

Improving Teacher Quality
Arts and Science Integration

VISUAL ART & PHYSICAL SCIENCE

GRADE 5
WINTER 2012

**ITQ ARTS AND SCIENCE INTEGRATION
GRADE 5
VISUAL ART AND PHYSICAL SCIENCE**

**Is it Art? Is it Science?
Elements of Art and Photomicrographic Images
Lesson 1**

CONTENT STANDARDS

Visual Art

1.3 Use their knowledge of all the elements of art to describe similarities and differences in works of art and in the environment.

Physical Science

PS1 Elements and their combinations account for all the varied types of matter in the world.

PS1.e Scientists have developed instruments that can create discrete images of atoms and molecules that show that the atoms and molecules often occur in well-ordered arrays.

ESSENTIAL QUESTIONS (*Questions students might ask about the topic*)

- What do atoms and molecules look like through an electron microscope?
- How can I use the elements of art to describe discrete images of atoms and molecules seen through an electron microscope?

OBJECTIVES & STUDENT OUTCOMES (*Students will be able to.....*)

- describe their observations of images as seen through an electron microscope using the vocabulary of visual art.
- illustrate an image as seen through an electron microscope.
- analyze their work of art using the vocabulary of art.
- categorize their work of art as representational, abstract, or non-representational or non-objective and defend their reasoning.

ASSESSMENT (*Various strategies to evaluate effectiveness of instruction and student learning*)

- **Feedback for Teacher**
 - Informal feedback from classroom discussion
 - Observation of students during the work process
 - Drawings and reflections created by students
- **Feedback for Student**
 - Informal feedback from teacher during discussion
 - Individual conferencing with teacher

WORDS TO KNOW

Visual Art Vocabulary

- **Abstract:** artwork in which the subject matter is stated in a brief, simplified manner, little or no attempt is made to represent images realistically, and objects are often simplified or distorted.
- **Elements of art:** Sensory components used to create works of art: line, shape/form, color, texture, space, value
- **Non-representational:** Having no recognizable object as an image. Also called non-objective.
- **Representational:** to present a likeness.

Physical Science Vocabulary

- **Atoms:** The smallest particle of an element. Atoms are the building blocks of matter.
- **Electron microscope:** A microscope with high magnification and resolution, employing electron beams in place of light and using electron lens.
- **Photomicrography:** photos taken through the lens of a microscope.

MATERIALS

- computer connected to the internet
- document camera or projector
- 9" x 12" white construction paper, one per student
- pencil and eraser, one per student
- 8 colored pencils in a set, one per student
- hand held pencil sharpener, one per student
- one representational reproduction
- the words "representational = realistic" on a sign
- one abstract reproduction
- the words "abstract = objects simplified and distorted" on a sign
- one non-representational or non-objective reproduction
- the words "non-representational or non-objective = no object appears" on a sign
- Science notebooks (one per student)

RESOURCES

- *Portfolios, Grade: Five*, by Robin Montana Turner, Barrett Kendall Publishing
 - Representational art: page 11, 39, 88, 90, 96, 102, 105
 - Abstract art: page 8, 30, 35, 43, 66, 68, 70, 76, 80, 110, 124
 - Non-objective art: page 12, 28 B., 28, 41
- Websites
 - Molecular Expressions Photography: Interactive Java Tutorial: The Photo Gallery
<http://micro.magnet.fsu.edu/primer/virtual/galleria/photogallery.html>

PREPARATION *(To be completed prior to the lesson)*

- *Access Behold! The First Photo of a Molecule!*
<http://trueslant.com/justingardner/2009/08/29/behold-the-first-photo-of-a-molecule/> Bookmark it for use in the lesson
- *Access Molecular Expressions Interactive Java Tutorial: The Photo Gallery* on the website:
<http://micro.magnet.fsu.edu/primer/virtual/galleria/photogallery.html>
- Choose "minerals"
- Choose "magnesium chloride" or "nickelous sulfate"
- Manipulate the focus, intensity and zoom capabilities for a clear view

WARM UP *(Engage students, access prior learning, review, hook or activity to focus the student for learning)* (5 minutes)

