information on every country of the world. Each country profile provides facts and data on geography, climate, people, religion, language, history, and economy, making it ideal for personal or family education and for students of all ages.
- [http://www.atlapedia.com/](http://www.atlapedia.com/) Atlapedia Online has a profile of every country that provides facts and data on geography, climate, people, religion, language, history, and economy, making it ideal for all ages.
ABOUT the ARTWORK

This basket is made using rushes or marsh grasses, though most contemporary baskets in this tradition are made from sweet grass, a native, perennial, warm-season grass found growing sparsely in the coastal dunes extending from North Carolina to Texas. Sweet grass is a long-stemmed plant that grows near the ocean behind the dune line and along the boundaries between marshes and forest. It is harvested in the spring and summer by pullers, who slip it out of its roots, like a knife from a sheath. Weavers dried the freshly cut grasses in the sun for days or even weeks, depending on the season, before they could made into baskets. This type of basket is based on a tradition brought to the United States from West Africa by slaves. The African American art of basket making dates from the 1700s, when baskets were first used in rice cultivation. Fanner baskets were wide winnowing trays used to throw threshed and pounded rice into the air, allowing the wind to blow away the chaff. The basket making tradition was revived in South Carolina in the early twentieth century at the Penn School, a historic school for African American students on St. Helena Island, South Carolina. This type of coiled sea grass basketry have survived in America for 300 years, and sweet grass baskets now are recognized as an art form.

DISCUSSION TOPICS

Natural Habitats
Explain to students the significance of natural habitats. Basket makers are faced with environmental changes that threaten the existence of their craft. The supply of sweet grass is becoming more difficult to acquire because the natural habitat of sweet grass have been significantly diminished. Two primary factors have led to this situation. First, urbanization has led to the destruction of much of the natural sweet grass plant habit. Second, the traditional gathering areas on the Barrier Islands off the coast of Charleston have been developed as beach resorts or private communities with restricted access. As a result, basket makers now have to travel to Georgia and Florida to find adequate supplies.

Cross Cultures
Rice was the primary crop of South Carolina during the colonial period and the base of the State’s economy until the 19th century. Slavers were paid premium prices for Africans from the West African Rice Kingdoms of the Windward Coast (Senegal to the Ivory Coast) and the mouth of the Congo River (Gabon, Zaire, and Angola). A man or woman who made baskets was worth more than one who did not, age, strength, and other skills being equal. Since colonial South Carolinians knew little of rice culture, the success of the American Rice Kingdom is credited to these enslaved Africans.

Customs and Traditions
A tradition is a custom that is carried out at special times and repeated generation after generation. A custom is the way people behave around each other. Studying the artwork, customs, and traditions of a group of people helps us to understand that group’s way of life. Read about the origins of the intricate technique and art of basket making as preserved by the Africans who were brought to America as slaves and their descendants. You will find stories such as this one: A grandmother guides her granddaughter’s hands as she teaches her the art of basket sewing. When the child asks her how she came to make baskets, the woman’s answer harkens back to a time when one of their ancestors were initiated into manhood in a village in Africa. Part of the rite involves being able to make a grass basket woven or coiled so tightly that it can hold water. Soon after this event, the young man is captured, transported to America, and sold as a slave at an auction in Charleston, SC. During the day he works the fields, but by night he makes baskets, and this skill is passed down from one generation to the next.
The Gullah Culture

The Native Island Gullah people adhere to the customs of their ancestors through the sewing of sweet grass baskets, the weaving of casting nets and the preparation of traditional Gullah foods. The Gullah culture, a blend of West African, European and Native American cultures, became the lifestyle of West African slaves isolated from the mainland. The Gullah remember their past and look toward the future preservation of their cultures which is distinguished by the crafts of sweet grass basket sewing, quilt making and fish net weaving in an annual festival. Today, the descendants of West Africans brought in bondage to the coastal islands of South Carolina and Georgia, are striving to preserve a way of life. Gullah is more than simply the language and name of a people, it encompasses the essence of struggle, spirituality, perseverance and tradition.

African Geography

The continent of Africa is the second largest of the seven continents on Earth. Africa is bounded by the Atlantic Ocean on the west, the Indian Ocean on the east, the Mediterranean Sea on the north, and the Red Sea on the northeast. Africa covers 11,700,000 square miles (30,300,000 square kilometers).

Countries: There are about 53 countries in Africa. The biggest country in Africa is Sudan, which covers 967,500 square miles (2,505,816 square kilometers). The countries with the largest populations in Africa are Nigeria (107,000,000 people), Egypt (64,800,000 people), and Ethiopia (58,700,000 people).

What is a Savanna? A savanna is a hot, seasonally dry grassland with scattered trees. This environment is intermediate between a grassland and a forest. Savannas are located in the dry tropics and the subtropics, often bordering a rainforest. Savannas have an extended dry season and a rainy season.

Animal Adaptations: The animals that live in savannas have adapted to a great deal of variability in the food supply throughout the year; there are times of plenty (during and after the wet season) and times of almost no food or water (during the dry season). Many savanna animals migrate to deal with this problem.

Where are Savannas? Savannas are located in Africa, Madagascar (an island off the east coast of Africa), Australia, South America, India, and the Myanmar-Thailand region of Southeast Asia.

Animals that Live in Savannas: Many animals live in savannas, from invertebrates (like grasshoppers, termites, and beetles) to large mammals (like lions and leopards). The different savannas of the world support different populations of animals.

ASSIGNMENTS and PROJECTS

1. Using Reference Books. It is helpful to understand the time period that an artist lived in to better understand the artist’s work. You can learn more about the events in the life of an artist and culture in an encyclopedia, the internet, and other sources. Choose several different research sources to further investigate the arts and crafts of the Gullah, both historical and current and how other people preserve their traditions, arts, and culture.

2. Immigration Heritage. All of our cultural distinction in the United States comes from the many cultures that comprise the US population due to immigration. Think about people who have come from other countries to make their home in the United States. List three reasons you people came to America. Name three ethnic, racial, or cultural groups that live in your part of the country. What common values do these groups share as Americans? What characteristics do these groups bring to the broad cultures of the US? Have students research the Gullah culture or other cultures in Georgia.

3. Weaving and Patterns. Artists create patterns by repeating shapes and lines to create rhythm in their work. Baskets are works of art that naturally contain patterns because of the way they are made, through the repetition of weaving. Discuss the process and terminology of weaving. The base structure of a woven basket is comprised of vertical threads or ribs, called the warp of a weaving that are interlocked with horizontal threads or ribs called the weft of a weaving. Two simple weaving projects use found objects and thread to complete a woven basket. 1) Using a disposable plastic drinking cup, cut the sides into 1” vertical strips from top to bottom. Starting at the bottom, weave yarn in and out of the ‘warp’ ribs on the cup, pushing the thread down after each round to create a solid woven appearance. 2) Using strawberry baskets, tie yarn, ribbon, raffia or other weaving materials to a bottom corner and weave them in and out of the holes in the basket. Use masking tape at the end of the threads to create a “needle” which will make the weaving process easier.
ASSESSMENT

• How does continental migration relate to Sweet grass coil baskets?
• Discuss the customs and traditions associated with Sweet baskets?
• What are some geographical aspects of the African continent?
• Why are natural habitats important?
• What is the history of Gullah Culture?
• Describe the process of weaving.

RESOURCES

Books
• Row upon Row: Sea Grass Baskets of the South Carolina Low country by Dale Rosengarten, 1986
• Circle Unbroken (Booklist Editor’s Choice. Books for Youth (Awards)) by Margot Theis Raven, E. B. Lewis (Illustrator), 2004
• Beauty, Her Basket by Sandra Belton, Cozbi A. Cabrera (Illustrator), 2004

Websites
• Knowitall.org at http://www.knowitall.org is a site where students can learn about South Carolina and Gullah culture through historical pictures and virtual tours of historic sites in South Carolina. Designed for kids.
• Africa for Kids at http://pbskids.org/africa/ provides many links to African traditions, customs, people and places.
• History for Kids at www.historyforkids.org/ for detailed information about geography, history, and cultures.
ABOUT the ARTIST

Edwin Lord Weeks was born to a New England family, who were affluent spice and tea merchants from Newton, a suburb of Boston. Weeks traveled in Paris as a young man in the 1870s to train at Ecole des Beaux-Arts under Jean-Leon Gerome and privately with Leon Bonnat. In France, Weeks became part of an increasingly noteworthy colony of American expatriate artists. Weeks’ success was founded on his paintings of the Middle East and North Africa, where he distinguished himself by accessing regions of Morocco previously closed to Western travelers. Overcoming dangers from famine, disease, and a hostile population, Weeks translated his travel experiences into rich, detailed renderings. Weeks’ presence in India in the 1880s and 1890s coincided with the height of the British Raj (the British Colonial Administration), in which he expressed the romance and splendor of Indian civilization. Weeks was invited to exhibit a large collection of his works at the Empire of India Exhibition held in London in 1895. He was honored there with a special medal for his contributions and would receive medals and decorations from the governments of France and Germany as well. The artist continued to paint right up to his death in 1903.

ABOUT the ARTWORK

This painting is typical of Weeks’ artworks that portray the romance of travel. This is a relatively early work of his, perhaps inspired by his first trip to the Middle East. In this painting, we see how the artist was particularly fascinated with those aspects of ancient Middle Eastern life that survived into modern times, and recorded them in scenes that varied from simple street, desert, and market settings to elaborate court ceremonies. Weeks had an exceptional eye for detail but his best works display a unique blending of careful, factual recording of people and places. Viewers of Weeks’ paintings appreciate the vicarious experience of far-off, exotic realms

DISCUSSION TOPICS

Where in the World?
The exact location of the camel rider in this painting is unknown. Weeks traveled in many areas with deserts such as the Middle East, the area comprising countries of southwest Asia and northeast Africa, India, and northern Africa, as well as to Morocco many times. Morocco is located in Northern Africa, bordering the North Atlantic Ocean and the Mediterranean Sea, between Algeria and Western Sahara. India is located in Southern Asia, bordering the Arabian Sea and the Bay of Bengal, between Burma and Pakistan. Have students research areas with deserts. What is a desert? Where in the world are deserts? Does the US have any deserts?

The Seven Continents
The earth is a globe, of course, and can be divided into lots of lines called latitude and longitude. Latitude lines run north and south; longitude lines run east and west. The lines measure distances in degrees. The Equator is 0 degree latitude. This imaginary line, which runs through parts of South America, Africa, and Asia, is officially the halfway point between the North Pole and the South Pole. The Prime Meridian is 0 degrees longitude. This imaginary line runs through the United Kingdom, France, Spain, western Africa, and Antarctica. By using the equator and prime meridian, we can divide the world into four hemispheres, north, south, east, and west. For instance, the United States is in the Western Hemisphere (because it is west of the prime meridian) and also in the Northern Hemisphere (because it is north of the equator). The earliest maps have the equator marked on them, but it wasn’t until the late 19th Century that the prime meridian was named. Until that time,
as many as 14 different locations were being identified on various maps as 0 degrees longitude. The International Meridian Conference of 1884 changed all that, naming an imaginary line drawn through Greenwich, England, as the prime meridian. These lines are merely for the identification of where things are on a map or a globe.

Explorations and the South

Many famous explorers are memorialized in this region. Juan Ponce de Leon (1460-1521) was a Spanish explorer and soldier who was the first European to set foot in Florida. He also established the oldest European settlement in Puerto Rico and discovered the Gulf Stream (a current in the Atlantic Ocean). Ponce de Leon was searching for the legendary fountain of youth and other riches. When explorers sailed to the New World, what were they looking for? What did they find? What consequences did their exploration have for the people already living there?

ASSIGNMENTS and PROJECTS

1. Paint a Story. This painting of a man on a camel with lots of diamonds and rubies tells about the main event of a story. When writers tell a story, they present the events to show the most logical order. What do you suppose came before, and what happened after this man with the diamonds and rubies rode across the unique geographical location called a desert? Write a fictional narrative of the story behind this painting. Then illustrate your story with a drawing or painting.

2. Compass Points. What You Will Need:

- Clear glass filled with water
- Quarter-inch (one-half-centimeter) slice from the end of a cork
- Magnet
- Needle

1. Float the cork in the glass of water.
2. Magnetize the needle by rubbing it over the magnet in the same direction about 50 times.
3. Lay the needle on cork.
4. The needle will slowly turn and point in the same direction, no matter how many times you point it in another direction.

Once magnetized, the needle lines up with the Earth’s north and south magnetic pole, just as a magnetized pointer in a compass.

3. The Flat Stanley Project. This is a wonderful way to teach students all sorts of things, including the following geography, writing skills, communication skills, culture, art, creativity. The namesake of the project is the title character of a 1964 book by Jeff Brown, called Flat Stanley, in which the main character, who has been flattened, has all sorts of adventures when his family sends him places through the mail. Those who receive these paper characters can take them on all sorts of adventures—to work, to the zoo, on plane and boat trips.

Have students make their own paper character. They can look like the student or have an identity all their own. Then have the students mail their character to a friend or family member. Enclose a letter asking to have the character taken to visit interesting cultural, geographical, or historical places in their town. Then have the recipient send back the character and a letter about their town, pictures, and artifacts that tell something about their hometown.

Students can keep journals outlining the people and places their character visits, be sure to include pictures and maps. It is very likely that the characters will traveled to many places across the country or around the world, and so students can plot those points on a map and find out where those and about the people who live there.

4. Commemorative Stamp. Each year, the United States Postal Service issues several stamps commemorating a wide range of people and events. If you could design a stamp, what geographical region, or event relating to geography would you commemorate or honor?

ASSESSMENT

- What does topography refer to?
- What is latitude and longitude?
- Identify regions in the Middle East.
• What is the significance of the equator?

RESOURCES

Books
• *Artist Explorer - A Ride Through Persia to India in 1892* by Edwin Lord Weeks (Illustrator), 2005

Websites
• Visit National Geographic. at [http://www.nationalgeographic.com/main.html](http://www.nationalgeographic.com/main.html) for maps, cultures, and facts from around the world. Includes a special section for kids
• Visit the official Flat Stanley Project website for additional ideas and stories at [http://flatstanley.enoreo.on.ca/index.htm](http://flatstanley.enoreo.on.ca/index.htm).
• Where in the World and other games are provided for kids at [http://yahooligans.yahoo.com/games_popup.php?g=ges_wqmm](http://yahooligans.yahoo.com/games_popup.php?g=ges_wqmm)
ABOUT the ARTIST

Praised in his lifetime as a painter of light and air, Childe Hassam (child HASS am) is a significant American Impressionist painter. Hassam was born in Boston and traveled to Paris in 1886 where he became immersed the French style of Impressionism and became part of the emerging American Impressionist group, eventually settling in New York City. He is most known for painting distinctly American subjects—the streets, parks, neighborhoods, and festive military parades. His choice of contemporary scenes, from fashionably dressed New Yorkers parading down Fifth Avenue to the weathered buildings and rocky coasts of New England, contrasted with American artists of the day, who preferred subjects from the past. 

Hitherto historical painting has been considered the highest branch of the art, Hassam said in an 1892 magazine interview. A true historical painter, it seems to me, is one who paints the life he sees about him, and so makes a record of his own epoch. It is estimated that the artist produced more than 2,000 oil paintings, pastels and watercolors, plus some 400 prints, during his lifetime.

ABOUT the ARTWORK

This painting represents Hassam’s subject matter of later years, patriotic, decorative paintings of wartime New York City. By placing emphasis on the flags during the Allies Day Parade in 1917 on 5th Avenue in New York City, Hassam celebrates the joined forces with other countries during WWI. The painting is part of a series of approximately 30 paintings with flags as the primary subject matter. The short choppy brushstrokes visible in this painting are typical of those found in Impressionist paintings. Hassam was greatly influenced by French Impressionism. French painters like Claude Monet had also painted flag subjects.

DISCUSSION TOPICS

Allied Nations and WWI
Relate the subject represented in the painting to the actual historical event it represents. Explain the significance of Allies (an association of two or more groups, individuals, or nations who agree to cooperate with one another to achieve a common goal) and relate it to the Allied Nations during WWI. A military conflict, from August 1914 to November 1918, World War I involved many of the countries of Europe as well the United States and other nations throughout the world. World War I was one of the most violent and destructive wars in European history. Of the 65 million men who were mobilized, more than 10 million were killed and more than 20 million wounded. The term World War I did not come into general use until a second worldwide conflict broke out in 1939. Before that year, the war was known as the Great War or the World War. The war began as a clash between two coalitions of European countries. The first coalition, known as the Allied Powers, included the United Kingdom, France, Belgium, Serbia, Montenegro, and the Russian Empire (see Russia). The Central Powers, which opposed them, consisted of the empires of Germany and Austria-Hungary. Japan joined the Allied Powers in 1914. The Ottoman Empire joined the Central Powers in 1914, as did Bulgaria in 1915. The same year, Italy entered the war on the Allied side. Although the United States initially remained neutral, it joined the Allies in 1917. The conflict eventually involved 32 countries, 28 of which supported the Allies. Some of these nations, however, did not participate in the actual fighting.
The Avenue of the Allies

During both world wars, 5th Avenue in New York was dubbed *The Avenue of the Allies*. During World War I, Hassam painted views of 5th Avenue decorated as *The Avenue of the Allies*. This painting depicts part of the most ambitious flag display. This spectacle was planned by a committee of artists and architects and involved the decoration of 5th Avenue between 26th and 58th Streets. These colorful flags were meant to encourage patriotic spirit and raise money to pay for wartime expenses. Explain to students the concept of patriotism (pride or devotion to the country you were born in or a citizen of). Here, Hassam looked north from 53rd Street and compressed into a vibrant pattern three blocks dedicated to flags of Great Britain, Brazil, and Belgium. (Can you locate these countries on a world map?) Hassam transformed three city blocks of flags into a colorful pattern of rectangles, stripes, triangles, circles, and diamond shapes. The artist painted at least thirty flag pictures and these were exhibited often in groups of twenty-two, as a reminder of the number of allied nations.

Flag Symbolism

Have students identify the flags with their countries in the painting. Explain the symbolism of each flag. A symbol invests things with a representative meaning. For example an image of a heart often symbolizes love, or an apple symbolizes knowledge. Have student examine the American flag and identify the symbolism of the stars, the stripes, the colors red, white, and blue.

ASSIGNMENTS and PROJECTS

1. Personal Flag. Every country has its own flag, every state does too, and even some families. A Flag is a piece of cloth that carrying a distinctive design and is used as a symbol of group identity or nationality. Have students research flags in order to identify the ones represented in Hassam’s painting. Childe Hassam made the flag of Great Britain, America’s closest ally, the largest flag. Known as the “Union Jack,” the flag combines the cross of Saint George (England), the cross of Saint Andrew (Scotland), and the cross of Saint Patrick (Ireland). It became the national flag of Great Britain in 1801. Research your ethnic background and flags those countries. Combine them to create your own personal flag.

What you need:

- Large pieces of paper
- Clothes hanger
- Colored paper
- Scissors
- Tape
- Glue

Cut paper to be as wide as a clothes hanger. Fold the top edges of the paper over the bar of the hanger, and tape it to the back. To decorate your flag, cut the colored paper into stripes, diamonds, and other shapes. Arrange them until you find the design you want. Glue them down, and then hang the flag up. Do you have your own anthem?

2. Traveling Journal. Childe Hassam built his reputation on light-filled images depicting the streets of New York and New England’s coastal resorts. He also enjoyed traveling and delighted in discovering and painting new scenes and unfamiliar landscapes. Have students create a traveling journal that combines writing and illustrations to record their next field trip.

ASSESSMENT

- What benefits do artists provide by recording specific cultural or geographic events?
- Why do specific cultures or geographical regions have specific symbolism, such as in flags?

RESOURCES

Books


Video

ABOUT the ARTWORK

Neoclassicism furniture, such as this chair, takes its design elements for ancient Greek and Roman decorative styles and designs. This chair is a good example of Grecian-cross legs. It was also modeled after antique curule chairs, a type of folding chair with heavy legs and no back originally used by high officials in ancient Rome. Chairs with cross-legs at the front and were made in France and England and published in furniture pattern books, but the placement of the legs at the sides was a variation favored by New York furniture makers. This type of chair would have been owned by a wealth and sophisticated family and would have been acquired for a parlor. Mahogany was the preferred wood used for this type of furnishing and was often carved. Neo-classic decorative designs were also employed. They included wreaths, laurel branches, lyres, stars, rosettes, urns, palm leaves, as well as the more martial designs of battle-axes, torches and shields. Patriotic colors of red, white and blue were very popular in our country along with the American bald eagle.

DISCUSSION TOPICS

What is Neoclassicism?

Neoclassical, or “new” classical, style describes architecture, decorative arts, and furniture that were inspired by the classical architecture of ancient Greece and Rome. A Neoclassical building often have these features:

- Symmetrical shape
- Tall columns that rise the full height of the building
- Triangular portico (or porch)
- Domed roof

During the 1500s, the famous Renaissance architect Andrea Palladio awakened an interest in the architecture of ancient Greece and Rome. Palladio’s ideas became the model for architecture in Europe for many centuries. In the late 1700s and early 1800s, the newly formed United States drew upon classical ideals to construct grand government buildings as well as private homes. Neoclassicism continues to influence architectural and interior design.

What is a Curule Chair?

In ancient Rome, sitting on a curule chair was a privilege associated with high status. Ask students if they can identify other types of chairs that have the same status (i.e. throne, etc).

ASSIGNMENTS and PROJECTS

1. Design a Classroom Chair. In the tradition of a curule chair, design a chair that is specifically used for leaders, special events or special guests. Find a chair from surplus or a yard sale and embellish it with paint, beads, feathers and other decorative materials. Students should select materials that are symbolic to their classroom, or for the purpose of the class chair. For example, the chair might be a special place of honor for classroom visitors while they meet with students, or for the birthday student, or for the student who achieved something special. This could be an extended project that can continue throughout the school year and becomes a means of documenting the events and history of the class. Have students consider size, color, shape, decoration, and style.
2. Architectural Styles. Xerox copies photographs of various architectural buildings in your city or state, historical and contemporary. Review the buildings and identify the specific characteristics of each building and how these characteristics define the unique style of the building and architectural period it was created in. Then have students draw their own architectural design for a new school that represents the unique stylistic characteristics of the time and place they live in. Prepare them for this task by reviewing the components of the society they live in: influence of technology, cultural diversity, economics, geographical location, and so on. What other functions would they like to offer students in their school?

ASSESSMENT

• Why were/are specific pieces of furniture created for certain people/events?
• Why are there varying styles of architecture? How does history and social culture influence architectural and furniture design?

RESOURCES

Websites
• www.princetonol.com/groups/iad/links/artgames.html download images of architectural and furniture styles and periods.
History is the study of past events of a period in time or in the life or development of a people, an institution, or a place. The study of history helps to provide morality, good citizenship, identity, and understand people and societies. History helps us to understand change and how the society we live in came to be formed. Throughout history, visual artists have been able to communicate the diversity of human experience and provide insights into it, despite vast differences in time and distance. In this unit students will understand that great individuals and great events create history and even though we live in the present, it is necessary to learn about the past. Studying art in the context of history provides an understanding into individual artistic vision as well as enables us to explore what it means to be human.

**TELFAIR ARTWORKS, GPS RELATED CONCEPTS and ART VOCABULARY ADDRESSED IN THIS UNIT:**

**Jacob Lawrence, 1920s...The Migrants Arrive and Cast Their Ballots, 1976**
- Migration/Immigration
- Democracy
- Voting rights
- Equality: The Bill of Rights
- Harlem Renaissance

**Frederick Baldwin, Benjamin Van Clark Leading a March on Bull Street, 1960s**
- Civil Rights Movement
- Activism
- Segregation/discrimination
- Freedom of Expression
- 13, 14, 15 Amendments

**Childe Hassam, Avenue of the Allies, 1917**
- World War I
- Patriotism
- Allied Nations
- Flags
- Democracy

**Daniel Chester French, Oglethorpe, 1910**
- Historical Monuments
- Civic Planning: designing a community
- American Revolution: cause and effect
- Georgia State History

**Vernon Edwards, Harriet Tubman, 1982**
- Civil War
- Slavery and Share Cropping
- Underground Railroad
- Abolitionism
- Folk Art
ABOUT the ARTIST

Jacob Lawrence was born in Atlantic City, New Jersey in 1917. He spent his early childhood in Easton and Philadelphia, Pennsylvania; at age 13 moved to Harlem, New York with his mother and siblings. Lawrence’s artworks were directly inspired by the ideas of the Harlem Renaissance, a cultural and intellectual movement of the 1920s that fostered the arts—visual arts, poetry, fiction, drama, music—as a means for expressing and authenticating the African-American experience. The artist was encouraged by Harlem’s greatest thinkers to feel pride in his African-American heritage and to use it as subject matter for his paintings. In the late 1930s, Lawrence began his paintings of African American history telling the stories in a series of images. Through the 1940s and 1950s Lawrence depicted Harlem subjects focusing on workers and expressing their strength of purpose in bold colors, and strong simple designs. By 1960, Lawrence had achieved great stature in the art world—a full retrospective at the Brooklyn Museum of Art, a faculty position at Pratt Institute and election to the American Academy of Arts and Letters. It was during this time he began working on Civil Rights themes, painting narratives about the struggle for equality and justice. In 1970, Lawrence accepted the offer of full professorship at the University of Washington. He and his wife Gwendolyn moved to Seattle, where he spent the rest of his life (the Telfair Museum’s collection includes a sculpture bust of Gwendolyn). He continued to teach and created art until his death.

