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HOW ARTISTS CREATE

We invite students to explore the museum's seasonal exhibitions and reflect on the various elements that influence how artists create. This interdisciplinary approach provides students with an opportunity to think about concepts such as math and science while also thinking about storytelling, creativity, and inspiration.

SCHOOL TOUR INTRODUCTION

Thematic guided school tours provide in-depth exploration of the museum's exhibitions and relevant art concepts for K–12 students (ages 5 to 18). Two hours in length (90 minutes for K–1), each tour is led by knowledgeable museum volunteer educators who engage students in a conversation-based gallery visit utilizing <u>Visual Thinking Strategies</u> and introductory hands-on art lesson.

How To Use This Curriculum

The curriculum guide includes sample images, pre- and post-visit lessons plans, background information, lesson plans, extension activities, and other resources to help you integrate the museum experience into your classroom curriculum – lessons may also be modified to be used independently of a museum visit. Teachers are encouraged to adapt the lessons to other grade levels as appropriate.

PRE- AND POST-VISIT LESSONS

To ensure a successful and informative museum visit, pre-visit lessons are created to prepare your students for their museum visit. After your museum visit, use the post-visit exercises to help reinforce your students' museum experience and the concepts and information addressed during the tour and art activity. Lessons are designed to correspond to Common Core State Standards (CCSS) and Essential Academic Learning Requirements (EALRs).

CONFIRMATION PACKET

Please be sure to review the confirmation letter you received when you booked your school tour. The confirmation packet includes directions and parking instructions, and information about obtaining a free museum pass so that you may familiarize yourself with the exhibition content and the layout of the museum prior to your school tour. Also included in the confirmation packet are museum guidelines to share with students and chaperones prior to your visit to help insure a successful and safe museum visit for everyone.

CONTENTS

- Pre-Visit and Post-Visit Lesson Plans
- Glossary
- Resources

Tacoma Art Museum School Tour and Curriculum Guide lessons are aligned with Common Core State Standards and Washington State Learning Requirements in the arts and other subject areas.

Additional copies of this curriculum guide can be downloaded for free at <u>www.TacomaArtMuseum.org/Educators</u>. A paper copy can be purchased for \$10 by contacting <u>Education@TacomaArtMuseum.org</u>.

Cover Image Credit: Jeffrey Simmons, *Eulalia*, 1998. Oil and alkyd on linen. Overall: 52 ½ x 46 ½ x 1 ½ inches. Gift of Rebecca and Alexander Steward. 1998.24.

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Foundation.



ART AND STORYTELLING

Just as people can *verbalize* their thinking, they can *visualize* it. A diagram, a map, and a painting are all examples of uses of visual language. Its structural units include line, shape, color, form, motion, texture, pattern, direction, orientation, scale, angle, space and proportion. Visual storytelling is not new. It's been used since humans started depicting images in caves. Today, it is ingrained in art you see everywhere – from childhood fairytales to films, from advertising to social media – someone is trying express themselves and tell a story through visuals. Although it's not a new form of communication, it has been one of the most effective ones at getting points and feelings across to any audience quickly and accurately. A key factor in visual storytelling is interpretation – most art is made to be seen and to be interpreted by viewers from all backgrounds. It is when one interacts with an art piece that storytelling unfolds. For example, the most famous painting in the world is *The Mona Lisa* by Leonardo da Vinci and everyone wonders about the story behind her smile.

There are many approaches to interpreting stories within an artwork and one model is **Visual Thinking Strategies**, or **VTS**, which is a student-centered, research-based methodology for discussing art with a group of young people or adults. It uses art to foster learners' capacities to observe, think, listen, and communicate, asking them to back up interpretations of a work of art by identifying the visual evidence that led them to their conclusions. VTS promotes the growth of a student's aesthetic assessment. Building on an existing foundation of descriptive language, the practice of VTS encourages the evolution of critical thinking. Students learn to compile visual clues and arrive at valid interpretations. The following lesson is an adaptation of the VTS discussion technique.

A BRIEF OVERVIEW OF VTS

In VTS, the educator:

- Facilitates, but is never the source of information or opinion
- Listens and repeats a succinct summary of what the student has said, emphasizing words and concepts that push the conversation further
- Links various converging and diverging viewpoints
- Acknowledges each comment as a valid and worthwhile contribution

The students...