- Project the image of magnesium chloride or nickelous sulfate in an area of the classroom easily seen by all students.
- Ask students to visually examine the photograph for one minute silently.
- Ask:
 - *What do you see? How do you think this image was created?*
- Say:
 - *This image is an actual photograph taken through an electron microscope of the surface of magnesium chloride (or nickelous sulfate) by Michael Davidson and the Florida State University Research Foundation. This type of imaging is called photomicrography. In August of 2009, IBM Researchers in Switzerland made the first photograph of a molecule.*
- Click to the bookmarked page: <http://trueslant.com/justingardner/2009/08/29/behold-the-first-photo-of-a-molecule/>
- Say:
 - *This is a photograph of a single molecule of pentacene. The five hexagonal shapes in the center are carbon rings. They include 22 carbon atoms. The spaces round the outside of the photograph show 14 hydrogen atoms.*

MODELING *(Presentation of new material, demonstration of the process, direct instruction)* (10 minutes)

- Go back to the *Molecular Expressions* website.
<http://micro.magnet.fsu.edu/primer/virtual/galleria/photogallery.html>
- Maneuver around the website exploring microscopic views of polymers and then sugars.
- Choose one of the sugars to observe for the rest of this lesson.
- Distribute 9" x 12" white constructions paper, pencil, eraser, colored pencils, and hand held pencil sharpener to each student.
- Demonstrate how and instruct students to observe the **elements of art** in the photomicrography.
- Say:
 - *Move your eyes over the photomicrography. Find horizontal, vertical, diagonal lines. Use your finger to trace those lines on your paper. This type of mapping your drawing will help you to plan your work of art and use space more effectively.*
- Demonstrate how and instruct students to reproduce those lines on their drawings in a lightly sketched manner using pencil.
- Say:
 - *Now find shapes in the image. Use your finger to map these shapes on your drawing making sure not to smear your existing lines.*
- Demonstrate how and instruct students to add shapes to the sketch using pencil.
- Say:
 - *Let's examine this image and look for patterns. Notice the details and sketch them in lightly with pencil.*

GUIDED PRACTICE (*Application of knowledge, problem solving, corrective feedback*)

(30 minutes)

- Say:
 - *Now use your colored pencils to finish your work. If your colored pencil needs to be sharpened, do not use the electronic pencil sharpener, use the hand held sharpeners only. The lead is sometimes soft and the pencil will be ruined in the electronic pencil sharpener. Continue to look up at the image for observed information. Remember to create pencil strokes in the direction, thickness and pattern seen in the image to represent the surface texture of the sugar. You will have 20 minutes to complete your drawing.*
- While students are working on their drawing, place three reproductions, one **representational**, one **abstract** and one **non-representational** or **non-objective**, in an area of the classroom easily seen by all students.
- Move throughout the room encouraging students to reference the projected image visually and use color in a representative manner. Conference with individual students as needed.
- Warn students they have 5 minutes to finish their work when 15 minutes have passed.
- When 20 minutes have passed, instruct students to store colored pencils appropriately.
- Direct student attention to the three reproductions.
- Say/Ask:
 - *Notice these three works of art. They are very different from each other, but each one has the **elements of art**: line, shape/form, color, texture, space and value. Each one of these works represents a style or category of art. Who would like to place their drawing next to the work of art that is most like theirs?*
- Allow three or four students to place their drawings with the work of art that seems most alike.
- Say:
 - *Works of art that depict objects in a real way are called "**representational**."*
- Place the "**representational**" sign over the **representational** work of art.
- Say:
 - ***Abstract** works of art show objects in a simplified way with few details. Sometimes the object is distorted or exaggerated.*
- Place the "**abstract**" sign over the **abstract** work of art.
- Say:
 - *This type of artwork is called "**non-representational**" or "**non-objective**." That means there is no recognizable object in the work of art.*
- Place the "**non-representational**" or "**non-objective**" sign over the **non-objective** work of art.
- Ask:
 - *Now that we know what each category means, would you students who placed your artwork up here like to move your artwork to a different category? If so, what category would you move it to? Why?*

DEBRIEF AND EVALUATE (*Identify problems encountered, ask and answer questions, discuss solutions and learning that took place. Did students meet expected outcomes?*)

(5 minutes)

- Prompt for reflective writing in the science notebook: "Describe your drawing for someone who cannot see it using the vocabulary of art and science."

EXTENSION (*Expectations created by the teacher that encourages students to participate in further research, make connections and apply understanding and skills previously learned to personal experiences.*)

- Go back to <http://micro.magnets.fsu.edu/> and click on "micro-scapes". Explore the idea of "art in science" where the photographers/scientists have put together multiple-exposure **photomicrography** to craft alien/surrealistic landscapes.

Representational:
to present a likeness

Abstract:

Artwork in which the subject matter is stated in a brief, simplified manner with little or no attempt to represent images realistically. Objects are often simplified and/or distorted.