ABOUT the ARTWORK

The idea for this artwork about voting came to Lawrence in 1941 when he produced a 60-panel series called The Migration of the Negro. This series documented the mass migration of more than a million African American people from the rural South to the cities of the North between 1910 and 1940. The Migration was an appropriate subject for Lawrence, whose own parents and many friends had migrated from the South. Jacob Lawrence was 22 years old when he started painting the 60 paintings to tell the story of The Great Migration and it took him one only year to finish. The paintings are now part of The Phillips Collection, housed in The Museum of Modern Art, New York. Jacob Lawrence made this print when he was 57 years old in 1974. He had been asked to contribute to a portfolio of silkscreen prints in honor of America’s 200th birthday in 1976. In this work we see a quiet scene in which a group of African Americans, new arrivals in a northern city, cast their votes, perhaps for the first time.

APPRECIATING THE ARTWORK: Describe, Analyze, Interpret, Judge

Use this four-step art appreciation process to increase your visual awareness skills, learn more about how an artwork was made, reveal important ideas the artist wants you to consider, and determine for yourself whether the artist was successful in conveying their idea to you in a visual work of art.

Describe

Look at the artwork for three minutes and make an inventory of what you see. Be prepared for your teacher to take the poster reproduction away, and be able to remember at least five things you see in this painting. As a class you may make a list of this artwork’s visual inventory.

This print is a silkscreen, a print on paper in which ink is forced through open areas of a silk screen and is transferred, or
printed, to paper. Printmaking is a medium that allows for multiple copies of one image. A group of prints is called an edition. Why would the artist make more than one print?

What colors did the artist use? Name them and identify what color scheme Lawrence chose for this print image. The color scheme of red, yellow and blue symbolizes strength as all colors are created by the three strong primaries. Red, yellow, and blue are called primary colors because all other colors are made by blending and/or mixing them together.

**Analyze**

Lawrence has described his use of the elements of art to describe life, he has said he would manipulate form, color, space, line and texture to depict our life. How has he done that? How has his unique style of using color and shape a part of identifying and documenting the African American experience?

How has the artist created unity (through the color scheme and repetition of silhouetted shapes) and variety (through the events, everyone is engaged in a different activity) in this artwork?

How has the artist made the room, full of activity, seem like it is in real space? (perspective, creating an illusion of actual space). How does it not look real? (flat shapes and flat color.)

**Interpretation**

As his biography reveals, Jacob Lawrence was encouraged to embrace his African American heritage by the scholars and artists he trained with. What other themes and historical events could artists with similar ambitions create art about?

How would an historian dissect this artwork and identify historical events portrayed?

The scene appears active but quiet at the same time. Why?

Have you ever accompanied an adult to the voting precinct and watched as they cast their ballot? What similarities of your experience are portrayed in Lawrence’s image? what is different?

Voting is both a very private and public practice. How does the artist reveal both those sides to you?

Re-read About the Art: we see a quiet scene in which a group of people, newly arrived from the north, cast their votes, perhaps for the first time. At the table in the center, a man in a black suit gives his name and address to poll workers who have the names of eligible voters listed in their book. Other voters, young and old, in fine clothes and overalls, wait their turns. A man with a gold cane chats with a woman in blue. Another man reads the newspaper. At the rear, a man steps into the voting booth. Nobody knows which levers this man will pull after he closes the curtain.

**Judge**

*The 1920s...The Migrants Arrive and Cast Their Ballots* is an important work of art in an important series of art created by an historically important artist. Why?

What has Lawrence done to document American history? Look again at this painting for three minutes and then close your eyes. Use your memory to count the number of people present, the different work that is being done, the thinking that is going on.

Did Lawrence take you on an historical journey? Use this image as a stage script for an historical re-enactment. Now answer whether Lawrence captured the event.

**DISCUSSION TOPICS**

**A Series of Events**

Show students images from the *Great Migration Series*. Discuss how each picture is depicted the in same visual style yet represents different subject matter. Jacob Lawrence often worked in series, which means he created many paintings about the same subject. *The Migration Series and The Harriet Tubman Series* are two examples in which he expressed his ideas about the subject of race and equality. Ask students to describe the series of events represented by Lawrence in his *Great Migration Series* and how the artist communicates those ideas. Use a Venn diagram on the board to list ideas.
**Question:** If you were to document an event or story from history, what subject would you choose? Why? How would you illustrate the series of events in your story?

**Recording History**

Have students read *The Great Migration: An American Story* by Jacob Lawrence (Harper Trophy, 1995). This book chronicles the 1916-1919 migration of African Americans from the South through a sequence of 60 paintings and accompanying narrative captions. The story begins with the call for new workers in the North to replace those men fighting in World War I. There was no justice for African Americans under Southern law, and sharecropping kept them poor. Explain sharecropping (where tenant farmers farm land for the owner and is paid a share of the value of the yielded crop). Lawrence depicts their arrival in Chicago and Pittsburgh; their new jobs in factories; the attacks against them by white workers; and their new opportunities, such as voting and going to school. At first, most of the paintings are set in the South, showing only a few people venturing north. Later on, the artwork is more crowded, with the phrase *And the migrants kept coming* repeated over and over again. Have students identify the reasons African Americans left the south and their advantages of migrating north. Use the illustrations in this book and *Harriet and the Promised Land* to launch a discussion of the following characteristics of Jacob Lawrence’s painting style: strong colors, flat shapes, little detail, exaggeration, depth expressed by overlapping images. Have students observe and discuss the patterns and free-form shapes of Jacob Lawrence’s work.

**Question:** Lawrence uses bright flat colors and abstract shapes to depict the people, places and events in his artworks. What kinds of possibilities of interpretation are offered by color? By playing one color off against another? How does Lawrence’s use of color evoke the energy of the Great Migration?

**Migration**

Lawrence’s Migration series documents a sequence of events in American history. Define the words migrant (someone who moves from one region or country to another, often in search of work or other economic opportunities) and immigration (the act of people entering into a new country to settle permanently). Ask students if they understand why people would willingly leave their home country in order to live in a completely new environment. Explain that the movement of people (and animals too) from one place to another is to find better living conditions. Discuss the history of Native American migration (Trail of Tears, for example), or Irish, Chinese, Mexican and Central and South America, Cuban, and Vietnamese migration. Ask students to think about stories of their own that involve migration or moving.

**Question:** You notice things when you move from place to place: differences in buildings, the people, and the patterns. How did Jacob Lawrence observe the details of the world around him? How did these images become part of his identity as a person and as an artist?

**Freedom**

Explain to students that in some countries people are not allowed the freedom to vote for a president as we do in the United States. Discuss the word freedom (a state in which somebody is able to act and live as he or she chooses, without being subject to any restrictions) and its relationship to democracy (the free and equal right of every person to participate in a system of government, often practiced by participation in government or in the decision-making process). Some governments are ruled by a dictator (one who has absolute power). This is one reason many individuals emigrate. Discuss the democratic process in the United States and how citizens are allowed to participate in the decision-making processes in a free and equal way. Explain however, that this democratic process was not always practiced in the United States. Women were not allowed to vote until 1920 and African Americans did not enjoy equal participation in the democratic process until United States Congress passed the Voting Rights Bill of 1957, the first major civil rights legislation in more than 75 years (in 1968, The Fourteenth Amendment was passed, which made blacks citizens of the United States).

**Question:** If you were given the task of creating a work of art about freedom, what would it look like?

**The Harlem Renaissance**

The Harlem Renaissance, an explosion of African American creativity in the 1920s Harlem neighborhood in New York City is part of Jacob Lawrence’s history. Never before in America has there been such a creative environment for African American poets, playwrights, novelists, essayists, artists, and musicians. The word Renaissance actually means re-birth. In the case of the Harlem Renaissance, it indicates the new opportunities for African American migrants from the south to gain respect and notoriety for their beliefs and talents. African-American writers and artists believed that by writing stories and creating works of art based on their personal experiences, they could unite African American Americans and change people’s attitudes about racism. Other Harlem Renaissance artists include painter Aaron Douglas, authors Langston Hughes, Zora Neale Hurston, Ida B. Wells, jazz musician Duke Ellington, blues singer Bessie Smith, dancer Josephine Baker and the performer Paul Robeson.
Question: Lawrence valued his community and observed it closely; it inspired his art. If you were asked to create a series of artworks about your community, what would you represent? Why?

Compare your community in the past with the way it is now. Describe its present character. What are the differences? (Different people, ages, occupations, buildings, transportation, open space). Have students interview residents who have lived in your community for a long time. How do they view the neighborhood? What do they think about the community now? Has it changed? Has change made the neighborhood better or worse? Why? Each student could write a report on the interview, for class discussion. What is regarded as good change? Bad change? Why?

Voting Process
Lawrence represents the significance of the voting process in this print. Describe the process of voting in the United States and how even though it is a powerful democratic right; it is often carried out in a quiet manner. On the days before Election Day though, voters participate in public rallies, wave signs, cheer, and debate the candidates and the issues. But the actual act of voting on Election Day is quiet and private. Voters arrive at the polls, stand in line, greet neighbors and friends, enter the voting booth alone, push some buttons or mark a ballot, then leave. Important decisions are made with little fanfare but great dignity as voters have their say in what becomes of their town, their state, and their country. At the polls, all voters are equal. The vote of the poor person counts just as much as the vote of the rich. The unknown and the famous have equal power. Women and men, citizens of all colors, all backgrounds, all religions, have a vote in the democratic process.

Question: Why would Lawrence feel compelled to capture this particular aspect of history? What did Lawrence want the public to think about when viewing their artworks?

ASSIGNMENTS and PROJECTS

1. Historical Figures. Lawrence has often devoted series of paintings to a single subject. These range from contemporary genre scenes, set in supermarkets and in Harlem; to historic events, including black migration to America’s northern cities and the aftermath of Hiroshima; to sagas of heroic figures who symbolize the struggle for emancipation and equality. Among Lawrence’s subjects are John Brown, Frederick Douglass, Harriet Tubman, and Toussaint L’Ouverture. Have students research the subjects of other paintings by Lawrence to determine their significance in history.

2. Rights and Responsibilities. The people depicted in Lawrence’s painting are exercising their rights of freedom and by doing so, are accepting the responsibility of following the rules of a free society. A right is a privilege given to citizens of a community or country. A responsibility is a person’s duty to family and community. Have students answer the following quiz.

Which of the following is a right and which is a responsibility?

- attend school
- obey the speed limit
- clean your room
- vote for public officials
- clean up trash in the park
- care for a sibling

What is a personal responsibility you have? What is a personal right you cherish?

3. Travel to a New Land. Assign students a foreign country to research. They will then create their own drawing or paintings of migration, moving or travel to that country in the style of Jacob Lawrence.

4. Silhouette Shapes are Universal. Jacob Lawrence used silhouette shapes in his painting to depict people. A silhouette is a solid shape of the shadow of an object made by light passing over an object or person. Lawrence uses silhouettes rather than realistic portraits to symbolize the universality of people. Make a silhouette mural by creating shapes of the members of the class in their daily activities at school in honor of their freedom to an education.
ASSESSMENT

• Which event does Jacob Lawrence depict in this artwork?
• What is migration? Why does it happen?
• What is meant by democracy? Freedom?
• Why do people vote? Does everyone vote? Do you have to vote?
• Identify the branches of government such as national, state, local.
• What is the Harlem Renaissance? How is Lawrence a representative of the Harlem Renaissance movement?
• What is the difference between a right and a responsibility?

RESOURCES

Books

Video
• Jacob Lawrence, An Intimate Portrait

Websites
• Visit Artcyclopedia for more information and images by Jacob Lawrence at http://www.artcyclopedia.com/artists/lawrence_jacob.html
• The Whitney Museum of American Art hosts this great site for children. A selection of websites related to Jacob Lawrence’s art and life is also available at http://www.whitney.org/jacoblawrence/resources/webography.html
Lesson

ABOUT the ARTIST

Frederick Baldwin is a documentary photographer known for powerful documents of historical events. In 1963 and 1964, the photographer worked as a volunteer in to document events unfolding in Savannah during the era of the Civil Rights struggle, including voter drives and registration to the visit of Dr. Martin Luther King. Baldwin co-founded FotoFest in 1983, along with Wendy Watriss, and European gallery director, Petra Benteler to promote the exchange of art and ideas through international programs and the presentation of photographic art. This Houston, Texas based organization works globally and locally to promote, Literacy Through Photography, using photography to strengthen writing skills, visual literacy, and cognitive learning.

ABOUT the ARTWORK

This photograph documents Benjamin Van Clark, a leading figure in the Civil Rights Movement in Savannah in the 1960s. Baldwin captures an event in Savannah’s social history. As a result of desegregation, Savannah citizens organized a march to promote awareness of the impact desegregation had on their neighborhood during the 1960s. Van Clark leads a march on Bull Street in Savannah to protest for equality for African American citizens. Savannah’s City Hall is shown in the background. Why would the photographer choose this view? Why is the march taking place in front of City Hall?

Discussion Topics

Africa + America
Frederick Baldwin’s photograph focuses on the African American experience. Explain to students the genesis of this experience. African Americans (American Blacks or Black Americans) are a racial group in the United States whose dominant ancestry is from sub-Saharan West Africa. Many African Americans also claim European, Native American, or Asian ancestors. A variety of names have been used for African Americans at various points in history. African Americans have been referred to as Negroes, colored, blacks, and Afro-Americans, as well as lesser-known terms, such as the 19th-century designation Anglo-African. Explain why the terms “Negro” and “colored” are now rarely used.

The Civil Rights Movement and Martin Luther King Jr
Define the words civil rights (rights that all citizens of a society are supposed to have, for example, the right to vote or to receive fair treatment from the law) and provide an overview of African-American history with attention to the events of history that led to the Civil Rights Movement.

Show other photographs from the Civil Rights era with attention to the August 28, 1963 Freedom March in Washington D.C. Read an excerpt from Martin Luther King’s I Have a Dream Speech that was delivered that day in history on the steps of the Lincoln Memorial.

*We hold these truths to be self-evident: that all men are created equal. I have a dream that one day on the red hills of Georgia the sons of former slaves and the sons of former slave owners will be able to sit down together at a table of brotherhood. I have a dream that one day even the state of Mississippi, a desert state, sweltering with the heat of injustice and oppression, will be transformed into an oasis of freedom and justice. I have a dream that my four children will one day live in a nation*
where they will not be judged by the color of their skin but by the content of their character. I have a dream today.

For the full text, see the Martin Luther King, Jr. Papers project at Stanford University, www.stanford.edu/group/king.

Explain how this one single event remains a defining moment in history. The March on Washington was a massive public demonstration that articulated the goals of the Civil Rights Movement. The March attracted an estimated 250,000 people for a peaceful demonstration to promote Civil Rights and economic equality for African Americans. Participants walked down Constitution and Independence avenues, then — 100 years after the Emancipation Proclamation was signed - gathered before the Lincoln Monument for speeches, songs, and prayer. Televised live to an audience of millions, the march provided dramatic moments, most memorably the Rev Martin Luther King Jr.’s "I Have a Dream" speech.

Georgia History
The civil rights movement in the South was one of the most significant and successful social movements in the modern world. Black Georgians formed part of this southern movement for full civil rights and the wider national struggle for racial equality. From Atlanta to the most rural counties in Georgia’s southwest Cotton Belt, black activists protested white supremacy in a myriad of ways—from legal challenges and mass demonstrations to strikes and self-defense. In many ways, the results were remarkable. As late as World War II (1941-45) black Georgians were effectively denied the vote, segregated in most areas of daily life, and subject to persistent discrimination and often violence. But by 1965, sweeping federal civil rights legislation prohibited segregation and discrimination, and this new phase of race relations was first officially welcomed into Georgia by Governor Jimmy Carter in 1971.

Civil Rights in Savannah
Baldwin’s photograph is specific to Savannah. The Savannah Civil rights movement is considered one, if not the most, successful local civil rights movements in the South. The Savannah movement was headed totally by Savannah locals and supported by Savannah’s black community. It was the local chapter of the NAACP (National Association for the Advancement of Colored People) that was the head of the movement. Under the Leadership of W. W. Law the youth of Savannah were organized and trained so that on March 16, 1960 black youth sat at the lunch counters of eight downtown department stores protesting segregation. Within months the NAACP was able to organize more protests at segregated churches, beaches, buses, bus depots, and airports. In March 1960, after the lunch counter sit-ins, the NAACP organized a boycott of the white owned stores on Broughton Street. They were asking for the charges against the youth participating in the sit-ins to be dropped, the desegregation of lunch counters, better jobs for blacks in those stores, and the use of “sir” and “ma’am” for black patrons. This boycott would last eighteen months and drive several white owned businesses out of business. At the end of the boycott they won the desegregation of lunch counters, which made Savannah the first city in Georgia with desegregated lunch counters. Between 1961 and 1963 the use of boycotts brought the desegregation of parks, the city buses, library, and the cafes in the bus depot and the airport. The organization of the NAACP contributed greatly to a constant running movement. The community members were not only on the streets marching to gain their civil rights, but they were also registered to vote. During this time in the south it could be detrimental to one’s life to be black and trying to vote. The black community in Savannah faced this fear and was willing to march through it for their cause.

ASSIGNMENTS and PROJECTS

1. History is Always Happening. Baldwin’s photographs tell stories about historical events. Think of a family event or story in your personal history, and divide it into its beginning, middle, and end. Use a digital or instant camera to document your story by reenacting portions from the past, or by having an object or place stand in for that piece of your history puzzle. Create an exhibition of your works.

2. Ben Van Clark Park. The main subject captured in Baldwin’s photograph is Ben Van Clark, a local civil rights figure. Have students research The Ben Van Clark Park and Neighborhood to understand Savannah’s history and how it transformed through mass transit, desegregation, and preservation.

3. Civil Rights. Research the Civil Rights movement. Who were some of the leaders of the movement? Find out about the strategies used to press for racial equality. Locate the cities where major Civil Rights activity occurred.
ASSESSMENT

• What was the purpose of the Civil Rights Movement?
• Who is Benjamin Van Clark and why is he significant to Georgia history?
• What was the purpose of 13, 14, 15 Amendments?
• Define segregation.

RESOURCES

Books
• Donald L. Grant, The Way It Was in the South: The Black Experience in Georgia (Secaucus, N.J.: Carol Publishing Group, 1993).
• “...We ain’t what we used to be”: Photographs by Frederick C. Baldwin. (Savannah, GA: Telfair Academy of Arts and Sciences, Inc.: 1983.) Out of print but available through local libraries and used booksellers.

Websites
• Visit http://www.fotofest.org/ for more detailed information about FotoFest, the International non-profit photographic arts and education organization that was co-founded by Frederick Baldwin.
ABOUT the ARTIST

Praised in his lifetime as a painter of light and air, Childe Hassam (child HASS am) is a significant American Impressionist painter. Hassam was born in Boston and traveled to Paris in 1886 where he became immersed the French style of Impressionism and became part of the emerging American Impressionist group, eventually settling in New York City. He is most known for painting distinctly American subjects—the streets, parks, neighborhoods, and festive military parades. His choice of contemporary scenes, from fashionably dressed New Yorkers parading down Fifth Avenue to the weathered buildings and rocky coasts of New England, contrasted with American artists of the day, who preferred subjects from the past. Hitherto historical painting has been considered the highest branch of the art, Hassam said in an 1892 magazine interview. A true historical painter, it seems to me, is one who paints the life he sees about him, and so makes a record of his own epoch. It is estimated that the artist produced more than 2,000 oil paintings, pastels and watercolors, plus some 400 prints, during his lifetime.

ABOUT the ARTWORK

This painting represents Hassam’s subject matter of later years, patriotic, decorative paintings of wartime New York City. By placing emphasis on the flags during the Allies Day Parade in 1917 on 5th Avenue in New York City, Hassam celebrates the joined forces with other countries during WWI. The painting is part of a series of approximately 30 paintings with flags as the primary subject matter. The short choppy brushstrokes visible in this painting are typical of those found in Impressionist paintings. Hassam was greatly influenced by French Impressionism. French painters like Claude Monet had also painted flag subjects.

DISCUSSION TOPICS

**Allied Nations and WWI.** Relate the subject represented in the painting to the actual historical event it represents. Explain the significance of Allies (an association of two or more groups, individuals, or nations who agree to cooperate with one another to achieve a common goal) and relate it to the Allied Nations during WWI. A military conflict, from August 1914 to November 1918, World War I involved many of the countries of Europe as well the United States and other nations throughout the world. World War I was one of the most violent and destructive wars in European history. Of the 65 million men who were mobilized, more than 10 million were killed and more than 20 million wounded. The term World War I did not come into general use until a second worldwide conflict broke out in 1939. Before that year, the war was known as the Great War or the World War. The war began as a clash between two coalitions of European countries. The first coalition, known as the Allied Powers, included the United Kingdom, France, Belgium, Serbia, Montenegro, and the Russian Empire (see Russia). The Central Powers, which opposed them, consisted of the empires of Germany and Austria-Hungary. Japan joined the Allied Powers in 1914. The Ottoman Empire joined the Central Powers in 1914, as did Bulgaria in 1915. The same year, Italy entered the war on the Allied side. Although the United States initially remained neutral, it joined the Allies in 1917. The conflict eventually involved 32 countries, 28 of which supported the Allies. Some of these nations, however, did not participate in the actual fighting.
The Avenue of the Allies. During both world wars, 5th Avenue in New York was dubbed *The Avenue of the Allies*. During World War I, Hassam painted views of 5th Avenue decorated as *The Avenue of the Allies*. This painting depicts part of the most ambitious flag display. This spectacle was planned by a committee of artists and architects and involved the decoration of 5th Avenue between 26th and 58th Streets. These colorful flags were meant to encourage patriotic spirit and raise money to pay for wartime expenses. Explain to students the concept of patriotism (pride or devotion to the country you were born in or a citizen of). Here, Hassam looked north from 53rd Street and compressed into a vibrant pattern three blocks dedicated to flags of Great Britain, Brazil, and Belgium. (Can you locate these countries on a world map?) Hassam transformed three city blocks of flags into a colorful pattern of rectangles, stripes, triangles, circles, and diamond shapes. The artist painted at least thirty flag pictures and these were exhibited often in groups of twenty-two, as a reminder of the number of allied nations.

The American Flag. Have students identify the flags in the painting. Explain the symbolism of each flag. A symbol invests things with a representative meaning. For example an image of a heart often symbolizes love, or an apple signifies knowledge. Have students examine the American flag and identify the symbolism of the stars, the stripes, the colors red, white, and blue. Ask them if they know who designed the flag? Or, why the flag sometimes called “old glory”?

The U.S. flag has undergone many changes since the first official flag of 1777. On June 14, 1777, the Continental Congress passed the first Flag Act, which said that the flag would be made up of thirteen alternating red and white stripes and thirteen white stars on a blue field. Stars have been added to the flag as new states join the union. While the flag’s colors did not have a specific meaning at the time, the colors were significant for the Great Seal of 1782.

How is the U.S. Flag similar to the British “Union Jack”?  

- White: Signifies purity and innocence
- Red: Signifies valor and bravery
- Blue: Signifies Vigilance, perseverance, and justice

Why the stars and stripes? The first Great Seal committee suggested the Latin motto “E pluribus Unum” in 1776. It means “One out of many.” “E pluribus Unum” is a clear reference to the thirteen colonies united into one nation – symbolized by a constellation of 13 stars. Stars are considered a symbol of the heavens and the divine goal to which human beings have aspired from time immemorial; the stripe is symbolic of the rays of light emanating from the sun.

