



## Color

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### Lesson Plans for Educators

March 9, 2011

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## Color

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## Image List

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1. Chinese, Kangxi Period (1662-1722), Q'ing Dynasty (1644-1911)  
**Vase with "Sang de Boeuf" Glaze**  
Porcelain  
Promised gift of Bert G. Clift  
L1978.49
2. Din Navajo  
**Small Rug with Swastika Design**  
Wool natural dye  
Gift of Dr. James and Susan Ferguson  
2007.27.3
3. Edgar Alwin Payne (1882-1947) American  
**Red Mesa, Monument Valley, Utah**, 1940s  
Oil painting  
Purchased with funds from the Phyllis Cannon Wattis Endowment for Modern and Contemporary Art, and Sam and Diane Stewart  
2008.14.1
4. Harriett Richards Harwood (1870-1922) American  
**Étude**, 1892  
Oil painting  
University of Utah Collection  
X.035
5. Anna Campbell Bliss (b. 1925) American  
**Series III, Spectrum Squared, Variation A**, 1973  
Screenprint  
Gift of Mrs. Paul L. Wattis, Image courtesy of Anna Bliss  
1975.046.007.001
6. Democratic Republic of the Congo Kuba Kingdom  
**Ngaady aMwaash Mask**, 20th century  
Mixed media  
Purchased with funds from the Emma Eccles Jones Foundation  
2006.31.1
7. Paulanship (1885-1966) American  
**The Moods of Time: Morning**, 1938  
Bronze sculpture  
Purchased with funds from the Marriner S. Eccles Foundation  
1983.005

## Image List

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8. Filippo Lippi (1406-1469) Italian  
***Madonna and Child***, 1437-1438  
Panel painting  
Gift of Mrs. Richard A. Hudnut  
1951.016
9. Anne Truitt (1921-2004) American  
***Truitt '67***, 1967  
Acrylic painting  
Gift of Belinda Straight, M.D.; image (C) Estate of Anne Truitt / The Bridgeman Art Library / Courtesy Matthew Marks Gallery, New York  
1995.033.010
10. Robert Carston Arneson (1930-1992) American  
***Breathless (Self-Portrait in Blue)***, 1976  
Ceramic  
Purchase with funds from the National Endowment for the Arts and Mrs. Paul L. Wattis  
Art © Estate of Robert Arneson/Licensed by VAGA, New York, NY  
1976.060\_A,B
11. George S. Dibble (1904-1992) American  
***Wailele***, 1985  
Watercolor  
Purchased with funds from Friends of the Art Museum  
1986.017
12. Hyacinthe Rigaud (1659-1743) French  
***Madame de Noailles***, 1692  
Oil painting  
Gift of Mrs. Richard A. Hudnut  
1951.005
13. François Ykens (1601-1693) Flemish  
***Flower Still Life***, 1644  
Panel painting  
Gift of Val A. Browning  
1993.034.006
14. Norman Ackroyd (b. 1938) American  
***Perimeter Rainbow***, 1970  
Etching  
Purchased with funds from Friends of the Art Museum, Image courtesy of Dolan/Maxwell  
1971.041.006.005

## ***Sang de Boeuf Vase***

## ***Kangxi Period, Chinese***



One of the great triumphs of the Kangxi (Emperor K'ang-hsi period of the Q'ing dynasty) was the revival of this lustrous blood-red glaze. *Sang de boeuf* means "blood of ox" glaze and is named because of the deep red color. It had been used earlier but the secret of making it was lost during the Jiajing reign (1522-1566) when the supply of material being used ran out. The color derives from small amounts of copper oxide in the glaze. The glaze was probably applied by spraying and running down the sides of the vase, stopping miraculously short of the foot through amazing technical control. The perfect control achieved by the Kangxi potters is usually lacking in vases of later periods, where the glaze typically ran over the foot and had to be ground or chipped off. Such monochromatic glazes were always considered aesthetically pleasing to the Chinese cultivated taste. This vase is a typical well-balanced shape.

## ***Small Rug with Swastika Design***

***Din Navajo***



Navajo weaving is a continually evolving art form. From its earliest beginnings the artist has been subjected to outside influences in terms of materials and designs. Yet Navajo weaving has always been an intrinsic expression of Navajo aesthetics. While historically, great emphasis has been placed on outside influences on the development of Navajo weaving, it is the individual weaver's choice that results in the finished product, integrating old and new for a unique blending of innovation and tradition.

The red color used to dye this rug is made from cochineal (KOH-CHIN-EEL), which was the most vivid red color available before the advent of synthetic dyes in the 1800s. Cochineal are very small beetles found on a cactus indigenous to Mexico. Farming of the cochineal insect was the most important export for Mexico in the 18th century. The beetle is still used today to color textiles and food.

This saddle blanket has an ancient symbol of the swastika. The swastika is a motif frequently found on textiles and art from all around the world for thousands of years. In Navajo myth, the swastika represents the Whirling Log.

In the Whirling Logs narrative, or Tsil-ol-ne story, the hero of the story sets out on a long journey down a river. At first, the gods try to persuade him against going, but seeing his determination, help him hollow out a log in which he will travel down the river. Along the way, he has many misadventures which ultimately result in his gaining important ceremonial knowledge. In one such instance, he and his craft are captured by the Water People, who carry him down beneath the waters to the home of Water Monster. Black God threatens to set fire to Water Monster's home and the hero is released, but not before being taught by Frog how to cure the illnesses caused by the Water People. When he finally reaches the big river that is his destination, the gods take his log out of a whirlpool where the rivers meet, and help him to shore. The log spinning in the whirlpool is represented by a swastika design.

# ***Sang de Boeuf* Vase and Small Rug** **Color from Natural Pigments Lesson**

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written by Virginia Catherall

## **Objectives:**

1. Students will learn about natural pigments
2. Students will learn the history of natural pigments and how American Indians used and made pigments
3. Students will learn about Benjamin West, the father of American painting and his use of natural pigments.
4. Students will mix their own natural pigments and paint with them.

## **Materials:**

Natural pigments samples or photographs such as cochineal beetles, oak gall, and yellow ochre

Image of Vase with “*Sang de Boeuf*” Glaze

Image of Small Rug with Swastika Design

Image of Portrait of Mrs. Benjamin West and Her Son by Benjamin West

Image of a Koyemsi or Mudhead Clown by the Hopi culture

Natural Food coloring

Liquid dish soap

Powdered natural tempera paint such as raw umber, cochineal, or gilsonite (good source is <http://naturalpigments.com>)

Watercolor paper

Brushes

## **Background:**

Paint is simply made of ground up pigment and a binder of some sort to keep the pigment together. Some of the first paintings were done on cave walls and were created with paint made of dirt or charcoal mixed with saliva or animal fat. The fat or saliva binder would dry leaving the pigment embedded in the cave wall.

Over time, cultures learned to make different colors from natural materials found in the environment. Look at the Vase with “*Sang de Boeuf*” Glaze. What natural mineral do you think was used to make this glaze? It was made with copper oxide - the oxide is important because it gives it the reddish color (like rust with iron oxide). Why would Chinese potters want to make a vase all red?



Many other cultures used natural materials to create art. In the past as well as today, American Indians use a variety of plants, minerals, and animals to create paintings on pottery, animal skins, and other objects. Some examples are: black from charcoal, yellow from yellow ochre, white from gypsum or burnt shells, pink from Catlinite stone, and red from red ochre, lady's bedstraw root, blood, or cochineal beetles. These pigments would be dried and ground then mixed with a binder such as saliva, hide glue, bone marrow, egg whites, bear grease, prickly pear cactus juice, or yucca juice.

Look at the reproduction of Koyemsi or Mudhead Clown by the Hopi culture. Can you take a guess as to what natural materials made the colors on the sculpture?

Southwest, Pueblo culture, Hopi people  
**Koyemsi or Mudhead Clown**, Wood and Pigment  
Utah Museum of Fine Arts, Museum # ED 1998.3.21

Look at some natural pigments. You can see the raw materials that are ground up and used as pigments in paint. Some examples of pigments from an animal is the Cochineal beetle, from vegetable matter is the oak gall, and from minerals is yellow ochre. If you would like to see how each of these raw materials was made into pigment and paint, see the lesson below.

Look at the image of the *Small Rug with Swastika Design*. This rug was dyed with cochineal beetles. The very small beetles were imported from Mexico to America and used to make the red dye. What other colors can you see on this rug? Do you think dyes were used to make the tan or black or are they natural wool colors? What dyes do you think would make black or tan?

Early European American artists in North America used natural pigments to make their own paint as well until commercial paint was produced around 1800. Artists created paint by grinding pigment into oil but because the paint would harden so fast, they had to make it fresh every day. Because oil paint was so hard to travel with, many artists went outside and sketched with watercolor or charcoal and then took their sketches back into a studio to paint with oil.

One of America's most famous painters is Benjamin West. Often called the "Father of American Painting," West was the first American to gain international fame and was the mentor to many other American artists such as Gilbert Stuart. Benjamin West was born in Pennsylvania and first learned to make paint from local American Indians. When he was a child, American Indians showed him how to make paint by mixing clay from the riverbank with bear grease or fat in a pot.

Take a look at the image of a UMFA painting by Benjamin West called *Portrait of Mrs. Benjamin West and Her Son, Raphael* painted in 1770. All of the oil paints used in this painting were ground from natural minerals and plants and mixed by hand with oil and other binders.