**Non-
representational:**
having no
recognizable object
as an image. Also
called non-objective.

**ITQ ARTS AND SCIENCE INTEGRATION
GRADE 5
VISUAL ART AND PHYSICAL SCIENCE**

**Would You Please Hand Me the Triangle?
Appropriate Tools in Art and Science
Lesson 2**

CONTENT STANDARDS

Visual Art

2.1 Use one-point perspective to create the illusion of space.

Physical Science

I&E 6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations.

I&E 6.f Select appropriate tools (e.g., thermometers, meter sticks, balances, and graduated cylinders) and make quantitative observations.

ESSENTIAL QUESTIONS (*Questions students might ask about the topic*)

- How do I draw basic geometric forms so they look dimensional?
- How do I choose appropriate tools to draw geometric shapes and show dimension?
- How does choosing appropriate tools in visual art compare to choosing appropriate tools in science?

OBJECTIVES & STUDENT OUTCOMES (*Students will be able to.....*)

- draw basic geometric shapes using appropriate drawing tools.
- create a drawing illustrating the illusion of space using the conventions of single point perspective.
- compare and contrast the choice of appropriate tools when creating art and when conducting an experiment in science.

ASSESSMENT (*Various strategies to evaluate effectiveness of instruction and student learning*)

- **Feedback for Teacher**
 - Informal observation of students throughout the drawing process
 - "Single Point Perspective Drawing Checklist"
- **Feedback for Student**
 - Informal feedback from teacher
 - Individual conferencing during Guided Practice
 - "Single Point Perspective Drawing Checklist"

WORDS TO KNOW

Visual Art Vocabulary:

- **Horizontal:** The right to left, or across orientation of a line, shape or form.
- **Horizon line:** The line representing where earth meets sky.
- **Illusion of depth:** The organization of shapes in a work of art to make a flat surface appear as if it has depth or three dimensions.
- **Orthogonal lines:** Vanishing lines in a perspective drawing.
- **Parallel:** Lines, planes surfaces or objects side by side and having the same distance continuously between them.
- **Perspective:** Drawing solid objects on a two-dimensional surface to give the right impression of their height, width, depth, and position in relation to each other when viewed from a particular point.
- **Vanishing point:** A point at which receding lines seem to converge.
- **Vertical:** The up and down orientation of a line, shape or form.

MATERIALS

- variety of drawing tools: templates, ruler, yardstick, t-square, triangle, different style compasses, sharpeners, sandpaper, stumps, tortillons, drawing board, portfolio
- variety of science tools: balance, graduated cylinder, beaker, test tube
- reproduction or projection of *Beach at Trouville* by Claude Monet
- 12 inch ruler, one per student
- compass, one per student
- pencil and eraser, one per student
- triangle, one per student
- 9" x 12" white construction paper
- colored pencils
- Science notebooks (one per student)

RESOURCES

- *Portfolios, Grade: Five*, by Robin Montana Turner, Barrett Kendall Publishing
 - Single Point Perspective: pages 6, 92, 93, 94, 105, 108
 - *Beach at Trouville*, 1870 by Claude Monet: page 92
- Internet Sites
 - Works of art with horizon line, vanishing point and orthogonal lines:
 - Claude Monet, *Beach at Trouville*:
http://www.art.com/asp/sp-asp/_pd--10082578/Beach_at_Trouville.htm
 - Watch perspective drawing occur:
 - <http://www.olejarz.com/arted/perspective/index.html>
 - <http://www.cartage.org.lb/en/themes/Arts/drawings/PerspectiveDrawing/OnePointPersp/OnePointPersp.htm>
 - Perspective drawing in comics: http://www.scottmcdaniel.net/drawing/perspective/1_point.html

PREPARATION (To be completed prior to the lesson)

- SDUSD Visual Art Grade 3, Lesson 2: "The Illusion of Space"

WARM UP (Engage students, access prior learning, review, hook or activity to focus the student for learning) (5 minutes)

- Display a variety of drawing tools in an area easily seen by all students. Display a variety of science tools in an area easily seen by all students
- Ask:
 - Refer to drawing tools. What kind of profession uses these tools? [illustrator, artist, designer, architect] Why do artists need tools to draw? [to measure, to be precise, straight lines, perfect circles, true 45 degree angles]
 - Refer to science tools. What kind of professions uses these tools? [scientist, chemist] Why do scientists need tools? [to make accurate observations]
- Say:
 - Today you and I are going to use some of these tools to carefully draw objects.