- Have an opportunity to point out and verbally describe what they see happening in a work of art
- Know that their thoughts and opinions are heard, understood, and valued
- Provide evidence to explain interpretative comments
- Are able to see that each comment contributes to the group process of mining the art for meanings

Lesson

Let students know that today they are going to discuss a work of art to see what they can learn about the artwork and the artist(s) just by looking. Select one of the images included in this guide, or find and choose your own image. Most museums provide access to their collections online, including the Tacoma Art Museum at eMuseum.

Please note that in a first time VTS discussion, a figurative, narrative scene makes for a steady stream of conversation as well as diversity of interpretation. Using more abstract pieces can prove challenging for first-time art viewers, but can be developed quickly by guiding questions down a qualitative checklist. For example, 'Who would like to tell me about the textures they see (line, depth, contrast, shape, e.g.)?'

- 1. Seat students in front of selected artwork and give them a moment to look at the image in silence before inviting them to speak. Look carefully at the image with the students. Encourage them to view the art much like they would read a book, scanning across, up, and down.
- 2. Ask, "What is going on in this image?" Rather than starting out with "What do you see?" a question that invites a checklist of responses-----"a dog," "the color green," "a red square," e.g.----an open-ended question about what is happening starts the discussion off by inviting students to make meaning out of what they see. It also implies that we can find meaning in any work of art.
- 3. Paraphrase each student's comment after he or she responds, pointing to the details he or she mentions. Paraphrasing and responding to each comment in the same way helps indicate to students that no one interpretation is more valid or interesting than another.
- 4. Introduce the appropriate mathematic and visual arts vocabulary as it appears in the conversation. Review the glossary on pages 9 10 for assistance.
- 5. If a student provides an interpretive comment about the image ("I think the artist is sad," "It looks like a farm," "This takes place in the future," e.g.), ask, "What do you see that makes you say that?" This reminds students to return to the image to find evidence for their opinions; it also builds descriptive vocabulary.
- 6. Ask "What more can we find?" intermittently to keep the discussion going—and to imply that there is always something more that we can find in a work of art.
- 7. Repeat the three big questions as needed to allow students to continue to describe their observations:
 - "What is going on in this image?"
 - "What do you see that makes you say that?"
 - "What more can we find?"
- 8. Use your own judgment to close the discussion when student focus wanes. (The time needed for this lesson may vary from 10-45 minutes, depending upon the age and developmental needs of students.) As you conclude, thank all the students for their contributions.

EXAMPLES



Jacob Lawrence, *Brooklyn Stoop*, 1967. Gouache and casein on paper. Overall: 21 1/8 x 16 1/8 inches. Museum purchase, 1990.



Roger Shimomura, *Minidoka No. 5 (442nd)*, 1979. Acrylic on canvas, Frame: 60 x 72 x 2 inches. Gift of George and Kim Suyama, 2003.



Barbara Early Thomas, *The Storm Watch*, 1988. Egg tempera on paper. Image overall: 21 3/4 x 29 7/8 inches. Gift of Carol I. Bennett, 2004.

EXTENSION ACTIVITIES

Collaborative Story

Have your students select an image from the Tacoma Art Museum's collection, or any museum collection. Using the image as inspiration, have your class create the first paragraph of a story through group discussion and suggestion. Send your classes' paragraph, along with a copy of their selected image, home with one of your students. That student will read the first paragraph and then write a paragraph continuing the story. Repeat this process until every student has added their own paragraph to the story-chain. At the end of the project, gather the class to hear the results and review the image that inspired their story.

Journey Story

For further exploration, choose a work of art in the gallery that draws you in. Image you can "jump" into it and write a story about your adventure. How did you get there? What happened to you as you explored the work of art from the inside? How will you get back out? If you choose, illustrate your story with a picture of yourself inside the work of art.