ASSIGNMENTS AND PROJECTS

1. **Flags.** A Flag is a piece of cloth that carrying a distinctive design and is used as a symbol of group identity or nationality. Have students choose images, such as the stars and stripes on the American flag, that they feel represent things that are important to them. Pictures can convey meaning, just as the 50 stars on the American flag symbolize each state. Have students design a flag based an image or images that best represent themselves.

2. **Historic Scenery.** Artists often paint scenes from real life events that both record and interpret the event at the same time. Look at the painting by Hassam. Can you get a sense of the actual scene from the painting? What does it sound like, smell like, what is the expression on the people’s faces? Have students look at the painting to identify the flag closest to them and slowly look down the avenue to the flags hanging furthest away. How many flags do you see? What time of day and season is it? Is there a breeze blowing? What is the weather like?

In a theater production, the scenery helps the audience understand the play and also helps to create the mood of the play. A set designer creates a background for each scene and then uses set props (flag, confetti) and hand props (something) to add details to the scenery.

What to do: Imagine you are a set designer. You are designing the scenery for a mystery that takes place somewhere in Savannah. Describe the background. What colors and kind of lighting would help create the mood for this scene? You could set your play during a real event that takes place in Savannah or your community, such as the St. Patrick’s Day Parade or a Veterans’ Day event.

3. **Traveling Journal.** Childe Hassam built his reputation on light-filled images depicting the streets of New York and New England’s coastal resorts. He also enjoyed traveling and delighted in discovering and painting new scenes and unfamiliar landscapes. Have students create a traveling journal that documents a journey—from a family vacation or school field trip, to a trip to the grocery store or doctor’s office.
ASSESSMENT

• What countries were involved in World War I?
• Which countries were allied to the United States during World War I?
• What is the purpose of a Flag?
• What is a visual symbol?
• What is the symbolism of the American flag?

RESOURCES

Books
• Flag Paintings of Childe Hassam by Ilene Susan For Los Angeles County Museum of Art, 1988
• Childe Hassam: American Impressionist by Ulrich W. Hiesinger, Childe Hassam, Jordan-Volpe Gallery, 1994
• The Golden Age of American Impressionism by William H. Gerdts, Carol Lowrey, 2003

Video

Websites
• http://www.metmuseum.org/explore/childe_hassam/index.html A great site by the Metropolitan Museum devoted to Childe Hassam.

Detail: How many different flags do you see? What countries do they represent?
About the Artist

Daniel Chester French established himself as one of the leading American sculptors and public artists of the early 20th century. Author Louisa May Alcott’s sister encouraged French to become a sculptor. He studied briefly in the U.S. with William Hunt, Samuel Ward and later had the opportunity to study for a year in Florence, Italy. Much of French’s work incorporates allegorical figures and themes illustrated by his first major commissions, the Minute Man monument in Concord, Massachusetts (1871-75), and the statue of John Harvard in Harvard Yard, Cambridge (1883-84). French created hundreds of other sculptures most notably, the massive statue of Abraham Lincoln, which sits in the Lincoln Memorial in Washington, DC. French became a member of the National Academy of Design (1901), the National Sculpture Society, the Architectural League, and the Accademia di San Luca, of Rome. In 1940, French was selected as one of five artists to be honored in a series of postage stamps dedicated to great Americans.

About the artwork

This is a small plaster version of the monumental sculpture depicts James Oglethorpe, an English general and philanthropist, founder of the American colony of Georgia. The sculpture is typical of French’s style—a combination of detailed realistic rendering, especially in portraiture, in the grand neo-classical tradition of statuary. Oglethorpe is depicted with a penetrating gaze, which illustrates his leadership and power. The material used to create this work is plaster, which is not as permanent as traditional sculptural media such as bronze or marble. Savannah’s Chippewa Square is the site of French’s large monument of General James E. Oglethorpe, sculpted by Daniel Chester French and cast in bronze. This square was laid in memory of the brave American troops in the Battle of Chippewa, which took place during the war of 1812 and was led by General Jacob Brown. French’s Oglethorpe monument was dedicated in Savannah in 1910 in a large ceremony accompanied by a military parade. The base of the monument was designed by Henry Bacon, the same architect who designed the building that houses French’s Lincoln Memorial in Washington, DC.

Discussion topics

Monumental Heroes Memorialized

Explain the words monument (something designed and built as a lasting public tribute to a person, a group of people, or an event) and memorial (something that is intended to remind people of a person who has died or an event in which people died, for example, a statue, speech or special ceremony). After executing his first large work, The Minute Man (1875), French received many important commissions, including his most famous achievement, the heroic Lincoln in the Lincoln Memorial, Washington, D.C. Have students identify other monuments and memorials in the area such as the Waving Girl (located on the Savannah River Bluff, it commemorates Florence Martus (1869-1943), who was known for waving her flag at ships while she waited for her lover’s return) and The John Wesley monument (located in Reynolds Square, the bronze statue commemorates a man who ministered to Georgians and started the first Sunday School).

Georgia’s History

Ask students to identify the figure represented in French’s sculpture. Discuss Oglethorpe’s significance in Georgian history. How does the artist represent the figure? How is he dressed? How is positioned? Have students pose in a theatrical
position, as if they were modeling for their own monument to history. Ask students to imagine what they want to be remembered for. Why is the actual monument positioned so that Oglethorpe faces south?

**Time Line**

Using the following resources (story, video notes, history text, and encyclopedia), students will make a time line. Time line dates will begin at Oglethorpe’s birth and end with his death. Each student will make their own time line and include at least 10 historical dates. These dates may include events relating to famous people and their accomplishments, political events, battles, or other historical facts. Include dates from United States history only.

**ASSIGNMENTS and PROJECTS**

1. **Historical Squares.** Oglethorpe is credited with creating Savannah’s city plan which is known across the world as an excellent example of urban design. The squares are essential to Oglethorpe’s plan for Savannah. Assign students to research other monuments and memorials in their city or neighborhood park in order to understand their historical significance. In downtown Savannah, there are twenty-four historical squares named after either an important person or event in the history of Savannah. Monuments, statues, and occasionally graves can be found in some of the squares. Have students visit the squares of Savannah and observe the details of the statues. Research one square to understand how pieces of history commemorate many things in Savannah’s past and present, old and new.

2. **Everything Oglethorpe.** Ask students to list everything within the city of Savannah that has been named in Oglethorpe’s honor. (i.e. Oglethorpe Club, Oglethorpe Square, Oglethorpe Ward, Oglethorpe Street, Oglethorpe Bench and the Oglethorpe Monument).

3. **French Facts.** Daniel Chester French studied in Boston and New York prior to receiving his first commission for the 1875 statue *The Minute Man*. Standing near the North Bridge in Concord, in the Minute Man National Historical Park, this work commemorates events at the North Bridge, the site of the shot heard ‘round the world. An American icon, images derivative of The Minute Man statue appeared on defense bonds, stamps, and posters during World War II. Assign to each student another sculpture by French and report to the class about its significance in American history. Some of the best of his statues and memorials are John Harvard and the bust of Ralph Waldo Emerson (Harvard); *Death and the Young Sculptor*, Milmore Memorial (Boston); *Mourning Victory*, Melvin Memorial (Concord, Mass.); Lewis Cass (Capitol, Washington, D.C.); and *Alma Mater* (Columbia Univ.). In collaboration with Edward C. Potter he executed equestrian statues of General Grant (Philadelphia), General Washington (Paris), and General Joseph Hooker (Boston).

**ASSESSMENT**

- Why do artists create public monuments and memorials?
- What historical figures has Daniel Chester French memorialized?
- What is the significance of general Oglethorpe to Georgia history?

**RESOURCES**

**Books**

- See *Letters from General Oglethorpe*, collected by the Georgia Historical Society (1873); biographies by L. F. Church (1932), A. A. Ettinger (1936, repr. 1968), and J. G. Vaeth (1968)

**Websites**

- For more information about Oglethorpe and his relationship with the Native Americans go to [www.sip.armstrong.edu/Indians/Essay.html](http://www.sip.armstrong.edu/Indians/Essay.html) to read David H. Connolly Jr.’s essay titled *Oglethorpe and the Georgia Indians: A Change of Heart*
- Visit [http://www.chesterwood.org/](http://www.chesterwood.org/) the site of Chesterwood, Daniel Chester French’s former studio that has been transformed into a museum.
- For more information on the Savannah City plan created by Oglethorpe visit the New Georgia Encyclopedia at [http://www.georgiaencyclopedia.org/nge/Article.jsp?id=h-2547](http://www.georgiaencyclopedia.org/nge/Article.jsp?id=h-2547).
ABOUT the ARTIST

Born in Pooler, Georgia, Edwards was a self-taught (Folk) artist who followed in the footsteps of his father, a carpenter, and of self-taught artist, Ulysses Davies, another accomplished African American woodcarver. Edwards is best known for his carved wood sculptures of famous black individuals as well as for his walking sticks in the form of snakes. The artist made valuable contributions to the folk art of the region. The prolific body of work by Edwards speaks to diversity of heritage and shared national experience, individual creativity, and community values.

ABOUT the ARTWORK

This sculpture depicts Harriet Tubman, the escaped slave who became a leading abolitionist. Edwards depicts the subject in all seriousness of her being, with a rifle, as she carried in historical accounts to protect the slaves she was leading to freedom through the Underground Railroad and as warning to any escapees who might want to back out and inadvertently give away the escape route. The sculpture stands as a symbolic portrait of black history. The inspiration for folk art is often tied to critical moments in America’s history, especially times of war or national celebration, and in this instance, an individual’s personal response to those events. This work is one of a number Edwards’ small busts of historical figures in black history from Abram Hannibal to Malcolm X.

DISCUSSION TOPICS

What is Folk Art?
Folk art is defined as art created by artist with no formal education in art. Self-taught or naïve are another terms used to describe folk artists. The history of American folk art has served many functions through time, adapting to the challenges of each age. Individual artistry was rewarded by patronage, but usually within parameters defined by the historical period in which the artist worked. By the middle of the nineteenth century, however, the stability of even established conventions was challenged by growing industrialization, new technologies, and changing patterns of immigration, with an influx of new influences. Mechanical processes displaced artists and others who adopted the new methods or sought alternative occupations. Woodcarving shops, for example, that had produced figureheads for ships turned to the production of trade figures that stood on land; as the demand for these declined, new trends took their place, implemented by the remnant of the old woodcarving shops and joined by a new generation of immigrant woodcarvers, who made beautifully carved animals for new amusements such as carousels. By the end of the century, industrialization had rendered most handmade products obsolete. Rather than reinforcing a norm, folk art became expressive of individual voices raised in support of the human touch and the credo of beauty in everyday objects—voices that also spoke to topical issues, personal concerns, and popular culture.

Historical Context
Discuss the significance of Edwards’ subject Harriet Tubman. Remind students of the hardships weathered by African Americans at the time period of Tubman’s popularity (between the 1850s and 1860s around the Civil War period). Explain the historical context, which makes her story so significant. Discuss how other people’s history had an impact on her own. The Bible story of Moses leading the children of Israel out of Egypt meant a lot to Tubman. The people of Israel were slaves like her people. One experience that greatly affected her life took place when she was trying to help another slave. Harriet’s
overseer was angry with the slave and when he went after the slave, Harriet blocked the doorway to stop him. The overseer took an iron weight and threw it at Harriet striking her in the head. She was near death for some time and had a deep cut on her forehead for nearly eight years. For the rest of her life, Harriet suffered severe headaches and sleeping spells. In spite of her hardships, though, Tubman went on to become a heroine of her time.

The Underground Railroad

Provide an historical overview of the Underground Railroad and explain how it was neither a railroad nor underground but a vast network of people who helped fugitive slaves escape from the south to the North and to Canada. The Underground Railroad consisted of many individuals—whites but and black—who knew only of the local efforts to aid fugitives and not of the overall operation. Still, it effectively moved hundreds of slaves northward each year—according to one estimate, the South lost 100,000 slaves between 1810 and 1850. An organized system to assist runaway slaves seems to have begun towards the end of the 18th century. In 1786 George Washington complained about how one of his runaway slaves was helped by a society of Quakers, formed for such purposes. The system grew, and around 1831 it was dubbed The Underground Railroad, after the then emerging steam railroads. The system even used terms used in railroading: the homes and businesses where fugitives would rest and eat were called stations and depots and were run by stationmasters, those who contributed money or goods were “stockholders,” and the “conductor” was responsible for moving fugitives from one station to the next. Harriet Tubman remains a famous conductor. Between 1850 and 1860, she saved money to make 19 trips to the South to free about 300 slaves.

The Civil War

Discuss the events of the Civil War as it relates the subject. When the Civil War broke out between the North and the South in 1861, Tubman served with the Union army of the North. She shared the dream that President Abraham Lincoln had in bringing freedom to the slaves in the South. Harriet worked as a nurse, scout, and a spy for the Union and in 1863, she led a group of black soldiers under Colonel James Montgomery on a raid. Nearly 800 slaves were freed as a result. Harriet Tubman was one person who began to help change peoples views of slavery and freedom. She would be proud of the steps that have been taken to remind humankind that we were all created equally.

Slavery

Often artists express ideas that relate to their own history. In this case it is African American History. Edwards’ heritage is part of the American story, which unfortunately includes slavery. Discuss the history of slavery. Remind students that being born into slavery meant that you were property and had no rights. Even as children, slaves were expected to work long hours. Slaves were expected to work hard and fast and to be obedient to their masters. As a child, Harriet Tubman was often hired out to work for other slave masters. As she grew older, she was sent to work in the fields with other slaves. Have students individually think of what they know about slavery, Harriet Tubman, the Civil War, Underground Railroad, and any famous people during this era of the 1800s. In pairs, have students share what they remember and write it down. Then have the whole class contribute to a class list on the chalkboard of everything that was shared.

ASSIGNMENTS and PROJECTS

1. **Story Board.** Assign the book *Harriet and the Promised Land* (Alladin, 1997) by Jacob Lawrence (Illustrator), which tells the story of Harriet Tubman. Have students create a storyboard with 10 historical events that occurred during Tubman’s lifetime.

2. **Learning Journal.** In a learning journal, have each student write an entry telling 3 historical facts they have learned in studying Harriet Tubman’s life. Explain why these facts are important.

3. **Biography.** Have students research the biographies of William Still, Sojourner Truth, Frederick A. Douglass, and James Forten. Each student will read the assigned material of his or her famous person. Each student then prepares a short presentation of his or her person’s life and accomplishments. Each student teaches other classmates about their person. (Students may take notes as each person shares their summary. You may conclude with a class discussion about what they found most interesting about these people.

4. **Learning from the Past.** Read from the book *The Value of Helping* by Ann Donegan Johnson. Explain where this takes place by point into the state of Maryland on the United States map as you read. Continue pointing out places on the map throughout the story. At the conclusion of the story, students write an explanation answering: “If I were a slave, I would....” Students explain how they feel about being a slave, explain what they would do, and explain why/how they would carry out their plan.
5. Mapping a Route. Prepare copies of your county or state map for cooperative groups (4 students to a group). When students are in their groups, they must map out a course to free a territory, which you will determine. Give a starting point and a final destination. (For example, begin in Georgia and map out a route that you could walk to get to free territory in New York or Chicago) Each group must:

1. Draw out their route on their map. Calculate the distance for each route using the distance key on the map. Measure distance with yarn then use mileage key to add up the total miles of the route.

2. Estimate how long the trip would take. Time how long it would take to walk a mile. Multiply that time with the total miles of the route to get total hours. Also add in minutes/hours you would need to sleep or rest. Total up all the hours for the journey and find the number of days as well.

3. Explain why they chose this route. (Example: What barriers were in the way? Terrain too rough? Would you use roads? Is their too much traffic to risk being caught on this route?).

Have groups pair-up with another group and share the results explaining why they chose their particular route. Then have each group share their route with the class, the distance and time for the route, and reasons for choosing it. Discuss what route would be the best. This activity would help students appreciate how far some people had to travel on foot to reach free territory.

6. Looking at Folk Art. Have students visit the Beach Institute African American Cultural Center in Savannah to see the Ulysses Davis folk art collection or visit the website at http://www.kingtisdell.org/davis.html. Davis, another prominent Georgia folk artist served as an inspiration to Vernon Edwards. Have students choose a work by Davis that is similar to Edwards’ Harriet Tubman sculpture and list all the commonalities as well as the differences.

ASSESSMENT

• What is the significance of Edward’s sculpture?
• Why is Harriet Tubman important to history?
• Is there a different between Slavery and Share Cropping?
• What is the Underground Railroad?
• Define Abolitionism.
• What was the Civil War about?
• What is the history of Folk Art?

RESOURCES

Books
• The Value of Helping by Ann Donegan. Johnson, (1979)
• Harriet and the Promised Land (Alladin, 1997) by Jacob Lawrence (Illustrator)
• Freedom Train by Dorothy Sterling, (1954)

Websites
• For more information about the Underground Railroad visit http://www.nationalgeographic.com/features/99/railroad/, a comprehensive and extremely interesting that includes maps, links, timelines, classroom activities and biographies is provided by National Geographic
• For more information on the The Beach Institute Ulysses Davis Collection visit http://www.kingtisdell.org/davis.html
• Georgia Folk art and crats are discussed on the New Georgia Encyclopedia website: http://www.georgiaencyclopedia.org/nge/Article.jsp?path=+/Folklife/FolkArt&id=h-545
• Visit http://gafolkart.com/, which features Georgia’s living folk artists.
The many parallels between art and language naturally inspire connected and cumulative learning when the two disciplines are correlated in the classroom. Just as students can find meaning in literature through reading and writing stories and poems, they can also find meaning in works of art through reading about art, carefully looking at works of art, and writing about paintings, sculptures, and other art objects. This unit highlights the natural parallels between art and language to include: main idea/meaning, artist/author, people/characters, portrait/biography, self-portrait/autobiography, and drawing/writing. Students will develop vocabulary, record ideas and feelings, develop organizational and writing skills, distinguish between fact and opinion, use descriptive words, make comparisons, predict outcomes, make inferences and develop their skills in writing for a variety of purposes.

TELFAIR ARTWORKS, GPS RELATED CONCEPTS and ART VOCABULARY ADDRESSED IN THIS UNIT:

**William Scharf, Ascending Betrayal, 1985**
Thesaurus
Grammar: Nouns, Verbs, Adjectives
Writing Process
Poetry and the abstraction of language
Antonyms & Synonyms

**Julian Story, The Black Prince at Crecy, 1888**
Reading to Learn
Adjectives and Adverbs
Research and Resources
Plot, Main Character, Theme
Listening/speaking and viewing

**Augusta Oelschig, Death of a Carousel, 1951**
Authors’ (and artists’) purpose
Mystery and Fantasy Subject Matter
Writing Structures
Hypothesis

**Everett Shinn, Rip Van Winkle, 1939**
Fairytales and Fables
Illustration

**Tim Rollins and K.O.S., Study for Amerika, c.1984-89**
Reading to Learn
Analytical Skill
ABOUT the ARTIST

Born in Media, Pennsylvania. As a youth, Scharf’s artistic pursuits were shaped by American artist, N.C. Wyeth, who facilitated his admission to the Pennsylvania Academy of Fine Arts. After serving in the U.S. Army Air Corps, Scharf resumed his studies with classes at the Barnes Foundation and the University of Pennsylvania and with European travel and study at the Académie de la Grande Chaumiére in Paris. Scharf settled in New York in 1952, where he later met Abstract Expressionist artist Mark Rothko, who, along with Jackson Pollock and Willem deKooning formed The New York School. Scharf’s work brings to mind the paintings of Mark Rothko, for whom he served as a studio assistant, and he has been considered second generation Abstract Expressionist. The artist’s artwork is characterized by its blend of abstract expressionism, surrealism, and individual vision. His paintings can be found in public collections across the country including the Brooklyn Museum of Art, the National Museum of American Art, and The Phillips Collection.

ABOUT the ARTWORK

Similar to many artists, Scharf creates dozens of sketches and preliminary drawings for large canvases, to develop and refine his ideas. These sketches reveal the compositional development of the work and the artist's process. Scharf’s wife was from Savannah and he rented a studio on the Savannah riverfront which he used during summer visits to the city from 1966-1985. The reference to water and a floating feeling in many of Scharf’s works from this period is not coincidental as the artist worked in a studio overlooking the Savannah River during their creation. In fact, the artist’s sketchbooks identify the names of ships passing in the Savannah River as the artist worked in his studio. The monumental Ascending Betrayal was completed during Scharf’s final summer in Savannah. Symbolic elements such as the truncated cross, crown of thorns, and cluster of grapes, in combination with the painting’s title and the notated sketches refer to the Christian bible story of Judas’s betrayal of Jesus. In Ascending Betrayal, a sense of approaching conflict is created by the tension between light forms on the left half of the canvas and the ominous dark ones on the right. A gleaming white parallelogram floats at the center of the canvas dividing the work with its strong geometry lending contrast and structure to the work’s organic flow. Ascending Betrayal is a tribute to the power of suggestion. It demonstrates the capacity of abstract form and rich color to generate meaning, mood, and emotion.

APPRECIATING THE ARTWORK: Describe, Analyze, Interpret, Judge

Use this four-step art appreciation process to increase your visual awareness skills, learn more about how an artwork was made, reveal important ideas the artist wants you to consider, and determine for yourself whether the artist was successful in conveying their idea to you in a visual work of art.

Describe

Look at the artwork for three minutes and make an inventory of what you see. Be prepared for your teacher to take the poster reproduction away, and be able to remember at least five things you see in this painting. As a class you may make a list of this artwork’s visual inventory.

Consider the length and size of this painting; why did the artist choose this format? (66 x 179” equates to approximately 5 1/2 feet high by 15 feet wide!) How tall are you? How many people would it take to equal the length of this painting?
Analyze

This is an abstract painting, which means that the artist has used organic and geometric shapes, colors and lines to symbolize objects and indicate meaning, rather than representational realistic images. Identify a color, a shape, and a line in this painting and think about how they are connected and what they suggest to you. Do certain colors or shapes suggest emotions to you?

Interpretation

This painting is about human behavior that escalates and becomes more serious, intense and unpleasant. Ascending means increasing or going higher, and betrayal means disloyalty to those who trust you. Think of a situation from a movie, a book, a poem, or life that could be described in this way. How can shapes, lines and colors illustrate that behavior?

As his biography reveals, Scharf is a second generation Abstract Expressionist, meaning he studied with the first generation of Abstract Expressionists. These artists created with great passion and an outpouring of emotion, and deep contemplative thinking. Their use of abstract shapes and forms were key in prompting the same level of deep thinking in the viewer of their art. How does looking at and appreciating Scharf’s painting differ from viewing a realistic painting?

The artist is fond of poetry. Like writers and poets, artists often use symbols which are significant to them. Look at the artist’s sketches. Can you see how he developed symbols that are almost like a private language? What are some examples?

Judge

The written word is a powerful form of communication and an equally powerful form that sparks the imagination. Think about how we rely on written words to tell us important factual information; then compare that type of writing to the fictional writing that makes our imagination soar. Do you think Scharf’s painting, Ascending Betrayal, is similar to a non-fiction work that encourages us to use our creative thinking abilities?

DISCUSSION TOPICS

Increasing Your Vocabulary and Learning a New Language
Define vocabulary (all the words used by or known to a particular person or group) for students. Vocabulary for artists is the repertoire of expressive forms or techniques used in a particular art form. Discuss the benefits of increasing our vocabulary so working with words is a fun pleasurable activity. Explain the purpose of a thesaurus (a book that lists words related to each other in meaning), antonyms and synonyms. Look up words in a thesaurus to learn new words and how one meaning can have multiple words to describe that meaning. Increasing vocabulary by learning new words in English is similar to learning a foreign language in order to communicate in world cultures. When we learn new words or learn a foreign language, we are able to explain things in new ways, to more people. The language of art, known as the elements of art and principles of design, is a language that artists learn so they can create artwork with structured organization (grammar) and meanings (vocabulary) specific to their intended idea. Student artists often feel as if they are learning a foreign language when they begin to study the elements of art and principles of design, however, once they master the visual art language, they are able to clearly communicate their ideas to the viewers.

Question: How large is your vocabulary? Make a list of words that describe this painting. Using a thesaurus, identify other words that could be used in place of the ones you already know. Were any of the words from the thesaurus better choices than the ones you initially thought of? What can you do to remember these new words and adopt them into your permanent vocabulary? Association? Usage?

