artsNOW
Integrated learning solutions

EXPLORE GEOMETRY WITH ABSTRACT IMAGERY
Grade Band: 2-3
Content Focus: Visual Arts & Math

LEARNING DESCRIPTION

Delve into the abstract world of Wassily Kandinsky! Allow your imagination to soar as you discover mathematical connections within Kandinsky images. Students will be inspired by the work of Kandinsky to create their own abstract art that incorporates geometric concepts and the elements of art.

LEARNING TARGETS

Essential Questions	"I Can" Statements
How can you utilize visual images to learn about mathematical concepts?	I can create artwork inspired by Wassily Kandinsky that demonstrates my understanding of mathematical concepts. I can describe my artwork in terms of mathematical concepts.

	I can identify mathematical concepts in my classmates' artwork. I can use color and space intentionally in my art.

GEORGIA STANDARDS

Curriculum Standards	Arts Standards
Grade 2: 2.GSR.7.1 Describe, compare and sort 2-D shapes including polygons, triangles, quadrilaterals, pentagons, hexagons, and 3-D shapes including rectangular prisms and cones, given a set of attributes. **Grade 3:** 3.GSR.6.1 Identify perpendicular line segments, parallel line segments, and right angles, identify these in polygons, and solve problems involving parallel line segments, perpendicular line segments, and right angles. 3.GSR.6.2 Classify, compare, and contrast polygons, with a focus on quadrilaterals, based on properties. Analyze specific 3- dimensional figures to identify and describe quadrilaterals as faces of these figures.	**Grade 2:** VA2.CR.1 Engage in the creative process to generate and visualize ideas by using subject matter and symbols to communicate meaning. VA2.CR.2 Create works of art based on selected themes. VA2.CR.4 Understand and apply media, techniques, and processes of three-dimensional art. VA2.CN.2 Integrate information from other disciplines to enhance the understanding and production of works of art. **Grade 3:** VA3.CR.1 Engage in the creative process to generate and visualize ideas by using subject matter and symbols to communicate meaning. VA3.CR.2 Create works of art based on selected themes. VA3.CR.4 Understand and apply media, techniques, and processes of three-dimensional art. VA3.CN.2 Integrate information from other disciplines to enhance the understanding and production of works of art.

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
Grade 2: 2.G.1 Identify triangles, quadrilaterals, hexagons, and cubes. Recognize and draw shapes having specified attributes, such as a	**Anchor Standard 1:** I can use the elements and principles of art to create artwork.

given number of angles or a given number of equal faces. **Grade 3:** 3.G.1 Understand that shapes in different categories (e.g., rhombus, rectangle, square, and other 4-sided shapes) may share attributes (e.g., 4-sided figures) and the shared attributes can define a larger category (e.g., quadrilateral). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. 3.G.3 Use a right angle as a benchmark to identify and sketch acute and obtuse angles.	**Anchor Standard 2:** I can use different materials, techniques, and processes to make art. **Anchor Standard 4:** I can organize work for presentation and documentation to reflect specific content, ideas, skills, and or media **Anchor Standard 5:** I can interpret and evaluate the meaning of an artwork.

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
• Geometry - Branch of mathematics that deals with deduction of the properties, measurement, and relationships of points, lines, angles, and figures in space from their defining conditions by means of certain assumed properties of space. • Polygon - A closed plane figure with at least three straight sides and angles, and typically five or more. • Quadrilateral - A four-sided polygon • Acute angle - An angle measuring less than 90 degrees • Right angle - A 90 degree angle • Obtuse angle - An angle measuring greater than 90 degrees • Parallel lines - Lines that will never touch • Perpendicular lines - Lines that intersect forming a 90 degree angle	• Abstract - Process of art-making that has reference to the real world but is distorted or manipulated in some way. • Non-objective - Process of art-making that has no reference to the real world; strictly composed of design elements. • Contrast - Exhibiting unlikeness in comparison to something else. • Line – One of the seven elements of art; a mark made by a pointed tool such as a brush pen or stick; a moving point • Shape (Geometric and Organic) – One of the seven elements of art; a flat, enclosed area that has two dimensions, length and width • Negative space - Empty space; the background • Color scheme - A limited number of colors used in an artwork