Benjamin West (1738 – 1820)

**Portrait of Mrs. Benjamin West and Her Son, Raphael**, c. 1770

Oil on canvas

Purchased with funds from the Marriner S. Eccles Foundation. Museum # 1982.007.003

### **Activity:**

#### **For Younger Students:**

Students will make their own natural pigment paint using natural food coloring

Many artists' paints are still made with natural materials today such as ochre, charcoal, madder, and cochineal. Many types of food coloring are also made with natural materials. Green food coloring can be made from seaweed, brown from caramelized sugar, yellow from turmeric, and orange food coloring from seeds. Red food coloring is made from cochineal beetles or sometimes from beet juice or paprika.

Students can mix their own paint with food coloring or tempera paint and dishwashing soap – a clear dish soap works best. Powdered natural tempera paint such as raw umber, cochineal, or gilsonite can be found here: <http://naturalpigments.com>. Natural food coloring can be found here: <http://www.naturesflavors.com>.

In a small bowl add equal parts of dish soap and powdered tempera paint and mix well. Younger students can mix a few drops of natural food coloring instead of the paint. Use a paintbrush to apply to watercolor paper.



For older students:

Make your own natural pigment from raw materials



#### Oak Gall pigment

Oak galls can be found on oak trees and are small, round and grow out of the trunk. Crush or smash the oak galls and put them in a pot (a rusty one works best as iron releases the tannic acid in the galls) and cover with water. Soak the galls for 3 days and then drain the water. Add a quart of fresh water and simmer the galls until half the water evaporates. Let cool and then drain through cheesecloth.

The oak gall liquid now needs a binding agent to keep it from separating. Mix Gum Arabic into the liquid. Store in a container with a lid and use within one week.



#### Yellow Ochre pigment

You can buy yellow ochre clay minerals at most art supply stores and it is already ground down to a powder. You will need a sheet of glass and a glass muller to properly mix the paint and oil. Start first by putting some ochre on the glass plate and mixing in some oil with the muller until a paste is formed. Keep mixing the paint with the muller until it is smooth then switch to a palette knife to mix. Keep mixing until the paint has a buttery consistency. When the paint is smooth, you are done.



#### Cochineal Beetle pigment

In order to make your own pigment with cochineal you would need to combine cochineal extract with alum and an alkali. But you can make cochineal dye very easy. Dye is a soluble color that can be used to color cloth. To make the dye, first grind up cochineal insects to a powder. You can use a mortar and pestle or an old coffee grinder. Then add a small amount of water to cover the powder and put in a jar. Let set overnight. The next day, make a dye pot with enough water in it to cover your cloth or fiber you will be dyeing. Bring the water to a boil and add the cochineal mixture. Let the water simmer for 40 minutes. Remove the cloth or fiber and let rinse in warm water. Let dry.

### **SAFE PIGMENTS**

Burnt Sienna, Caput Mortuum, English Red, Flesh Ochre, Gold Ochre, Green Earth/Terre Vert, Indian Red, Iron Oxides (except for Mars Brown), Ivory Black, Mars Black, Orange, Red, Violet, and Yellow Ochres (naturally-colored clays, mostly yellowish), Raw Sienna, Red Ochre, Terre Vert/Green Earth Titanium White, Transparent Red Oxide (also yellow and orange), Ultramarine Blue, Green, Red, and Violet, Venetian Red



**State Core Links:**

3rd grade Social Studies

Standard I Objective 3

Identify ways people use the physical environment.

Standard II Objective 1

Identify and explain the interrelationship of the environment (natural resources) and community development (artistic creations).

Standard II Objective 2

Describe and compare early indigenous people of the Americas and analyze how these cultures changed with the arrival of people from Europe, and how the cultures of the Europeans changed.

K-2 Science

Standard 2

Students will gain an understanding of Earth and Space Science through the study of earth materials.

Standard 4

Students will gain an understanding of Life Science through the study of changes in organisms over time and the nature of living things.

4th grade Science

Standard 3

Students will understand the basic properties of rocks, the processes involved in the formation of soils, and the needs of plants provided by soil.

5th grade Science

Standard 1

Students will understand that chemical and physical changes occur in matter.

Objective 2: Evaluate evidence that indicates a physical change has occurred.

Identify the physical properties of matter (e.g., hard, soft, solid, liquid, gas).

Compare changes in substances that indicate a physical change has occurred.

Describe the appearance of a substance before and after a physical change.

**Sources:**

[http://www.womenofthefurtrade.com/wst\\_page18.html](http://www.womenofthefurtrade.com/wst_page18.html)

[http://www.absoluteastronomy.com/topics/Benjamin\\_West](http://www.absoluteastronomy.com/topics/Benjamin_West)

<http://www.wisegeek.com/what-is-food-coloring-made-of.htm>

<http://familycrafts.about.com/od/paintrecipes/a/dishsoappaint.htm>

<http://naturalpigments.com>

## ***Red Mesa, Monument Valley, Utah* Edgar Payne**



Celebrated for his mountain scenes set in California's High Sierras, Edgar Payne was also attracted to the desert buttes and mesas of Utah's Monument Valley, a region that he painted many times during his life. His nuanced painting, *Red Mesa, Monument Valley, Utah*, reveals his careful attention to the values of colors (orange and blue) set against a thunderously gray sky. An unseen cloud shades the foreground of the painting, forming a compositional element that contrasts with the warmly lit mesa and emphasizes the broad expanse of the desert.

Edgar Alwin Payne was born in 1882 in Washburn, Missouri. Payne left home at an early age and earned a living as a house painter. He spent a very brief time at the Art Institute of Chicago, and otherwise was a self-taught artist.

Edgar Alwin Payne (1882-1947) American  
***Red Mesa, Monument Valley, Utah***, 1940s  
Oil painting  
Purchased with funds from the Phyllis Cannon Wattis Endowment for Modern and Contemporary Art, and Sam and Diane Stewart  
2008.14.1

## Étude

## Harriett Richards Harwood



Harriett (Hattie) Richards Harwood was born in Salt Lake City in 1870. She was the second daughter of Dr. Heber John & Mary Johnson Richards. Artists were not uncommon in her family as Lee Greene Richards was her cousin. In 1887, she enrolled in the newly-founded Salt Lake Art Academy, where she pursued her interest and love of art. The Academy was run by her future husband, James T. Harwood. In 1888, James left for Paris and they corresponded often. She would send her pieces of art work for his critique.

Included in one of their letters, was a suggestion that she desired to travel to New York City to study art. James responded that “it was difficult for a woman to study and remain morally good.” Harriett respected his concerns and stayed home.

In 1890, Harriett went with her family to live in Switzerland. She attended private schools in Geneva and later studied art in Paris. By this time, James and Harriett were engaged and on June 25, 1892, they were married. They honeymooned in Pont Aven, France and soon afterwards returned to Salt Lake City to start their life together.

In 1892 Harriett exhibited in the Utah Building at the Chicago World’s Fair with a piece called *Etude*. James exhibited at the same time. This was a great honor, as very few artists were selected for the exhibit. During their life together, they traveled very often to Paris. After the birth of their three children, Harriett painted only occasionally, as being a mother required most of her time.

In 1920, the family moved to Oakland, California, where “Hattie” died on April 28, 1922 from goiter. Her oldest daughter, Ruth, became an accomplished artist and poet. She attributed much of her success to the influence of her mother.

Harriett Richards Harwood (1870-1922) American  
*Étude*, 1892  
Oil painting  
University of Utah Collection  
X.035

# Étude and Red Mesa, Monument Valley, Utah Replicating Nature Lesson

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written by Tami Searle

## **Objective:**

1. Students will learn how to look at nature to replicate colors in painting.
2. Students will learn how to unify a picture by combining colors to produce commonality.
3. Students will also be able to identify a focal point, positive and negative space, and composition.

## **Materials:**

image of *Étude* by Harriett Harwood

image of *Red Mesa, Monument Valley, Utah* by Edgar Payne

harvest objects for still-life such as gourds, corn, wheat, beans or other vegetables or fruit

artist's medium such as watercolor or colored pencils

drawing pencil

**Grade Levels:** 4th to 12th

**Time Frame:** 3-4 (45 minute) class periods

## **Key Words/Vocabulary:**

Foreground - the foreground is the part of a composition that appears to be closest to the viewer.

Medium - the specific tool and material used by an artist, for example, brush and oil paint, chisel and stone.

Still-life - a painting or drawing of a group of inanimate objects contrived by the artist according to some theme, either symbolic or aesthetic.

Chiaroscuro - a strong contrast between light and dark in a painting.

## **Questions for Looking:**

Look at the image of *Red Mesa, Monument Valley, Utah* by Edgar Payne. What color are the rocks in the painting? (orange). Why do you think the mesa is called Red Mesa? The area in southern Utah and Northern Arizona is sometimes called Red Rock Country. Do you think the rocks are red or orange? Are those colors similar in look? Do you think the artist painted this picture while looking at Red Mesa or in his studio? What other colors can you see in the orange/red rocks? The artist looked carefully at all the different colors actually in the rocks in order to paint them as they really looked. Does this painting look realistic to you or has the artist added his own interpretation?

Look at the image of *Étude* by Harriett Harwood. What is the subject of this picture? How do you think it relates to the harvest? At what time of year would these vegetables be harvested? What colors did she use? (Secondary and neutral colors). Even though the leaves are green, can you see some orange mixed in with the green? Can you also see some green mixed in with the orange on the pumpkin? What colors, besides white, are in the cauliflower? Is there white in the pumpkin and the leaves? What colors are found in the potatoes? How many of these colors do you see in the foreground? This is a trick used by artists to make the picture appear to be "tied together" and more realistic. It makes the picture look more complete and connects the objects to each other through color, even though you don't notice this until you look very closely.

This artist has also used another trick. In this picture, the background is painted so dark that we can't see what is in the background. This technique called *chiaroscuro* is used by many artists, like Rembrandt and

Caravaggio. We call this area “negative space.” Negative space is areas in the painting that are not occupied by anything. What is the purpose or subject of the picture? (basket and vegetables). This is called “positive space” or areas in the painting occupied by objects. Is the foreground positive or negative space? (negative).

