



artsNOW

Integrated learning solutions

PROBABILITY PALETTE Grade Band: 7 Content Focus: Visual Arts and Math



LEARNING DESCRIPTION

In this lesson, students will introduce the element of unpredictability into visual art by employing probability as the guiding force behind the selection of elements in their artistic process.

LEARNING TARGETS

Essential Questions	"I Can" Statements
How can I use probability to create a unique work of art?	I can use probability to create a unique work of art.
How can I use the elements of line, shape, and color to create a unique work of art?	I can use the elements of line, shape, and color to create a unique work of art.

GEORGIA STANDARDS

Curriculum Standards	Arts Standards
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<p>7.PR.6: Using mathematical reasoning, investigate chance processes and develop, evaluate, and use probability models to find probabilities of simple events presented in authentic situations.</p>	<p>VA7.CR.1 Visualize and generate ideas for creating works of art. VA7.CR.2 Choose from a range of materials and/or methods of traditional and contemporary artistic practices to plan and create works of art. VA7.CR.3 Engage in an array of processes, media, techniques, and/or technology through experimentation, practice, and persistence. VA7.CR.4 Incorporate formal and informal components to create works of art.</p>
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SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
<p>7.DSP.5 Investigate the concept of probability of chance events. 7.DSP.6* Investigate the relationship between theoretical and experimental probabilities for simple events. 7.DSP.7* Apply the concepts of theoretical and experimental probabilities for simple events.</p>	<p>Anchor Standard 1: I can use the elements and principles of art to create artwork.</p> <p>Anchor Standard 2: I can use different materials, techniques, and processes to make art.</p> <p>Anchor Standard 7: I can relate visual arts ideas to other arts disciplines, content areas, and careers.</p>

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> ● <u>Probability</u> - A measure of how likely something is to happen. It ranges from 0 (impossible) to 1 (certain) ● <u>Chance</u> - The likelihood or probability of a specific event occurring 	<ul style="list-style-type: none"> ● <u>Line</u> - One of the seven elements of art; a path that connects two points ● <u>Shape</u> - One of the seven elements of art; a 2-dimensional object; it can be freeform/organic (resembles something from nature) or geometric (squares, circles, triangles, etc.) ● <u>Color</u> - One of the seven elements of art; reflected or absorbed light ● <u>Warm colors</u> - Red, orange, yellow ● <u>Cool colors</u> - Green, blue, violet/purple



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- Neutral colors - Brown, gray, white, black, tan
- Complementary colors - Two colors across from each other on the color wheel
- Analogous colors - Colors next to each other on the color wheel
- Color wheel - A tool artists use to create their artwork
- Composition - How artists use the elements of art in an artwork

MATERIALS

- Mixed media paper
- Markers
- Pencils
- Dice (one needed for each artwork)
- Colored pencils
- *Optional: oil pastels, crayons, and/or paint and paintbrushes*

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Display the painting by Amy Kang, *dice games with 1 die and 6 colors* (do not tell students the name of the painting).
- Ask students to work collaboratively to engage in the See, Think, Wonder protocol.
 - First, students will identify what they see in the image. Emphasize that they should make objective observations about the artwork (i.e. colors, textures, shapes, etc.).
 - Next, ask students to identify what they think about the image. Emphasize that students should be creating inferences using visual evidence from the artwork.
 - Finally, ask students what they wonder about the image.
- Ask students how they think the painting was made. Ask students how they think Amy Kang chose her colors.
- Tell students the name of the painting, *dice games with 1 die and 6 color*. Now, ask students again how they think she chose her colors.
- Ask students what the probability was that Kang would use red in her painting.
- Show students other examples of her artwork such as *dice games with 2 dice and 11 colors* and *dice games with 4 dice and 21 colors*. Ask students the same question about probability.
- Explain to students that they will be using probability to create an original artwork.

Work Session



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- Tell students that in their artwork they will be using the Elements of Art, Line, Shape, and Color.
 - Show students a color wheel. Discuss with them the ways color can be organized into color schemes (warm—red, orange, yellow; complementary—two colors across from each other on the color wheel, etc.).
 - Next, show students examples of shapes that can be used in art. Discuss with students that artists use geometric and free-form/organic shapes in artwork.
 - Finally, show students examples of lines in art.
- Show students Composition 8 by Vasily Kandinsky. Ask students to describe how Kandinsky uses lines, shapes, and colors together to create his artwork. Students might notice overlapping, changes in size, some elements going “off the page”, etc.
- Explain that students will be using a die to determine what lines, colors, and shapes they will use in their artwork.
- Show students the handout that they will use to guide them as they create their artwork.
- Pass out materials to students. Students can complete this artwork independently or with a partner.

Closing/Reflection

- In small groups, students should compare the similarities and differences in their artwork. They should reflect on how probability changed the choices each of them made in their artwork.

ASSESSMENTS

Formative

Teacher will assess understanding by determining if students are able to:

- Calculate probability
- Use probability to select elements for their artwork
- Identify how Kandinsky uses the Elements of Art, line, shape and color, in his painting

Summative

CHECKLIST

- Students can use probability to determine line, color, and shape choices.
- Students can use line, shape, and color through overlapping, variety of line thickness, and changes in size of shapes.
- Students can compare and explain how probability changes the composition of their artwork.

DIFFERENTIATION

Acceleration: Like Amy Kang, increase the number of dice and dice rolls ([2 dice and 11 colors](#) and [dice games with 4 dice and 21 colors](#))



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Remediation:

- Reduce the number of elements or options students have to calculate to create their artwork.
- Pre-determine the elements that will correspond to each die roll.
- Allow students to work with a partner.

ADDITIONAL RESOURCES

- Amy Kang, [dice games with 1 die and 6 colors, 2 dice and 11 colors](#) and [dice games with 4 dice and 21 colors](#))
- [color wheel](#)
- [types of shapes](#)
- [types of lines](#)
- Vasily Kandinsky, [Composition 8](#)
- Probability Palette [handout](#)

**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.*

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