MODELING (Presentation of new material, demonstration of the process, direct instruction) (25 minutes)

- Display or project *Beach at Touville* by Claude Monet in an area easily seen by all students.
- Direct students to visually examine the work for one minute silently.
- Ask:
 - How does the artist make this flat picture appear to have depth and distance? [objects in foreground are largest, in middle ground smaller and objects in the background are smallest]
- Say:
 - The illusion of depth is an important concept in art. Today we are going to learn about perspective. The place where the sky meets the water or the ground is called the **horizon line**.
- Use a yardstick or ruler to show where the horizon line appears on the work of art.

- Ask:
 - *Who can come up to the work of art and show where the boardwalk seems to disappear or vanish?*
- Choose a student to point out the place toward the center of the work where the boardwalk seems to come together.
- Say:
 - *In a work of art this spot is called the **vanishing point**...a point on the horizon where it seems everything vanishes visually. Notice how the tops of the buildings, the top of the sea wall, the lines in the boardwalk, the line where the ocean meets the sand all line up with the **vanishing point**. The lines that are made at a diagonal ending at the **vanishing point** are called **orthogonal lines**.*
- Use the yardstick or ruler to illustrate how the **orthogonal lines** in the work of art all converge at the **vanishing point**.
- Say: *Today we are going to draw some basic geometric shapes using the rules of single point perspective.*
- Distribute 9" x 12" white construction paper, a pencil, an eraser, a ruler, a compass and a triangle to each student.
- Demonstrate how and instruct students to:
 - Turn papers to a landscape orientation.
 - Place the ruler along the left hand edge of the paper with "0" at the bottom corner.
 - Place a dot on the paper at 4.5 inches.
 - Place the ruler on the right side of the paper with "0" at the bottom corner.
 - Place a dot on the paper at 4.5 inches.
 - Place the straight edge of the ruler across the page lining up the two dots.
 - Draw a line from the left edge of the paper to the right edge of the paper using the ruler. This is the **horizon line** will be the **horizon line** for this drawing.
 - Place a ruler so that the inch measurement side lies just under the **horizon line** and the "0" point of the ruler lies at the left edge of the paper.
 - Mark a small dot at the six-inch mark on the **horizon line**. This is the **vanishing point** for this drawing exercise.
- Ask: *Which of the tools on your desk would be best to draw a perfect 2-inch square on this drawing?* [triangle]
- Demonstrate how and instruct students to:
 - Draw a 2-inch square in the lower right hand corner of the drawing below the **horizon line**. (Figure 1)
 - Draw a straight line from the **vanishing point** to the upper right hand corner of the square. This is called an **orthogonal line** or a **vanishing line**. (Figure 2)
 - Draw a straight line from the **vanishing point** to the upper left corner of the square. (Figure 3)
- Ask: *Who can remember what this kind of line is called?* [orthogonal]
- Demonstrate how and instruct students to:
 - Draw a straight line from the **vanishing point** to the lower left corner of the square (Figure 4)
 - Draw a straight horizontal line parallel to the top of the square between the first and second **orthogonal lines**. (Figure 5)
 - Draw a straight vertical line from the intersection point of that vertical line and the second **orthogonal line** to the third **orthogonal line**. This should make the square appear as a cube. (Figure 6)
 - Erase the part of the **orthogonal lines** that extend from the back of the cube to the **vanishing point**. (Figure 7)