Similarities in the Processes of Writing and Making Art
The process of writing is parallel to the process of making a work of art. Writers take original ideas they want to communicate to their reader and brainstorm about how to present those ideas. For example, some writers use web-diagrams to develop ideas. Writers then organize an outline of their ideas, and begin writing paragraphs, or “writing chunks,” eventually reworking them to produce a fluid and comprehensive written form that expresses their initial idea. Similarly, artists like Scharf begin the process of communicating an original idea by drawing a series of small sketches (called thumbnail sketches) in their sketchbook to develop possible visual solutions for their idea. One of these solutions is then translated to another medium (i.e. oil on canvas, pastel on paper, clay, wood, metal, etc.). Compare how artists title their artwork with how an author titles a book. Stages of Writing = Stages in Art making / Pre-writing = sketches / Rough draft, revising and editing = thumbnails

Question: Where do artists and writers get their original ideas? Discuss inspirations such as new experiences, recording
history, expressionism, activism and other motivations to the artist and writer.

Poetry and Abstraction
Scharf’s *Ascending Betrayal* is an example of an abstract painting. To explain abstraction, define the various meanings of the word itself. In general, abstract in the art sense means to represent as aspect of something in the world, whether it is an object or an idea. It refers to an essence or a summary. A good comparison is when an author wants to publish a work and they contact a publisher who requests that the author submits an abstract of the book, a summary that emphasizes the main points or general idea. So as a noun, abstract often refers to a summary of a longer text. Scharf has summarized the relationship between the characters of a story using abstract shapes, lines and colors. Poets also present narratives in words or word-phrases, just as an abstract artist presents visual narratives in a simplified composition of shapes and colors. Discuss the process of abstracting an idea, or simplifying an idea, from detailed realism to shapes and colors. Using the sports company, Nike, exemplify how an abstract logo (the Swoosh) is based on the ancient myth of Nike, the Greek goddess of victory. Statues and artworks created in her mythological image, such as the sculpture of the *Nike of Samothrace (The Winged Victory)*, depicted the goddess with wings; hence the Nike abstract symbol of a wing is an appropriate image for athletic gear. (Symbolizing the message: “wear these products and you will achieve victory”).

Questions: Why do you think Scharf chose abstraction rather than realism? What other abstract symbols do we see everyday are derived from realistic images?

The Vocabulary and Grammar of Visual Art and English
Standard English grammar may be readily compared to the artists’ language of the elements and principles of design. Just as the artist and writer go through similar creative thinking and development processes, they both use vocabulary and grammar to articulate, structure and communicate ideas. Explain how certain characteristics applicable to both art and language arts even share the same terms: generalizations, details, elements, setting, sequence, composition, balance, unity, symmetry, conclusions, emotions, vocabulary, and research.

Question: Compare Scharf’s used of visual language in *Ascending Betrayal* to the grammatical elements of a story. What comparable structures do you see? (space=pause; repetition of shapes=sequence; transition into darker color=conclusion)

Multiple Interpretations of Words and Art
Words provide us with the ability to define and describe what we encounter on a daily basis and to express to others our experiences. The better our vocabulary, the more we can elaborate our descriptions. Sometimes, however, a word can mean two different things and can confuse your description…unless we know both definitions! For example, the word hard can mean difficult or can be used to describe a solid surface. The ability to recognize and use words with multiple meanings demonstrates a level of verbal communication that is both admirable and useful when writing and talking. Likewise, certain elements of art can have multiple meanings. For example, warm colors such as red, yellow and orange are considered cheerful colors and artists often use them to portray “happy” events. In contrast, warm colors are also used to create visual symbols that provide warnings or imply danger because of their color intensity (i.e. stop sign, caution sign, fire trucks).

Question: What contrasting meanings do cool colors (blues, purples, greens) provide, if any? What other words have more than one meaning?

ASSIGNMENTS and PROJECTS

1. **Identifying Nouns, Verbs and Adjectives.** Study *Ascending Betrayal* to compose a list of ten different words to describe aspects of the painting. For each word, identify whether it is a noun, verb, or adjective.

2. **An Abstract Antonym.** 1. Create a list of antonyms and synonyms for each word in the title of the artwork *Ascending Betrayal*. Synonyms, words with the same meaning, could include escalating, climbing, reaching; or dishonor, deceit, distrust. Antonyms, which mean the opposite, could include descending, reducing, lessening; and trust, honorable, friendship. 2). Continue this process and make a list of five vocabulary words to describe the painting. To increase your vocabulary, look up similes, antonyms and synonyms of those words. 3). Write a fictional story using only the antonyms to develop a storyline. Create an abstract illustration of your story. Compare your choice of shapes and colors with those of Scharf’s in *Ascending Betrayal*. Is your illustration an abstract antonym of Scharf’s painting?

3. **Poetry in Abstraction Collage.** Have students select a favorite poem and create a collage that describes the poet’s message. To begin, identify key words or phrasing in the poem and develop organic and geometric paper shapes that describe those words and ideas. Consider the flow and rhythms found in poetic stances of your chosen poem and use
the verbal ‘space’ to distinguish the physical space between the shapes you have created. After arranging the shapes, and identifying the space, glue the shapes onto a base paper. On top of the shapes, draw lines and additional shapes to enhance the abstract collage’s ability to describe the poem you have read. Next, write a paragraph that describes why this poem appeals to you—why it has touched a special place in your mind and heart.

Have you ever related a work of art to a poem you recently enjoyed?

4. Finding Words and Writing Poetry. Similar to the popular word magnets found on refrigerators, this activity prompts students to develop random (abstract) poetry from words found in popular magazines. To prepare the activity, students will cut ten or more words (preferably nouns or verbs) out of texts such as magazines, newspapers, etc. and place them into a large basket. Each student will then pick ten words from the basket that must be used to compose a poem. They will layout and glue the word poetry on paper, concentrating on the sound of the word and rhythm of the word groups. Students should not worry if the ‘sentences’ do not make sense! Students should share the poems with the class and the student audience should write a positive, reactionary comment for each reader.

5. Fact or Fiction? Multiple Interpretations based on Personal Perception. What is the difference between fact (something that can be shown to be true) and fiction (imaginary people and events). Many writers use facts to create fiction. How do they do this? Read a news story from the daily paper and ask students to write key phrases to record the who, what, when, where and why of the story. Then, using their journalistic ‘notes’, they are to translate what they remember most from the story into a drawing. Compare and contrast the student images that emerge and discuss the power of personal perception in understanding, remembering and interpreting stories and artworks. Interpretations are influenced by our personal perceptions that are based upon our age, gender, race and personal experiences.

ASSESSMENT

- What is the purpose of a thesaurus?
- What is an antonym? A synonym?
- What is grammar and how do artists and writers use it?
- How is making art similar to the writing process?
- Discuss how art and poetry abstract language to communicate ideas.
- How do writers and artists use fact and fiction in their works?

RESOURCES

Books

Websites
- What Rhymes with Squirrel is a great site at [http://adifferentplace.org/poetry.htm](http://adifferentplace.org/poetry.htm), which provides lots of great ideas for students and teachers. Try some of their activities and explore their links.
- Study the Principles of Art at [www.sanford-artedventures.com/study/study.html](http://www.sanford-artedventures.com/study/study.html). Explore art and learn about art history.
- Kid Pub at [http://kidpub.com/kidpub/](http://kidpub.com/kidpub/) to read over 40,000 stories written by kids from all over the planet!
- Watch Silverstein’s poetry come to life in animations of his wacky characters at [www.shelsilverstein.com/indexSite.html](http://www.shelsilverstein.com/indexSite.html)
ABOUT the ARTIST

Born in England, Artist Julian Russell Story was the youngest child of American neoclassical sculptor and poet William Wetmore Story. Story grew up in Rome, surrounded by the literary and artistic elite who admired his father. He received his formal education at Eton and Brasenose College, Oxford University, England. Story is most known for his paintings of portraits, narratives, history, and interiors. The Black Prince at Crecy, won a medal at the Paris Salon in 1888 and was later awarded a bronze medal at the Paris Universal Exposition of 1889 (the same exhibition that showcased the Eiffel Tower), where the Telfair’s first Director, Carl Brandt, purchased it for the museum.

ABOUT the ARTWORK

Story painted The Black Prince at Crecy to gain acceptance into the French Academy’s annual Salon exhibition. By having work in the annual salon, artists gained exposure for their work to encourage commissions and provide financial stability. The Black Prince of Crecy is a large painting (it is the largest painting in the Telfair’s collection) based on an actual battle in the Hundred Years War between England and France. The painting portrays a scene after the Battle of Crecy, which was fought in France on August 26, 1346 and considered a major turning point in the war. Standing at the center of the composition is the Black Prince (so called because of his armor), who was actually Edward, Prince of Wales. His clothes are whipped by the wind into a lively silhouette in contrast to the lifeless body of King John of Bohemia on the right, who fought on the side of the French. King John, who was completely blind, lies dead on the field amongst 4,000 other men killed in the conflict. In the upper right stands the windmill from which the Black Prince’s father, King Edward III of England, watched the battle. The storm clouds visible on the horizon not only provide a dramatic setting for this event, but as a historically accurate detail. The Black Prince stands in front of his troops, paying homage to the brave King John, whom he admired as an adversary. Despite his blindness, King John had insisted on being led into battle by twelve knights with their horses tied together so that he “might strike one clean blow.” The Black Prince later adopted the motto of King John, Ich dien (I serve), shown inscribed on the bridle of King John’s horse. It has been the motto of the Princes of Wales ever since.

DISCUSSION TOPICS

Developing the Plot

Artists, like writers, develop a central idea through twists and turns in plot. Define the significance of plot (the sequence of events) to a story. How has the artist provided a sequence of events to effectively tell this story? Ask students why they think The Black Prince at Crecy is a successful composition? Is it the placement of the main character? Although the key figure is placed at the center of the composition, other supporting characters help to convey the complexity of the story of this battle. The artist’s placement of figures keeps the viewer’s interest by leading the eye around the canvas. He does this by using several strong diagonals and arcs that direct the viewer’s eye throughout the composition. Ask students to draw a visual diagram that identifies how their eyes travel from one part of the painting to another. Equate this to an author’s ability to connect characters and varying events through repetition and leading clues. Discuss a recent book and the mechanisms the author put in place to lead the reader from one event to another in order to develop the plot.
Language Art
Language is the communication of thoughts and feelings through a system of signs, symbols, gestures or written symbols. Have students look closely at the Black Prince at Crecy to identify each of the above in the painting. Explain how descriptive details, such as adjectives and adverbs, vary language patterns and make communication more clear and interesting. Identify other details of the composition by creating a list of descriptors a critic might use to discuss an artist’s accomplishments. Have students use their research to act as an art dealer or critic to convince a collector that this painting is either a masterpiece or not. This activity will enhance students’ oral and visual strategies to communicate meaning to the listener.

ASSIGNMENTS and PROJECTS

1. Artists Read to Learn and Research. Julian Story, artist of The Black Prince at Crecy used a variety of resources to research this historical event so his painting was accurate and full of detail. Ask students to research other historical stories of interest (or assign them one). Discuss the word research (a method of investigation into a subject in order to discover facts, to establish or revise a theory, or to develop a plan of action based on the facts discovered) and resources (somebody or something that can be used as a source of help or information). Provide three different sources for researching their topic. Then have students use the details they accumulated to create a drawing or painting of the event.

2. Fact or Fiction? Story created this painting about an actual event in history. Authors, like artists, write about events in history and often add their own creative twists turning fact into fiction. Choose an event from history that you find either captivating or ridiculous as the premise for a fictional skit and write a short one-act play. Include yourself as a lead character and ponder how you would have changed the event, and the course of history, by doing things differently.

3. Gesture Drawings Record History. Gesture drawings are quick sketches that enable the artist to gather as much visual information as possible while testing out compositions for their degree of interest. Practicing gesture drawing helps an artist with expressive line quality and perception skills. Using The Battle at Crecy as inspiration, perform dramatic skits that take place before or after the scene depicted in the painting. When you are not acting, be an artist in the audience by creating gesture drawings of the cast as they freeze in motion during their skit.

Brain Teaser: What occupation demands gesture drawing as a skill? (court illustration artist)

ASSESSMENT

- What is the difference between an adjective and an adverb?
- Why do artists and writers conduct research?
- What is a resource and how is it useful?
- What is a plot and how do artists and writers develop one in their work?

RESOURCES

Websites
- Refer to www.telfairartyfacts.org/teachers/DBAE/prince.htm for a detailed lesson plan for this artwork.
- History for Kids at www.northvalley.net/kids/history.shtml provides links on many topics in history.
ABOUT the ARTIST

Augusta Oelschig was one of Savannah’s most important painters in the 20th century, known for her local scenes, political works and spiritually charged abstractions. She was one of the first students enrolled at Armstrong College when it opened in 1935. She also attended the University of Georgia, where she studied under painter Lamar Dodd and received a B.F.A. Degree in 1939. Later that year, she studied with well-known American painter Henry Lee McFee in Savannah. She had one-person exhibitions at the Telfair Academy of Arts and Sciences in 1941, and at the Montgomery Museum of Art in 1942. During these years she held a teaching position in the Art Department at Alabama Polytechnic (now Auburn) University. In 1946, she opened up her own art school in Savannah on Bay Street. In 1947 she spent most of the year in Mexico, where she met the famous Mexican muralists Diego Rivera and Jose Clemente Orozco, who influenced her to include social themes in her work. She moved to New York in 1948 and participated in numerous gallery exhibitions. Returning to Savannah 1962. In 1972, she received a commission for a mural depicting the history of Savannah for the New Home Federal Bank on Telfair Square, composed of 44 individual paintings worked into an overall design. The mural took three years to complete. In 2000 the mural was reinstalled at the Savannah Area Chamber of Commerce office on Bay Street, not far from her former studios. She was featured in a 1995 video interview produced by the Telfair Museum Art and Savannah’s Government Channel and in the 1996 exhibition and book Looking Back: Art in Savannah, 1900-1960, also produced by the Telfair.

ABOUT the ARTWORK

In Memoriam is a surreal painting that seems to depict a dark side to what is usually thought of as a pleasant experience—riding a carousel. The carousel horses have come alive and seem to be racing to leave the mechanical platform, perhaps to freedom. The story of the painting is based on a real experience. Oelschig was riding the bus home in New York one evening and saw a homeless man cooking over a fire that he had started near the Carousel in Central Park. She called the police but no action was taken and that night the Carousel burned. The Carousel was one of Oelschig’s favorite places in the city and she painted the burned ride several times. The first of these paintings was titled Death of a Carousel. The artist did a second major painting of the carousel a year later, in 1952 after hearing that her brother’s plane had been shot down in the Korean War. A new shaft of light had broken through the ruined carousel, and this made the horses appear to be in motion, and suggested, to her, life after death. This second painting was named In Memoriam in honor of her brother. The artist has taken a normal event and made it into a powerful personal story by making inanimate objects come alive. The warm color palette suggests activity and the dark values that dominate the scene provide mystery and fear. The dark interior space of the tent is highlighted with strong beams of sunlight that appear to give the carousel horses life.

DISCUSSION TOPICS

1. Hypothesizing. Discuss the word hypothesis (a tentative explanation for an event, used as a basis for further investigation). The artist has created a painting that portrays their hypothesis to the question ‘what if’? Consider other ‘ordinary’ activities and pose the question of ‘what if’ to discover how a hypothesis can be used as a tool to spark an artist’s imagination. How does hypothesis relate to writers? Scientists? Mathematicians?
2. Author’s and Artist’s Intentions? What is the artist’s purpose in presenting the viewer with a dark expressive work about a usually joyful experience of riding a carousel? Do we believe what the artist has presented for us? The artist has transformed a real scene into an expressive fantasy, in which the wooden horses seem to rear up in agony in her first version of this painting. In this version, In Memoriam the horses appear ghostly and seem to be in motion. Oelschig’s work could be called magic realism, which is a trend that you will find in both visual art and literature. In magic realism artists and authors transform everyday events or images using elements of fantasy, the imaginary, the unreal or the supernatural to inspire our imagination and make a story more powerful and personal. Ask students if they can name other works of art or books that feature this type of subject matter (i.e. Harry Potter, A Series of Unfortunate Events series, the Earwick Series).

3. Investigating Details of the Mystery. Just as you extract details when you read with thought, the viewer of an artwork must extract details in order to understand the entire story the artist has portrayed. Have students act as a detective and review In Memoriam/Death of a Carousel as though they were investigating a crime scene. What is going on? What went wrong? What clues can you uncover to answer this mystery?

4. Visual Words. Explain the difference between homonyms, homograph, synonyms and antonyms. Just as we study words to increase our vocabulary, an artist uses the elements of art and principles of design to provide comparisons and opposing views visually. For example, in this painting, the artist chose a monochromatic color scheme to evoke a certain feeling and to create a specific mood. Monochromatic refers to the color scheme, where different shades of a single color are used, much like a synonym refers to a word that means the same, or almost the same as another word. What mood or feeling has Oelschig evoked through the use of her color scheme? If the artist used a lighter and brighter color palette, do you think the atmosphere would be more of happiness and joy (the antonym or opposite of the monochromatic color scheme)?

ASSIGNMENTS and PROJECTS

1. Whose Story? Write a story based upon this painting. Before reading the Art Historian’s description of this painting, study it for a few minutes then create a story based upon what you see and what you believe is happening. Then read the description of the artwork. How is your story different than the artist’s intention? Whose story do you believe?

2. Drawing Animals with Human Personalities. Oelschig painted the mechanical carousel horses as having a life of their own by creating them with such expressive faces and determination. Create gesture drawings that depict animals reacting like a human, such as working hard, daydreaming, crying, laughing, competing in sports, or playing music.

3. Writing and Drawing to Record. You can use writing and drawing to make your powers of observation stronger. Time yourself and stare at the painting for two minutes, tracking all the details your memory can hold. Then, removing the image of the painting from your sight, write a description of the painting using words and phrases. Then make a quick sketch of the painting, trying to duplicate all you remember seeing. Share your word list and sketch with someone who has never seen the painting before. Do they have a good idea of what the painting looks like? Show them a copy of the painting. Were they surprised at the image or was it just what they expected based upon your description?

ASSESSMENT

• What is a hypothesis and how does it relate to visual or written works?
• How do we understand the intentions from artists and authors?
• Why do artists and writers use fantasy subject matter or magic realism?
• What is the difference between a synonyms, homonyms, homograph, and antonym?

RESOURCES

Books
• The Inch High Kid No. 6 (Which Way Secret Door Books), by R. G. Austin (1983).
• Harry Potter Hardcover Boxed Set (Books 1-4) by J. K. Rowling, Mary GrandPré (Illustrator).
• Carnival at Candlelight (Magic Tree House #33) by Mary Pope Osborne, Sal Murdocca (Illustrator) (2005).
• The Stinky Cheese Man and Other Fairly Stupid Tales by Jon Scieszka, Lane Smith (Illustrator) (1992).
• Painted Ponies, by William Manns, et al. (1986).
• Telfair Museum of Art Collection Highlights
Websites
• You can be an art detective! See if you can find Grandpa’s Painting. Art history disguised as a mystery! www.eduweb.com/pintura/index.html

• Explore paintings like an art historian. This interactive site at www.eduweb.com/insideart/ is an adventure into a painting. Answer some key questions, then return to the museum to begin your adventure again.

• The Worldwide Kids’ Art Gallery at www.theartgallery.com.au/KidsArt.html celebrates the boundless expression and imagination of children. This site invites children from all corners of the globe to submit their art, poetry, and short stories.
ABOUT the ARTIST

Everett Shinn became widely known as one of “The Eight” or the Ashcan School (so named because the canvases appeared to have been painted with soot and ash)—a group of American artists who first exhibited together at New York’s Macbeth Gallery in 1908. United by a common interest in urban realism and a disdain for the conservative policies of the National Academy of Design, these painters challenged the art establishment.

Shinn began as a newspaper illustrator for the Philadelphia Press. Drawing noteworthy events in the life of a city shaped his later artistic direction. Like other Ashcan artists, Shinn painted the “grit and grime” of New York street scenes that ranged from Park Avenue to the Bowery. He became especially fascinated by popular theater and represented this subject in a variety of artistic mediums. The artist’s early experience as a newspaper artist-reporter gave him great technical facility, which he later exercised as an illustrator for many national magazines such as McClure’s, Hearst’s International, Everybody’s and The Century. Shinn painted several murals, including a 22 x 44 foot painting for the city hall in Trenton, New Jersey. Shinn’s work is represented in many major museum collections including the Metropolitan Museum of Art, the Whitney Museum of American Art and the Phillips Memorial Gallery in Washington, D.C.

ABOUT the ARTWORK

Shinn illustrated many books including Dickens’ A Christmas Carol and Christmas in Dickens, Poems of Childhood, The Happy Prince, and Rip Van Winkle. This illustration is based on an actual story and depicts the main character Rip van Winkle who is known for sleeping a long time. In this scene we witness the moment when Rip van Winkle awakens from his 20-year slumber and is harassed because he slept through an important part of American history—the American Revolution. Although Shinn was a renowned Ashcan artist that depicted the realism of city life, as an actor and playwright he was drawn to fictional role-playing. This illustration of this classic fable seems quite theatrical with its action-stopped pose of van Winkle, the secondary characters overlooking the ‘actor’s’ performance, and the scenery mimics that of a stage set.

DISCUSSION TOPICS

Understanding a Fable
Discuss the word fable (a short story with a moral) and how fables usually involve animal characters. Some fairytales and fables are actually based on true stories and some are not. Ask students if they believe that Cinderella, Paul Bunyan, Little Red Riding Hood or the Seven Dwarfs were real people. Even though they are fictional stories, fables are meant to teach us a lesson, or provide us with important knowledge. Discuss the fable of Rip Van Winkle. What is the message or moral of the story? Washington Irving wrote Rip Van Winkle tongue in cheek (satirically) as if it were both a legend and a true story and indeed it does include both historical events and the lore of the Catskill mountains and early settlers. As a name, Rip van Winkle has come to be a reference to a person who is lazy or to a person who is unaware of current events. Discuss other favorite fairytales, fables or tall-tales and identify the important message the original author wanted us to learn.

Reading with Flair!
Parents are often able to read fairytales and fables with ease and much drama because they have told the story hundreds of times. The ability to read with accuracy is one accomplishment. The ability to read with accuracy and expression is another. The tone and pitch of a reader’s voice combined with their expressive articulation makes the written word come...
alive. Discuss qualities and techniques for reading aloud with accuracy and expression. How do artists depict imagery with flair?

Evaluating the Story
The story of Rip van Winkle is set in the days before and after the American Revolutionary War. A villager of Dutch descent escapes his nagging wife by wandering up Kaaterskill Clove near his hometown of Palenville, New York in the Catskill Mountains. After various adventures he settles down under a shady tree and falls asleep. He wakes up 20 years later and returns to his village. He immediately gets into trouble when he hails George III, not knowing that in the meantime the American Revolution has taken place and he is not supposed to be a loyal subject of the British rule any longer. Read the short story of Rip Van Winkle by Washington Irving and generate questions in order to improve your comprehension of the text and the events pictured by Shinn. Then, evaluate the characters and events by supporting your ideas with evidence from the text. Finally, make a connection between the fable and your personal experience. How has all this thinking and evaluating of your response to what the author wrote important to your ability to comprehend and evaluate the reading? Did your efforts make it more or less of a ‘good read’?

ASSIGNMENTS and PROJECTS

1. Make a Classic Contemporary. Choose a favorite fable and consider how it should be changed to address contemporary society. Would that make it more believable to young children today? Would the important message change somewhat? Draw a scene from the contemporary fable you developed based upon a classic one.

2. Washington Irving’s story was about a particular region. Research and write a fable or legendary tale based upon the lore of your area. If you live on the Southeast coast perhaps you would write about pirates like Blackbeard who supposedly buried treasure on the coastal islands, or the legend that the inn in Robert Louis Stevenson’s Treasure island was based on the Pirates House building in Savannah. Look at the legends and lore of Africans brought to the south as slaves and their stories, such as the story of Ebo’s (Ibo) Landing or the legend of the slaves who left their bondage and “flew” back to Africa. (New Georgia Encyclopedia Website).

ASSESSMENT

• Identifies characteristics of folk tales, tall tales and fables.
• Why do artists illustrate stories?

RESOURCES

Books
• Read about the artist’s life in Everett Shinn 1876-1953 A Figure in His Time, by Edith de Shazo.