Figurative Poem

Choose a work of art and look closely at it. Then create these four lines:

Line 1: Your own creative name for the work of art

Line2: An action phrase based on what you see

Line 3: A simile or metaphor that describes a character or the setting of the work of art

Line 4: Another short name for the work of art



Example: *Flamingos I Have Known and Loved* Colors of nature Walking among the flowers Love is like a flower A flamingo's garden

Image: Camille Patha, *Flamingos I Have Known and Loved*, 1981. Acrylic on canvas, Overall 48 x 42 inches. Gift of the artist, 2005.37.2.

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How Artists Create Curriculum Guide, page 7

ART AND MATH

Art and mathematics at first seem to be very differing things – artist Dale Chihuly once said that his work is done very quickly and that "there's no math involved" in his process – however the two disciplines have a long historical relationship. The ancient Egyptians and Greeks utilized the golden ratio (in mathematics and the arts, two quantities are in the *golden ratio* if their ratio is the same as the ratio of their sum to their maximum) in their architecture, pottery, and sculptures. During the Renaissance painters strove to figure out how to depict three-dimensional scenes on a two-dimensional surface, leading to intensive study of geometry and perspective. Italian artist, scientist, and mathematician, Leonardo da Vinci, is known for incorporating mathematical concepts into his artwork such as the *Mona Lisa*. Modern artist, M.C. Escher is famously recognized for his tessellation art, which is the tiling of a plane using one or more geometric shapes with no overlaps and no gaps. Historically, tessellations were used in Islamic art such as in the decorative tiling for palaces. While it is not always visible in art, artists intentionally and unintentionally utilize mathematical concepts to make their artwork as both art and math are intricately linked.

Lesson

Before visiting the museum students will explore the connections between art and math. Most museums provide access to their collections online, including Tacoma Art Museum at <u>eMuseum</u>, this online database will allow students to search the museum's collection by artist or by using a key terms – see provided examples. Once students have selected the artist or artwork they will research the math concepts the artist utilized. The included worksheet (page 11) will help guide students in their research. Please review the illustrated vocabulary on pages 9 - 10. Upon completing the lesson, each student will present their research to the entire class and share which mathematical concept(s) the artist used.

EXAMPLES



Lucinda Parker, *Slim Shimmy Shanks*, 1984. Acrylic and graphite on canvas. Overall: 69 x 56 inches. Bequest of Kathryn L. Skinner, 2005.



Scott Fife, *LeRoy, The Big Pup*, 2004. Archival cardboard, carpenter's glue, and drywall screws. Overall: 118 x 54 x 140 inches. Generously sponsored by multiple donors – for complete list contact Tacoma Art Museum.



Michael Lawson, *Untitled*, 1969. Paint on paper. Window overall: 6 7/8 x 4 inches. Gift of Janice Niemie and Dennis Braddock, 2007.

EXTENSION ACTIVITY

Have students recreate the artwork they selected (students may use the same or similar materials listed on the database). This extension activity will allow students to both experiment with art materials and provide them with the opportunity to experience how artists create. Once all of the students have recreated their artwork have a classroom exhibition, each student should be prepared to explain how they made their piece and how it is similar or different from the original.

ILLUSTRATED VOCABULARY



Geometric shapes

Precise shapes that can be described using mathematical formulas. Circle, square, triangle, oval, rectangle, parallelogram, trapezoid, pentagon, pentagram, hexagon, and octagon.

Organic shapes

Are irregular and uneven shapes. Their outlines may be curved, angular, or a combination of both.



Symmetry

One half of the image is the reflection of the other half, or mirror image.

Asymmetry

Absence of symmetry in visual arrangement of elements.





Perspective

The appearance of objects, buildings, etc, within a work of art relative to each other, as determined by their distance from the viewer, or the effects of this distance on their appearance.

One-point perspective

There is a single vanishing point

Two-point perspective

A number of vanishing points are possible.





Scale

The size of something compared to the world in general - an artwork might be termed miniature, small scale, full scale or life-size, large scale or larger than life, or monumental.

Proportion

A principle of art that describes the size, location or amount of one element to another (or to the whole) in a work.



Pattern

The repetition of an element (or elements) in a work. An artist achieves a pattern through the use of colors, lines, or shapes.

Tessellation

The process of creating a two-dimensional plane using the repetition of a geometric shape with no overlaps and no gaps.