In art, it is common to have one object that draws your attention to the rest of the picture. This object is sometimes brighter, darker, lighter, etc. than the rest of the picture. This is called the “focal point.” This is used to get people to focus on specific parts of the picture. The easiest way to locate a focal point is to close your eyes, then open them quickly. The first thing you see when you open your eyes will usually be the focal point. What do you think the focal point of this picture is? (The pumpkin). Not all focal points are located in the middle of the picture, why do you think the artist placed it there in this picture? Notice that the artist has all of the positive space in the middle.

Look at *Red Mesa, Monument Valley, Utah* by Edgar Payne again. Where do you think the focal point of that painting is? Although the artists were painting from nature, they still chose how to arrange their composition. How to place the pumpkin or where in the picture to put the mesa.

All artists develop their own “tricks” to improve their artwork. Artists also borrow ideas and techniques from each other and incorporate them into their own style.

### **Activity:**

Show the class the images of the two paintings again and explain that both artists used oil paints to paint the pictures. Explain that every medium has its own effect. Show some art objects made with different mediums. Explain that in this activity, the students are going to use some of Harwood’s artistic tricks to create their still life by experimenting with a different medium.

Set up a still-life using fruits or vegetables that would be harvested during the current season. Limit your still-life to about seven items (Remember: odd numbers are more interesting than even numbers). Pick a medium that you will use: consider availability, what you already have on hand and cost. Watercolors or colored pencil would be great mediums.

Begin by having students sketch, in pencil, their still-life. Remind them to pay attention to proportions and size. (Don’t draw a 2”x2” picture if their paper is 9”x12”). Remember that accuracy counts!

After the still-life has been drawn, have the students look at the subject and decide where the focal point is and what colors will be used in the picture to draw interest. Have them look closely at all the “hidden” colors in the objects. Are there colors that are reflected from other objects? Are there shades of colors? Have them decide how to subtly include colors from other objects to tie them together. Decide how to color the foreground and background. Do you want to use a dark background or possibly, include all of the colors from the still-life?

### **Assessment:**

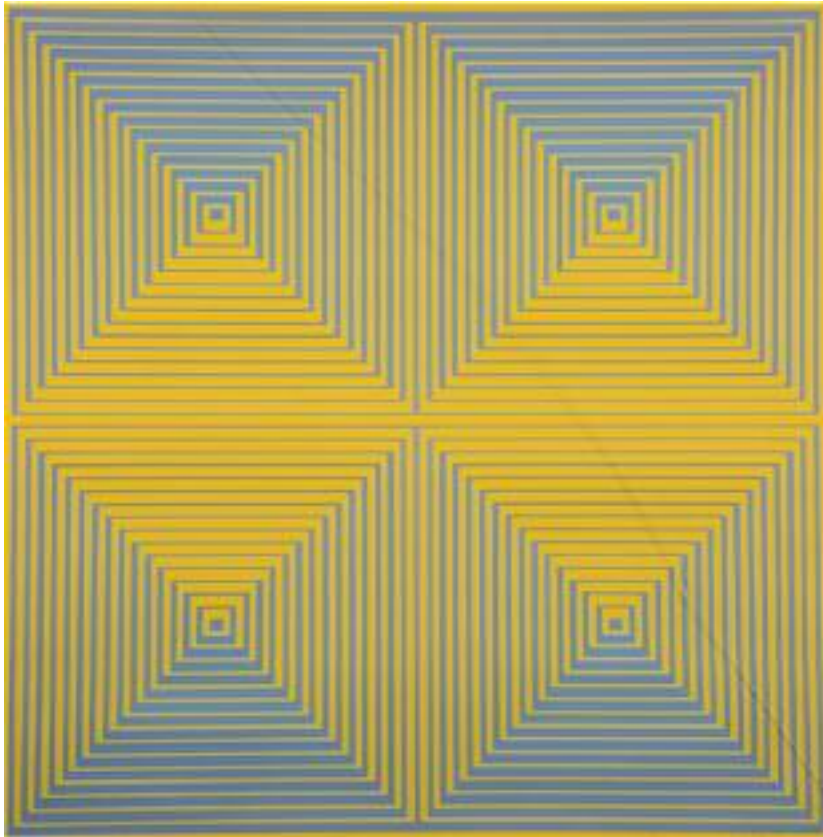
The students can be assessed through a rubric system. Example:

40 Points: Still-life is accurately drawn, using up as much of the paper as possible. All objects are included and proper proportion is used. There is an obvious focal point. Each object contains colors from other objects. Background and foreground were appropriately handled.

50 Points: Must include everything from 40 points plus shadows in appropriate places, incorporation of detail, and texture of each object. Make sure that your objects look believable and interesting.

60 Points: Must include everything from 50 points plus the students write a description as to the meaning of this still-life to them. Include how it relates to them personally and what they learned while doing it. What would they do differently next time? Defend why they think it is or is not a good piece of art. Must be a minimum of one page typed.

## ***Series III, Spectrum Squared, Var. A*** **Anna Bliss**



Anna Campbell Bliss was born July 10, 1925, in Morristown, New Jersey. She earned a Bachelor of Arts from Wellesley College in Art History and a Master of Architecture from Harvard's Graduate School of Design. She studied color theory and design with Gyorgy Kepes at MIT and with Josef Albers. In addition, she studied painting and print-making with Cameron Booth, Malcom Meyers, and other Minnesota artists. After graduate school, Bliss studied and traveled in Europe, Mexico, South America, the Middle East, Africa, and Asia.

Anna and her husband, Robert L. Bliss, have an architecture and design company. In addition to her work in these two fields, she became interested in color perception and now is an authority who lectures widely on the subject. She has served as the guest editor for *Design Quarterly* and has written numerous articles for professional journals. She is an artist, architect, and nationally recognized consultant on color and design.

Bliss' art is a "fusion of color and geometry" in which she manipulates the sensory aspects of color, juxtaposing complementary colors to create optical vibrations. By limiting her designs to simple geometric shapes, she keeps the focus on the color effects. Her design and architecture background have most likely influenced her choice of shapes, often concentric triangles and squares in modular series, as well as the large scale of her artworks.

Although most artists either use color as a vehicle for communicating emotional sensations or exploit color for its physical properties, Bliss combines these two approaches. "I would like my work to be satisfying on more than one level of consciousness," says Bliss "[in order] to make a contribution to our understanding of color as well as to provide stimulation and enjoyment." Bliss' aim is to prompt a unique color experience for everyone.



## ***Ngaady aMwaash Mask***

## ***Kuba Kingdom***



In a dance that re-enacts the Kuba origin myth, a man wearing a *Bwoom* mask engages a man wearing a *Mukyeem* mask of Woot. This mock fight recreates the battle they fought for the throne and for the affection of *Ngaady aMwaash*, their sister who became Woot's wife. *Ngaady aMwaash* is represented in this mask.

The mask of *Ngaady aMwaash* portrays Mweel, Woot's wife and sister. Just as *Bwoom* represents maleness, *Ngaady aMwaash* illustrates Kuba ideals of feminine beauty. Diamond patterns emphasize the smoothness of her brow, a sign of beauty among the Kuba. Lines painted on her cheeks represent tears, referring to the hardship of a woman's life under male authority, as well as to the pain of death—this mask often appears in funerary contexts. White and black triangles painted on the face are said to symbolize hearthstones and domesticity.

In contrast to the *Ngaady aMwaash* mask the *Bwoom* mask used alongside this mask symbolizes maleness with its bulging forehead and nose and sharply angled cheekbones. Copper strips on the forehead, cheeks and mouth emphasize the masculine look of these features.

The other mask used with the *Ngaady aMwaash* mask is the *Mukyeem* mask. The *Mukyeem* mask is a variation of the *Mwaash aMboy* mask that represents Woot, the founder of the ruling Bushoong dynasty. Decorated with cowrie shells, beads, and leopard skin, *Mukyeem* masks are topped with a stylized elephant's trunk, an emblem of the king's power. Two beaded strips at each side of the trunk represent tusks. The cowrie shells—often used for money—are a sign of wealth.

# ***Spectrum Squared & Ngaady aMwaash Mask*** **Exploring Patterns, Connecting Math & Art** **Lesson**

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**written by Tracey Matthews**

## **Objectives:**

1. Students will describe and analyze various visual patterns to identify patterns.
2. Students will create their own pattern.
3. (Older students) Students will use patterns to describe mathematical problems.

## **Materials:**

Image of *Series III, Spectrum Squared, Variation A* by Anna Campbell Bliss  
Image of *Ngaady aMwaash Mask* from the Kuba Kingdom  
Copies of handouts “Looking at Patterns” and “Pattern Worksheet.”  
Drawing Paper  
Art supplies (colored pencils, markers, crayons, etc.)

## **Background:**

The elements of art are components or aspects of a work of art that can be isolated and defined. They are commonly used to analyze and discuss works of art. The elements of art are often described as the building blocks of art. The elements of art regularly includes color, value, line, form, space, shape and texture and are often used in conjunction with the principles of art.

The principles of art are the rules or guidelines that artists use to organize the Elements of Art. During this activity we will highlight pattern and rhythm (also known as repetition).