Websites
• Rip Van Winkle text of the story http://www.classicallibrary.org/irving/rip/
• Biography of Washington Irving http://www.classicallibrary.org/irving/index.htm
• The story of Ebo’s landing http://www.georgiaencyclopedia.org/nge/Article.jsp?path=/HistoryArchaeology/AntebellumEra/Events-7&id=h-2895
Artist: Tim Rollins & KOS (Kids of Survival)
American, (b. 1955)
Title: Study for Amerika Series
Date: c. 1984-89
Medium: Gouache and pencil on printed book page
Size: 7 7/8 x 5 1/4 in.
Given in Memory of Morris Slotin by Milton Mazo, M.D. and Billy K. Poole

ABOUT the ARTIST
Rollins was born in Pittsfield, Maine, in 1955. A conceptual artist who co-founded the artists’ collective Group Material, he was also a special ed teacher in public school 52 in the South Bronx. He discovered that his students responded to art when taught his way, not as it is usually taught in public schools. He established the Art of Knowledge Workshops for students with learning disabilities and then K.O.S., which stands for “Kids of Survival,” the name the students chose for themselves. The workshop was designed to encourage a greater interest in literature, and for one of the first projects, Rollins had his students draw at their desks while he read aloud George Orwell’s 1984. All of the students had copies of the book; one misunderstood the instructions and drew directly on the pages. The creative possibilities of placing images over text excited the class, so they applied the pages of the entire novel to a canvas and began working in concert on a large-scale composition. The process has since become the trademark of the collaboration between Rollins and the students, who call themselves Kids of Survival—K.O.S.—in recognition of the skills acquired through participation in the workshop, which have helped them to better navigate the social, cultural, and political factions that make up their world.

ABOUT the ARTWORK
This work is a continuation of a series of paintings based on Franz Kafka’s novel, “Amerika,” and dedicated to the neighborhood people who experienced a great deal of displacement during urban renewal. The imagery is based on a passage in the last chapter in which the hero sees hundreds of women dressed as angels and blowing long golden horns. In a flyer distributed throughout the local school, Rollins asked the school community—teachers, students, parents, and friends—to “show your freedom, your individual voice, your spirit in the form of a golden horn.” The individual horn designs that were collected at the school were adapted and combined by Rollins + KOS to create the final composition. Could you tell from the painting that this is about a certain piece of literature if someone didn’t tell you?

DISCUSSION TOPICS
The Pen versus the Picture
Discuss the power of words. Are words more potent when spoken or written? Discuss the power of visual images. How is this different from the power of words? Discuss the phrases, “A picture is worth a thousands words.” And “The pen is a mightier than the sword.” Discuss multiple levels of understanding and learning styles, asking students to consider whether they have a tendency for visual or audio learning.

Analyze the Story
To create the image you see, artist Tim Rollins had his students created visual images based on Franz Kafka’s Amerika. The image you see is a single page from that book with one student’s interpretation of the golden horns mentioned in Kafka’s story. What does the horn look like in this work? (A walking figure?) In other workshops, Rollins used Kafka’s Amerika as the theme for the high school group, while younger children explored Aristophanes’ The Frogs. Have students read Aristophanes’ The Frogs and other classic literary works then analyze the story in order to respond to the words with visual imagery. Discuss the process of analyzing a literary work and judging the primary message the author intended, and finally, the role of the reader in responding to the reading.
The work of Tim Rollins and KOS is based upon their response to social and political problems that are defined and discussed in history through classic works of literature. What contemporary problems are similar to historical events? Why have they repeated themselves?

ASSIGNMENTS and PROJECTS

1. R.U.O.K? Can you read this sentence? I C U. I C U isn’t a sentence. I C U isn’t even a word! But if you say each letter out loud, you’ll say a simple sentence, “I see you.” Some letters in English sound just like other words. When you say C it sounds just like the words “see” and “sea.”

Try to figure out what these sentences mean by saying each letter or number out loud.

A B S E-Z 2 C.
K-T S B-Z.
I M N A C-T.

A rebus is a kind of puzzle that adds pictures to letters and numbers to make words and sentences. Can you make up your own sentences using only letters and numbers? Make up your own rebus puzzle and see if your friends can figure it out.

2. Picture Rebus History and Research. Making rebuses was an important step in the history of writing. Back in the fourth millennium B.C., in a region called Mesopotamia, the ancient Sumerians developed a system of writing with pictographs -- they drew pictures to represent things that they wanted to keep records of.

Drawing pictures to represent things is a limited way of writing. You can write only about things that you can draw—like a cow or a bird or a fish or water. You can’t write someone’s name or write about something that you can’t draw—feelings like love or hate or confusion.

To get around this limitation, the Sumerians started using pictures to make readers think of a sound, rather than an object. For instance, you can think of the picture on the left as an eye, or you can just think of the sound that you make when you say the letter I. In Sumerian writing, a picture of a hand, for example, came to stand for the Sumerian word su, which meant “hand,” but also stood for the sound “su,” which could be used to make other words. Using rebus writing made it possible to write about things that couldn’t easily be pictured.

This project was created by The Exploratorium, San Francisco, California. For more ideas visit their website at http://www.exploratorium.edu/

3. Word-Shaped Poems. Just as Tim Rollins and KOS make visual images using shapes that respond to writing, you can make words into shapes to communicate an idea. Artists use shapes to communicate ideas. Writers use words to share their thoughts and ideas. Sometimes putting words in a shape makes writing more interesting and fun to read. Write a word shape poem about something you see in the classroom.

ASSESSMENT

• How do analytical skills help a reader or a viewer of art with interpretation?
• What is a judgment?
Manageress sent me to tell you that it needs the straw basket she lent you."

"Here it is," said Karl in a voice trembling with agitation. Delamarche and Robinson had drawn aside in pretended humility, as they always did when decent looking strangers appeared. The waiter picked up a basket and said: "The Manageress also told me to ask you whether you haven't changed your mind and would like to sleep in the hotel after all. The other two gentlemen would be welcome too, if you care to bring them with you. The beds are all ready for you. It's warm enough tonight, but it's far from safe to sleep in this place; you often come across snakes."

"Since the Manageress is so kind, I'll accept her invitation after all," said Karl, and waited for his companions to say something. But Robinson, good there quite dumb and Delamarche was looking up at the stars with his hands in his trouser pockets. Both were obviously expecting Karl to take them with him without further ado.

"In that case," said the waiter, "I have orders to take you to the hotel and carry your luggage there."

"Then please just a moment," said Karl, bending down to put in his box of clothing which were still lying about.

Suddenly he saw himself. The photograph, which had been lying on the table, was missing and nowhere to be found. Nothing except there, except the photograph. "I can't find my photograph," he said to Delamarche imploringly.

"What photograph?" asked Delamarche.

"The photograph of my parents," said Karl.

"We haven't seen any photographs in the box, Mr. Rossmann," said Robinson.

"But it is quite impossible," said Karl, with his beseeching
This unit features the natural association between art and math. Mathematics is the study of relationships among numbers, shapes, and quantities and includes the guiding principles of arithmetic, algebra, calculus, geometry, and trigonometry. Mathematicians use signs, symbols, and proofs to develop ideas based on pattern and structure. Similarly, artists use the elements of art (line, shape, color, light, mass, space, texture, time and motion) and the principles of design (unity, variety, balance, emphasis, rhythm, scale, proportion and harmony) as guidelines to create preliminary models, sketches, layers and final compositions. Within these two parallel processes are relationships between the disciplines of art and math. For example, art concepts of space and form relate directly to math concepts of geometry; art principles of variety and pattern relate to multiplication and division; the principles of time, motion and balance relate to scientific properties evaluated by mathematical equations. The goal of this unit is to learn how many of the principles used in creating artworks connect to mathematical concepts.

**TELFAIR ARTWORKS, GPS RELATED CONCEPTS and ART VOCABULARY ADDRESSED IN THIS UNIT:**

**George Hitchcock, Early Spring in Holland, 1887-1905**
Multiplication / Division,
Fractions
Graphs / Charts
Percentages
Impressionism

**Sylvia Plimack Mangold, Untitled, 1970**
Geometry
Parallel and Perpendicular lines
Pattern
Rays

**Robert Gwathmey, Marketing, 1943-1944**
Problem solving
Money / Value
Economics

**Max Bill, Hard Half of a Sphere, 1972**
Shape / Mass
Telling time
Diameter, radius and perimeter of a circle
Abstract sculpture

**James Rosati, Drake, Small Version, 1970**
Fractals
Geometric forms: parallelograms, trapezoids, cubes, cylinders
2 dimensional / 3 dimensional objects
Artist: George Hitchcock, American (1850-1905)
Title: Early Spring in Holland
Date: 1887-1905
Medium: Oil on canvas
Size: 35 7/8 x 51 1/8 in.

ABOUT the ARTIST

George Hitchcock is best remembered as an American expatriate artist who lived in Holland and exhibited in Paris at the turn of the century. Though trained as a lawyer (graduating from Brown University in 1872 and from Harvard University in 1874), Hitchcock abandoned law for art and traveled to Europe to study and teach in London, The Hague, Düsseldorf, and Paris. He eventually settled in Holland, where he established a reputation as a painter of landscapes, flowers and peasant women. Hitchcock was influenced by the Impressionist artists whose main focus was the effects of light and color. His paintings were exhibited at the Paris Salon in 1887, and he was later elected to the National Academy of Design in New York. Hitchcock was a close friend of Gari Melchers, another American who worked in Holland, and who was buying art for the Telfair’s collection during the early 20th Century.

ABOUT the ARTWORK

This painting depicts a garden in Holland and is painted in the Impressionist style. Impressionism is a late 19th century movement in which artists painted en plein air (out-of-doors) the fleeting qualities of color and light on their subjects at different times of the day. The garden, in particular, was a favorite subject for Impressionist artists. Hitchcock painted this garden in the Netherlands, a country renown for its tulips. The artist portrays the garden from the perspective of a gardener, surrounded by tulips.

APPRECIATING THE ARTWORK: Describe, Analyze, Interpret, Judge

Use this four-step art appreciation process to increase your visual awareness skills, learn more about how an artwork was made, reveal important ideas the artist wants you to consider, and determine for yourself whether the artist was successful in conveying their idea to you in a visual work of art.

Describe

Look at the artwork for three minutes and make an inventory of what you see. Be prepared for your teacher to take the poster reproduction away, and be able to remember at least five things you see in this painting. As a class you may make a list of this artwork’s visual inventory.

Note the size of the painting, it is approximately 3 feet by 4 feet in size, which is a medium size painting. Why did the artist make it in this size? How big is it compared to how big you are?

How long did it take the artist to finish this painting? (18 years; from 1887-1905; many artists work on multiple canvases and stop and start work on an image waiting for inspiration or the right resolution to come to mind.) how old is this painting?

Analyze

Name all the colors in this painting. How many are there? Identify the different values of main color-wheel colors.

What is the focus or emphasis of the composition? How did the artist organize the elements of art and principles of design to direct your eye to the center of attention?
How would a mathematician use multiplication to describe this artwork? How would they use division?

What time in the day is it in this painting? What artistic techniques did the artist use to give us visual clues to identify the time of day? Do you see any shadows?

Interpretation

Why would an artist create a painting about a tulip garden? Why was this scene so interesting to George Hitchcock that he was motivated to paint it, and thought we should look at it for years and years? Can you think of an image from your daily landscape that would motivate you to paint it because you find it beautiful or think it is an important place that you should document for people to see years from now?

What inspired Hitchcock to paint it from that angle? Why at this time of day? How do the colors in the flowers help to identify the time of day? Is one time of the day more restful than another?

Although all the tulips are part of one field, they are broken up into even rows of color. How many different colors do you see? Use fractions to describe how much space each color takes up in the field. (i.e. 6/10 of the field contains pink tulips.)

Judge

How does this painting of a garden scene differ from a photograph of a garden scene? Why do artists and photographers today continue to capture garden scenes?

Think about the signs of spring in your neighborhood, from the flowers on sale at a local greenhouse to those emerging from the ground in neighborhood gardens. How does viewing a painting of a landscape differ from experiencing an actual garden or greenhouse in person?

Look again at this painting for three minutes and then close your eyes. Pretend you are in this scene. Use your imagination to identify how the sun feels, the temperature reading on the thermometer; listen to the breeze in the garden, smell the air with all its fragrance. Did the artist take you on a journey? What do you think Hitchcock wants us to remember about this painting?

Do you think tulipomania (see “DISCUSSION TOPICS and QUESTIONS”) has anything to do with Hitchcock’s painting? Or with the presence of the tulip fields?

**DISCUSSION TOPICS**

**The Landscape and the Industrial Revolution**

Discuss the dominance of landscape as subject matter at the turn of the 19th century (when this artwork was painted) as a response to the Industrial Revolution. The Industrial Revolution was a time when, throughout the world, people used machines to do the work of the human labor force, which expedited the tasks and enabled greater production. Today, during the Technology Revolution, we have machines that use machines to do work, and some say society has become so efficient and fast that humans have a hard time keeping up with the pace of the machine.

*Question:* Why would an artist feel compelled to capture a tranquil landscape during such busy industrial heyday? If a person could make 12 items per an hour and a machine could make 20 items per an hour, how many would each have made after 8 hours? What % does production increase when the item is made by a machine?

**The Tulip Business**

This painting depicts a garden of one specific type of flower, tulips. Tulips represent the largest geophyte (bulb) crop worldwide, and Holland dominates world production with 80% of the world market – that comes to 3 billion bulbs produced on 21,078 acres. How many bulbs would be produced per acre? What are the measurements of an acre?

How did the Tulip originate? *Tulipa* sp. are native to the Mediterranean and China. Tulips have been bred and cultivated since they were brought to Holland in 1594. How long has Holland produced tulips?

The term “tulipomania” was coined in the 1600’s in reference to aggressive tulip production in the Netherlands that resulted in both extreme wealth and finally poverty when the market crashed.
Question: *What agricultural crops have an economic impact on the region?*

**ASSIGNMENTS and PROJECTS**

1. **Virtual and Visual Impressionism: Art History and Studio Art ‘Pencil Painting’ Lesson.** The Impressionist style was initially regarded as radical and revolutionary, but it did not originate in isolation. The National Gallery of Art in Washington D.C. has an informative virtual tour of the beginnings of Impressionism. Have students visit this tour at www.nga.gov/exhibitions/horointro.shtm and page through the works and texts on the various artists. After visiting the Impressionist website, have students identify how the stylistic characteristics of Impression influenced the work of other artists (such as George Hitchcock) who emulated the Impressionist masters. A one-page written research report on Impressionism will support student’s success as they complete a drawing or painting in the Impressionist style. A neat and tidy method of creating an Impressionist painting in the classroom is to use the eraser end of a pencil as the paintbrush for students to dab, dab, dab various values of paint colors on a piece of paper.

2. **The Division and Fraction of Geophytes, aka Flower Bulbs.** Flower bulbs are called geophytes. A geophyte is an herbaceous plant with an underground storage organ. Storage organs are reserves of carbohydrates, nutrients, and water, and may be classified as bulbs, corms, tubers, rhizomes, tuberous roots, and enlarged hypocotyls. They evolved as a mechanism for plant, and as a result, geophytes in their natural habitats are capable of perennial (every year) life cycles. Bulbs start out as one unit and then over the years, they grow offshoots and make a multiple unit. Gardeners then divide the multiple units into fractions and then transplant them to make more plants.

Figure the answer to this fraction set: If you have one bulb that has 8 offshoots the first year you planted it, and it continued to create dividable offshoots, you would have a garden full of tulips. Figure out how many tulip bulbs you would plant after two years, after three, four and then five. If you planted one bulb that grew 8 offshoots the first year, and then you planted the 8 offshoots the second year and they grew the same number of offshoots, how many bulbs would you then have to plant the third year? How would you express this growth and division process in fractions and ratios? Create a chart or bar graph to track the multiplication of a tulip over five years. If you started will one bulb, after five years how many bulbs would you have? How much money would you make if you sold these bulbs for $6 each?

3. **Measuring Growth and Marketing Tulips, a real problem.** To learn about the growth cycle of bulbs, and how temperature effects the speed of development, compare and contrast the growth of a tulip bulb grown in a pot in open air with one grown in a pot under greenhouse conditions. Chart the temperature/conditions and growth cycle of each bulb in their respective growing condition. This forcing stage takes approximately 1.5 to 4 weeks depending on the bulb, the season, and the temperature. Tulips may be forced at many different temperatures. The most commonly preferred temperature is 63 F (17 C) night temperature with day temperatures not more than 5 degrees F higher. This is a good group project.

**Student Directions:** If you were the owner of a commercial greenhouse called Happy Days Nursery, and you wanted to have your crop of spring tulips blooming in time for Mother’s Day sales, you might ask yourself when should you plant the bulbs and what should the growing conditions be? This is an important question that must be answered correctly if you want to make a profit in your tulip business! *What you will need:*

- two tulip bulbs
- two 4” growing pots—3/4 full with potting soil
- one 1.5 liter soda bottle with neck cut off so it fits over one pot and becomes a greenhouse
- outside thermometer and one to measure temperature in ‘greenhouse’
- ruler to measure growth
- growth chart made by each student

Part 1. **Keep a Record from Initial Planting until Flower Fades**
<table>
<thead>
<tr>
<th>Growing Environment</th>
<th>Date</th>
<th>January 1</th>
<th>January 5</th>
<th>January 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulb in nature</td>
<td>Height-Temp-visual description</td>
<td>1/2&quot;-65F green shoot first appears gloomy day</td>
<td>5/8&quot;-65F moving along sunny</td>
<td>Bud Appears</td>
</tr>
<tr>
<td>Bulb in Greenhouse</td>
<td>Height-Temp-visual description</td>
<td>2&quot;-89F green growth overnight; no water needed</td>
<td>3 ½&quot;-85F Wow! This is quick!</td>
<td></td>
</tr>
</tbody>
</table>

2. Now Make a Data Analysis Grid tracking the growth cycle with the calendar date on the Y-axis and the two bulb specimens on the X-axis. Use two different colored pencils or markers to distinguish between the data of the two bulbs.

3. Make a marketing plan by answering these questions from your data. Which environment produced a better flower? Which environment is less expensive to maintain? (nature is free, greenhouses are expensive.) According to your research findings, when would you need to plant the bulbs to sell the week before Mother’s Day if you used the natural environment? The greenhouse environment? What would your group call your tulip farm or greenhouse?

4. Design visuals for advertisement. Create advertising visual (a logo or symbol) for the label of your plants in the Impressionist style.

**ASSESSMENT**

- How is multiplication and division used for problem solving?
- What is a fraction?
- How is time measured?
- What is the purpose of a graph?
- What is Impressionism? How is George Hitchcock’s painting Impressionist?

**RESOURCES**

**Books**

**Videos**
- Sister Wendy’s Story of Painting: The Age of Revolution - Impressionism (60 minutes)
- Landmarks of Western Art: Impressionism and Post-Impressionism (50 minutes)
- Art of the Western World: Enlightenment to Post-Impressionism (171 minutes)
- A Day in the Country: Impressionism and the French Landscape (30 minutes)
- Impressionists on the Seine (30 minutes)
- Monet: Legacy of Light (28 minutes)

**Websites**
- San Francisco Science Museum’s The Exploratorium at [http://www.exploratorium.edu/gardening/feed/index.html](http://www.exploratorium.edu/gardening/feed/index.html) for projects specific to the science of gardening.
ABOUT the ARTIST

Sylvia Plimack Mangold grew up in New York City. Although Plimack Mangold paints everyday objects with meticulous accuracy, she is perhaps best described as a painter of illusions. Plimack Mangold’s paintings, watercolors, drawings and prints are inspired by both interior and exterior surroundings. Plimack Mangold was influenced by artist James McNeill Whistler’s subtle tonalities he achieved in his paintings, watercolors, and prints at the turn of the century. Plimack Mangold’s husband, Robert Mangold, is also a well-known painter and depicts similar Minimalist subject matter.

ABOUT the ARTWORK

Plimack Mangold’s simplified composition, with the central emphasis on geometric forms (as seen in this work), characterizes the 1970s art style, Minimalism. The artist realistically rendered each grain of wood using the technique of one-point perspective to achieve the illusion of depth on the flat painting surface. The parquet floor depicted in this painting was modeled from the artist’s New York City apartment the she lived in with her young son and her husband. Plimack Mangold has commented that the floor was, in part, the reason she and her family moved into the New York City Eldridge Street address in 1967, where they resided until moving to rural upstate New York in 1971. The floor continued to be the primary subject matter for Plimack Mangold through the 1970s, although other compositions included additional elements such as a baseboard or a mirror and, eventually, a window with a view of the landscape.

DISCUSSION TOPICS

Parquet Geometry
We are surrounded by geometry every day. Geometry focuses on properties and relationships of points, lines, angles, curves, surfaces, and solids. In this artwork, the artist has painted a parquet floor. Parquet (PAR-KAY) is the name of a type of wood inlay used to cover a floor. Ask students how a mathematician would describe this painting using mathematical terms and definitions. Have students explain why an artist would create a painting of a floor?

Line Up
Discuss the element of line by asking students where they see lines in everyday life. Discuss the variation in line quality they may see by comparing the horizon line, a waiting line, a city skyline, and so on. Point out that the types of lines an artist makes vary as well, and are indicative of an individual style. An artist’s line is unique, like a signature. Engage students in a discussion about how their personal signature (letters in the alphabet are lines) has the potential of describing their personality.

Pattern Identification
A pattern, like Plimack Mangold’s parquet floor, is a repeated decorative design. Have students identify patterns they see around them (stripes on their clothing, designs on wallpaper, wood floors, wall of cabinets, rows of chairs, etc). Discuss the history of patterns with reference to the ceilings and walls of ancient tombs, on utensils and inscribed on sarcophagi.
Charting Rays

Historically, artists have used many methods to create the illusion of depth on a flat surface—from basic overlapping of forms to mathematical systems of perspective. Linear perspective is a form of perspective in which drawings or paintings are given apparent depth by showing parallel lines as converging on the horizon. This method was the preferred system employed by artists during the Renaissance (i.e. Massaccio, Raphael, Brunelleschi) to create the desired “window on the world” effect. Similarly, in math, a line is a set of points in a straight path that goes on forever in both directions. A ray is part of a line. It has one endpoint. Always name the endpoint first.

Line <----------------------------> Ray LM m---------------------------->

Many rays are visible in the painting of floor tiles by Sylvia Plimack Mangold. They converge at the vantage point where we visually identify the end of space. Chart the rays you find on the floor starting with the letter A. Can you find enough rays to get to the letter Z?

Artists use converging lines to show how parallel lines look as though they meet at a point in the distance. Parallel lines are lines on a flat surface that actually never meet. They are the same distance apart at all points. Some geometric shapes are made up of pairs of parallel lines. Squares, rectangles, trapezoids and parallelograms all contain parallel lines.

Additional exploration: place a sheet of clear mylar, a plastic page protector or tracing paper over a printout of the Mangold image. See if you can determine where the rays would converge in a vanishing point and trace the major rays in the image to that point.

ASSIGNMENTS and PROJECTS

1. Descriptive List. Divide students into groups and have each group write on a sheet of paper a list of 10 descriptive words (i.e. flat, blue, smooth, square, clean, patterned, etc.) to describe the floor of the classroom. Compile the words to create a bar graph to see which word was used the most to describe the floor.

2. Planes of Reality. Plimack Mangold’s painting draws the viewer into an intimate, unknown space. Some of the artist’s images are framed by illusionary “masking tape,” painted to look like actual tape, which expands the artist’s commentary on the different planes of reality and illusion. Ask students to research the artist and her Minimalist contemporaries (husband Robert Mangold, Donald Judd, Agnes Martin, and Sol LeWitt) to create a list of their subject matter that relates to mathematical principles (i.e. planes, squares, parallelograms, grids, etc).

3. Times 4. (Concepts: Multiplication, Money, Fractions, and Components of a Whole)

Each section in this parquet floor is composed of 4 planks. What other things come in groups, sets or packages of fours? What unit of money x 4 equals $1. ? How many Sides to a Square? 4 sides = 1 square; How many sticks of butter in a 1 pound package of butter? 4 sticks of butter = 1 pound; How many babies are in the quadruplet stroller? 4 babies = quadruplets; 4 musicians = a quartet (name one); 4 (quarts) = 1 gallon; 4 (directions) make up the compass rose.

4. What Spilled? How Much? Where did it go? Using a Xerox copy of Plimack Mangold’s parquet floor image, design a math problem that encourages students to complete a shape/figure/design by drawing a ‘spilled liquid’ on a transparency with a marker. Equations involving ratios, percentages and fractions may be calculated by counting the number of squares affected by the spill, versus those not affected.

