

General Information

Teacher Name: Eric Runyan, Chase Elementary

Subject: Integrated Math and Visual Art/Sculpture, 5th Grade

Topic: Geometry (two-dimensional and three-dimensional shapes)

Time Frame: 3 weeks (Eight, 45-minute class periods)

Guiding Questions: How can looking at abstract art increase awareness of geometric forms and visual relationships?

Goals, Standards and Vocabulary

Overview (How and where this art-integrated unit fits into the curriculum):

In this math/visual arts integrated unit students will explore and create various artworks inspired by a single source, the Patrick Henry Bruce painting, *Peinture*. As part of a math lesson, the students will create three-dimensional forms that will be used to craft a sculpture. The students will then create abstract or realistic perspective drawings of their sculpture.

Goals (What students will realize by using the art form to activate content area):

By closely observing, drawing and creating three-dimensional shapes, students will increase their ability to identify shapes, analyze shape attributes, and build two- and three-dimensional shapes.

The students will perform a Close Read of *Peinture*.

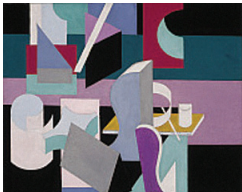
Patrick Henry Bruce (American, 1881-1936)

Peinture, 1917-18

Oil and graphite on canvas

10 1/16 x 12 5/8 in., Frame: 12 3/4 x 15 5/16 in.

Terra Foundation for American Art, Daniel J. Terra Collection, 1999.21



Students will observe and identify the two-dimensional and three-dimensional shapes in *Peinture*. The students will use two-dimensional shapes to plan their sculpture and build three-dimensional shapes using paper. By creating their own sculptures, students will understand how the artist used color and line to distinguish 2/3-D forms. This sculpture will be mounted on paper as the artifact they will be asked to draw in perspective and later paint. The final project will consist of the paper sculpture along with a perspective drawing that will accompany the sculpture.

Through sculpting and drawing the two- and three-dimensional forms, students will develop a greater understanding of the construction and characteristics of geometric shapes.

Academic Standards and Descriptors: Illinois State Standards in the content area that this unit addresses.

Stage E

- 9A.** Students who meet the standard can demonstrate and apply geometric concepts involving points, lines, planes and space. (Properties of single figures, coordinate geometry and constructions)
- 9.A.1. Identify, compare, and analyze attributes of two- and three-dimensional shapes and develop vocabulary to describe the attributes.
 - 9.A.8. Identify, sketch, and build two- and three-dimensional shapes given attribute clues.
- 9B.** Students who meet the standard can identify, describe, classify and compare relationships using points, lines, planes and solids. (Connection between and among multiple geometric figures)
- 9.B.3. Match a front, right side, and top view drawing with a three-dimensional drawing built with cubes.

UNIT LAYOUT

Content and Art Making Activities

American Art - Peinture

Fine Arts Standards and Descriptors: Illinois State Standards in the fine arts that this unit addresses.

Stage E

25A. Students who meet the standard understand the sensory elements, organizational principles, and expressive qualities of the arts.

25.A.3. Describe value and line and how they transform shapes to three-dimensional forms.

26A. Students who meet the standard understand processes, traditional tools, and modern technologies used in the arts.

26.A.4. Describe and/or demonstrate how the same idea is executed in two-dimensional and three-dimensional media.

26B. Students who meet the standard can apply skills and knowledge necessary to create and perform in one or more of the arts.

26.B.3. Sketch and build a sculpture from a two-dimensional drawing.

Vocabulary Lists- Content and Art:

Content – two-dimensional, three-dimensional, perpendicular, parallel, prism, pyramid, regular, irregular, cube, plane, line, angle, volume, cone, tetrahedron, cylinder, octahedron, inference

Art – perspective, abstract, value, sculpture, still-life, cubism, peinture, swirl, representation, form

Day 1

Focus:

Close Read

Materials Needed:

High quality reproduction of Patrick Henry Bruce's *Peinture* (jpeg available via www.terraamericanart.org), LCD or ELMO projector, EAEC Close Read Teaching Strategy, Close Read handout (*Appendix A*)

Warm-Up and Pre-Assessment Activities:

Review the structure of a Close Read (observation, inference, contextualization). Inform students that the first step of the Close Read requires observation. Ask the students to limit their responses to "I see..." statements. The second step of the Close Read requires the students to make inferences. Explain to the students that based on the observations they made in the first step of the Close Read, they should start to make intelligent guesses. Students should preface their responses with "It looks like..." The final step involves a contextualization of background information about the artist, the work of art and the time period in which it was created. This contextual information helps create a further understanding of the artwork.