## **Activity:**

1. Define pattern: we see visual patterns in our school, homes, and community. Ask students to name objects and places in which visual patterns are commonly found (couches, blankets, shoes, fences, bags, tiled flooring, bracelets, etc.).
2. Explain that a pattern, whether in nature or art, relies upon three characteristics: a unit, repetition, a system of organization. A system of organization is how the repeating unit is organized. In this activity we will explore many ways of organizing a repeating unit. Pass out copies of “Looking at Patterns” to students. Examine *Series III, Spectrum Squared, Variation A* by Anna Campbell Bliss and *Ngaady aMwaash Mask* from the Kuba Kingdom.
3. After reading through the “Looking at Patterns” handout have students follow the directions to make their own pattern.
4. To adapt activity for older students relate visual patterns to numerical patterns. Have students create a visual pattern to represent a numerical one.

Example 1: 1, 2, 4, 8,

$1(a)=1$

$2(a)=2$

$4(a)=4$

$X*(2)=z$



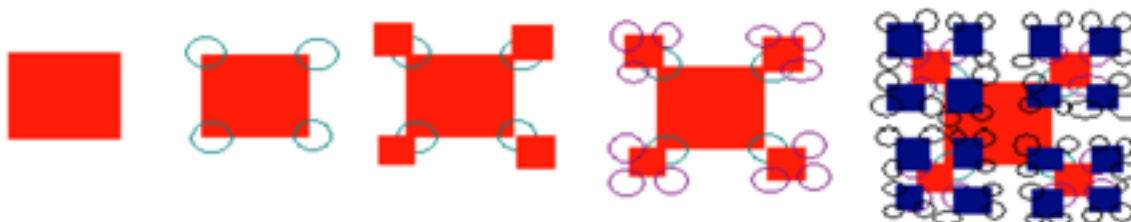
Example 2: Pattern- 4, 16, 64

$1(a)=4$

$4(a)=16$

$16(a)=64$

$x*(4)=z$



5. Have students complete the “Pattern worksheet.” Then have them identify the patterns on *Series III, Spectrum Squared, Variation A* by Anna Campbell Bliss and *Ngaady aMwaash Mask* from the Kuba Kingdom.

### **State Core Links:**

3rd – 6th Visual Art

Standard 2: (Perceiving) The student will analyze, reflect on, and apply the structures of art. In this standard the student uses meaningful works of art to recognize the elements and principles and applies them in personal work.

Kindergarten Mathematics

Standard 2: Students will sort and classify objects as well as recognize and create simple patterns. Objective 2: Identify, duplicate, describe, and extend simple repeating and growing patterns.

1st Grade Mathematics

Standard 2: Students will identify and use number patterns and properties to describe and represent mathematical relationships. Objective 1: Recognize, describe, and represent patterns with more than one attribute.

2nd Grade Mathematics

Standard 2: Students will model, represent, and interpret patterns and number relationships to create and solve problems with addition & subtraction. Obj. 1: Recognize, describe, create, & extend growing patterns.

3rd Grade Mathematics

Standard 2: Students will use patterns, symbols, operations, and properties of addition and multiplication to represent & describe simple number relationships. Objective 1: Create, represent, & analyze growing patterns.

4th Grade Mathematics

Standard 2: Students will use patterns and relations to represent mathematical problems and number relationships. Objective 1: Identify, analyze, and determine rules for describing numerical patterns involving operations and non-numerical growing patterns.

# Looking at Patterns

## RANDOM PATTERN

Random patterns have repeating units with no apparent order.



## REGULAR PATTERN

Regular patterns have identical repeating units that repeat in identical spaces.



## ALTERNATING PATTERN

An alternating pattern has two or more different repeating units that repeat regularly.



Directions:

1. Read each description for the different kinds of patterns.

2. Design a repeating unit:  
Here are some ideas...

- Geometric Shapes,  
i.e. stripes, square,  
diamond, dots...

- Themes from Nature,  
i.e. leaf, sun, bird, tree,  
flower...

- Repeating object from every-day life,

- i.e. parking stalls,  
houses, windows,  
grave stones...

2. Choose one of the following patterns:

- Random
- Regular
- Alternating
- Symmetrical
- Progressive

3. Decide on your color pattern:

- Random
- Repeating
- Alternating

4. Create your pattern.



## SYMMETRICAL PATTERN

Symmetrical patterns have repeating units that relate to each other in one of the four basic symmetry operations- Translation, Reflection, Glide Reflection and Rotation.



### translation

rigid motion with repetition along a line



### reflection

rigid motion with repetition across a line (axis)



### glide reflection

rigid motion with reflected repetition along a line



### rotation

rigid motion with repetition around a point

## PROGRESSIVE PATTERN

Progressive patterns have a repeating element that changes each time they are repeated. (i.e. each repeating unit becomes progressively smaller as it approaches the horizon line, each repeating unit is seen from a different side.



## COLOR

The color in a pattern may be random, repeating (or regular) or alternating.



# Pattern Worksheet

Identify the characteristics (the repeating unit, the system of organization, and color pattern) in the patterns below. Here is an example:



Describe the repeating units: ***Paisley shape, leaf shapes, flower shapes.***

Describe the system of organization ***This pattern is a regular pattern that repeats four times. The symmetry operation is rigid motion with repetition along a line or translation.***

Describe the color pattern: ***The color repeats in a regular pattern.***

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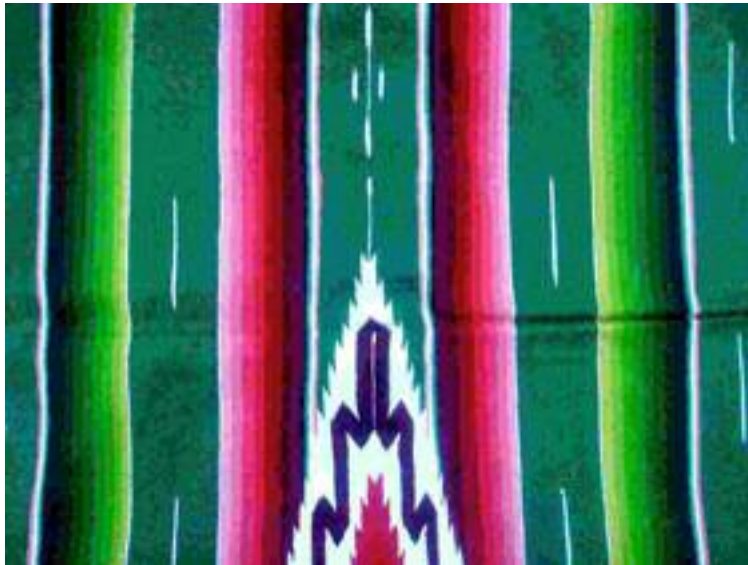


Describe the repeating units:

Describe the system of organization:

Describe the color pattern:





Describe the repeating units:

Describe the system of organization:

Describe the color pattern:



Describe the repeating units:

Describe the system of organization:

Describe the color pattern:

## ***The Moods of Time: Morning***

***Paul Manship***



Creator of the *Prometheus Fountain* at Rockefeller Center and of the *Bronx Zoo Gates* (both 1934), Paul Manship was at the height of his popularity when he sculpted a series of four fountain groups representing the moods of time for the 1939-40 New York World's Fair. *The Moods of Time* fountain group was executed in plaster in monumental size (over twice the size of the Museum's bronze) in 1938 and destroyed after the fair. In this series, Manship represented the Four Times of Day in allegorical form. His masterful combination of classicism and academicism made his bronzes attractive to prevailing establishment tastes.

Of *The Moods of Time* in general and of *Morning* specifically, Manship said: "I have tried to make these groups understandable to the average person, and, in *Morning*, which is awakening energy, use of the cock, the trumpeter and the throwing aside the veil of night is rather obvious."

Despite his role as a guardian of traditional values in art, Manship shared with the early modernists an attraction to the linear conventions of archaic Greek and Egyptian art. Whereas certain modernists saw archaism as one more alternative to conventional modes of representation, Manship saw beauty in ancient streamlined patterns, which, when wed to both the nature-based stylizations of Art Nouveau and modernist-inspired industrial design, became quintessential expressions of Art Deco.

Paul Manship (1885-1966) American  
***The Moods of Time: Morning***, 1938  
Bronze sculpture  
Purchased with funds from the Marriner S. Eccles Foundation  
for the Marriner S. Eccles Collection of Masterworks  
1983.005

## ***Madonna and Child***

***Filippo Lippi***



Despite significant paint loss, the pensive mood of the Madonna is evident in the refined tilt of her head and her distant, transparent gaze. The Christ Child, more fully preserved, is typical of Lippi's curly-haired, pug-nosed babies. Lippi's full modeling of figures and their relationship to architectural space was influenced by Masaccio, a genius of the early Renaissance who painted frescoes in the Brancacci Chapel in Florence that belonged to the Carmelite order. Filippo Lippi, a monk in that order (he was later released from his vows after a scandalous affair with a nun who bore him two children, Alessandra and the painter Filippino Lippi) is rumored to have assisted Masaccio. Lippi was famous during his lifetime and his list of patrons reads like a *Who's Who* of Florence. He exercised great influence on his many students, among them Sandro Botticelli.

Burton B. Fredericksen of the J. Paul Getty Museum in Los Angeles first recognized this panel, despite extensive overpainting, as a work by Fra Filippo Lippi. After conservation at the Getty Conservation Laboratory, this painting was discussed in several articles and included in the latest catalogue on Lippi published in 1993.

Filippo Lippi (1406-1469) Italian  
***Madonna and Child***, 1437-1438  
Panel painting  
Gift of Mrs. Richard A. Hudnut  
1951.016

# Morning and Madonna and Child

## Chemistry Changes Color Lesson

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written by Virginia Catherall

### **Objectives:**

1. Students will understand the concept of oxidation through observing art and doing chemical experiments.
2. Students will create their own sculpture and change its color through chemistry.