From the data collected, the spilled area may be structured into a graph where the amount of spill in each row of tiles is recorded. Represent the first row of tiles in bar 1(y axis); second in bar 2; and continue until you have walked across the floor. The amount spilled in each square is identified on the (x axis)

5. YOU KNOW THE ANSWER TO THIS TRICK QUESTION. Are the floor tiles in the background of this painting smaller than the ones in front, or do they have fewer rectangles than the ones in front? (They are smaller. It’s called: PERSPECTIVE.)
ASSESSMENT

Ask students to find examples of the following: angles, parallel and perpendicular lines and planes, parallelograms; squares, pattern.

• What is perspective? Why do painters such as Plimack Mangold use this technique?
• What is a horizon line?
• What is a vantage point?
• How are aesthetics related to art?
• How do artists use geometry in their work?

RESOURCES

Books

Websites
• For an interdisciplinary course on mathematics in art and architecture go to [http://www.math.nus.edu.sg/aslaksen/teaching/math-art-arch.shtml](http://www.math.nus.edu.sg/aslaksen/teaching/math-art-arch.shtml)
• For more images by Sylvia Plimack Mangold, visit [www.artcyclopedia.com/artists/mangold_sylvia_plimack.html](http://www.artcyclopedia.com/artists/mangold_sylvia_plimack.html)
Robert Gwathmey, American (1903-1988)
Title: *Marketing*
Date: c. 1943-1944
Medium: Oil on Canvas
Size: 21 3/8 x 27 inches
Museum Purchase, 1944

ABOUT the ARTIST

Robert Gwathmey was born and raised in Richmond, Virginia and moved to New York where he became involved with the Social Realist movement. The artist was inspired by his own experiences in the South, where he witnessed first-hand the poverty, racism and near-slavery conditions of African American life in the late 1930s and 1940s. Gwathmey will be remembered as one of the first white artists to produce dignified and empathetic images of African Americans at a particular time and place. The artist was especially influenced by modern artist Pablo Picasso, whose use of abstraction and experimentation gave artists a new way of looking at the world. Some of Gwathmey's paintings were inspired by his wife Rosalie's documentary photographs of African-American life at the time. He also used her as a model on occasion. Gwathmey taught at the Carnegie Institute of Technology from 1939 to 1942 and then at the Cooper Union School of Art in New York City until his retirement in 1968.

ABOUT the ARTWORK

*Marketing* is typical of Gwathmey's paintings, which capture people's daily tasks. Celebrating the ordinary aspects that make up our lives. This painting characterizes Gwathmey’s painting style in which he arranges simple shapes and angles against expressive color, often outlined in black. He uses simple spatial techniques such as overlapping and size to create a sense of real space. Gwathmey believed that by simplifying a composition to its essentials and using symbolic abstraction, the message of his work could be most strongly communicated. In choosing color, Gwathmey sometimes arranged collected bits of different hued papers and rags on the table or floor until he arrived at the desired effect. The following description of the content in this painting is from the Telfair Museum Education website, *artyFacts: Marketing*, painted in the early 1940’s, is typical of the social realism found in the early work of Robert Gwathmey, depicting situations faced by tenant farmers and sharecroppers, particularly African Americans, in the rural South. This work is instrumental— that is, the artist means to tell us about something that is troubling, and wants his art to serve actively as inspiration for change. In this work, an African American man is shown standing on the porch of a country store. Dressed in a straw hat and overalls, he appears to be a farmer, and he peers into his hand in a gesture that suggests he is counting change. Nearby, a small hand-painted sign advertises apples, while peeling posters spread across the side of the store, garishly advertising poultry, Coca Cola, 666 Cold and Fever remedy, and a circus. A blonde, white beauty queen appears in a poster possibly advertising beauty aids. In the background lie a blacktop road and a barren expanse of red clay. In the foreground, a single stalk of corn springs up in front of the posters, while several opened cans (label colors suggest vegetables and soup cans) litter the ground. The work is painted in flat areas of color with minimal shading. The artist appears to comment on several issues surrounding the rural South in a time of great change. One-fourth of black farmers in the early part of this century were landowners, and the remainders were sharecroppers or tenant farmers who worked the land for a small share of the crops. The lone corn stalk and the empty food cans provide clues to the man's situation. Racist laws in Southern states, and the emergence of commercial agriculture, forced many blacks from subsistence farming into sharecropping. Commercial farming favored very large plantings of a single crop, such as tobacco, cotton, or corn. If blight like the boll weevil or a natural disaster (drought, flood, winds) occurred, crops were wiped out and tenant farmers often faced hunger. This farmer, though he works all day to grow food, may be having difficulty finding enough money to buy food that has been canned by a large company. The world of money and advertising (“marketing”), as seen in the posters, reminds the viewer of everything that is out of reach for the farmer. Rural markets, like the one shown in *Marketing*, were extremely important to farmers, who would buy goods on credit during the planting season. Often credit charges were so high, many farmers owed everything they made to the store.
DISCUSSION TOPICS

Marketing an Idea
An artwork is often valued by its ability to teach us something about our society. Artists who work in this context study the political, geographic and social developments of society to narrate or illustrate the world they live in. What social issues in our current society are based upon economics? Would these be interesting issues for an artist to tackle in their artwork? (debt, bankruptcy, social class division, health care, cost of living.)

Advertising Imagery
Gwathmey captured the bright and dynamic advertising posters that were placed on the sides of barns and stores during the 1930s and 1940s in the rural south. Have students look around their own neighborhood to create a list of advertising images they come into contact with on a daily basis. How do the advertising images represented in Gwathmey’s painting differ from the images we see today? How are they the same?

ASSIGNMENTS and PROJECTS

1. The Ingredients of an Artwork’s Composition. Just as a good cook assembles the perfect ingredients for a delicious recipe, an artist assembles the right elements for a successful artwork. If you were to dissect Gwathmey’s composition, and separate it into mathematical fractions, you will discover more about the composition. Have students measure (in numbers, percentages, or fractions) each element (color, line, shape, space) of Gwathmey’s composition in the form of a recipe (i.e. 1/3 yellow, 1/8 straight lines, 1/4 red, etc.). What colors did he use the most? What shapes? Why did he make these choices?

2. Marketing, Multiplication Skills and Fact Families. The title of Gwathmey’s artwork is Marketing, which could describe the business activity of presenting products or services to potential customers in such a way as to make them eager to buy. Often this is done with pricing the goods. For example, if sugar cookies were four for a dollar, and you had a dollar in your pocket, you would probably buy four, no matter how hungry you were. Business owners realize this is just part of human nature. If apples, for example, were 3/99 cents, or 50 cents each, you would probably buy three because it would save you money.

Fact families are commonly used in money transactions and equations such as this. In mathematics, certain numbers form families because they are related and work together in multiplication and division equations, and are called fact families. For example, a fact family is 3,8,24. The relationship they have can be expressed with these equations:

\[ 3 \times 8 = 24; \ 8 \times 3 = 24; \ 24 \div 3 = 8; \ 24 \div 3 = 8 \]

Imagine the products that were sold in the store in Marketing and create a list of items and prices. Then create fact families for these prices, considering individual prices and group prices.

Go to the Front of the Class and Divide It into Thirds: Gwathmey used flat space and overlapping shapes to create a sense of space in his painting. Visually divide the painting into layers: front foreground (layer 1); middleground (layer 2) and background (layer 3), and identify the objects in each layer. Now look at the front of your classroom. What do you see? A chalkboard or a whiteboard? What shape is it? What else do you see? What shapes are they? What is in the foreground, middleground and background? Using a ruler, and a compass if necessary, draw a diagram of all the shapes you see in front of you in your classroom by overlapping shapes. Does your drawing resemble the flat space Gwathmey used in his painting Marketing?

To enhance your drawing cut found papers and cloth into the shapes you have identified and collage them onto your drawing using a glue stick.

ASSESSMENT

- Define the term “marketing”.
- How do advertisers get consumers to buy their product?
- What is the difference between foreground and background in an artwork?
- What is a fact family?
RESOURCES

Books

Websites
- Refer to a complete DBAE lesson plan on this artist and artwork found at the Telfair Museum website.  [www.telfairartyfacts.org/teachers/DBAE/Market.htm](http://www.telfairartyfacts.org/teachers/DBAE/Market.htm)
ABOUT the ARTIST

Max Bill is best known for his advertising designs, but he was also a painter, sculptor, graphic artist, industrial designer, and teacher. Bill studied at the Bauhaus, an early influential 20th century art and design school in Germany. In 1930 Bill opened his own studio in Zürich, Switzerland where he spent most of his life and earned a living designing advertisements and furniture. The artist co-founded and directed the College of Design in Ulm, Germany (1951–55), and also designed its buildings. The work of Max Bill represents a balancing act between severe, reduced forms and flowing organic ones, between philosophical thinking and practical application. In drawings, sculptures, paintings, and architectural models, Bill’s work is characterized by clarity of design and precise proportions.

ABOUT the ARTWORK

*Hard Half of a Sphere* is a sculpture, a three-dimensional artwork that is traditionally carved from stone or wood, or constructed from clay or metal. A person who creates sculpture is called a sculptor. Three-dimensional objects take up space and are described by their height, width, and depth. A solid piece of sculpture occupies space, and makes the space around it come to life. In fact, sculptors think of the entire composition, the interplay between solid and space, when they create a work of art. The medium for this sculpture is silica, a natural substance from the earth’s crust found in several forms, including quartz and opals. The most common form of sand is silica, which is used to make glass. *Hard Half of a Sphere* has both geometric and organic qualities, the external form is a perfect geometric half-sphere, however the carved interior area is an organic negative space. Organic shapes and forms are those that often mirror natural objects, they are irregular in size. The contrast between the highly geometric exterior and fluid organic interior provides contrast and interest to the sculpture’s design. The relationship of the organic and geometric forms to one another is emphasized by the neutral color of the sculpture. The neutral color forces our eye and mind to travel seamlessly between the two areas of the sculpture. The artist has achieved an unusual harmony between geometric and organic areas of this one sculptural form creating a perfect balance between the two.

DISCUSSION TOPICS

Circles and Spheres
Using Bill’s sculpture, explain to students that the fundamental difference between shape and form (mass) is depth. Shape is always a two-dimensional area, measured by height and width. Mass is a three-dimensional form, measured by height, width, and depth. Squares and circles relate to shape whereas cubes and spheres relate to mass. Discuss the difference between shape and mass by presenting an actual two-dimensional work next to a three-dimensional one in the classroom. Have students actually walk around the three-dimensional object in order to “see” the significance of space and volume. Include in your discussion the distinctive characteristics of volume.

Modernism and Math
In the early twentieth century, a number of architects and designers abandoned the decorative styles of the past to embrace the modern, utopian visions of the Bauhaus school and other influential European art movements. Favoring uncluttered geometric shapes, they worked with industrial materials and new technologies to express a new view of life for the “modern” age. Many of their radically different designs have become classics of the era. Max Bill is an example of a
modern artist who is known for his classic clock designs.

Time
Examining the subject of time was a fascinating challenge for Max Bill, and one that occupied him for decades. An excellent example of his work is a wall clock he designed for Junghans in 1956-57. On one clock, the time markings on the clock are measured with varying lengths of black lines without numbers. Have students examine Bill’s clock design and compare it to the classroom clock or their watch. Ask students how the artist has represented the elements of time in seconds, minutes, and hours? Discuss how dividing one quantity into another forms fractions, numbers that are not whole numbers.

ASSIGNMENTS and PROJECTS

1. **The Bauhaus Generation, Architecture and Mathematical Principles.** Max Bill, a product of the Bauhaus generation, pupil of Walter Gropius and friend of Le Corbusier and Mies Van der Rohe, the famous architect of American skyscrapers whose dictum was *less is more*. Research these Bauhaus architects and the buildings they designed. Further your research to discover how skyscrapers are made and the mathematical principles architects have considered in their designs.

2. **The Common Form of Manufactured Items.** Many shapes in our contemporary environment appear to be machine-made because of their perfect, regular, straight or curved edges. Make a quick inventory of all three-dimensional items in the classroom that are geometric and manufactured. Is there anything that is geometric and natural? (Bring in an orange!)

3. **Centered Circle Measurements.** Using a playground frisbee, measure the diameter and radius of a circle.

4. **What to do with those deflated playground balls? Draw them!** Every playground has a bag of used balls that are in assorted states of deflation. They are great examples of a geometric form that has organic qualities as well. Find one or two and study in comparison to Max Bill’s sculpture. Draw Bill’s sculpture and next to it draw a deflated ball from the same angle as a comparison.

5. **Subtractive Sculpture Project.** Subtractive Sculpture is a technique in which artists carve materials from a larger form, usually a block of material such as marble, clay or wood. In this project, students will create a subtractive sculpture using modeling clay, which is easily carved with a plastic knife. Preliminary planning includes transforming a girded block into a sphere with an organic interior negative space, as seen in Bill’s sculpture. What you will need:

   4”x4” chunk of modeling clay or other clay that hardens when dry plastic knife.

Part I: Preliminary Design on Paper: create a drawing that will become a blueprint for your sculptural work with clay.

1. Draw a cube on a piece of paper;
2. Remove the corners of the block to ‘round-out’ the form into a sphere;
3. Remove ¼ of the sphere to create an organic side of the sphere;
4. Remove more of the negative space, concentrating on making the interior negative space organic so you have the contrast of geometric exterior form and organic interior space.
5. Then, use these drawings as guides, begin the carving process. Divide the cube into quadrants so you can estimate where you should carve the actual form.

Enrichment: When you are carving the modeling clay, consider the other sides of the sculpture. What will the back, left, right, top and bottom of the sculpture look like? Draw additional cubes or cylinders and draw the outside lines of these points of view.

Begin carving! It is better to remove little by little when carving into clay. Smooth out rough knife marks with your fingers. Is your sculptural form geometric and organic?
ASSESSMENT

• What is a perimeter?
• Identify the following attributes of geometric solids such as cubes, prisms, cylinders, and spheres.
• What is the difference between a negative and positive areas?
• How do sculptors create sculpture? What kinds of media are used?
• Identify half rotation and full rotation 90 degrees; 180 degrees; 360 degrees

RESOURCES

Books
• *Typography, Advertising, Book Design* by Max Bill. This monograph provides an extensive look at works for which the artist has received little attention in the fields of typography, advertising and book design.

Website
• For visual examples of re-issued Max Bill designs, such as watches and clocks go to [http://www.ameico.com/maxbill.html](http://www.ameico.com/maxbill.html)
ABOUT the ARTIST

Rosati is an American sculptor known for his large steel abstract sculptures. The span of the artist’s career ranges from 1960 to 1980. Most works were influenced by architectural structures and themes and complimented the buildings surrounding the outdoor sculptures. In his career, Rosati has fulfilled many commissions for public artworks all across the United States. One of his works sat at the base of the World Trade Center and was destroyed in the Sept. 11 attacks.

ABOUT the ARTWORK

This work represents a model or maquette for a large-scale sculpture. The work is abstract, modernistic, geometric, architectural sculpture. The unity of these elements is provided in 2 ways. (1) By the stability of the composition itself; (2) by viewing the surrounding buildings through the sculpture so as to see their architectural styles mimicked in it. The final sculpture was intended to be walked into and viewed, just as the surrounding architecture is intended to be lived in and viewed.

DISCUSSION TOPICS

Old and New Math
Most math you study in school is old knowledge. For example, the geometry you study about—circles, squares, and triangles—was organized around 300 B.C. by a man named Euclid. Fractal geometry, however, is much newer. A Fractal is an irregular or fragmented geometric shape that can be repeatedly subdivided into parts, each of which is a smaller copy of the whole. Fractals are used in computer modeling of natural structures that do not have simple geometric shapes, for example, clouds, mountainous landscapes, and coastlines. Have students examine Rosati’s sculptural model to understand fractals.

Rosati Sculpture Lost in 9/11
Between the former World Trade Center towers, there was a large, stainless steel piece called Ideogram by Rosati. Completed in 1974, this twenty-five-foot piece was one of the more interesting commissions on the plaza, because as you moved around it, it took a different shape. It was also one of the most photographed pieces there, since people in the fashion industry seemed to like it and incorporated it into a lot of fashion ads. For more information about the sculpture once located at the World Trade Center go to www.sculpture.org/documents/911/911_sculptureofwtc.htm

Color Science and Numbers
The bright (school bus) yellow surface color is a significant element in Rosati’s sculpture. We could say it is an intense 100% primary yellow. Artworks that are made with only one color are called monochromatic. When an artist adds white to a color they create a tint of that color and subtract the intensity, which lowers the percentage of primary color pigment. From your experience with paint, imagine how the yellow color of Drake would look if it was tinted with 50% white paint, with 90% white paint. Likewise, when black is added to a color it makes a shade of that color by darkening it. The higher percentage of black, the less intense the primary color. How would Rosati’s sculpture look different if he shaded the 100% intense yellow color with 50% black paint? Why do you think Rosati chose to paint his sculpture such a 100% intense yellow?
**ASSIGNMENTS and PROJECTS**

1. **Design a Form with Function.** Design a functional container using three or more different geometric forms. Think of a useful container, such as a pitcher for water, or an aquarium for a fish. Artists make useful everyday objects more interesting with creative designs. Using the basic drawing tools on the computer, select the form tool and draw a cylinder, cube or sphere. Then, select other geometric forms and attach them to the main one. Consider form and function in your design. Finish up the design by adding color, patterns or drawing in the various forms you created.

2. **Computer Generated Minimal Sculpture.** Hard-edge, minimalist sculptors often use geometric shapes such as parallelograms; trapezoids and rhombi to inspire their three dimensional forms. Review these shapes and develop plans for a three dimensional sculpture using them as inspiration. A computer program that has the 3D function (MSWord) would enable you to try many designs that join these shapes. Consider what each of these shapes represents to you.

**ASSESSMENT**

- Why do artists construct models for larger artworks?
- What is a fractal?
- What is the difference between proportion and scale?

**RESOURCES**

**Books**


**Websites**

- For detailed lesson plans about Fractals, art and math go to [http://www.dcet.k12.de.us/teach/quest/shari.htm](http://www.dcet.k12.de.us/teach/quest/shari.htm)
- For more information about the sculpture once located at the World Trade Center go to [www.sculpture.org/documents/911/911_sculptureofwtc.htm](http://www.sculpture.org/documents/911/911_sculptureofwtc.htm)
- James Rosati’s daughter is also an artist. To view her work, go to [http://www.phillippedigigraphs.com/index.html](http://www.phillippedigigraphs.com/index.html)
Science provides explanations and allows us to understand how the world works—how cells form human beings, how a bird can glide above our heads, or why the sky is blue. Artists think like scientists in many ways. They study nature as carefully as scientists, sometimes with the same precision and objectivity in their representation, other times more personal or subjective. Both artists and scientists use the power of the imagination to solve problems and discover new inventions to better the world. Utilizing the methods of both scientists and artists, students will study the relationship of art with biology, chemistry, ecology, and physics to understand the effects of industry on our environment, the characteristics of natural organisms, and the properties of matter. This unit will provide an understanding of how scientists seek answers and truth with the same motivation as artists.

TELFAIR ARTWORKS, GPS RELATED CONCEPTS and ART VOCABULARY ADDRESSED IN THIS UNIT:

Moshe Safdie, *Jepson Center for the Arts*, 2005
Technology and Progress
Tools and Materials
Scale, Volume
Pollution and Conservation
Sketches and Preliminary studies

Childe Hassam, *Brooklyn Bridge*, 1904
Engineering principles, Suspension
The Science of Snow
Biology and Cells
States of Matter

Henri Martin, *Puy L'Evec*, c. 1914
Color: psychology, optical, chemistry
Reflective properties of Light
Ecology

Helen Levitt, *New York*, 1940
Chemistry
Minerals
Social Studies

The Five Senses
Human Anatomy
Biology
Bronze casting technology
ABOUT the ARTIST

Moshe Safdie (MO-SHA SAF-DEE) is an accomplished architect who was born in what is now known as Israel and moved to Canada at age 15. He studied architecture at McGill University in Montreal, Quebec, and then worked for Louis I. Kahn for two years in Philadelphia. Safdie's *Habitat 67*, a project built for the 1967 World's Fair, called Expo '67, in Montreal, was the first major prefabricated housing project ever constructed. Since then he has constructed similar projects in Puerto Rico, Israel, and other countries. In 1970, Safdie began intense involvement with the rebuilding of Jerusalem. During this period, he also became involved in the developing world, working in Senegal, Iran, Singapore, and in the northern Canadian Arctic. He was the director of Harvard University’s Urban Design program from 1978-1984. In addition to major works of urbanism in the past decade, Safdie’s major cultural and educational commissions have included: the Telfair Museum of Art in Savannah, GA; the Skirball Museum and Cultural Center in Los Angeles, CA; Exploration Place in Wichita, KS, and the National Gallery of Canada; educational facilities such as Eleanor Roosevelt College at the University of California in San Diego; civic buildings such as the Springfield, MA, and Mobile, AL, Federal Courthouses; and performing arts centers such as the Kansas City, MO, Performing Arts Center.

ABOUT the ARTWORK

This photograph shows an interior for Safdie’s destination of distinction, the Jepson Center for the Arts designed for the Telfair Museum of Art. The architect designed the building that consist of two separate structures connected by glass bridges over a protected space that is part of Savannah’s original town plan conceived in 1733 by Georgia’s founder General James Oglethorpe. The photograph illustrates the significance of the soaring, light-filled South atrium and dramatic light patterns throughout the building. The construction of The Jepson Center for the Arts represents the first expansion in the Telfair’s 119-year history and adds 66% more exhibition and educational space than is currently available in the museum’s two c.1819 National Historic Landmark buildings in Savannah’s historic district, the Telfair Academy of Arts and Sciences and the Owens-Thomas House. The Jepson Center for the Arts features galleries for major traveling exhibitions, Southern art, photography, and works-on-paper; also a community gallery, a 3,500-sq. ft. interactive gallery for young people, outdoor sculpture terraces, education studios, an auditorium, café, and store.

APPRECIATING THE ARTWORK: Describe, Analyze, Interpret, Judge

Use this four-step art appreciation process to increase your visual awareness skills, learn more about how an artwork was made, reveal important ideas the artist wants you to consider, and determine for yourself whether the artist was successful in conveying their idea to you in a visual work of art.

Describe

Look at the photograph and drawings of the Jepson Center for three minutes and make an inventory of what you see. Be prepared for your teacher to take the poster reproduction away, and be able to remember at least five things you see in this drawing. As a class you may make a list of this architecture’s visual inventory.

What are two distinguishing characteristics of this building that you first noticed?
Why do you think Safdie chose glass and white stone as elements of his design? How do these elements enhance the art work, affect the interior space, and connect to the world outside?

**Analyze**

What are repeated elements of design the architect used throughout the building?

Where would you be standing if you had this photograph?

**Interpretation**

The drawings that were created before the Jepson Center was constructed are called preparatory or preliminary sketches and are used to illustrate what the final building will look like. Three-dimensional models, also called maquettes, are created by architects to visualize design solutions and identify possible problems or unforeseen technological challenges.

**Judge**

Does this preliminary drawing of the Jepson Center accurately describe the experience of actually visiting the Jepson Center?

Is a sketch for a painting a work of art or ‘just a sketch?’ How are models and preliminary drawings different from a work of art?

If you were approving the design of this building, how would the preliminary drawings and maquettes help you in making your approval decision?

Does the building add variety to the existing neighborhood? How does it either complement or distract from the historical architecture of Savannah?

Does the building look like a museum? Why? Why not? What elements of its design indicate its use or the experience you might have in the building?

**DISCUSSION TOPICS**

**Art + Science = The Shape of Architecture**

Architecture combines art, science, engineering, design, and construction. An architect’s job is to create the appearance and the construction plans (blueprints) for buildings. Knowledge of engineering (the application of science in the design, planning and construction and maintenance of buildings, machines and other manufactured things) is extremely crucial to building a safe and strong structure. Explain to students that many people are involved in the creation of a building no matter how large or small. Have students look around and identify some of the specialized professions and individuals involved in the creation of the Jepson Center (engineers, masons, carpenters, painters, electricians, etc.). Many decisions must be made in order to construct a building of this monumental size. Have students identify some of the decisions that the architect and the builders had to make for this building (shape, materials, furniture, colors, placement of doors, windows, etc.).

**Question:** What exactly is the science of architecture? What scientific principles need to be considered when designing and constructing a building?