Positive Space

Area in artwork that is filled with something, such as lines, designs, color, or shapes.

Negative Space

The empty space around and between the subject(s) of an image.

	ART AND MATH	
Name Research a piece of art from the Tacoma Art Museum's permanent collection using <u>eMuseum</u> to determine how artists use math to create their artwork.		
Artist:		
Dimensions:		
Materials:		
Circle all that apply:		
Two-dimensional	Three-dimensional	Geometric shapes
Organic Shapes	Perspective	Symmetry
Asymmetry	Tessellation	Other
How do you think the artist made the	his piece (mathematical concepts, too	ls, timeframe, etc.)?
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ART AND SCIENCE

While it may not seem the case, the visual arts and sciences naturally overlap. Both disciplines involve openmindedness and inquisitiveness – ideas, theories, and hypotheses which are tested in the laboratory and studio respectively. Artists like scientists, study people, culture, history, and mythology. Throughout history artists have striven to understand how the mind perceives the visual world – while also exploring the properties of materials such as stone, metal, glass, and paint to name a few.

Human beings have been utilizing scientific properties for centuries to create art. While there is a rich history between science and art mediums such as sculpture (stone and metal), as well as glass, paintings truly showcase the intersection of both disciplines throughout history and cultures. Cave paintings dating to 40,000 years were created using various pigments (or paint) from plants, sand, and different soils. Tempera – also known as egg tempera, is a permanent, fast-drying painting medium consisting of colored pigment mixed with a water-soluble binder medium – has been found on early Egyptian sarcophagi decorations. Oil paint was first used for the Buddhist Paintings by Indian and Chinese painters in western Afghanistan sometime between the 5th and 10th centuries – it did not gain popularity in Europe until the 15th century during the height of the Renaissance period. In the late 19th and early 20th centuries, the physiological and psychological effects of color and light were a primary concern to Impressionist and Post-Impressionist artists such as Vincent van Gogh, Paul Gauguin, and Claude Monet. With the invention of acrylic paint in the 20th century, artists no longer had to mix their own paints to achieve the desired color and thickness – artists can modify the appearance, hardness, flexibility, texture, and other characteristics of the paint surface by using acrylic media or simply by adding water.

Lesson

After visiting the museum, students will further explore the connections between art and science. When visiting a museum one is asked not to touch the art or to use any flash photography – this is for the preservation of the art. In the art field there are specialists who make it their job to learn the science behind art to ensure the proper conversation of objects.

Take oil paintings for example:

- Excessively high light levels can cause the fading and/or darkening of paintings. Some paintings darken so severely that the painting and its details are no longer visible.
- Extremes and fluctuations in temperature and humidity can cause damage to paintings due to the expansion and contraction of the wood and fabric components of the painting.
- Aside from the unsightly appearance of dirt on a painting, dirt also serves as a host for mold growth and the
 absorption of pollutants and moisture onto the surface of a painting. All of these can cause damage that
 obscures the image of the painting.

Now, while we have spent time focusing on paintings – for this particular lesson students will observe and understand the changes that occur to metals when submerged in water. Teachers please supply students with Pennies, Periodic Table, Journal or bound paper, Clear plastic containers, Water, Teaspoons, Vinegar, and Salt.

Divide the class into groups of three or four. Hand out a penny to each group. Explain that the metal in a penny is an **alloy** of zinc and copper. Have the class identify these two metals on a periodic table. Have students draw their pennies and then answer the following questions in their journals, using adjectives to describe characteristics.

- What color is the coin?
- Is it shiny or dull?

- How would you describe the texture of the surface?
- Is the metal hard or soft?
- What do you think will happen to the penny over the next week?

Have students place the pennies in clear plastic containers, cover them with water, and then add a few teaspoons of salt to the water or a few drops of vinegar. Allow the coins to soak for a week. Then have groups reexamine their coins. They should draw the pennies a second time and answer the questions above again in their journals. Each group should compare their two drawings and their observations.

- What has changed?
- What has stayed the same?
- Compare the coins placed in salt water versus those placed in vinegar water what are the differences and similarities?
- What do you think happens to metal sculptures exposed to salt water on a long term basis what about outdoor sculptures exposed to all elements including rain, sun, snow, wind, etc.?