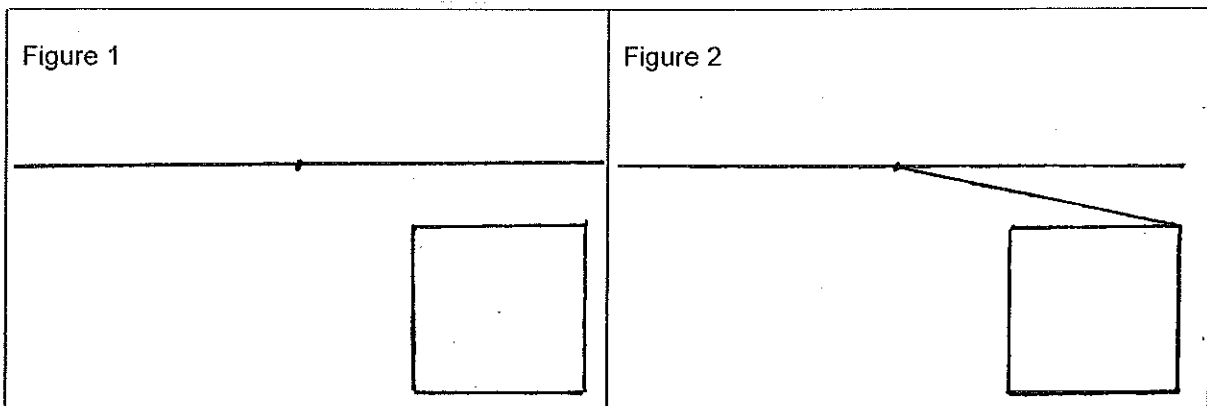


Figure 3

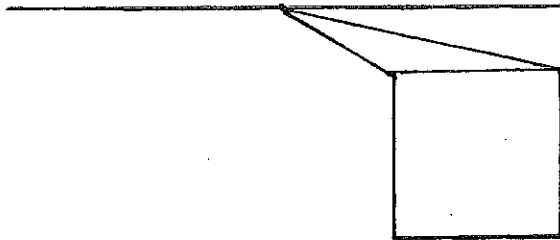


Figure 4

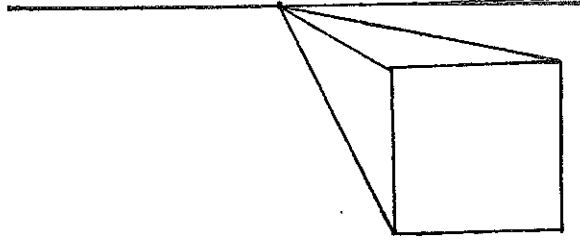


Figure 5

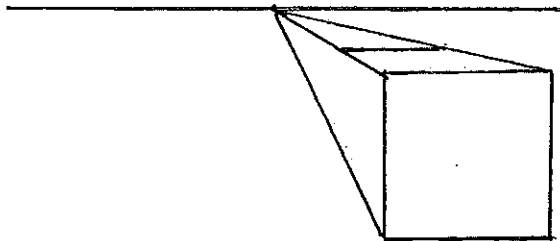


Figure 6

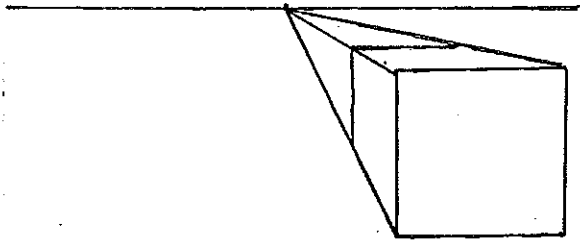
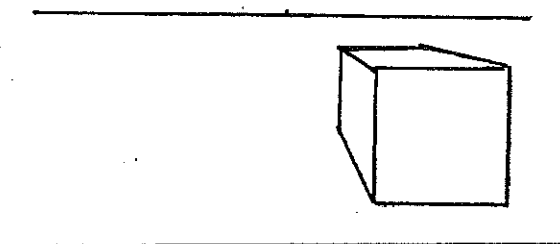


Figure 7



- Demonstrate how and instruct students to:
 - Draw a 6" x 2" vertically oriented rectangle that extends above and below the horizon line on the left side of the drawing. (Figure 8)
 - Erase the part of the horizon line that appears "inside" the rectangle. (Figure 9)
 - Draw a straight orthogonal line from the upper right hand corner of the rectangle to the vanishing point.