Main Activity:

Show the image of *Peinture*.

Have the students look at the image and record their initial observation in the Close Read handout journal. Sample questions to guide the discussion include:

What shapes do you see? Where?

Do you see any identifiable objects (i.e. a table, a glass, a ruler)?

What types of lines do you see (perpendicular, parallel)? Where?

What colors do you see?

UNIT LAYOUT

Content and Art Making Activities

American Art - Peinture

Have the students share with a peer regarding what they observed, then facilitate a class discussion about the observations (encourage students to write down any new observations they heard from their classmates).

After observations are complete, students should make individual inferences. Inferences allow students to infer meaning and should be supported by evidence. Sample questions to guide the discussion include:

How do you know it is a table, a glass, a ruler, etc?

How does Bruce imply three-dimensionality?

What do you think the artist wanted to communicate? Why?

Have the students share with a peer regarding what they inferred, then facilitate a class discussion about the inferences (encourage students to write down any new inferences they heard from their classmates).

Discuss relevant contextual information about the painting with the class. Refer to the Terra Foundation for American Art's website (www.terraamericanart.org) for further information.

Artist:

- Patrick Henry Bruce lived from 1881 to 1936.
- He began his artistic education at age sixteen at the Richmond Art School in Virginia, and later furthered his studies in New York City and Paris, France.
- When Bruce moved to Paris, he was influenced by artists such as Henri Matisse and Paul Cezanne, whose work focused on the expressive qualities of color and the geometric structures of forms found in nature.
- Bruce was further influenced by Cubism, a range of art from the early 20th century that investigates and often breaks down or rearranges two- and three-dimensional forms, often resulting in abstraction.
- Bruce's paintings were frequently based on still-life arrangements of every day objects such as food that one would find on a table top, which he then abstracted in order to explore the relationships of the angles, planes, and colors of volumetric forms.
- Bruce had an interest in math.

Artwork:

- The painting *Peinture* is the first in a series of still-life paintings. *Peinture* is the French word for painting and all the paintings in the series are titled either *Peinture* or *Nature Morte*, which is French for still-life.
- All the paintings in the series focus on the boundary between representation and abstraction. For instance, while *Peinture* depicts a straw, a glass, a ruler, a book, and a canvas, these elements either lack specific detail, are out of proportion, or seem to float in an undefined space.
- Have the students respond to the discussion with how this contextualization of the artist and artwork informs or changes their interpretation of the painting.
- Explain still-life and its meaning as an art term. Explain the term "abstract" to be the use of form, line and color as a visual language that alters the traditional representation of physical objects.

Wrap-Up and Post Assessment Activities:

Discuss what qualities give two-dimensional work three-dimensional form. Refer to *Peinture* for specific examples, paying attention to how Bruce used form, line and color to create depth and volume.

UNIT LAYOUT

Content and Art Making Activities

American Art - Peinture

Day 2

Focus:

Drawing with perspective

Materials Needed:

pencil, paper, ruler, glue or tape, Characteristics worksheet (*Appendix B*), three-dimensional shape nets (to be folded into three-dimensional shapes – <http://www.senteacher.org/wk/3dshape.php>), EAEC Step-by-Step Perspective Drawing Guide

Warm-Up and Pre-Assessment Activities:

Place students in groups of four that they will work in for the duration of the unit. The students will work with their groups for constant feedback, as well as later in the unit for support and comparison drawing.

Give each group five or six nets. Have the students predict what three-dimensional shapes will be created by each net.

Review geometry vocabulary, focusing on the names and definitions of each shape presented in the nets.

Fold the nets into the three dimensional shapes.

Main Activity: (this should be done as part of a group)

Lead a tutorial on perspective drawing. Highlight that perspective is how you see an object from the point at which you are looking at it. See EAEC Step-by-Step Perspective Drawing Guide.

Have each group place one of the shapes they created from the nets in front of them. From that perspective, have each student in the group draw exactly what they see.

Ask the students to rotate around their table. Now, from a different perspective, ask them to draw the same shape.

Again, have the students change positions. This time though, they must change their level (move up and down) and sketch the shape for a third time.

Have the students notice the difference in perspective in each sketch.