EXAMPLES



Sarah Hood, *Summer Tree Ring*, 2007. Sterling Silver, plastic model railroad armature. Overall: 3 x 2 x 1 inches. Gift of the artist, 2009.







Sarah Morris, *Myth of the Sea*, circa 1968-1970. Bronze, Overall 112 x 91 x 51 inches. Gift of Wells Fargo Bank, 2001

EXTENSION ACTIVITY

Have students create a painting using watercolors – letting them know that they will be placing the finished piece under a light source for a week (weather permitting placing the piece outside in the sun will expedite the process) to see how the watercolor paints react to long term light exposure. Ask students to follow similar prompts to the coin lesson.

EXTENDED CONNECTIONS

SEEING COLOR

Color originates in light. Sunlight, as we perceive it has no color. In reality, a rainbow is testimony to the fact that all the colors of the spectrum are present in white light. As illustrated in the diagram, light goes from the source (the sun) to the object (the apple), and finally to the detector (the eye and brain).

1. All the "invisible" colors of sunlight shine on the apple.

2. The surface of a red apple absorbs all the colors of the light rays, except for those corresponding to red, and reflects this color to the human eye.

3. The eye receives the reflected red light and sends a message to the brain.

COLOR WHEEL

A color circle, based on the primary colors of red, yellow and blue, is traditional in the field of art. Sir Isaac Newton developed the first circular diagram of colors in 1666. Since then, scientists and artists have studied and designed numerous variations of this concept.

There are definitions (or categories) of colors based on the color wheel.

Primary Colors

Red, yellow and blue. In traditional color theory (used in paint and pigments), primary colors are the 3 pigment colors that cannot be mixed or formed by any combination of other colors. All other colors are derived from these 3 hues.



Secondary Colors

Secondary Colors

Green, orange and purple. These are the colors formed by mixing the primary colors.

Tertiary Colors

Yellow-orange, red-orange, red-purple, blue-purple, blue-green & yellow-green. These are the colors formed by mixing a primary and a secondary color. That's why the hue is a two word name, such as blue-green, red-violet, and yellow-orange.

Primary Colors

Source: colormatters.com

How Artists Create Curriculum Guide, page 15

Tertiary Colors



LIGHT TRANSMISSION

Transparent



Materials like air, water, and clear glass are called transparent. When light encounters transparent materials, almost all of it passes directly through them. Glass, for example, is transparent to all visible light. The color of a transparent object depends on the color of light it transmits. If green light passes through a transparent object, the emerging light is green; similarly if red light passes through a transparent object, the emerging light is red.

Translucent



Materials like frosted glass and some plastics are called translucent. When light strikes translucent materials, only some of the light passes through them. The light does not pass directly through the materials. It changes direction many times and is scattered as it passes through. Therefore, we cannot see clearly through them; objects on the other side of a translucent object appear fuzzy and unclear. Because translucent objects are semi-transparent, some ultraviolet rays can go through them. This is why a person behind a translucent object can get a sunburn on a sunny day.

Opaque





Light Absorbed

Most materials are opaque. When light strikes an opaque object none of it passes through. Most of the light is either reflected by the object or absorbed and converted to heat. Materials such as wood, stone, and metals are opaque to visible light.

GLOSSARY

VISUAL ART ELEMENTS

The basic components th at make up a work of art

Color – The visible range of reflected light. Color has three properties: hue, value, and intensity.

Form – A three-dimensional object that has length, width, and depth.

Line – The one-dimensional path of a dot through space used by artists to control the viewer's eye movement; a mark made by a pencil, pen, or brush.

Shape – A closed space made when a line connects to itself.

Space – The area above, below, around, and within a piece of artwork. The illusion of depth or space on a flat surface is created through the use of the following techniques: overlapping shapes and forms, use of size, detail, value, color, and linear perspective.

Texture – How something feels (actual) or appears to feel (visual/implied).

Value – The lightness and darkness of a line, shape, or form.

PRINCIPLES OF ORGANIZATION

A means of organizing the elements in a work of art

Balance – The arrangement of elements that makes the individual parts of a composition appear equally important. If a composition appears top or bottom heavy and/or weighted to one side, it is not visually balanced.