**Grade Level:** 4-8

### **Materials:**

Image of *Madonna and Child* by Filippo Lippi  
Image of *Morning* by Paulanship  
Approximately 5 tarnished pennies (dark brown or green)  
water  
1 small non-metallic bowl  
1 plastic spoon or fork  
1 teaspoon salt  
1/4 cup white vinegar  
Paper towels  
Clock  
Plastic gloves  
pH paper (optional)  
Copper wire

### **Background:**

Before the invention of synthetic pigments, artists in Medieval and Renaissance Europe used minerals and plants to give color to paints. One common pigment they used was Green Earth pigment (Terre Verte) in paintings. Green Earth is a mixture of minerals (mainly celadonite and glauconite) that form a green color. Medieval painters used Terre Verte under flesh tones on faces and hands because it neutralized the brighter pinks and reds of the flesh colors. Without the green underpainting, the pink in the flesh colors directly on the white gesso of the canvas or wall made faces look sunburned. But over the years, the red and pink pigments faded away leaving many old paintings with green faces. An example of this is the UMFA's Filippo Lippi painting of the *Madonna and Child* (see close-up of the Madonna's face at left).



Another mineral from the earth that is naturally green is oxidized copper. Copper carbonate is used often for pigment and occurs naturally as malachite and azurite. Bronze is mostly made of copper with other metals added such as tin, phosphorus, manganese, aluminum, or silicon. Over time, bronze can become green, it is called a "patina" – if the patina is green it is referred to as "verdigris." The patina is sought after by artists because of the green color. The ancient Asians would bury their bronzes to naturally oxidize them, sometimes for years. Today the oxidation and coloring can take place within hours. The patina is applied by brushing or spraying various chemicals onto the bronze. Look at *Morning* by Paulanship. This bronze sculpture was created in the 1930s and has a green patina that was created using chemicals.



The Madonna has a green face through a chemical reaction by accident, but *Morning's* green color was created on purpose. Why? Let's explore how to create a patina on copper.

### **Activity:**

Everything around us is made up of tiny particles called atoms. The copper of a penny, for example, is made up of copper atoms. Pennies use to be mostly copper, but since the early 1980's, pennies are mainly zinc, with a coating of copper so that they retain the same appearance. Sometimes atoms of different kinds join to make compounds. Copper atoms can combine with oxygen atoms from the air to make a compound called copper oxide, similar to rust forming on iron. The copper oxide on the outside of the penny makes the pennies look dirty and dull.

Copper oxide can be dissolved in a mixture of a weak acid and table salt. Vinegar, orange juice, and lemon juice are weak acids. If you combine them with salt, and dip a dull penny into the mixture, your penny will emerge from the acid and salt bath bright and shiny.

Copper forms other compounds, many of which are green or greenish-blue, when it comes in contact with common substances present in the atmosphere and the world around us. These substances include chlorides, carbonates, and hydroxides. To see one of these reactions take place, take a paper towel and fold it twice. Put it on a plate and soak it with vinegar. Place five pennies on the soaked paper towel and leave them for one day. Transfer the pennies to a dry paper towel and wait a few hours. A green substance will be seen on the surface of the pennies or on the paper towel around the pennies. This is copper acetate or copper carbonate, sometimes known as verdigris.



We are going to create our own copper sculpture and change it's color through a chemical reaction. Have the students take a length of copper wire (you can get copper wire from Nasco, [www.enasco.com](http://www.enasco.com), 16 or 18 gauge works well.) The students should create a sculpture out of wire. This activity can be used with other lesson plans to discuss form or line. See below for examples of copper wire sculptures:



Then have the students treat the sculpture or part of the sculpture to make it oxidize like they did the pennies or if students want to see a natural reaction that could take years, they can leave the sculptures outside and watch the copper turn from bright copper to brown to green. Discuss with the students how their sculptures change when the color changes. Does the meaning of their sculpture change, the mood, the beauty?

**Extension:**

Have students learn how artists in Europe in the 17th century mixed paints, and then mix their own paint. See a lesson from the Getty Museum:

[http://www.getty.edu/education/teachers/classroom\\_resources/curricula/art\\_science/lesson12.html](http://www.getty.edu/education/teachers/classroom_resources/curricula/art_science/lesson12.html)

**State Core Links:**

4th grade Science

Standard 3

Students will understand the basic properties of rocks, the processes involved in the formation of soils, and the needs of plants provided by soil.

5th grade Science

Standard 1

Students will understand that chemical and physical changes occur in matter.

Objective 2: Evaluate evidence that indicates a physical change has occurred.

Identify the physical properties of matter (e.g., hard, soft, solid, liquid, gas).

Compare changes in substances that indicate a physical change has occurred.

Describe the appearance of a substance before and after a physical change.



## **Truitt '67**

**Anne Truitt**



Anne Truitt was born Anne Dean in 1921 in Baltimore, Maryland. She spent her childhood in Easton on the Eastern Shore of Maryland. Truitt graduated cum laude with a B.A. degree in psychology from Bryn Mawr College in 1943. She worked as a Red Cross Nurse's Aide at Massachusetts General Hospital until the end of World War II, serving in the wards at night after working as a research assistant in the hospital's psychiatric laboratory during the day. Truitt wrote poems and short stories during this time; these exercises, as well as other writings and correspondence, form part of her Bryn Mawr College archive.

Truitt studied sculpture for one academic year at the Institute of Contemporary Art, 1949, in Washington, D.C., followed by three months at the Dallas Museum of Fine Art. Following this formal training, she worked in clay, cast in cement and plaster, experimenting with various techniques, including steel welding. In 1961 Truitt began to work in the style for which she later became known: she paints multiple delicate layers of color characterized by subtle variations on wooden constructions which she has fabricated in accordance with scale drawings; the structural elements of these sculptures constitute armatures supporting color.

From: [annetruitt.org](http://annetruitt.org)

Anne Truitt (1921-2004) American  
**Truitt '67**, 1967  
Acrylic painting  
Gift of Belinda Straight, M.D.; image (C) Estate of Anne Truitt / The  
Bridgeman Art Library / Courtesy Matthew Marks Gallery, New York  
1995.033.010

## Breathless

## Robert Arneson



Robert Arneson was born in Benicia, California in 1930. He studied with Peter Voulkos, another influential Bay Area sculptor, at the California College of Arts and Crafts (now the California College of the Arts) where he received a B.A. in 1954. Arneson received an M.F.A. from Mills College in Oakland in 1958, where he later taught until 1962. In 1960, Arneson began to work with ceramics as art pieces. His beer bottle, with no opening, is credited as one of the first non-functional works in ceramics, thus transforming the perception of the medium from craft or decoration to a fine art form of sculpture. In 1962, Robert Arneson joined the staff at the University of California at Davis where he taught and was the head of the ceramics department until 1991.

With his quirky and flippant style, Arneson is considered to be a leader of the Funk Art movement of the 1960s, a humorous movement that was a reaction to the non-objectivity of Abstract Expressionism. At UC Davis, he taught with Manuel Neri and Wayne Thiebaud, and influenced a generation of Bay Area sculptors including Viola Frey. In 1980, Arneson was commissioned to create a memorial to San Francisco's slain mayor, George Moscone. In his usual light-hearted fashion, Arneson included references to Harvey Milk and the "Twinkie defense," and the sculpture was rejected. Through his decades of work in ceramics, Arneson's works include self-portraits and socially themed figures. His ceramics are characteristically covered in vibrant and thick glazes, and are most frequently humorous or irreverent in some way. Robert Arneson died in Benicia, California in 1992.

Robert Carston Arneson (1930-1992) American  
**Breathless (Self-Portrait in Blue)**, 1976  
Ceramic  
Purchase with funds from the National Endowment for the Arts and  
Mrs. Paul L. Wattis  
Museum # 1976.060\_A,B  
Art © Estate of Robert Arneson/Licensed by VAGA, New York, NY

# ***Truitt '67 and Breathless***

## **Expressing with Color Lesson**

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**written by Megan Hallett**

Although most students enjoy the use of color as a form of expression, it is usually tied to representational work, and secondary to the picture. This is an opportunity to experiment with creating work that utilizes one to two elements of art at a time as expression, so that the color, color/shape, or color/line become the subject matter of the work.

### **Objective:**

The purpose of this lesson plan is to explore the use of color as subject matter in artwork.

Students will:

1. Look at two or three artists who used color expressively in their work but in radically different ways
2. Compare and contrast the work of Kandinsky and Arneson or Truitt using the list of questions provided
3. Experiment with creating painted compositions that are inspired by music compositions
4. Experiment with creating painted compositions that are inspired by poetry

### **Materials:**

Postcard set of Kandinsky paintings

CD with Wagner and Schoenberg music compositions

Image of *Breathless* by Robert Arneson

Image of *Untitled* by Anne Truitt.

### **Background:**

#### Wassily Kandinsky

Kandinsky was born in Russia 1866 and died in 1944. He spent many years as a painter and teacher in Germany and France and was known for his abstract paintings and for his books on art theory, *Der Blaue Reiter* (The Blue Rider) and *Concerning the Spiritual in Art*. Kandinsky was a follower of theosophy, which suggests that creation develops as a geometric progression. He was also interested in the abstract nature of music and the way in which he experienced it as pure emotion, without needed objects or specific stories to be told along with it. Kandinsky associated colors with moods and experiences.

"I applied streaks and blobs of colors onto the canvas with a palette knife, and I made them sing with all the intensity I could..."

~Wassily Kandinsky

#### Anne Truitt

Truitt was born in 1921 and died in 2004. She was an important North American artist, painting/sculpture professor and writer. She authored three books, *Daybook*, *Turn* and *Prospect*. The sculptures that she is best known for are large columns and walls made of wood that are armatures for many delicate layers of paint. Of her work she said, "What is important to me is not geometrical shape per se, or color per se, but to make a relationship between shape and color which feels to me like my experience. To make what feels to me like reality." The reproduction from the UMFA collection is a work on paper.