Wrap-Up and Post Assessment Activities:

Using each of the shapes record the characteristics of the shapes on the three-dimensional Characteristics worksheet.

Day 3

Focus:

Three-dimensional sculpture

Materials Needed:

shapes from previous activity, cardstock or cardboard (to mount sculpture), tape or glue

Warm-Up and Pre-Assessment Activities:

Look at *Peinture* again to review attributes of two- and three-dimensional shapes.

Review the idea that three-dimensional shapes are constructed by combining two-dimensional shapes. Identify two-dimensional shapes found within the three-dimensional shapes constructed in the previous lesson.

Review vocabulary

UNIT LAYOUT

Content and Art Making Activities

American Art - *Peinture*

Main Activity:

The groups will use the three-dimensional shapes made in the previous activity to create a three-dimensional sculpture. This sculpture should include as many shapes as the group permits. The sculpture will be the result of the three-dimensional shapes being connected together using glue or tape.

The completed sculptures will be mounted on cardstock. This will be done by using cardstock or cardboard as the base, and gluing the entire completed sculpture to the base. Provide students with a mounted model sculpture if possible.

Wrap-Up and Post Assessment Activities:

Have the student groups share what forms they chose to combine and why.

Day: 4 and 5

Focus:

Using perspective drawing to recreate the groups' sculptures

Materials Needed:

paper, pencil, sculptures, *Peinture* by Patrick Henry Bruce

Warm-Up and Pre-Assessment Activities:

Model the perspective drawing of a sculpture.

Main Activity:

Instruct each student to draw their group sculpture from their individual perspective.

Remind the students to continually refer to the idea of staying in perspective when they are drawing their sculpture.

Rotate through the groups to provide further instruction and support.

Wrap-Up and Post Assessment Activities:

Look at the Patrick Henry Bruce *Peinture* image again and ask the students to notice the two-dimensional shapes that could have been used to create the three-dimensional forms in the painting. Ask the students if there are any three-dimensional forms that they did not notice before.

Have the students physically point out three-dimensional forms in *Peinture* and identify the two-dimensional shapes used to create them. Students should utilize the geometry vocabulary.

UNIT LAYOUT

Content and Art Making Activities

American Art - Peinture

Day:6 and 7

Focus:

“Abstracting” the drawing

Materials Needed:

paper, pencil, sculptures, *Peinture* by Patrick Henry Bruce

Warm-Up and Pre-Assessment Activities:

Review the idea of what ‘abstract’ means. Revisit the Close Read of *Peinture*. Ask the students to pull out their Close Read handout notes from the first day of this unit. Ask the students what objects Bruce may have abstracted in his painting. How did he change or alter the objects in their representation? Remind the students that Bruce was intensely interested in that boundary between representation and abstraction.

Explain that by reducing the details of everyday things Bruce was able to create pure forms—finding the 2-D and 3-D in nature was his way of abstracting. Ask students to think of their sculpture as a still-life arrangement and to imagine what the original objects might have been. Ask them to consider how they can make recognizable objects further abstracted?

Model how to “change” a regular shape into an abstract shape by altering two-dimensional shapes (take a square and make a cylinder by “swirling” it, or a circle to an oval, showing that abstract is a form of the original).

Main Activity:

Instruct the students to take their drawings of their sculptures and alter or abstract them to become representations of their original forms. Inform the students that they are “abstracting” their sculptures in a similar way that Patrick Henry Bruce “abstracted” found objects in his paintings.

Make suggestions such as:

- Altering one side (or more than one side)
- Slicing the shape in two pieces
- Bending the shape
- Swirling or adding circular elements to the shape
- Reducing the details to create a simpler shape

Suggest to the students that they can refer to their three different perspective drawings for inspirations on how to “change” the representation of their sculptures – representation changes with regard to perspective.

The students should have a finished two-dimensional abstract drawing that represents the three-dimensional sculpture their group created.

Wrap-Up and Post Assessment Activities:

Discuss the process each individual went through in their abstract drawing:

How did you start with your perspective drawing?

How is your perspective drawing different from others in your group?

Would your drawing look the same if you were sitting in one of your group members’ seat? How would it change?

Identify the shapes from the original nets that are represented in your drawing. Articulate which perspective each shape is represented from.

Explain the process of how you created your drawing.