	• Warm colors - Red, pink, orange and yellow • Cool colors - Blue, green, purple/violet • Primary colors - Blue, yellow, red • Secondary colors - Orange, green, purple/violet • Neutral colors - Brown, tan, black, gray

MATERIALS

- Images of "Composition 8" and "Red, Blue and Yellow" by Russian artist, Wassily Kandinsky
- Drawing paper or tag board (9" x 12" sheets)
- Pencils
- Markers, colored pencils, oil pastels and/or tempera paint

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Introduce this activity by having students look at an image of "Composition 8" or "Red, Blue and Yellow" by Russian artist, Wassily Kandinsky.
- Have students engage in the 10 x 2 artful thinking routine.
  - Students will work collaboratively to identify 10 things that they recognize in the image. Then, repeat the process; the second time, however, ask students to focus specifically on the colors and shapes that they see.
- Facilitate a class-wide discussion around students' observations.

Work Session

Process

- Project Kandinsky's "Composition 8" and "Red, Blue and Yellow", side by side (use slide two of Wassily Kandinsky images). Direct students to work collaboratively to use math vocabulary and concepts to describe the angles, lines, and shapes found within these abstract and non-objective masterpieces.
  - Students should draw/write their responses on sticky notes.
  - Direct students to identify the polygons within these images and their defining attributes, including different types of quadrilaterals.
  - Students should also look for examples of types of angles, types of triangles, and line relationships (parallel and perpendicular).
- Draw or project a large Venn diagram on the board. Students should place their sticky notes in the appropriate section of the Venn diagram.

- Next, tell students that they will create their own abstract or non-objective artwork in the style of Kandinsky according to criteria set by the teacher. For example, criteria might include designs including a minimum of three different types of quadrilaterals, a triangle, a polygon more than four sides and angles, two right angles, parallel lines, etc.
- Project "Composition 8" and "Red, Blue and Yellow" again.
    - Ask students to make observations about how the space is used in the artwork. Students should notice that there isn't much negative space or "empty space".
- Next, discuss the colors that Kandinsky used.
- Project an image of a color wheel and discuss different types of color schemes: Warm, cool, neutral, primary and secondary.
- Tell students that they will be using color to "color code" their artwork. How they do this is up to them.
    - For example, all triangles could be cool colors, all quadrilaterals could be warm colors, and all polygons with more than four sides could be neutral colors.
- Students will then draw their designs lightly on paper or tag board in pencil and then add color using marker, tempera paint, colored pencil, oil pastel, etc.
- Upon completion of their artwork, ask students to describe their art using mathematical vocabulary.

Closing/Reflection

- Display students' artwork on walls or place on tables/desks. Give students a "scavenger hunt" to find mathematical concepts in each other's artwork.
- See if students can figure out how other students used color in their artwork.

ASSESSMENTS

Formative

Teachers will assess students' understanding of the content throughout the lesson by observing students' participation in the activator, discussion of the mathematical concepts evident in Kandinsky's artwork, discussion of Kandinsky's use of color and space, and ability to apply mathematical concepts to creating a unique artwork.

Summative

- Students can create an artwork inspired by Wassily Kandinsky that demonstrates their mastery of mathematical concepts.
- Students can describe their artwork in terms of mathematical concepts.
- Students can identify mathematical concepts in each other's artwork.
- Students can use color and space intentionally in their art.

DIFFERENTIATION

Acceleration:

- Have students identify the area and perimeter of the polygons in their artwork (grade 3).

- Have students use scrap materials found in the classroom to interpret their artwork in a 3D format by turning it into sculpture. Materials could include popsicle sticks, tape, cardboard, pipe cleaners, straws, etc.

Remediation:

- Provide students with specific concepts to look for in Kandinsky's artwork using a word bank.
- Reduce/limit criteria in artwork to focus on fewer concepts at a time.
- Provide visuals with examples of concepts to support students.
- Allow students to work with a partner to create artwork.

ADDITIONAL RESOURCES

- Vasily Kandinsky, Guggenheim Museum
- Color wheel
- Wassily Kandinsky images

**This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state's adoption of new standards.*

Ideas contributed by: Darby Jones. Updated by Shannon Green and Katy Betts.