**The Technology of Enclosing Space**

Technology is based on geometry. Geometry is the backbone of building design and construction. For the Jepson Center, the architect Moshe Safdie used geometric forms in a creative way, just as William Jay did in the design of the original Telfair House in 1819. Have students describe and identify all the geometric shapes of the building seen in the photograph. Architects also must take into account scale and volume. Scale describes the size of an object in relation to other objects. For example, a three-story building is monumental in scale compared to you, and your size. Volume is the amount of enclosed interior space of an object, or in this case a building. Have students focus on space (the unbounded three-dimensional expanse in which all matter exists) and explain how artists deal with space; painters create an illusion of space on a flat surface, sculptors create works to exist in space, and architects enclose space on a grand scale. Compare all the
spaces of the Jepson Center in respect to their function. How did Safdie design the space to reflect its specific function? Spaces to examine include the art galleries, interactive galleries, auditorium, café, museum store, etc. How do the interior museum space and the exterior city space interact? (The outdoor sculpture garden with its views of the city, the expanses of glass that allow you to see both the interior and exterior world, etc)

*Question:* Are all building based on geometric forms? Can you name any buildings created with organic forms? Have you ever seen one?

**The History of Architecture**

The History of Architecture is the History of Technology. Materials are the substances, the supplies, that are selected by the architects and used by the builders to create structures. Materials chosen for a building affect the structural soundness, resilience to environmental factors, and appearance. The Jepson Center is enclosed in Portuguese stone and features a soaring, light-filled atrium, sweeping staircase, and amazing glass bridges that connect the gallery spaces. Have students name the materials used to construct buildings throughout history (i.e. mud, brick, wood, stone, concrete, iron, steel, glass). Students can also identify the materials used to construct this building. Show illustrations of ancient structures to demonstrate the evolution of building technology and advancements in methods and materials. Begin with ancient architectural examples, such as the Egyptian pyramids that used a load-bearing construction method (stacking and piling stones), then proceed to post and lintel method (where 2 vertical posts, or columns support a horizontal lintel) of construction used for the Greek Parthenon or Stonehenge, followed by the Roman Coliseum to illustrate how the arch and dome method of construction allowed for large open interior spaces. Explain how Roman engineering of roads, bridges, aqueducts and plumbing, influence on our world today. Also, how the Romans’ invention of concrete (a mixture of sand, cement, aggregate, and water that hardens into a strong, stony material) made it possible to build open, spacious structures that were not possible before because of the limitations posed by the weight of stone. With the advances in science and technology in modern times, materials and their uses have become more sophisticated. The Industrial Revolution paved the way for modern architecture with the use of iron (a naturally occurring element), and then later with steel (alloy of iron, carbon, and small amounts of manganese, chromium, and nickel, that is stronger than iron). The advent of steel ushered in the era of the skyscraper. Another invention came along in 1852 when Elisha Graves Otis invented the first safety brake for elevators. With his installation of the first safe elevator he literally enabled buildings – and architects’ imaginations – to climb skyward, giving a new and bolder shape to the modern urban skyline.

*Question:* If you were an architect building your own home, what materials would you use?

The two ends of the Jepson Center have sloping glass ceilings. Each glass panel weighs between 800 and 1200 pounds! The ceiling panels are supported by steel cables hung from steel beams or trusses overhead. At the time of this building’s construction there is only one other roof like it in the United States.

**The Invention of Glass**

The origin of glass is not precisely known, however many scholars trace it to Mesopotamia over 2000 years ago. In our high-tech, fast-paced world the presence of glass in our everyday environment is so common that we rarely notice its existence. With the mass production of so many things, such as cloth, glass, and even food, we have lost touch with the actual processes necessary to make these essential items. It is amazing to think that sand, sodium carbonate (often formed by burning seaweed) and lime can be transformed into a substance with limitless possibilities. Glass is a beautiful medium, which can be used to make household items such as windows and mirrors, or transformed into delicate art. At one point in history, glass was considered a very valuable commodity available only in small sizes to the extremely wealthy. Early Egyptians considered glass a precious material, as evidenced by the glass beads found in the tombs and death masks of ancient Pharaohs. Even earlier, the cave dwellers of Prehistory relied on chipped pieces of obsidian, a natural volcanic glass, for tools and weapons. In ancient times molten glass was kept in a liquid state using a wood-burning furnace. It takes a lot of wood to heat a furnace over 1000 degrees. Today, giant machines make the glass that was used for the Jepson Center. Safdie chose glass for a major portion of the exterior because of the location of the building. The glass on the front of the Jepson Center creates a mirror effect that reflects the image of the important historical square the building faces. This design idea provides an important link from past to present. Have students discuss the significance of glass as well as the importance of light to the Jepson Center and for architecture (in their homes, religious structures, or movie complexes) in general.

*Question:* How many other things can you name that is made from glass?

**Safdie Shakes Hands With Oglethorpe**

When General Oglethorpe designed Savannah he came up with a simple, yet sophisticated, design that reflected both the equal principles and classical standards of fortress construction. His basic design model was a square-shaped unit called a *ward*. At the center of each ward was a large, square, open space. The four corners of each ward contained a *tything*. 73
A tything consisted of ten house lots. The relationship between the position of the house lots and the square insured that the residents of each ward had a natural meeting location. Moshie Safdie has gained international acclaim for his urban designs and similarly designed housing projects that rely on a combination of efficiency and aesthetics. Safdie took into consideration Oglethorpe’s original city plan of Savannah when designing the Jepson Center. Around the squares were placed trust lots and longer blocks separated by lanes. Safdie designed this building so the lane would remain open to the sky to respect the plan designed by Oglethorpe. The main staircase crossing the lane even has a glass floor.

Question: Review a map of Savannah to identify the grid design Oglethorpe when he planned the city. Can you locate the three Telfair buildings on the map; the Telfair Academy, the Owens-Thomas House and the Jepson Center?

Seeking Approval: Past Meets Present

Before a public building can be constructed, the design of it must be approved by local boards that monitor whether the architectural design is appropriate to their city. The board reviews sketches of the proposed building created by the architect. Many people believe that architecture is the soul of a city. Architectural style has always been an indicator of time, history and culture. Some people believe it is not appropriate to mirror the past when designing a building in the 21st century. However, others think differently. Moshie Safdie’s design for the Jepson Center was not initially accepted by the historical board of Savannah. Board members desired a building that mimicked the typical historical style of downtown Savannah. He had to convince them that his design did have a place among these structures and would be asset to the community. Safdie convinced them that great architecture is a symbol of its time and a building should reflect the ideals of the current century, not the historical past. How does this building differ from other cultural buildings (i.e. The Telfair Academy of Arts and Sciences and The Owens-Thomas House) in Savannah? Architecture indicates history and reflects change in society. Many contemporary art museums are designed to look like giant sculptures and often use modern materials and techniques of construction. Frank Gehry’s Guggenheim Bilbao and Frank Lloyd Wright’s Guggenheim Museum in New York City are additional examples to further discussion museum design.

Question: What do you think an art museum should look like? Think about this: the Jepson Center should be a work of art unto itself; what is more appropriate than a modern art museum looking like a modern work of art?

ASSIGNMENTS and PROJECTS

1. Research the Architect. Moshie Safdie’s architecture continues to attract attention. Buildings such as the National Gallery in Ottawa, the Skirball Cultural Center in Los Angeles, Exploration Place Science Center and Children’s Museum in Wichita, Kansas, and the Vancouver Public Library in Canada are examples of the architect’s passion for complex geometries, elegant materials, and urban place-making. Have students conduct research on Moshie Safdie and report on his many architectural masterpieces.

2. The Function of Architecture. Have students list the functions of architecture (religious, memorial, residential, civic, commercial) and provide examples from Savannah of each category.

3. LEGO Habitat Design. Safdie refined a series of Habitat designs using a cellular housing scheme, which consisted of step like clusters of cubic, pre-cast concrete units that interlocked into a unique maze-like plan to form apartments. Initially his ideas proved expensive and difficult to construct, but Safdie introduced the cellular scheme in several areas including New York and Puerto Rico where his ideas were successfully initiated. His Israeli period also produced a number of impressive urban insertion projects and various town-planning schemes. Using Legos, building blocks, and/or erector sets to create modular housing solution for the growing world population, and plan a city with efficient apartment complexes.

4. Preliminary Drawing. Architects usually begin formulating their ideas on paper first, and must also present their ideas in the form of drawings to their clients for approval. Using paper, pencil and ruler, or the drawing toolbox on a computer, create shapes and forms to virtually draw the structure of a museum that houses something you collect, such as rocks, cards, or jewelry!

5. Architecture for the Birds. Investigate woodworking templates and plans for bird nesting houses and create a basic architectural structure that will attract birds to your school. Consult the information in http://catalog.skokie.lib.il.us/record=b1377323 Make Your Own Birdhouses & Feeders by Robyn Haus, 2001.

6. Pyramid and Cube Structures: Geometric Gumdrop Models. This lesson, adapted from The Exploratorium in San Francisco, California (www.exploratorium.edu/) shows how to construct models of geometric structures using gumdrops and toothpicks. The teacher provides 20-30 gumdrops per student (alternatives: balls of modeling clay, mini-marshmallows, or
partly cooked beans, etc.) and approximately 50 round toothpicks. Challenge students to prepare an interlocking structure that could shelter and house a family. Discuss the issues of stability, and structural integrity in design.

Making Squares and Cubes: Start with 4 toothpicks and 4 gumdrops. Poke the toothpicks into the gumdrops to make a square with a gumdrop at each corner. Poke another toothpick into the top of each gumdrop. Put a gumdrop on the top of each toothpick. Connect the gumdrops with toothpicks to make a cube. It takes 8 gumdrops and 12 toothpicks. Build more squares and attach them to the existing cube. When your structure is about 6 inches tall or wide, try wiggling it from side to side. Does it feel solid, or does it feel kind of shaky?

Making Triangles: Start with 3 gumdrops and 3 toothpicks. Poke the toothpicks into the gumdrops to make a triangle with a gumdrop at each point. Poke another toothpick into the top of each gumdrop. Bend those 3 toothpicks in toward the center. Poke all 3 toothpicks into one gumdrop to make a 3-sided pyramid. It takes 4 gumdrops and 6 toothpicks. Use more toothpicks and gumdrops to keep building triangles onto the sides of your pyramid. When your structure is about 6 inches tall or wide, try wiggling it from side to side. Does it feel solid, or does it feel kind of shaky?

Making 4-sided Pyramids: To make a large and stable structure try a 4-sided pyramid that has a square on the bottom and triangles on all 4 sides. When you make a structure that uses both triangles and squares, you can make larger structures that are less wiggly. Build a square, and then poke a toothpick into the top of each corner. Bend all 4 toothpicks into the center and connect them with one gumdrop, to make a 4-sided pyramid.

What other ways can you use squares and triangles together? How big a structure can you make before you run out of gumdrops? Looking for other triangles in structures around you may give you ideas for other designs you can build with gumdrops and toothpicks.

The Exploratorium in San Francisco, California created this project.

ASSESSMENT

• What does an architect do?
• What are some functions of architecture?
• How does technology determine the shape of architecture?
• When was glass invented?
• Define the term scale.
• What is volume in relation to architecture?
• What is a preliminary study and why is one important to architects?

RESOURCES

Books
• “The City After the Automobile: An Architect’s Vision by Moshe Safdie, 1998
• The Seven Wonders of the Modern World by Reg Cox, 1996.
• How a House is Built by Gail Gibbons, 1990.
• Amazing Buildings, by Kate Hayden, 2003.

Videos
• Building Big. 2000.
• Human-Made Wonders of Africa, Australia & the Americas. 1996.
• Human-Made Wonders of Europe & Asia. 1996.

Websites
• The Moshe Safdie Hypermedia Archive at McGill University http://cac.mcgill.ca/safdie/archive/archive.php offers a broad look at architecture of the world and the process of making an architectural plan come to life.
• To view more projects by architect Moshe Safdie visit his website at www.msafdie.com
• Art and Science Collaborators, Inc. maintain a site at http://www.asci.org to raise public awareness about artists and scientists using science and technology to explore new forms of creative expression, and to increase communication and collaboration between the fields of art and science.
• http://www.wonderfest.org/ is a site that aspires to challenge unexamined beliefs, stimulate curiosity, promote careful
reasoning, and encourage life-long learning. Wonderfest achieves these ends by presenting series of scientific events to the general public.

• A leading architectural site on the web is Great Buildings Online at http://www.greatbuildings.com/
Artist: Childe Hassam, American (1859-1935)
Title: Brooklyn Bridge In Winter
Date: 1904
Medium: oil on canvas 30 x 34 1/16”
Museum Purchase

ABOUT the ARTIST
Childe Hassam is a significant American Impressionist painter whose artistic career spanned from the 1870s until his death in 1935. Hassam is most known for painting the changing character of late 19th early 20th century New York from a city of brownstone tenements and pedestrian walks to one of skyscrapers, parades, and suspension bridges. Hassam visited Paris in 1886 where he became immersed in rural and urban plein-air paintings that put him in the center of the emerging American Impressionist group. He returned to Boston in 1889, and eventually settled in New York City. Praised in his lifetime as “a painter of light and air,” Hassam adapted the French style of Impressionism to make vivid paintings of distinctly American subjects. In later years, Hassam preoccupied himself with patriotic, decorative paintings of wartime New York City. These festive interpretations of people and flags in the streets of the increasingly skyscraper dominated New York landscape brought him great popularity and critical success. It is estimated that the artist produced more than 2,000 oil paintings, pastels and watercolors, plus some 400 prints, during his lifetime.

ABOUT the ARTWORK
In this painting, Hassam shifts away from the sunny atmosphere of his pre-1900 city scenes to capture the Brooklyn Bridge during the wintertime. Still using the Impressionist style, with its short, choppy strokes of paint visible, Hassam shows his loyalty to plein-air painting; yet despite the attention to light, atmosphere, and weather conditions, the work was probably done in Hassam’s studio on West 67th Street in New York. The artist painted other winter scenes, capturing the way the cold drizzle, sleet, and snow blurred the detail of objects and made bold, abstract designs out of the big city structures. Depicting twilight or the last light of the day, Hassam cast a veiled mystery over the scene in which the color range is narrow and organized around cool tones. Brooklyn Bridge in Winter places the viewer in Brooklyn looking across the river to the skyline of New York on the poised on the verge of the skyscraper era. There seems to be a melancholy visual poetry here, an emotional transition between the realities of the 19th and 20th centuries.

DISCUSSION TOPICS
The Brooklyn Bridge
Hassam painted the Brooklyn Bridge from many different vantage points throughout his career. A marvel of engineering technology, the Brooklyn Bridge became a cultural landmark from the day it begun in 1869 to its completion fourteen years later in 1883. On its opening day, a total of 1,800 vehicles and 150,300 people crossed. The bridge spans 1,595 feet across the East River. The bridge cost $18 million to build and approximately 27 people died during its construction. At the time it opened, it was the longest suspension bridge in the world — fifty percent longer than any previously built, and has become a treasured landmark. Additionally, for several years the towers were the tallest structures in the United States. Since the 1980s, it has been floodlit at night to display its architectural features. The architecture style is Gothic, with the characteristic pointed arches above the passageways through the stone towers. The Brooklyn Bridge is a suspension bridge, a type of bridge that has been made since ancient times. Simple suspension bridges are still constructed in today for use by pedestrians and livestock using designs based upon the ancient Inca rope bridge (these are made by connecting massive cables of woven grass to pairs of stone anchors placed on either side of the crossing space.) Suspended from two locations over a river or canyon, simple suspension bridges follow a shallow downward arc and are not suited for modern roads and railroads. Over the centuries, advancements in materials, such as concrete and steel, and design led to the development...
of the suspended-deck suspension bridge, capable enduring extreme weight and use posed by modern transportation. Savannah's Talmadge Bridge is also a suspension bridge.

The Brooklyn Bridge was designed by an architectural firm owned by John Augustus Roebling in Trenton, New Jersey. Roebling and his firm had built smaller suspension bridges, such as the John A. Roebling Suspension Bridge in Cincinnati, Ohio and the Waco Suspension Bridge in Waco, Texas, that served as the engineering prototypes for the final design. As construction was beginning, Roebling's foot was seriously injured in an accident; within a few weeks, he died and his son, Washington, succeeded him, but was stricken with a disease that limited his speech and movement. Washington's wife, Emily Warren Roebling, trained herself in engineering so she could communicate his wishes to the builders. Washington Roebling was unable to leave his home and watched the construction through a telescope.

The Brooklyn Bridge was placed on the National Register of Historic Places on June 17, 1977 and was designated a National Historic Engineering Landmark on March 24, 1983. Structures like the Brooklyn Bridge remain standing because some parts are being pulled or stretched and other parts are being pushed or compacted. The parts that are being pulled are in tension. The parts that are being squashed are in compression. Sometimes you can figure out whether something is in tension or compression by imagining yourself in that object's place. If you're a brick and someone piles more bricks on you, you'll feel squashed—you're in compression. If you're a long steel cable attached to a couple of towers and someone hangs a bridge from you, you'll feel stretched—you're in tension. Some materials, such as bricks, don't compact easily; they are strong in compression. Others, such as the steel cables used for the Brooklyn Bridge or rubber bands, don't break when you stretch them; they are strong under tension. Still others, such as steel bars or wooden toothpicks, are strong under both compression and tension. Illustrate these principles in class using some of the materials discussed.

Levels of Matter
Matter is everything around you. Matter is everything made of atoms and molecules. Matter is anything that has a mass. Even though matter can be found all over the universe, you usually find it in only a few forms. As of 1995, scientists have identified five states of matter: solids, liquids, gases, plasma, and a new one called Bose-Einstein condensates (the 1995 Nobel Prize was awarded to scientists involved with its discovery.) What makes a state of matter? It concerns the physical state of molecules and atoms. Elements and compounds can move from one physical state to another. Water is one example, it is made up of two hydrogen atoms and one oxygen atom (H2O). It has the same molecular structure whether it is a gas (steam), liquid, or solid (ice). Although its physical state may change, its chemical (molecules and atoms) state remains the same. So you ask, "What is a chemical state?" If the formula of water were to change by adding or taking away atoms, that would be a chemical change. If you added another oxygen atom, you would make hydrogen peroxide (h2o2). Changing states of matter is about changing densities, pressures, and temperatures. The basic chemical structure stays the same. Observe the levels of matter in Hassam's painting. What kinds of matter has he represented? How many different physical states of H2O can you find in this painting? (water in river, snow on roof)

The Science of Seasons
In Hassam's painting we see a typical New York day in winter. What is the science of snow? Snowflakes form when water vapor freezes into ice crystals in cold clouds. The ice crystals attract cooled water droplets to form various shapes. They become heavy and fall. If the air is cold enough, the snow falls all the way to the earth without melting. If the ground is freezing, the snowflakes stick to the ground. Snow crystals, commonly called snowflakes, are fascination because of where they come from, how remarkably complex and beautiful their structures are, and how they are literally produced out of thin air. In 1951 the International Commission on Snow and Ice produced a fairly simple and widely used classification system for solid precipitation. This system defines the seven principal snow crystal types as: plates, stellar crystals, columns, needles, spatial dendrites, capped columns, and irregular forms. There are three additional types of frozen precipitation: graupel, ice pellets, and hail. Ask students if they are familiar with these types of precipitation? Are they able to identify the type of crystals depicted in the painting? Have students draw each crystal form based on its descriptive name.

Biology
Biology is the study of life and the changes that take place with and around all living things. The study of biology covers every planet and object in the Universe. In the same way everything on Earth is made up of atoms, everything that is alive on Earth is made up of cells. An entire living thing can be one cell or billions. Most cells on Earth have similar pieces and parts. There are smaller pieces such as proteins and organelles. There are also larger pieces called systems and communities. Cells are small compartments that hold all of the biological equipment necessary to keep an organism alive and successful on Earth. A main purpose of a cell is to organize. Cells hold a variety of pieces and each cell has a different set of functions. Single cell organisms do exist, such as an ameba, but to grow and evolve lots are cells are needed. Humans are multicellular, so we have trillions of cells to do things like think, lift objects, and run. Cells make our life possible. There are many types of cells. Plant cells are easier to identify because of a structure called a cell wall. Plants have the wall; animals do not. An animal cell could be anything from a tiny microorganism to a nerve cell in your brain. This painting, like many living organisms, is composed of numerous little building blocks, the brush strokes. Have students choose a
section of the painting to analyze its structure. How has the artist organized the brushstrokes, like cells, to from buildings, snow, the bridge, and the sky?

**Powers of Ten**

Show the film *Powers of Ten* by Charles and Ray Eames, who produced the film in 1977 as part of an ongoing effort to make science and technology more interesting and accessible to the public. In just nine minutes, the film takes its viewers on a voyage from a picnic in Chicago to the edge of the Universe, zooming out to cover ten times as much space every ten seconds. Then the camera returns to the picnicner, narrowing in on his hand by powers of ten until it focuses on a tiny quark within one of his cells. Along the way, viewers learn not only about exponential growth and the appropriate units to define it, but also about the many ways in which questions of scale can enhance their understanding of the world around and within them.

**ASSIGNMENTS and PROJECTS**

1. **Architectural Investigation.** Have students investigate other buildings and architectural marvels constructed at the same time as the Brooklyn Bridge (example: the Eiffel Tower.) Investigate and identify all the people involved in its creation.

2. **Technologies and the Development of Civilization.** Research inventions to learn more about how technology has improved our lives and society. Have students explain the affect each invention had on the development of the United States. Some examples are: 1829 – sewing machine: manufacturing, economy; 1876 – telephone: communication, business; 1928 – jet engine: transportation, aerospace industry; 1946 – computer: communication, economy; 1982 – artificial heart, medicine.

3. **File Card Bridges.** Understand how engineers and architects create solid structures by making a bridge. How many kinds of bridges are there? You might think that bridges come in an infinite variety of forms. But if you get right down to the structural elements of a bridge, there are really only three kinds: beam spans, arch spans, and suspension spans. The simplest kind of bridge is a beam bridge. A log that has fallen across a river makes a beam bridge. So does a board laid across a puddle, a span of steel laid across a body of water, or a file card laid across two books. A beam bridge relies on the stiffness of the building material. If the log across the river sags, it doesn't make a very good bridge. Arches have been common features in buildings since 1,000 B.C., but they didn't appear in bridges for another thousand years. Roman roads, built at the height of the Roman Empire’s power, were often supported by stone arches. Suspension bridges, like the Golden Gate Bridge in San Francisco, rely on a cable or rope for their support. Each end must be secured on both sides to an stable or immovable object called an anchorage. The cable or rope pulls on the anchors, but as long as they don't move and the cable or rope doesn't snap, the bridge is stable. What you need:

   4 to 6 books
   A package of file cards
   300 to 400 pennies
   Scissors

Make 2 stacks of books with a 4 inches gap between them. Make sure the stacks are the same height. Lay one file card over the gap between the books. About 1/2 inch of the card should be resting on a book at each end. How many pennies do you think you can pile on this flat bridge before it falls into the gap-5? 10? 100? Try it and see how close your guess was. Without adding anything to the file card, try to make your bridge stronger. How could you change a file card to make it stiffer? What happens if you fold the card in half, make an arch, or fold the card into pleats?

What kinds of bridges can I make with my file cards? Using just your file card, you can make two of the three different kinds of bridges. When you lay a file card across two books-even if you’ve folded the card into pleats first–you’ve made a simple beam bridge. If you cut slots into the card, tuck the flaps under the edges of the book covers, and push the books slightly together, you’ll make an arch bridge.

The Exploratorium, San Francisco, California, created this project. For more ideas visit their website at [http://www.exploratorium.edu/](http://www.exploratorium.edu/).
ASSESSMENT

• What is the significance of the Brooklyn Bridge?
• What is the Science of Snow?
• What is a cell and why are they important?
• What is matter made of?

RESOURCES

Books
• Childe Hassam, American Impressionist (Metropolitan Museum of Art Series) (2004) by H. Barbara Weinberg
• Childe Hassam: An Island Garden Revisited (2005) by David Park Curry
• Childe Hassam: American Impressionist (1994) by Ulrich W. Hiesinger
• Childe Hassam, Jordan-Volpe Gallery

Videos
• Powers of Ten, (1977), a landmark film by Charles and Ray Eames explores the different scales of matter from small quarks to huge galaxies.