UNIT LAYOUT

Content and Art Making Activities

American Art - Peinture

Day 8

Focus:

Students present and share their work

Materials Needed:

sculptures, perspective drawings, *Peinture* by Patrick Henry Bruce

Warm-Up and Pre-Assessment Activities:

Refer to the guiding question to drive discussion of how Patrick Henry Bruce used geometric form to represent found objects.

Main Activity:

Set up a “Gallery Walk” for the students to view their classmates’ work with the sculpture and drawings next to each other. Each group should do a Close Read of at least one other group.

Have the students use a Close Read handout (Appendix A) to write down their observations and inferences.

Wrap-Up and Post Assessment Activities:

Each group should share with the class a problem they had to solve, what they are proud of in their sculpture and then have the chance to ask their peers if they have any questions.

Refer to the EAEC Assessment Student Critique Protocol.

Unit Assessments – Formative and Summative:

See *Appendix C*

Unit Support and Resources:

Texts, websites, primary and secondary sources, supplies, materials, outside resources, etc.

Patrick Henry Bruce (American, 1881-1936)

Peinture, 1917-18

Oil and graphite on canvas

10 1/16 x 12 5/8 in. (25.6 x 32.1 cm), Frame: 12 3/4 x 15 5/16 in. (32.4 x 38.9 cm)

Terra Foundation for American Art, Daniel J. Terra Collection, 1999.21

(jpeg available via www.terraamericanart.org)

<http://www.senteacher.org/wk/3dshape.php>

paper, pencils, cardstock or cardboard, glue or tape

Field Trip:

Students can visit the Art Institute of Chicago to see *Peinture* in person. To schedule a visit, go to <http://www.artic.edu/aic/education/tours/index.html>. Prior to the visit, teachers should call ahead to make sure that *Peinture* is on view (sometimes works of art are temporarily loaned to other museums or taken off view for conservation or other reasons).

Documentation (photos, student work, student interviews, etc.):

Document the unit with photos of the sculptures as well as the perspective drawings the students created within their groups. Collect Close Read handouts and 3-D Characteristics worksheets.

Appendix A

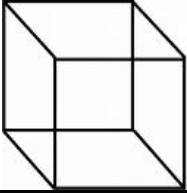
Close Read handout

Observations	Inferences	Contextual Information
<p>Write about what you see in front of you. (i.e. shapes, colors, physical representations.)</p>	<p>Write about what you “think you are seeing” in the image. You should have justification of your inferences.</p>	<p>Are there any other pieces of information that would help you to understand the image? Do you have other connections that create understandings?</p>

Appendix B

3-D Characteristics Worksheet

Please list the shapes your group used and record the characteristics in the diagram (see example)

Sketch of Shape	Shape Name	Characteristics (How many faces, edges, vertices?)
	Cube	<ul style="list-style-type: none">○ I have _____ faces.○ I have _____ edges.○ I have _____ vertices.

Appendix C

Content Rubric

	4	3	2	1	0
Content - Two and three dimensional shape construction	The student was able to correctly and accurately create three dimensional shapes and name the two dimensional figures used to create them.	The student was able to correctly and accurately create three dimensional shapes and name most of the two dimensional figures used to create them.	The student was able to create the three dimensional shapes and name most of the two dimensional figures used to create them.	The student was able to create the three dimensional shapes but could not name the two dimensional figures used to create them	The student did not create two dimensional shapes.
Content – Two and three dimensional shape characteristics	The student can accurately identify characteristics of three dimensional shapes.	The student can identify most of the characteristics of three dimensional shapes.	The student can identify some of the characteristics of three dimensional shapes.	The student can identify few of the characteristics of three dimensional shapes.	The student can not identify or recognize the characteristics of three dimensional shapes.

Art Rubric

	4	3	2	1	0
Art – Sculpture creation	The student was able to correctly and accurately create a sculpture using the three dimensional shapes. Artistic freedom and creativity are evident in the sculpture.	The student was able to correctly and accurately create a sculpture using the three dimensional shapes. Some artistic freedom and creativity are evident in the sculpture.	The student was able to create the three dimensional sculpture. Little thought was put into the creation of the sculpture.	The group created a sculpture but it was not connected and evidence the group did not discuss how to create the sculpture.	The student did not create a sculpture..
Art – Perspective drawing	The student gave maximum effort in creating the perspective drawing. Perspective is accurately drawn.	The student gave maximum effort creating the perspective drawing. Perspective is evident.	The student created the perspective drawing. Perspective is evident.	The student created the perspective drawing. Perspective is evident but lacks focus in the image.	No perspective drawing was created.