Figure 8

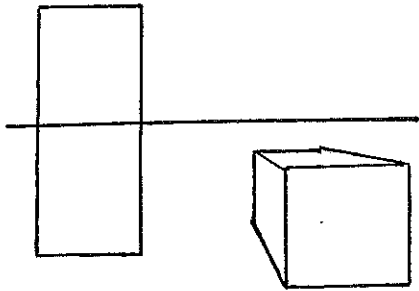


Figure 9

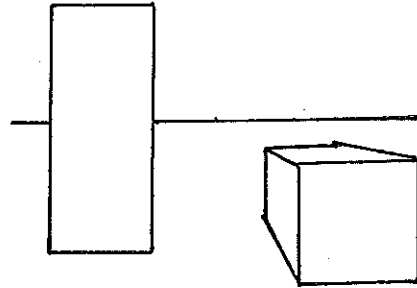


Figure 10

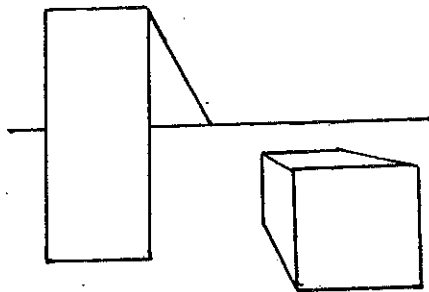


Figure 11

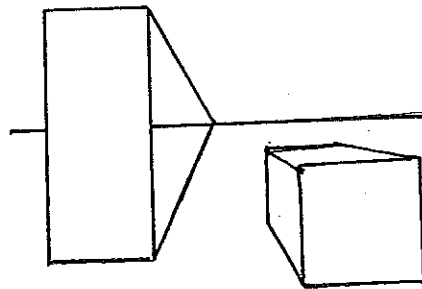


Figure 12

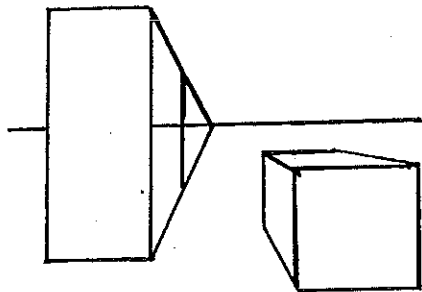


Figure 13

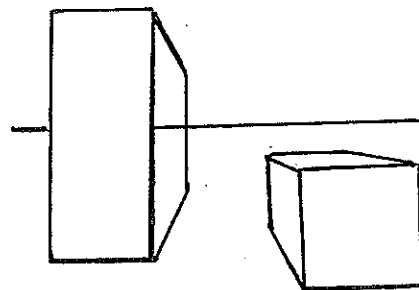
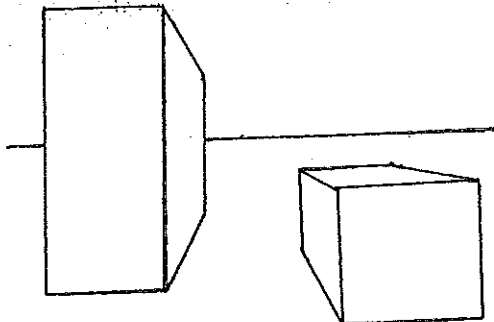


Figure 14



(Figure 10)

- Draw another **orthogonal line** from the lower right corner of the rectangle to the **vanishing point**. (Figure 11)
- Draw a straight **vertical line parallel** to the right side of the rectangle from the upper **orthogonal line** to the lower **orthogonal line**. This should make the rectangle appear as a slab. (Figure 12)
- Erase the part of the **orthogonal lines** that extend from the back of the slab to the **vanishing point**. (Figure 13)
- Erase the part of the **horizon line** that now appears “inside” the slab. (Figure 14)

GUIDED PRACTICE (*Application of knowledge, problem solving, corrective feedback*)

(15 minutes)

- Instruct students to add at least one more geometric form (e.g., pyramid, sphere, cube, slab) to the drawing using appropriate tools.
- Remind students that all **orthogonal lines** must be lined up to the **vanishing point** and all **horizontal and vertical lines** must be **parallel**.
- Distribute the “Single Point Perspective Drawing Checklist” to each student.
- Instruct students to use the checklist to check their own drawing for errors.

DEBRIEF AND EVALUATE (*Identify problems encountered, ask and answer questions, discuss solutions and learning that took place. Did students meet expected outcomes?*)

(5 minutes)

- **Ask:**
 - *What do you consider when choosing a tool to create art?* [needs, measurement, preciseness of line, angle or shape]
 - *What do you consider when you choose tools to conduct an experiment?* [needs, measurement, preciseness]
 - *What is different?* [Art is expression or communication from the artist to the public. Science is the systematic study of the structure and behavior of the physical world.]
- Prompt for reflection writing in the science notebook: “What is the same about conducting an experiment and making a work of art? What is different?”

EXTENSION (*Expectations created by the teacher that encourages students to participate in further research, make connections and apply understanding and skills previously learned to personal experiences.*)

- Add the idea of a primary light source when looking at the drawings. Which sides of the forms would be in highlight and which would be in shadow.
- Use pencil or colored pencils to demonstrate understanding of light and shadow on 3-dimensional objects.
- Draw details on the geometric forms making them look like recognizable objects. (e.g., buildings in a cityscape, train cars in a landscape, school buildings on campus).
- Create students’ names in block letters above or below the horizon line using the rules of perspective to make them appear three-dimensional.
- Go to <http://www.olejarz.com/arted/perspective/index.html> to see interactive single point perspective drawing.
- Find an area of the indoor or outdoor environment that illustrates perspective, horizon line, orthogonal lines, and vanishing point. Take students to that area to connect the art/science learning to the real world.