Website
• For facts, history and information about the Brooklyn Bridge go to http://www.endex.com/gf/buildings/bbridge/bbridge.html
ABOUT the ARTIST

Henri Martin (AHN-REE MAR-TAN) moved to Paris in 1879 from his hometown of Toulouse, France. His early works were devoted to poetic and allegorical themes reflecting his training at the Ecole des Beaux-Arts in Toulouse. After winning the Grand Prix he moved to Paris in 1879 to study at the Ecole des Beaux-Arts under Jean-Paul Laurens. Martin exhibited at the Salon des Artistes Francais in Paris from 1880, winning a medal at the 1883 Salon. A visit to Italy in 1885 brought a new lyrical freedom to his work. On Henri Martin’s return to Paris in 1889, he began experimenting with pointillism and turned almost exclusively to landscape painting, specializing in the beautiful rolling countryside around his house. He produced colorful canvases that are full of light, and studied landscapes at different times of the day to render works of shadow and sun. A shy, quiet character, Henri Martin remained independent, refusing contracts from many successful Parisian dealers. He found he no longer enjoyed living in Paris, and by the turn of the century painted almost exclusively in the countryside around his house, Marquayrol near Labastide du Vert in the Lot Valley. His painting changed very little from this time on, he had found a style with which he was comfortable and these canvases, often large, colorful and filled with light, are widely considered to be amongst his most successful. In 1889, Henri Martin exhibited at La Fete de la Federation where he was presented with a gold medal. He was named Chevalier of the Legion of Honour in 1896, and in 1900 won the grand prize at the Exposition Universelle. Martin was named Commander of the Legion of Honour in 1914.

ABOUT the ARTWORK

Martin’s painting features the Mediterranean coast saturated with sunlight. It is presumably spring, given the intense greens depicted in the landscape. Martin uses very active brushwork in the painting, mixing Pointillism with his own looser Post-Impressionist technique. The resulting impasto, a technique of applying paint so thickly that brushstrokes are visible, complements the beauty of the subject matter and vibrant palette.

DISCUSSION TOPICS

The Psychology of Color
Have students look at the colors used by Martin in this painting. What is the mood or atmosphere communicated by the colors in this work? Ask student how they respond to color in everyday life. Do bright colors make us happy? Is everyone’s response to color the same? Discuss the psychology of color and its effects on our moods, actions, and health. Have you ever felt “Blue”? “Red” with anger? “Green” with envy? Sometimes we use color to communicate these kinds of moods. For example, a pale blue is often used in hospitals for its calming effect. What color is your classroom? How does it make you feel? Do you have a favorite color and how does it make you feel?

Water World
Martin depicts the reflections of the houses and landscape on the water in the foreground. Discuss the word ecology, the study of relationships and interactions between living organisms and their environment. Water is an important element in our environment that we sometimes take for granted. We rely on the oceans to fuel the Earth’s weather systems and to provide the base of an immense food web that extends far beyond the shores. We also gather minerals, oil, and a vast array of raw materials from the oceans depths. Yet, since the 1800s, human interactions with the ocean have taken their toll. Numerous species and entire complex living ecosystems many millions of years in the making have been decimated.
or significantly altered. Coral reefs throughout the tropics are in decline, global ocean temperatures continue to slowly yet steadily rise, and most of the commercially valued fish populations are at record lows. As our human population continues to grow, so too does our reliance on the ocean to provide for us. As we enter the 21st century, we are faced with important choices, each of which has consequences for our planet. Ask students to name some ecological problems associated with bodies of water (pollution, drought, floods, etc.). Can they detect in the painting any evidence of these problems?

The Seasons and Reflections
Discuss the characteristics of each season in relation to the movement of the earth. Explain to students that the earth is slightly tilted on its axis. As the sun shines on the earth, it shines more directly on the northern hemisphere in June and on the southern hemisphere in December. That’s why the hemispheres have opposite seasons. In the spring and fall, the sun shines fairly straight on the equator, giving both hemispheres equal warming. Artists like Martin and the Impressionists observed with a keen eye the quality of light and how it illuminates objects and creates shadows and reflections. Have students identify the light source in Martin’s painting and identify shadows and reflections. How has Martin modeled paint to show light? What colors does he use? How does he show shadows? What colors does he use?

Optical Color
Visible light is made of seven wavelength groups. These are the colors you see in a rainbow: red, orange, yellow, green, blue, indigo, and violet. When light hits an object, some of the wavelengths are absorbed and some are reflected. The reflected wavelengths are what we perceive as the object’s color. One of the techniques Martin uses to create the vivid colors of this coastal landscape is applying short strokes of paint next to each other. When observed closely, we see the strokes of unmixed paint, but if we see the painting from a distance we “optically” mix the colors with our eyes. Small strokes of blue and yellow blend together at a distance and we perceive green. When one looks at two small amounts of different colors side by side, the two appear to create a different color. This color is usually something similar to the result when the two are mixed in pigment. For example dots of yellow interspersed with dots of blue appear green when viewed from a distance. The only difference is that when two colors are mixed in pigment, they lose some of their intensity. When two colors mix optically, they retain their intensity and they sometimes appear brighter. The Impressionists and Post-Impressionists practiced this type of color mixing. The best example is work by the Pointillists (Georges Seurat being the most recognizable) who laid down small dots of different colors and allowed the viewer to optically mix them. A similar example of this process occurs in color newspaper photos. If you look at a color newspaper photograph using a magnifying glass, you will see not a solid color, but small dots which, when optically mixed, create other colors.

The Chemistry of Paint
The ancient Mediterranean civilizations of Greece, Rome and Egypt used a painting technique called encaustic where natural pigments are mixed with bee’s wax, mineral pigments (such as iron, copper, and manganese oxides) and tempera. At the end of the Roman Empire and up to the Renaissance (15th century), this ancient technique was lost and replaced by oil paint and/or tempera. If you were a professional artist, it was customary that the your apprentice, someone who works under a skilled professional or master in order to learn an art, craft, or trade, was assigned the time-consuming job of making paint. Colored powders were ground up from rocks, mineral and plants, then mixed with a liquid, like oil or water. In the 19th century, tubes of prepared paint became available, so artists could easily pack up those portable materials and paint outdoors, en plein air. The Impressionists were the first artists to have this convenience. Ask students what inventions have made their lives easier?

ASSIGNMENTS and PROJECTS

1. Great Inventors of our Time. Scientific discoveries are constantly reshaping our world and work place. Many of today’s jobs are directly or indirectly related to science and technology. Have students research important figures in early modern science such as Nicolas Copernicus, Tycho Brahe, Johannes Kepler, Galileo Galilei, and Isaac Newton (who, astoundingly, during a single journey in 1665-66, discovered calculus, many of the basic laws of optics, the three laws of motion, and the law of gravity.)

2. Observation Experiment. In his paintings, Martin was interested in depicting the qualities of color and light. Have students observe and record changing light patterns; use a digital or disposable camera to record how light changes on a leaf over a specified amount of time. Then exhibit the pictures to illustrates the changing effects of light on the leaf or other object.

3. Reflecting Rainbows. Rainbows are an excellent way to show how white light can be broken into colors. What you will need:
compact disc (CD)
sunlight (or flashlight)
white paper

1. Take the CD out of its case and take a look at the blank side. You'll see bands of shimmering color. Tilt the CD back and forth and the colors will shift and change.

2. Hold the CD up to the light. Hold the piece of white paper so that the light reflecting off the CD shines onto the paper. The reflected light will make fabulous rainbow colors on your paper.

3. Tilt the CD and observe the changing reflections. Change the distance from the CD to the paper. What happens to the colors?

4. Take a closer look at your CD. It’s made of aluminum coated with plastic. The colors that you see on the CD are created by white light reflecting from ridges in the metal.

Why does a CD reflect rainbow colors, because the CD separates white light into all the colors that make it up. The colors you see reflecting from a CD are interference colors, like the shifting colors you see on a soap bubble or an oil slick. You can think of light as being made up of waves, like the waves in the ocean. When light waves reflect off the ridges on your CD, they overlap and interfere with each other. Sometimes the waves merge together, making certain colors brighter, and sometimes they cancel each other, taking certain colors away.

ASSESSMENT

• What is optical color?
• How do artists use light and color to depict objects?
• To depict an atmosphere?
• What are the chemical properties of paint?
• What is the history of paint?
• What is ecology?
• How is water important to our lives?

RESOURCES

Books
• Henri Martin, his life, his work by Jacques Martin-Ferrie ïres

Websites
• This weather education site is designed for students, parents, and teachers from TV meteorologist Nick Walker at http://www.wxdude.com/Leonardo On-Line.
• Leonardo was founded in 1968 in Paris by kinetic artist and astronautical pioneer Frank Malina. Malina saw the need for a journal that would serve as an international channel of communication between artists. It focuses on writings by artists who use science and developing technologies in their work. Today, Leonardo is the leading journal about contemporary science and technology in art. Go to http://leonardo.info for texts, artworks and sound files. Leonardo On-Line provides supplementary material to the texts and illustrations, and activities.
ABOUT the ARTIST

Helen Levitt is a well-known American photographer born in Brooklyn, New York. For seventy years Levitt took photographs of the city dwellers in New York’s working class neighborhoods. She photographed janitors, children, pushcart vendors, subway riders, and dogs. Primarily a self-taught artist, she is associated with photographers Henri Cartier-Bresson and Walker Evans, whom she studied with during 1938 and 1939. In 1937, Levitt became intrigued with the chalk drawings that were part of the New York’s children’s street culture of the time. She purchased a Leica camera and began to photograph these works as well as the children who made them. The resulting photographs appeared, to great acclaim, in 1987 as In The Street: chalk drawings and messages, New York City 1938–1948. Called one of the 100 best photo-books, first editions are now highly collectable. In 1943, Edward Steichen at the Museum of Modern Art curated her first solo exhibition, after which she began to find presswork as a documentary photographer. In the early 1950s she briefly became a film director, working with James Agee. In 1959 and 1960, she received Guggenheim Foundation grants to take color photographs on New York’s streets. Much of this work was stolen in a burglary. In 1976, she was a Photography Fellow of the National Endowment for the Arts. She has remained active as a photographer for nearly 70 years and still lives in New York City.

ABOUT the ARTWORK

Levitt’s photographs celebrate the everyday life of New York neighborhood activity. In this work, she captures a group of children as they are mesmerized by the bubbles floating in the air. The artist’s black and white photographs are almost taken outside, shot at a medium distance from the subjects. Levitt doesn’t manipulate the images or include herself in the picture, but rather removes evidence of herself as photographer so we can enjoy a new moment we wouldn’t have otherwise. In all her works, Levitt captures the direct photographic record of ordinary events that reveal the mystery and fantasy within daily life.

DISCUSSION TOPICS

Social Science
Social Science is the study of people in society and how individuals relate to one another and to the group. Helen Levitt made her mark on photography during a volatile time in America. The Great Depression of the 1930’s, a result of the 1929 stock market’s crash, decreased manufacturing, mass unemployment, plummeting agriculture prices due to over production, and the Dust Bowl crisis in the West, created one of the worst social crisis in the nation’s history. As part of a documentation project and to create jobs, photographers were hired by the government to record the countries social woes. This project was the idea of government economist Roy Stryker, who believed that photographs would be a more effective than numbers and charts in conveying the nation’s economic crisis. Walker Evans documented the poverty of the rural south and Lewis Hine photographed the child labor conditions in the same areas while Dorothea Lange revealed the plight of the farmer in the Midwest. Helen Levitt chose a different path. At age 23 the artist devoted her career to her personal surroundings, located just blocks away from her in the working class neighborhoods of New York.

The Invention of Photography
Photography is undoubtedly one of the most important inventions in history -- it has truly transformed how people conceive of the world. Now we can “see” all sorts of things that are actually many miles—or years—away from us, including undersea
trenches and other planets. Photography lets us capture moments in time and preserve them for years to come. Discuss the invention of photography in the 1830s and its impact on the art world. Ask students to imagine a world without photography, calling their attention to all media in which photography is experienced—newspapers, magazines, books, film, television. Ask students about their experience with cameras and photography. How many of them have used a camera? What kind? What type of photographs do they take? Have them explain the importance of photography in their lives.

Chemistry and Photography
Photography involves an understanding of chemistry and technology. The basic technology that makes photography possible is fairly simple. A camera, which is made of three basic elements: an optical element (the lens), a chemical element (the film) and a mechanical element (the camera body itself). Photographers manipulate and combine these elements to create an image on a light-sensitive film inside the camera. The chemistry involved is related to all aspects of the process. Light reacts to the substances on the film to create a negative image. The film is then developed through a chemical process. In the darkroom, this negative is projected onto silver particle treated paper. When light is projected through the negative onto the chemically treated paper, the silver particles react and “burn” a permanent image. The image is revealed when the paper is passed through a series of chemical baths.

Truth and Photography
Pose this question to students: How much of what we see in a photograph is real? Ask students if they believe this scene captured by Levitt was posed or not? Organize a debate to argue the truthful qualities of photography. Ask students if they ever had a photograph they did not like taken of them. Do they truly look like the photo or has the camera distorted their appearance in some way? Do they pose for pictures or act naturally? Point out the capability of the photographer to manipulate an image by compositional arrangement or darkroom techniques. Often, Levitt’s subjects don’t realize they are being photographed. She achieved this by using a right angle viewfinder which made it appear that she was shooting in another direction.

Digital Technology
The photography created by Levitt is a traditional type of photograph, which means that she used a 35 mm camera and film. Today it is possible to take photographs without film. Ask students how digital technology has changed the traditional photographic process. Provide examples of how art functions in the age of digital information. Encourage students to point out where they see art on the Internet. Have them identify visual images from popular culture that are digitally created or enhanced, for example, music videos, CD covers, and T-shirt designs.

ASSIGNMENTS and PROJECTS

1. Light Experiment. Photography is dependent upon light to create an image. Conversely, light is not always an artwork’s friend. The powerful light emitted by the sun will fade artwork that is not made with lightfast pigments. Places at different distances from the equator get different amounts of sunlight. In a place near the equator, the sun shines directly overhead throughout most of the year. Near one of the poles, the sun is low in the sky and its rays are very slanted. When collectors identify where they want to hang a piece of artwork, the amount of sun exposure is often a factor in the artwork’s placement. Many museums are constructed with glass that has ultraviolet filter. Experiment with the effects of the sun’s rays. Find out what affects the sun’s rays can have on pieces of paper.

Take one piece of dark colored construction paper. Place the paper where it will get direct sunlight for at least two hours a day. Place several small objects, such as paperclips or coins, on top of the paper. Examine the papers at regular one week intervals to see how much the color has faded from the paper. This can be observed by removing the objects from the paper to see how much the area exposed to light has faded compared to the area protected by the objects from the light. Replace the objects after making observations. Write down your observations. What effect did the sunlight have on the paper?

2. Mystery Photos. Some times things are not what they appear. When looking at an object, we tend to consider it as a whole, but if you look closer, or zoom in, things can become more abstract. The image is no longer a picture of an object, it can shows texture and patterns, become abstract. Students can use a digital or instant camera to zoom in and capture close-ups of ordinary objects. Then have the class guess what they really are. Look for objects with interesting textures or patterns, such as a pineapple or a sponge.

3. Sun Prints. Sun printing is a simple way of introducing the photographic printing process, because it shows how light reacts to chemically treated paper. Students can use small objects that will make interesting shadows. Students use objects brought from home, found outside, from the classroom, or out of their pockets. Look for objects that will make interesting shadows. Have students think about how to place their objects on the paper and consider composition before going outside.
Once they have decided on a composition, go outside and sit down in the sun. Spread out to avoid making shadows on each other’s prints. Have the two or three trays of water set up outside and ready for rinsing prints.

Give each student one sheet of light-sensitive paper. It may be helpful to write their names on the back of the paper with pencil. Make sure the students keep the paper blue-side down or covered up to avoid sun light until ready for use. Then have students quickly put their objects on top (blue-side up) of the light-sensitive paper.

Once objects have been placed on the paper, do not move either the objects or the paper until fully exposed, this can take 30 seconds or up to 3 minutes depending on the intensity of the sunlight. The paper will be exposed sufficiently when it turns almost white. Students can then remove the objects and place the paper in the water bath. Gently wash the paper around for about 30 - 60 seconds. The picture will turn lighter when placed in the water. Pat dry when finished, then place in a safe place to finish drying.

**ASSESSMENT**

- How is chemistry related to traditional photography?
- What mineral is found in traditional photographic prints?
- What does social studies refer to?
- Do photographers capture “truth” in their photographs?

**RESOURCES**

**Books**
- In the Street, Photographers on Photographers, Helen Levitt Mexico City
- A Way of Seeing, Here and There by Helen Levitt (2004)

**Websites**
ABOUT the ARTIST

Zorach grew up in Cleveland, Ohio, where he studied at the Cleveland School of Art. He moved to New York City in 1907 where he continued studies at the National Academy of Design. During 1910-11 he exhibited paintings at the Salon d’Automne in Paris; he then returned to the United States and was represented in the Armory Show of 1913. Zorach began carving sculpture in 1917 and by 1922 had decided to entirely devote himself to sculpture where he became an advocate of direct carving and worked in wood and stone. During the 1930s he was one of the leaders of the modern movement in American. Zorach taught at the Art Students League for more than 30 years. During the 1920s William Zorach was one of few American sculptors who carved directly in stone by preparing models in clay, which were transferred into stone by professional carvers. Zorach has been awarded numerous honors throughout his career. His works are in the collections of the Museum of Modern Art, The Metropolitan Museum of Art and the Whitney Museum of American Art in New York; The Boston Museum of Fine Art, Massachusetts; Los Angeles County Museum of Art, California; National Gallery of Art, Washington, D.C.; and the Art Institute of Chicago.

ABOUT the ARTWORK

This sculpture is typical of Zorach’s works, which are characterized by their simplified, massive forms. Also it is an example of his use of traditional subjects; he often depicted animals, children, mother and child, and child and animal. His daughter, Dahlov, often served as the subject of his sculpture. Zorach acknowledged the importance of his family to his life and work when he said, *Tessim and Dahlov and Marquerite (his son, daughter and wife) are all in my sculpture, for my sculpture is based upon my life and the people and things around me that I love... I realize my art through them.* This was the last cast made of Zorach’s *Mother and Child* before the artist’s death in 1966.

DISCUSSION TOPICS

What is Sculpture?
For thousands of years humankind has been using sculpture as a means of artistic expression. In fact, long before history was recorded, sculpture was being used by people to document the world in which they lived, record history, depict mythology, and tell stories. Sculpture was also used to represent societal concerns, such as religion, politics, and morality. Ask students what they think this sculpture is intended to express? Explain that sculpture has long been one of the most popular forms of fine arts. Sculpture was one of the first art forms to be truly appreciated for its beauty. One reason for this is that sculpture is an excellent medium for representing the human form. The sculpture by Zorach is one example of sculpture of human form. Although the look of sculptures has changed dramatically throughout the centuries, it will forever remain one the most popular art forms. Perhaps this art continues to remain popular because the nature of sculpture has continued to evolve over time, artist have developed new techniques and materials. Above all, sculpture allows the artist to have an intimate relationship with the work being created.

The Making of a Bronze Sculpture
Ask students if they can guess how Zorach created this sculpture. The process of bronze casting dates back to the ancient world, in the third millennium B.C., somewhere between the Black Sea and Persian Gulf. An artist created his artistic vision in beeswax, covered it in liquid clay, and cooked it in a fire. As it was heated by the flames, the wax melted away, leaving
a hollow clay shell. Tin and copper, both alloys of bronze, were gathered and heated. Once it was melted, the metal was poured into the cavity of the fire-hardened clay. When the metal cooled, the clay was broken away, revealing the bronze sculpture. Over the years this process was done using a variety of different tools and materials. At one time wax of the wild bee and copal (a hard resin) from the tropical trees were mixed and rolled into sheets, then formed into the pattern to be cast. Clay and charcoal were ground up and mixed together and then used to encase the pattern. This is referred to as *investment*. When thoroughly dry, the wax pattern was melted out through an opening (hence the name “lost wax”), leaving the mold into which the molten metal was poured. The encased casting was submerged in water and as the investment disintegrated, it released the metal casting. It was then polished and made into beautiful jewelry, money, and sculptures. The lost wax method is in common use for making bronze sculpture. The web site of the American Bronze Foundry at [www.americanbronze.com](http://www.americanbronze.com/) contains a link to a detailed description of the process with pictures of its various stages.

### The Skin You’re In

The subject matter for this sculpture is Mother and Child. Anatomy is the branch of science that studies the physical structure of humans, animals, plants, and other organisms. What is the biggest organ in your body? Your skin! Skin is very important. It covers and protects everything inside your body. Skin holds everything together. Skin is made up of three layers, each with its own important parts. The layer on the outside is called the epidermis. The epidermis is the part of your skin you can see. Have students look down at their hands for a minute. Explain that even though they cannot see anything happening, the epidermis is hard at work. At the bottom of the epidermis, new skin cells are forming. When the cells are ready, they start moving toward the top of your epidermis. This trip takes about 2 weeks to a month. As newer cells continue to move up, older cells near the top die and rise to the surface of your skin. What you see on your hands, and everywhere else on your body, are really dead skin cells. These old cells are tough and strong, just right for covering your body and protecting it. But they only stick around for a little while. Soon, they’ll flake off. Though you can’t see it happening, every minute of the day we lose about 30,000 to 40,000 dead skin cells off the surface of our skin. That’s almost 9 pounds of cells every year. Most of the cells in your epidermis (95%) work to make new skin cells. And what about the other 5%? They make a substance called melanin. Melanin gives skin its color. The darker your skin is, the more melanin you have. When you go out into the sun, these cells make extra melanin to protect you from getting burned by the sun’s ultraviolet, or UV, rays. This is why skin darkens when exposed to the sun.

### ASSIGNMENTS and PROJECTS

1. **The Five Senses.** Humans have five senses that help us understand and interpret the world. These senses are: touch, sight, smell, taste, and hearing. Artist use can use their sight to see a landscape and chose a paint color, they can use their hearing to add sound to their installations, they can use smell to stimulate memories or feelings, they can use touch to select a material to sculpt from, or they can even use taste by making art work from chocolate or candy. When making a sculpture, an artist might use their sight to create the design and appearance of the work, they might also use their sense of touch to choose a material, such as metal or wood, or feel what kind of texture a material has. Sculpture can engage multiple senses for the artist and the viewer. Students can identify body parts associated with the five senses. They will perform simple experiments involving the senses. What you will need:

   | Several empty 35 mm film canisters | baby powder |
   | lemons | jar of dill pickles |
   | cinnamon | peppermint oil |
   | chocolate | unpopped popcorn |
   | salt | air popper |
   | fresh dill weed | fresh mint leaves |
   | small fabric samples of various textures | sheets of various grades of sand paper |

Divide students into groups of four or five. Begin by making air popped popcorn for the students. Discuss all the ways in which they were able to know that popcorn was popping. Allow students to eat some popcorn and continue discussion.

Distribute numbered film canisters containing lemon, dill pickle, cinnamon, peppermint, chocolate, and baby powder. Students will guess what each smell is and write it down next to the number shown on the container.

Distribute each film canister containing salt or popcorn kernels. Students will shake the canisters and be able to distinguish between the two sounds. A student will walk around the room shaking the canister. Students cover their eyes and point to where the sound is coming from.

Students will taste either a piece of chocolate or a dill pickle. They will determine where on the tongue the taste buds are...
that taste sweet and sour. The sweet is tasted on the tip of the tongue and sour things are tasted on the sides of the tongue toward the front.

With eyes closed, students will be given pairs of circle shapes cut from various types of fabric and various grades of sandpaper. Students will attempt to match two like circles.

2. Casting in the Classroom. In order for students to further understand the casting process, create a hands-on experience. To make plaster sand cast you will need: plaster of Paris mix, water, a large bucket for mixing, interestingly shaped objects, sand, and small individual containers (shoe boxes, yogurt cups, plastic plates or cups.)

Give each student a container partially filled with sand. Have students push their objects or hand into the sand to create a negative impression, then remove carefully to preserve the shape. Mix the plaster and pour into the containers enough to fill the impressions. When the plaster is dry, remove the sculpture from the sand.

ASSESSMENT

• What is the biggest organ in your body?
• Why is the lost-wax process of making a bronze sculpture?
• What is sculpture?

RESOURCES

Videos
• Sculpture and the Creative Process (2 videos, 30 minutes each)
• Monumental Statues (50 minutes) National Gallery of Art Sculpture Processes overview of all processes (11 minutes)

Websites
• Visit http://www.madsci.org/~lynn/VH/ for a guided tour of the visible human. This tour, created by the National Library of Medicine, National Institutes of Health, introduces key concepts in human anatomy with images and animations from the dataset.
• Human anatomy online at http://www.innerbody.com/htm/body.html is a great place for fun, interactive, and educational views of the human body. This program contains more than 100 illustrations of the human body with animations and thousands of descriptive links.
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