Contrast – A technique in an artwork which shows differences in art elements such as smooth/rough textures, light/dark colors, or thick/thin lines.

Emphasis/Dominance – A suggestion that one element is more important than the others in the same composition; color, texture, shape, space, and size can be used to create importance.

Harmony – The creation of unity through the use of stressing similarities of separate but related parts of the artwork.

Proportion –The relationship of parts to a whole or parts to one another, referring to size and placement.

Rhythm – The use of repeated arts elements to create movement in an artwork; random, regular, alternating, flowing progressive.

Unity – A successful combination of arts elements to create a sense of wholeness and visual completion in an artwork.

Variety – The use of art elements to create differences in an artwork for visual interest.

ARTIST RESOURCES

Dale Chihuly - <u>http://www.chihuly.com/</u>

Julie Speidel – <u>http://juliespeidel.com/</u>

Roger Shimomura – <u>http://www.rshim.com/</u>

Sarah Hood - http://www.sarahhoodjewelry.com/medium/Default.aspx

Scott Fife – <u>http://scottfife.net/</u>

PUBLISHED RESOURCES

Art and Science by Eliane Strosberg. Abbeville Press, 2001.

How to Teach Art to Children: Grades 1-6. By Joy Evans and Tanya Skelton. Monterey, CA: Evan-Moor, 2001. Print.

Optical Illusions: The Science of Visual Perception by Al Seckel. Firefly Books, 2006.

Studio Thinking: The Real Benefits of Visual Arts Education by Lois Hetland et al, 2007. Teachers College Press, NY.

Science Arts: Discovering Science Through Art Experiences (Bright Ideas for Learning) by MaryAnn F. Kohl. Bright Ring, 1993.

TEACHER RESOURCES

- <u>Art Resource Center</u> Learn more about the exhibitions on view at Tacoma Art Museum by visiting the Bill and Melinda Gates Foundation Art Resource Center – with more than 6,000 art books, numerous art periodicals, videos, and teacher resource packets available, the ARC is an excellent community resource to learn more about the visual arts.
- <u>Arts Impact</u> Based out of the Puget Sound Educational Service District (PSESD), a professional development program that empowers K-8 classroom teachers to become competent and confident teachers of visual and performing arts using arts-infused lesson plans with a focus on mathematics and literacy.

<u>Tacoma Art Museum's collection database</u> – designed to make the museum's 3,200 object collection available online, was launched on November 1, 2011 and is a work in progress. New objects and information are being added to the database regularly.

EXTENDED LEARNING

Pigments Through the Ages - http://www.webexhibits.org/pigments/index.htm

Science, Art, and Technology - http://www.artic.edu/aic/education/sciarttech/index.html

Storytelling Activities & Lesson Ideas - http://www.storyarts.org/lessonplans/lessonideas/#picture

Tessellations explanation and activities - http://www.tessellations.org

COMMON CORE STATE STANDARDS (CCSS)

Speaking and Listening Standards

- Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on other's ideas and expressing their own clearly and persuasively.
- Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
- Integrate and evaluate information presented in diverse media formats, including visually, quantitatively, and orally.
- Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to take, purpose, and audience.

Language Standards

- Demonstrates command of the conventions of standard English grammar and usage when writing or speaking.
- Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

Writing Standards

- Write informative/explanatory texts to convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
- Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
- Produce clear and coherent writing in which the development, organization, and style are appropriate to the task, purpose, and audience.

Math Standards

- Represent and interpret data.
- Reason with shapes and their attributes.
- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- Geometric measurement: understand concepts of angle and measure angles.
- Classify two-dimensional figures into categories based on their properties.

ESSENTIAL ACADEMIC LEARNING REQUIREMENTS (EALRS)

Arts

- 1.1 Understand arts concepts and vocabulary
- 2.1 Apply a creative process in the arts
- 2.3 Apply a responding process to an arts presentation
- 3.1 Use the arts to express and present ideas and feelings
- 3.2 Use the arts to communicate for a specific purpose
- 4.2 Demonstrate and analyze the connections between the arts and other content areas