UNIT: VOLUME OF RIGHT RECTANGULAR PRISMS
CREATING STILL LIFE ART WITH RIGHT RECTANGULAR PRISMS

(Lesson 3 of 5)

Grade Band: 5

Content Focus: Visual Arts and Math

LEARNING DESCRIPTION

In this lesson, students will apply their knowledge of how to solve for volume of right rectangular prisms to create a still life artwork inspired by the artist Giorgi Morandi.

LEARNING TARGETS

Essential Questions	"I Can" Statements
How can I find the volume of right rectangular prisms? How can I create a still life drawing using various right rectangular prisms?	I can find the volume of right rectangular prisms. I can create a still life drawing using right rectangular prisms.

GEORGIA STANDARDS

Curriculum Standards	Arts Standards

5.GSR.8: Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms.	VA5.CR.1 Engage in the creative process to generate and visualize ideas by using subject matter and symbols to communicate meaning. VA5.CR.2 Create works of art based on selected themes. VA5.CR.3 Understand and apply media, techniques, processes, and concepts of two-dimensional art.

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
5.MDA.3 Understand the concept of volume measurement. a. Recognize volume as an attribute of right rectangular prisms; b. Relate volume measurement to the operations of multiplication and addition by packing right rectangular prisms and then counting the layers of standard unit cubes; c. Determine the volume of right rectangular prisms using the formula derived from packing right rectangular prisms and counting the layers of standard unit cubes.	**Anchor Standard 1:** I can use the elements and principles of art to create artwork. **Anchor Standard 2:** I can use different materials, techniques, and processes to make art.

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
• Two-dimensional shape - An object with height and width • Volume - The amount of space occupied by a three-dimensional object or shape • Height - The perpendicular distance from the base of a shape or object to its topmost point • Length - The distance from one end of an object to the other along its longest side	• Form - An object that is three-dimensional and encloses volume (cubes, spheres, and cylinders are examples of various forms) • Value - This describes the lightness or darkness of a color. Value is needed to express volume. • Composition - How an artist arranges the Elements of Art (line, shape, form, value, color, space, texture) to create an artwork • Still life - A genre of art in which the subject is an arrangement of

• Width - The measurement of the shorter side of an object or shape when compared to its length; it is usually the horizontal dimension
 	
• Right rectangular prism - A three-dimensional geometric shape with the following characteristics:
  ○ Faces: It has six faces, all of which are rectangles.
  ○ Right Angles: Each of its edges meets at a right angle (90°), making it a "right" prism.
  ○ Parallel and Perpendicular: Opposite faces are parallel, and adjacent faces are perpendicular.
  ○ Vertices and Edges: It has 8 vertices (corners) and 12 edges.
	non-moving/non-living objects
	
	• Subject - What the artwork is about
	
	• Proportion - The size relationships between different parts of an artwork. It determines how each element relates to the others in terms of size, scale, and placement.

MATERIALS

- Mixed media paper
- Pencils
- *Optional: Colored pencils or charcoal*
- Measurements for each student to calculate surface area and volume for three right rectangular prisms
- *Natura Morta* by Giorgio Morandi
- Examples of Morandi's still lives
- Shape to Form handout
- Forms with Value handout
- Colors / Shapes / Lines Artful Thinking Routine
- Acceleration only: Rulers and cardstock or thin cardboard

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Display *Natura Morta* by Giorgio Morandi. Engage students in the Colors / Shapes / Lines Artful Thinking Routine.
  - Instruct students to look at the artwork for at least 30 seconds. Then, have students turn to a partner and discuss:
    - What **colors** do you see?
    - What **shapes** do you see?
    - What **lines** do you see?

    - After students have shared what they see, ask them what three-dimensional forms they recognize. Tell students that some objects are composites of two or more forms. Students should identify right rectangular prisms.
- Introduce students to the artist Giorgio Morandi. Explain that Morandi was a still life artist who used many basic geometric forms as the basis of his artwork.
- Explain to students that a still life is an artwork in which the subject is an arrangement of non-moving/non-living objects. Show students additional examples of Morandi's still lives.
- Ask students how Morandi creates the illusion of three dimensions on a two-dimensional surface. Students should notice that some areas of the objects are darker than others to create the illusion that light is hitting a three-dimensional object. In art, this is called Value.

Work Session

- Tell students that they will be creating a still life drawing using right rectangular prisms. Students will be able to create their own composition consisting of three right rectangular prisms.
    - Composition in art is how the artist chooses to put the elements of art (such as Form and Value) together in his or her artwork.
- Students should randomly select **three sets** of measurements from a bag (example: right rectangular prisms: h: 2 in., w: 3 in., l: 5 in.). Explain to students that these three sets of dimensions for right rectangular prisms will be the subject for their still life drawings. Students can arrange them however they like.
    - Show them examples of Morandi's still lives again so that they can see how he used the space on his canvas and arranged his forms (some are in front of others, some side by side, etc.).
- Students should solve for the volume of their three right rectangular prisms.
- Show students the Shape to Form handout. Allow students to practice creating the forms they will need for their composition.
- Then, students should draw their three right rectangular prisms on their artwork.
    - Remind students to use the space on their paper and draw BIG!
    - Remind students to use proportion in their drawings.
        - For example, if one right rectangular prism's dimensions are h: 2 in., w: 3 in., l: 5 in., it should be proportional to another prism's dimensions that are h: 3 in., w. 1 in, l: 2 in.
- Remind students to add value like Morandi to create the illusion of three dimensions. Show students the handout Forms with Value as a guide. Students can use regular pencil, colored pencil, or charcoal for their artwork.
    - Tell students that the harder they press down with their pencils, the darker the value will be.
    - Holding the pencil almost horizontal to the paper when shading and adding value will create a smooth texture.

Closing/Reflection

- On a separate paper, students should write their formulas with dimensions for volume of their three right rectangular prisms and their solutions to the problems. Students should attach this to their artwork so that it is visible.
- Students should then engage in a gallery walk of each other's work. Students should reflect on the following questions:
    - How did the artist create his/her composition using the three right rectangular prisms?
    - How did the artist use the space on his or her paper?
    - How did the artist use value to create the illusion of form?
    - How is the artist's work similar and different to your own? To Morandi's?

ASSESSMENTS

Formative

- Teacher will assess throughout the lesson:
    - Are students able to solve for volume?
    - Are students able to practice drawing their three right rectangular prisms using the Shape to Form handout as a guide?
    - Are students able to identify various prisms in Morandi's artwork?

Summative

- Did students' final artwork:
    - Proportionally display the three prisms they were given?
    - Show value to create the illusion of form?
    - Show that they understood how to draw right rectangular prisms using shape?
    - Show the formulas and correct calculations for volume of all three prisms?

DIFFERENTIATION

Accelerated: Students can use card stock or chipboard (thin cardboard) to build their right rectangular prisms before drawing their still lifes (students will need rulers). Then, students can arrange their prisms in an interesting way and draw from observation.

Remedial:

- Assign students one prism to calculate volume for. Students can then draw this prism three times in their still life.
- Allow students to work in pairs to solve equations. Each student will then make their own still life.

ADDITIONAL RESOURCES

CREDITS

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