Single Point Perspective Drawing Checklist

- **Horizon line** goes across the middle of the paper.
- **Horizon line** is straight.
- **Horizon line** extends from the left side to the right side of the paper.
- **Vanishing point** is in the middle of the paper.
- All **horizontal** lines are **parallel**.
- All **vertical** lines are **parallel**.
- All **orthogonal lines** are oriented to the **vanishing point**.

**ITQ ARTS AND SCIENCE INTEGRATION
GRADE 5
VISUAL ART AND PHYSICAL SCIENCE**

**Learning From Works of Art and Science
Criteria and Scientific Evidence
Lesson 3**

CONTENT STANDARDS

Visual Art

4.3 Develop and use criteria as individuals and in groups to assess works of art.

Physical Science

I&E 6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations.

I&E6.h Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

ESSENTIAL QUESTIONS (*Questions students might ask about the topic*)

- What information do I need to understand a work of art?
- What does it mean to “research” something?
- How do you do research?
- How is analyzing a work of art like drawing conclusions from scientific evidence?

OBJECTIVES & STUDENT OUTCOMES (*Students will be able to.....*)

- develop criteria for analyzing and responding to works of art.
- connect the use of evidence in investigation, experimentation and analysis in various disciplines.
- develop research skills by identifying topic question and information resources.

ASSESSMENT (*Various strategies to evaluate effectiveness of instruction and student learning*)

- **Feedback for Teacher**
 - “Learning From a Work of Art” Worksheets
 - Informal feedback from class discussion
 - Observation
- **Feedback for Student**
 - Teacher observation
 - Response to “Learning From a Work of Art” Worksheet

WORDS TO KNOW

Visual Art and Physical Science Vocabulary:

- **Analysis:** Detailed examination of the elements or structure of something, typically as a basis for discussion or interpretation.
- **Evidence:** The available body of facts or information indicating whether a belief or proposition is true or valid.

MATERIALS

- a variety of reproductions of master works of art, one per group of three students
- a poor copy of an interesting masterwork of art with partial credit information
- two lined sheets of chart paper
- one chart paper with 3 sections, Section 1 titled “Description”, Section 2 entitled “Analysis” and Section 3 entitled “Response”
- a marker
- “Learning From a Work of Art “ worksheet, one per group of three students
- Science notebooks (one per student)

RESOURCES

- *Portfolios, Grade: Five*, by Robin Montana Turner, Barrett Kendall Publishing
 - Works of art throughout the textbook
 - Talk About Art: pg. 16, 38, 60, 82, 104, 126

PREPARATION *(To be completed prior to the lesson)*

- Review the elements of art: line, shape/form, color, texture, space and value

WARM UP *(Engage students, access prior learning, review, hook or activity to focus the student for learning)*

(5 minutes)

- Display a poor copy of an interesting masterwork of art so all students can see it easily. (Option: show Gilbert Stuart's unfinished portrait of George Washington available at this web site: <http://www.mfa.org/collections/object/george-washington-34341>)
- Instruct students to examine the work visually for one minute silently.
- Ask:
 - *What do you notice about this work of art? [it is missing parts, unclear] What you like to find out about it? [what the whole work looks like, who created it, title]*

MODELING *(Presentation of new material, demonstration of the process, direct instruction)*

(20 minutes)

- Place two chart papers in an area easily seen by all students.
- At the top of one chart write the word "Evidence" and write the words "Missing Information" on the other using a marker.
- Ask: *What do we know or what evidence do we see in this reproduction?*
- Write their ideas on the chart entitled "Evidence."
- Ask: *What information is missing?*
- Write their ideas on the "Missing Information" chart paper.
- Ask: *How could we find out the missing pieces of information? [investigate, research]*
- Show a clear and complete copy of the work of art. (Option: show Gilbert Stuart's full portrait of George Washington available at this web site: <http://www.georgewashington.si.edu/portrait/non-flash.html>)
- Discuss what information from the missing chart is now information that could be placed on the evidence chart.
- Place the third chart paper (with three sections) in the room.
- Say: *What are the pieces of information we always seem to think about when looking at a piece of art? [title, time period, artist, media, elements, meaning]*
- Write the ideas on the chart under the appropriate sections. [Title, artist, media, elements go under "Description". Significance, theme, meaning go under "Analysis". Personal connections, associated memories, feelings go under "Response".] (Give time for students to share all answers.)
- Say:
 - *Lets look at each section and form a question that summarizes what we have written.*
 - *When we are done we will have three questions we can use to assess works of art.*
- Write each question in the appropriate section.
- Use this chart as guide to analyze or assess other works of art.