“Though color and structure retained individuality, they could join forces rather as independent melodies can combine into a harmonic whole. And that when I combined them in a particular way, they had a particular content--particular to me, that is, a meaning that was important to me.” ~Anne Truitt

For more photos and additional biographical information- [www.annetruitt.org](http://www.annetruitt.org)

### Robert Arneson

Robert Arneson was born in 1930 and with his quirky and flippant style, Arneson is considered to be a leader of the Funk Art movement of the 1960s. In 1960, Arneson began to work with ceramics as art pieces. His beer bottle, with no opening, is credited as one of the first non-functional works in ceramics, thus transforming the perception of the medium from craft or decoration to a fine art form of sculpture. Through his decades of work in ceramics, Arneson's works include self-portraits and socially themed figures. His ceramics are characteristically covered in vibrant and thick glazes, and are most frequently humorous or irreverent in some way.

“My God, that's where the spirit was, that's where the color was and that's where the whole impact of whatever I had as an artist was ever going to be, in my touch and the color and the feeling I had.”

~Robert Arneson

### **Keywords/Vocabulary:**

- Abstract- expressing a quality or characteristic, not an object
- Spiritual- about the spirit, soul or mind as opposed to the body
- Improvisation- to compose or perform at the spur of the moment, with no rehearsal or preparation
- Composition- the organization of parts into a whole artwork, can be a piece of music, painting, writing, etc.
- Color Field- a style of abstract painting that usually involves large flat areas of color without a lot of emphasis on brushstrokes or the action of applying the paint.

### **Activity:**

#### Part One- Expressiveness of Color:

- Start with a brief discussion about color and emotions.
- Ask the students to explain phrases like “I feel blue” and “seeing red.”
- Discuss how certain emotions might make us “feel” a certain color and how certain colors might make us feel a certain way.
- Discuss how certain experiences might make us feel certain colors. Give examples such as- The first day of school is what color? The last day of school is what color? Your birthday is what color? Getting a really bad grade is what color?
- Discuss different feelings about color amongst the class.

#### Part Two- Compare and Contrast:

- Present the students with images by Kandinsky and *Untitled* by Anne Truitt or *Breathless* by Robert Arneson from the UMFA collection.
- Provide them with the background information about the artists and go over the keywords/vocabulary.
- Compare and contrast the quotes by the artists.
- Ask them to do a visual inventory of one of the Kandinsky reproductions. Things to think about- name the elements of art that the artists used. What words describe the line use? What words describe the color use? What do you hear as you look at the picture? Is there a sense of movement? How would you characterize that movement? What is this painting about?
- Ask them to do a visual inventory of the Truitt. What do they see? How would they describe the color? What kinds of things are absent from the painting that the students might expect to see? What is this painting about?

- Ask them to do a visual inventory of the Arneson. What do they see? How many colors do they see? What story is happening in the sculpture and how does the color help tell the story.
- Discuss the difference between a rehearsed act and an improvised act. Ask the students if either of the works might be characterized as improvised? Rehearsed?
- Explain that Kandinsky was very interested in improvisation. Truitt and Arneson tended to work from detailed drawings and scale models (rehearsals) and Truitt used multiple layers of paint. Ask the students to discuss the differences in feeling between an improvised piece and a rehearsed piece, both as a person who might participate and as an observer.

### Part Three- Music and Color:

In this section students will experiment with both improvisation and rehearsal as they use color to carry content in their work. The goal here is to experiment with using color as a primary subject in their work as opposed to pictures or recognizable objects. While they may also use line and shape, resist the urge to only see things. Some of the ways to do this- work quickly, do not take any breaks, try to work continuously, and use wet materials only- paint and ink.

#### Improvisation

- Provide students with large pieces of paper that cover the surface of their desks.
- Have them prepare their materials ahead of time. Instruct students to begin working as soon as they hear the music and to keep working until the music ends.
- Play music selection.
- Do at least two different music pieces in order to be able to compare two different art works from the students.

#### Rehearsal

- Have students listen to Schoenberg with their eyes closed.
- Next have them listen to it again while writing a list of words that come to mind as they listen.
- Utilizing this list have the students assign a feeling that they get from the music.
- Lastly have them translate the feeling into shape and color using sketches and paint on paper.

Lastly discuss what it felt like to use music as a source of inspiration for their artwork. Did they like or dislike it? How did it feel to try to respond with art materials to the emotions in the music? Were they successful? How is it different to improvise vs. rehearse? Which did they prefer and why?

## Wailele

**George Dibble**



George Dibble was born in Oahu, Hawaii in 1904. Dibble was a painter, teacher, and art critic for The Salt Lake Tribune who, throughout his career, greatly influenced numerous artists and students. He died in 1992. He took his first art class through the mail from a Cleveland cartoonist and caricaturist. In 1926, he received his teaching certificate from the University of Utah and taught elementary school for two years. Dibble then returned to the University for additional classes in 1928. Later he studied in New York City at the Art Student's League.

In the late 1930s, the Utah State Art Center exhibited works by Dibble and Bill Parkinson in what was probably the first non-objective art show in Salt Lake City. Dibble was a member of the first Modern Artists of Utah and participated in an exhibition and helped write a formal statement to the public, both intended to increase the understanding and acceptance of modern art in Utah.

Biographical information courtesy of the Springville Museum of Art.

George S. Dibble (1904-1992) American  
**Wailele**, 1985  
Watercolor  
Purchased with funds from Friends of the Art Museum  
1986.017



## Madame de Noailles

## Hyacinthe Rigaud



Hyacinthe Rigaud was the most distinguished portraitist during the reign of Louis XIV. The king sat for him twice for his portrait, followed by numerous members of the aristocracy, clergy, and artists and writers of the period. The portrait of Louis XIV, wearing sumptuous coronation robes, remains Rigaud's most famous portrait.

Rigaud's style derives from that of Sir Anthony van Dyck, whom he admired, but it is more grandiose in design and richer in color. To keep up with the demand for his work, Rigaud led a large studio that was a highly specialized factory in which assistants each fulfilled a particular task, be it painting the background or floral bouquets. However, Rigaud planned the compositions and reserved certain parts for himself, especially the faces. The refined pose of Madame Marie-Françoise de Bournonville, wife of Anne-Jules de Noailles, Marshal of France, and her magnificent clothing speak eloquently of her social position and of Rigaud's talent for portraits of impressive grandeur.

# ***Wailele* and *Madame de Noailles***

## **Symbol and Meaning in Color Lesson**

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**written by Annie Burbidge Ream**

### **Objectives:**

1. Students will explore color terms, meanings, and metaphors through a cultural context.
2. Students will learn about what different colors mean to different cultures.
3. Students will compare their own cultural traditions and celebrations to others.
4. Students will analyze how color can affect mood and emotions
5. Students will identify why colors are important to them both culturally and personally

### **Materials:**

1. 9"x 12" sheets of white construction paper, or Bookmaking Classroom Pack 6"x6" (Nasco.com item#: 9728948).
  2. Color assortment of markers, crayons, or colored pencils
  3. Various colored construction paper
  4. Stapler
  5. Glue sticks
  6. Image of *Wailele* by George Dibble
  - 7 Image of *Madame de Noailles* by Hyacinthe Rigaud
- \*Optional: supplies for further embellishment (magazine clippings, photographs, feathers, glitter, stamps, stickers etc.)

### **Background:**

Look at the image of *Wailele* by George Dibble. Describe what you see. Do any words or phrases come to mind when you look at the purple mountains? The phrase itself "purple mountain majesties" comes from a song called *America the Beautiful* written in the 19th century by Katharine Lee Bates. In 1893, at the age of thirty-three, Bates had taken a train trip to Colorado. Several of the sights on her trip inspired her, and they found their way into her poem, including the wheat fields of America's heartland Kansas, the majestic view of the Great Plains, and the beautiful color of Pikes Peak. On the pinnacle of that mountain, the words of the song came to her. Because of the popularity of this song over the years, purple mountains have become a symbol of America and patriotism.

What other meanings could the color purple have? Look at the image of *Madame de Noailles*. Do you think she is a rich person or a poor person? Why? Is she important? Look at the color of her dress. In Europe, purple is a symbol of royalty or riches. Kings are often shown in purple. Not only is Madame de Noailles dressed in purple, but her dress is also shimmery like satin or silk, a very expensive fabric, and made even more sensuous because it is purple.

Color acts as an important language of meaning that has played an intimate role in human life since the beginning of recorded history. Color is not only important in art, but also in cultures around the world. Its symbolism has been closely associated with ceremonies, superstitions, and religion. Colors can represent emotions, people, and even countries. Colors mean different things to different people due to varying cultural constructions that affect how people feel about color. For example, the color red can conjure up natural images of leaves in the fall, a blazing fire, or even blood. Culturally, red in Western cultures signifies conflicting emotions

of love and anger. In China red symbolizes celebration, joy, and luck; which is why red is often worn by brides for wedding celebrations. In India, red symbolizes purity and is used in many ceremonies that range from weddings to funerals. However, the color red might also be a cultural signifier guiding us on how to behave in a certain public space. The red of a stop sign, or a red cross visualizing a space of safety and help are both examples. The bright world of colors visualizes a diverse space full of diverse meanings! What meanings does your favorite color hold?

### **Activity:**

1. As a class, discuss important concepts relating to color in our world. What is symbolism? What are signs / signifiers that guide us every day? How can we tell stories about color?

2. Ahead of class prepare a short description of your favorite color. Tell your students what your favorite color is and describe any cultural significance it might have in both your own culture as well as others. Ask the students how your favorite color makes them feel. What does it remind them of?

