MATH MESSAGES IN COMPOSITION

Students use basic geometry and mathematical thinking to explore composition in works of art; consider geometric shapes in the composition of 2D images.

Grade: 6
Subject(s): visual art, math
Time: 45 minutes

Objectives for students
• Identify geometric shapes in art.
• Take an inventory of geometric shapes and record the corresponding coordinate points in a chart.
• Make connections between the visible geometry and compositional choices of the artist.

Overview
Students engage in hands-on discovery to connect narrative and design decisions with the underlying geometry in art. The math used in this activity, the coordinate plane, draws on knowledge of 5th-grade material and provides a framework for describing how artists manipulate shapes in two dimensions and make compositional decisions based on geometry and narrative choice.

Materials
• graph paper (1 per group)
• rulers (1 per group)
• permanent markers (1 per group)
• dot stickers, assorted colors (1 sheet per group)
• plastic sheet covers (1 per group)
• image (printed or projected) from advertising or pop culture. Suggestion: The Lego Movie poster
• image (printed or projected) of a painting from the Barnes Foundation. Suggestion:

Giorgio de Chirico (Italian, 1888–1978)
Dr. Albert C. Barnes, 1926
Oil on canvas, 36 1/2 × 29 in. (92.7 × 73.7 cm)
BF805. Photo © 2016 The Barnes Foundation

• images (printed on 8.5 × 11 paper) of 3–5 paintings from the Barnes collection (1 image per group).
Suggestions:
– Paul Cézanne The Card Players
– Amedeo Modigliani Redheaded Girl in Evening Dress
– Paul Cézanne Ginger Jar
– Horace Pippin Giving Thanks
– Vincent van Gogh The Postman

Images of these paintings are on the Barnes website in the Educator Resources section.

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**Procedure**
- Tell students that they are exploring how artists think like mathematicians.
- Define composition and explain to students that artists often use geometry to guide the viewer’s experience.
- Students use geometry to reveal the “secret messages” hidden in the composition of art.
- Students investigate the composition of a contemporary advertisement by placing dot stickers on focal points.
- Students connect the dots to find shapes, then discuss their arrangement and why those shapes might help a viewer understand what is being sold.
- Repeat this model with a piece from the Barnes Foundation to show how artists use composition to help viewers understand a work’s meaning.
- Practice in groups using printed copies of art from the Barnes Foundation in plastic sheet covers.
- Students cover the image with graph paper labeled with x and y axes in a four-quadrant coordinate plane, then swap their composition outlines with another group. Each group guesses which artwork their neighbors’ composition outline came from.

**Sample discussion questions**
- How would you describe the shapes?
- How do the shapes relate and what does that mean in the picture?
- What message was the artist trying to send with this composition?
- Are they trying to make your eye travel? Where does it travel to?
- What parts of the painting do the shapes include or exclude?
- How are the shapes organized in an x, y plane?
- What happens to your shape if you remove/move a dot?
- What decisions about composition are revealed in the shapes you have created?

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