GUIDED PRACTICE *(Application of knowledge, problem solving, corrective feedback)*

(20 minutes)

- Divide the class into groups of three students.
- Direct each group to choose a recorder who will write down the information for the group.
- Provide each recorder a "Learning From a Work of Art" worksheet.
- Provide a reproduction of a work of art to each of the student groups.
- Say:
 - *Recorders, please place the names of the students in your group at the top of the worksheet. Remember your own name.*

- Write the question we wrote for "description" in the upper section of the "Description" section of your "Learning From a Work of Art" worksheet.
- Now look at your work of art.
- Discuss your ideas and when you agree, the recorder will write down your group thoughts.
- Then go on to the next two sections.
- You have 10 minutes to complete all three sections, so use your time wisely.
- Allow time for the groups to complete their worksheets.
- Say: Over the next few days each group will be given the opportunity to share their work of art and their ideas from the worksheet with the class.
- Collect the worksheets and the reproductions together so they are conveniently stored together for the presentations.
- Say/Ask:
 - Now we have developed a way to look at and analyze works of art to help us learn. How can we develop a way to look at science experiments or presentations and analyze them to help us learn? [describe, analyze and respond]
 - Lets go back to the beginning of our lesson today. Remember when we looked at the piece of art that was missing information? How could that exercise, evidence vs. missing information, be used when looking at a science fair exhibit? [examine data closely, determine what information is missing, develop new questions, plan and execute a new experiment]
 - When we analyze art or science, sometimes we have more questions. What can we do to satisfy our curiosity? [research, create a work of art or experiment of our own]

DEBRIEF AND EVALUATE (Identify problems encountered, ask and answer questions, discuss solutions and learning that took place. Did students meet expected outcomes?)
(5 minutes)

- Ask:
 - What questions do you have about the works of art you examined today? How can you answer those questions? [do more research]
- In science notebooks have student discuss the idea research for self-satisfaction not just for a class assignment.

EXTENSION (Expectations created by the teacher that encourages students to participate in further research, make connections and apply understanding and skills previously learned to personal experiences.)

- Allow one group of three students from this lesson to show their work of art to the class each day until all groups have a chance to present.
- Ask each group to briefly describe, analyze and respond to their work of art using the information from their worksheet.

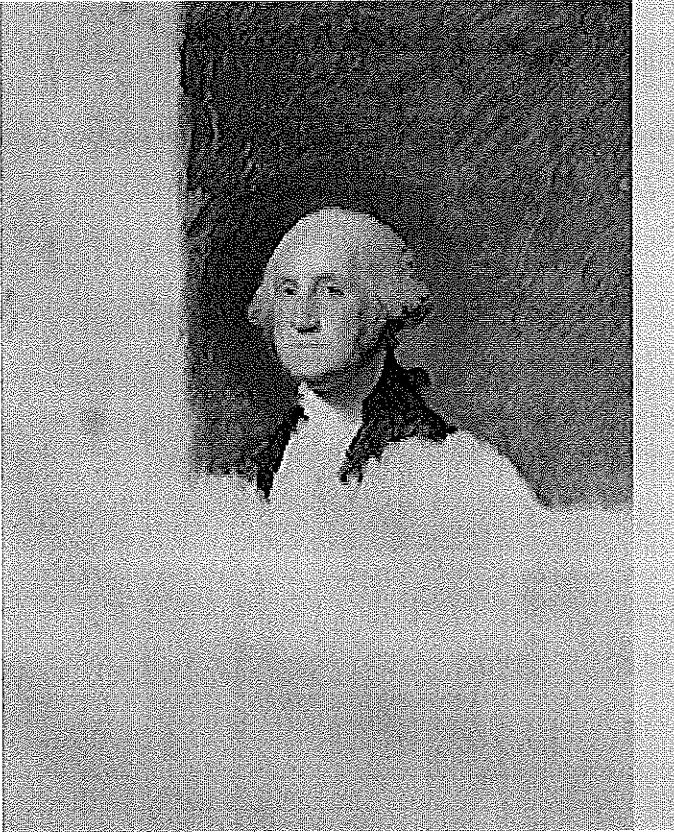
Learning From a Work of Art

Names: _____

DESCRIPTION:

ANALYSIS:

RESPONSE:



Gilbert Stuart painted this portrait from life in 1796, when Washington was President. He painted the likeness to use in a full-length portrait commissioned as a gift for the Earl of Shelburne. In the same year, Stuart painted Washington's wife Martha.

The artist kept the unfinished paintings until his death, using the likeness of Washington as the basis for many subsequent portraits, which were painted to meet the steady demand for Washington's image.