3. Go around the room and ask the students what their favorite color is. Why is that their favorite color? How does it make them feel? Does their color have any sort of meaning or symbolism that they know of?

4. Either in class or at home have the students research their favorite color. Have them create a list of terms they can be used to describe their color. What meanings does their color have both to them and in various cultures? What animals are their favorite color? Does their color symbolize anything?

5. After they have gathered all of their research, have the students create a record of what they learned by designing a short book about their favorite color and its many meanings and feelings.

6. The student's books should be narrative telling a creative story about their color. This can be done in a number of ways. (For example, if my favorite color was green, I could create a story about a green parrot exploring green throughout the world. My parrot might discover what materials originally were used to create green paint, or when the first green crayon was made. The parrot might explore a work of art about green, what culture sees green as a sign of good luck, or in what country do women wear a green wedding dress.)

7. Give the students 9"x12" pieces of paper, have them fold the paper in half and then staple it to begin creating their books. Students can enhance their stories with personal photographs, magazine clippings, paper collages, drawings, or paintings.

8. After the students books are completed, have them divide up into groups of 6 students or less and share their books with each other.

### **Variations:**

1. Have the students develop a book about colors in a specific country or culture, for example, a student could research and create a book about the Hindu Holi Festival of colors, or what the colors on a specific countries flag represent.

2. Older students could write a more detailed story or essay using color terms and associated meanings, or create a research project with an in class presentation about their findings.

3. Teachers could also explore color as it relates to social studies without the book making project by creating a "color of the day" or "color of the week" discussion in which the class together explores the meaning of

a specific color in more depth. This could also be a good opportunity to learn how to say different colors in various languages.

### **State Core Links:**

#### **3-6th Visual Arts**

Standard 4: Contextualizing: The student will interpret and apply visual arts in relation to cultures, history, and all learning. Objective 1: Compare the arts of different cultures to explore their similarities and diversities.

Objective 2: Connect various kinds of art with particular cultures, times, or places. Objective 3: Recognize the connection of visual arts to all learning. A. Use a visual arts form as a help in expressing an idea in a non-art subject; e.g., a science project, the writing of a poem, a social studies project.

#### **Kindergarten Social Studies**

Standard 1: Culture: Students will recognize and describe how individuals and families are both similar and different. Objective 1: Identify how individuals are similar and different. Objective 2: Recognize and describe how families have both similar and different characteristics.

#### **First Grade Social Studies**

Standard 3: Geography: Students will use geographic tools to demonstrate how symbols and models are used to represent features of the school, the neighborhood, and the real world.

#### **Second Grade Social Studies**

Standard 1: Culture: Students will recognize and describe how people within their community, state, and nation are both similar and different. Objective 1: Examine and identify cultural differences within the community. A. Explain the various cultural heritages within their community. B. Explain ways people respect and pass on their traditions and customs. C. Give examples of how families in the community borrow customs or traditions from other cultures. Objective 2: Recognize and describe the contributions of different cultural groups in Utah and the nation. A. Identify various cultural groups within the state of the nation. B. Describe contributions of cultural groups to our state and nation. D. Compare and contrast elements of two or more cultures within the state and nation; e.g., language, food, clothing, shelter, traditions, and celebrations.

Standard 3: Geography: Students will use geographic tools and skills to locate and describe places on earth. Objective 1: Identify common symbols and physical features of a community, and explain how they affect people's activities in that area.

#### **Third Grade Social Studies**

Standard 2: Students will understand cultural factors that determine how a community develops. Objective 1: Evaluate key factors that determine how a community develops. A. Identify the elements of culture; e.g., language, religion, customs, artistic expression, systems of exchange. B. Describe how stories, folktales, music, and artistic creations serve as expressions of culture. C. Compare elements of the local community with communities from different parts of the world; e.g., industry, economic specialization. E. Examine changes in communities that can or have occurred when two or more cultures interact.

#### **Fourth Grade Social Studies**

Standard 2: Students will understand how Utah's history has been shaped by many diverse people, events, and ideas. Objective 1: Describe the historical and current impact of various cultural groups in Utah. C. Explore cultural influences from various groups found in Utah today; e.g., food, music, religion, dress, festivals.

#### **Fifth Grade Social Studies**

Standard 1: Students will understand how the exploration and colonization of North America transformed human history. Objective 2: Assess the global impact of cultural diffusion as a result of colonization.

#### **Sixth Grade Social Studies**

Standard 2: Students will understand the transformation of cultures during the Middle Ages and the Renaissance and the impact of this transformation on modern times.

## ***Flower Still Life***

***François Ykens***



Like so many seventeenth-century still-life specialists, François Ykens studied flowers with a scientific scrutiny and represented them faithfully, yet he was interested in more than simple illustration. In this painting, Ykens drew the varied and intricate shapes with a lively sense of rhythm and movement through the use of repeating color. To enhance both the illusion of three-dimensional form and the clarity of details, he created a striking contrast between the dark, empty background and the brilliantly colored flowers. Because of its pictorial intensity, theatrical lighting and dynamic movement, the painting is typical of the Baroque period.

A still life is a painting of inanimate objects usually on a table. However, many painters of flower still lifes would put insects commonly found on flowers in their paintings. The artists used the insects as a symbol of life, decay, and death.

Ykens's success with elegant floral compositions over an unusually long career (over 60 years) made him a well-established figure who had many pupils. Peter Paul Rubens owned a number of still lifes by his friend Ykens, some of which are hanging today at the Rubens House in Antwerp.



# Flower Still Life

## Camouflage! Lesson

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written by Virginia Catherall

### **Objectives:**

1. Students will understand what camouflage is and how it works in animals by looking at photographs and art.
2. Students will learn how humans have used the idea of camouflage as well as the techniques used to create camouflage.
3. Students will create their own camouflage for different environments.

### **Materials:**

Various pictures of camouflaged animals  
Various pictures of military camouflage  
Image of Ykens' *An Arrangement of Flowers*  
Sketch paper  
Colored markers or oil pastels  
Fabric markers  
t-shirts

### **Background:**

Camouflage is a way that animals or humans conceal or obscure their bodies from other animals or people. Many animals in the natural world have evolved to have some kind of camouflage. There are four basic ways an animal or human uses camouflage: cryptic, disruptive, mimicry, and countershading.

#### Cryptic camouflage:

This type of camouflage has the animal blending in with their environment, basically becoming invisible. This can be accomplished through coloring or shape. A good example of this type of camouflage is a walking stick. A walking stick insect is both colored and shaped like the twigs and sticks that it lives on.



### Disruptive camouflage:

Disruptive camouflage confuses the observer by using bright colors, smoke or other distractions. This, in effect, keeps the animal or human from distinguishing the camouflaged animal from the distracting elements. An example is the ink that is used by octopuses.



### Mimicry camouflage:

When an animal is confused with a different animal, this is mimicry camouflage. Usually, the animal has a shape, coloring, sound, or smell of a more dangerous animal to discourage predators from attacking or eating the animal. An example is the elephant hawk moth caterpillar, which has very large eye markings on its body and makes it look like a snake's head at the front.



### Countershading camouflage:

This type of camouflage uses lighter colors on normally dark areas and darker colors on normally lighter areas. This can be seen in animals that have dark fur on the top and lighter fur on their underside, confusing some predators because when an animal is lit from above (like from the sun) they usually have shadows (and darker colors) underneath. A good example is an antelope. This type of camouflage is sometimes called Thayer's law because an artist named Abbott Handerson Thayer first described this type of camouflage in the 1800s.



Even though humans have been using camouflage for hunting since prehistoric times (as can be seen in some cave paintings), it wasn't until World War I that militaries around the world started using it in warfare. The military uses many techniques for camouflage including netting, natural materials, mimic color patterns, disruptive color patterns, and paint with special thermal and infrared qualities.

The most widely known type of camouflage that militaries use is the mimic patterns on soldiers' uniforms. These patterns are different based on the type of environment that the soldier is fighting in. Camouflage patterns used in desert areas, are beige and light brown. Forested area camouflage uses a mix of different green and brown colors. Patterns used in urban areas mix grey, white, and black colors. Camouflage patterns for snowy areas use white colors to blend in with the snow.



**Desert**



**Woodland**



**Urban**



**Activity:**

First ask these questions to get the students thinking about coloring and camouflage.

Why do you think animals are different colors? Why do you think some animals blend with their environment and some stand out (like Monarch butterflies)? What about the colors in camouflaged animals makes them blend with their background – is it their shade of color? The variety of colors? Both?

Take a look at the reproduction called *An Arrangement of Flowers* by François Ykens. A still life is a painting of inanimate objects usually on a table. But many painters of flower still lifes would put insects commonly found on flowers in their paintings. The artists used the insects as a symbol of life, decay, and death.



This painting has a small moth in it. Ask the students if they can see the moth. It is actually very easy to see on the table. But, what if it were on one of the flowers? Would it be easy to see? What kind of camouflage is the moth using? This moth is called a white cabbage moth. Why do you think it is called that? Do you think this moth would be camouflaged on a cabbage? This moth actually has light green coloring on the other side of its wings and when at rest looks like the color of cabbage. Why would a moth have two kinds of coloring?

Show the students a variety of camouflaged animals and discuss how they are camouflaged. Next show them a variety of military camouflage and discuss how these patterns and colors help the fabric to blend with different environments.

After learning about camouflage in animals and how humans use camouflage, students will create their own cryptic camouflage design for clothing.

1. Have students decide on an environment to create their cryptic camouflage design for clothing. The environment could be their bedroom, a neighborhood park, the classroom, etc.
2. Brainstorm with the students what elements in their environment they would need to mimic – is it the wall color? Objects in the room? The floor?
3. Let the students sketch ideas using colored markers or oil pastels on scratch paper.
4. Have them pay special attention to the shade of color they are using so as to match the background in normal light.
5. If there is time after they have their design, have them test it by putting the paper in the environment to see if it obscures or conceals.
6. Have the students transfer their design onto a t-shirt with fabric markers to create a piece of camouflaged clothing.

**Extension:**

Camouflage does not need to be confined to the visual senses. It can also involve other senses. Have the students create a smell that would conceal or obscure them in their chosen environment. Then have them create or record a sound.

**State Core Links:**

4th grade art

Objective 2

Discuss, evaluate, and choose symbols, ideas, subject matter, meanings, and purposes for artworks.

1. Create a work of art using inspiration from hobbies or interests.

Objective 3

Recognize the connections of visual arts to all learning.

2. Explain how scientific information can be communicated by visual art.

5th grade art

Objective 2

Create works of art using the elements and principles.

3. Create the illusion of common patterns and textures by the repetition of dots, lines, shapes, tones, colors, and value contrasts.

Objective 3

Recognize the connection of visual arts to all learning.

2. Describe how science has employed and benefited from the use of artists; e.g., the artists as explorers of the westward expansion, the use of visual displays in computers, observing and recording anatomy in the Renaissance.

Science 3rd Grade

Standard 2 Objective 2

Describe the interactions between living and non-living things in a small environment.

Science 5th Grade

Standard 5 Objective 2

Describe how some characteristics could give a species a survival advantage in a particular environment.

**Additional Sources:**

[http://en.wikipedia.org/wiki/Theory\\_of\\_camouflage](http://en.wikipedia.org/wiki/Theory_of_camouflage)

<http://www.howstuffworks.com/animal-camouflage1.htm>

What Color Is Camouflage? (Let's-Read-and-Find-Out Science, Stage 2) by Carolyn B. Otto

What are Camouflage and Mimicry? (The Science of Living Things) by Bobbie Kalman and John Crossingham

Animals in Camouflage by Phyllis Limbacher Tildes



## Perimeter Rainbow

## Norman Ackroyd



Ackroyd was born in the UK and attended Leeds College of Art from 1957–61 and the Royal College of Art, London from 1961–64, where he studied under Julian Trevelyan. Subsequently he lived for several years in the United States.

Ackroyd's works from the 1960s show his interest in both Pop Art, particularly artist Jasper Johns, and Minimalism. His complex compositions from that period often integrate pre-existing imagery such as newspaper clippings.

Gradually Ackroyd abandons the language of Pop Art; for a time his compositions simplify and grow more abstract, sometimes geometric. In time they depict or suggest naturalistic elements, e.g., hills, clouds, rainbows. Even when depicting rainbows, Ackroyd uses colour only very sparingly. He moves away from stencils and photographic transfers to pure aquatint, beginning the plate sometimes out in the landscape.

His studio space reflects his dark, intimate approach. Ackroyd states: "I like the studio being very private: the windows are blocked up so no one can see me in here. The floor above has good windows, and on the top floor there's skylit north light, which is incredibly good for painting and watercolouring."

# ***Perimeter Rainbow***

## **Creating Color: Connecting Math & Art Lesson**

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**written by Tracey Matthews**

### **Objectives:**

1. Students will explore coloring mixing.
2. Students will compare two objects by measurable attributes.
2. (Older) Students will determine the ratio of measurable attributes and use that information to calculate the percentage of each color in the color mixture.

### **Materials:**

(dickblick.com- Blick art materials online) 6 Watermedia Sets of Golden Fluid Acrylics – which include 10 colors in 1 oz bottles: Hansa Yellow Medium, Pyrrole Red, Quinacridone Magenta, Ultramarine Blue, Phthalo Blue (Green Shade), Phthalo Green (Blue Shade), Yellow Oxide, Burnt Sienna, Carbon Black, and Titanium White.

OR

6 Sets of paint in travel-size shampoo bottles (red, blue, yellow, black, white) (use any brand of liquid acrylic paint)

6 sets of measuring spoons, ( $\frac{1}{8}$ ,  $\frac{1}{4}$ ,  $\frac{1}{2}$  and 1 teaspoon)

Various colors of crayons

Paper towels or rags to clean off measuring spoons

“Creating Color” worksheet

Image of *Perimeter Rainbow* by Norman Ackroyd

### **Background:**

In the visual arts, color theory is a body of practical guidance to color mixing and the visual impacts of specific color combinations. Primary colors are sets of colors that can be combined to make a useful range of colors. RYB (red, yellow, and blue) is a historical set of subtractive primary colors (this color theory predate modern scientific color theory). However in the printing industry, to produce the varying colors the primaries are cyan, magenta, and yellow are applied together in varying amounts.

All colors of the spectrum combined together in light form create white but when all colors are combined in pigment form, black is created. Look at *Perimeter Rainbow* by Ackroyd. What is the main color in the painting? Do you see any other colors? Look closely at the edges (perimeters) you can see a thin line of colors around the outside. Have you ever combined all the colors of paint on your palette or all the colors of crayons on a page? When they are mixed like this, you get black. Do you think Norman Ackroyd started his print with all the colors and kept combining them? or do you think he started with black and then put a rainbow of color around the edge? You can mix colors to create any color of the rainbow and even a color not in the rainbow - black!

### **Activity:**

1. Review basic color theory with students. With younger students demonstrate basic color mixing (using two colors in specific quantities to create a secondary color).
2. Divide students into 6 groups and explain that they will be working together to conduct an experiment in color mixing. One group member should act as scribe to record the group's results using the “Creating Color” worksheet.
3. Begin by having students follow along while practicing making various shades of gray. For younger students

ask them to mix black and white to make light gray and dark gray. Direct older students to create the following shades of gray:

- $\frac{1}{4}$  tsp white,  $\frac{3}{4}$  tsp black
- $\frac{1}{2}$  tsp white,  $\frac{1}{2}$  tsp black
- $\frac{3}{4}$  tsp white,  $\frac{1}{4}$  tsp black

4. Discuss with students how using different measurements of the primary colors creates different secondary colors.
5. Provide each group with one crayon (not on their primary palette). Have students predict what primary color they should use to create the crayon color.
6. Have students complete the “Creating Color Worksheet” as a group. Students should attempt to create the color three times. Each time they should record their experiment. Have older students write a hypothesis.

#### (Younger Students)

Example: Color- Plum  
Experiment #1- red and blue  
Experiment #2- red, blue and a little white  
Experiment #3- mostly red, blue, and a little white

#### (Older students)

Example: Color- Plum  
Experiment #1-  $\frac{1}{2}$  tsp Ultramarine Blue,  $\frac{1}{4}$  tsp Pyrrole Red,  $\frac{1}{4}$  tsp Titanium White  
Experiment #2-  $\frac{1}{8}$  tsp Quinacridone Magenta,  $\frac{1}{4}$  Ultramarine Blue,  $\frac{1}{4}$  tsp Pyrrole Red,  
 $\frac{3}{8}$  tsp Titanium White  
Experiment #3-  $\frac{2}{8}$  tsp Quinacridone Magenta,  $\frac{1}{4}$  Ultramarine Blue,  $\frac{1}{4}$  tsp Pyrrole Red,  
 $\frac{1}{8}$  tsp Titanium White

7. Have older students change their fraction measurements into percentages.
8. Have each group share their prediction and results with the rest of the class.

### **State Core Links:**

#### 3-4th Visual Arts

Standard 4: Contextualizing: The student will interpret and apply visual arts in relation to cultures, history, and all learning. Objective 3: Recognize the connection of visual arts to all learning. A. Use a visual arts form as a help in expressing an idea in a non-art subject; e.g., a science project, the writing of a poem, a social studies project.

#### Kindergarten Mathematics

Standard 3: Students will understand basic geometry and measurement concepts as well as collect and organize data. Objective 2: Identify and use measurable attributes of objects and units of measurement.

#### 1st Grade Mathematics

Standard 3: Students will understand simple geometry and measurement concepts as well as collect, represent, and draw conclusions from data. Objective 2: Identify measurable attributes of objects and units of measurement, and use appropriate techniques and tools to determine measurements.

#### 2nd Grade Mathematics

Standard 3: Students will understand simple geometry and measurement concepts as well as collect, represent, and draw conclusions from data. Objective 2: Identify and use units of measure, iterate (repeat) that unit, and compare the number of iterations to the item being measured.

### 3rd Grade Mathematics

Standard 4: Students will select and use appropriate units and measurement tools to solve problems. Objective 2: Solve problems involving measurements.

### 4th Grade Mathematics

Standard 4: Students will describe relationships among units of measure, use appropriate measurement tools, and use formulas to find area measurements. Standard 4: Students will describe relationships among units of measure, use appropriate measurement tools, and use formulas to find area measurements. B. Describe the relative size among customary units of capacity (i.e., cup, pint, quart, gallon).

# Creating Color Worksheet

Name: \_\_\_\_\_

Directions:

1. Look at crayon color.
2. Guess how you might create that color by mixing the colors you have.
3. Write down the colors you will use to try to make the crayon color.
4. Conduct three experiments and record the color and amount of color you mix.

Crayon Color: \_\_\_\_\_

Fill in this box with  
crayon color

Primary Colors:

(colors you will mix together to make crayon color)

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## Experiment #1:

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Additional Notes if needed: \_\_\_\_\_

Fill in this box with  
crayon color



## Experiment #2:

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Additional Notes if needed:

Fill in this box with  
crayon color

## Experiment #3:

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Color: \_\_\_\_\_

Amount: \_\_\_\_\_

Additional Notes if needed:

Fill in this box with  
crayon color

## Results

Was it easy to try to create the crayon color why or why not?

Did any of the colors you mix surprise you?