

**PERSONAL PIZZA PIES: FUN FRACTIONS WITH FOOD ART**  
**Grade Band: 4-5**  
**Content Focus: Visual Arts & Math**



## LEARNING DESCRIPTION

Think about pizzas that you eat – how are they cut? Usually into fractions, such as eighths! In this lesson, students will learn about the art of Wayne Thiebaud, and then create personal pizza art, cutting their ‘pies’ into fractions. Visual fraction models have never been so fun!

## LEARNING TARGETS

Essential Questions	“I Can” Statements
How can a visual art lesson become a teaching tool for mathematics?	<p>I can use collage to create an artwork demonstrating fractions.</p> <p>I can add fractions with common denominators.</p> <p>I can describe an image in terms of fractions.</p>

## GEORGIA STANDARDS

Curriculum Standards	Arts Standards
<p><b>Grade 4:</b> 4.NR.4.2 Compare two fractions with the same numerator or the same denominator by reasoning about their size and recognize that comparisons are valid only when the two fractions refer to the same whole.</p> <p>4.NR.4.6 Add and subtract fractions and mixed numbers with like denominators using a variety of tools.</p>	<p><b>Grade 4:</b> VA4.CR.1 Engage in the creative process to generate and visualize ideas by using subject matter and symbols to communicate meaning. VA4.CR.2 Create works of art based on selected themes. VA4.CR.3 Understand and apply media, techniques, and processes of two-dimensional art. VA4.CN.2 Integrate information from other disciplines to enhance the understanding and production of works of art.</p>

## SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
<p><b>Grade 4:</b> 4.NSF.2 Compare two given fractions (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100) by creating common denominators or numerators, or by comparing to a benchmark fraction such as <math>\frac{1}{2}</math> and represent the comparison using the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>.</p> <p>4.NSF.3 Develop an understanding of addition and subtraction of fractions (i.e., denominators 2, 3, 4, 5, 6, 8, 10, 12, 25, 100) based on unit fractions. a. Compose and decompose a fraction in more than one way, recording each composition and decomposition as an addition or subtraction equation; b. Add and subtract mixed numbers with like denominators; c. Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having like denominators.</p>	<p><b>Anchor Standard 1:</b> I can use the elements and principles of art to create artwork.</p> <p><b>Anchor Standard 2:</b> I can use different materials, techniques, and processes to make art.</p> <p><b>Anchor Standard 5:</b> I can interpret and evaluate the meaning of an artwork.</p> <p><b>Anchor Standard 7:</b> 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"> <li>● <u>Fraction</u> - A way of representing a part of a whole or a division of quantities</li> <li>● <u>Denominator</u> - The bottom number in a fraction, indicating the total number of</li> </ul>	<ul style="list-style-type: none"> <li>● <u>Collage</u> - An artistic composition of materials and objects pasted over a surface to create an image or design.</li> </ul>



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<p>equal parts into which the whole is divided</p> <ul style="list-style-type: none"> <li>● <u>Numerator</u> - The top number of a fraction</li> </ul>	<ul style="list-style-type: none"> <li>● <u>Burnishing</u> - To rub with a tool to smooth or polish</li> <li>● <u>Composition</u> - How an artist arranges the elements of art in an artwork; how an artist uses the space in an artwork</li> </ul>
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## MATERIALS

<ul style="list-style-type: none"> <li>● 10" x 10" white drawing paper</li> <li>● 9" x 9" circle templates</li> <li>● Pencils</li> <li>● Construction paper</li> <li>● Scissors</li> <li>● Glue</li> <li>● Oil pastels, markers, or colored pencils</li> <li>● Butcher paper cut into rectangles</li> </ul>
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## INSTRUCTIONAL DESIGN

<p><b>Opening/Activating Strategy</b></p>
<p><i>Classroom Tips: Cover the work surface with disposable craft paper for quick clean up — all trash can be rolled up and thrown away. Solicit school community to help to build a magazine collection.</i></p> <ul style="list-style-type: none"> <li>● Introduce the lesson by discussing the art of Wayne Thiebaud, specifically his cakes and pies.</li> <li>● Divide students into small groups.</li> <li>● Pass the following images out to students: <ul style="list-style-type: none"> <li>○ <a href="#">"French Pastries"</a></li> <li>○ <a href="#">"Cakes"</a></li> <li>○ <a href="#">"Cake Slices"</a></li> <li>○ <a href="#">"Lemon Cake"</a></li> <li>○ <a href="#">"Four Cakes"</a></li> <li>○ <a href="#">"Around the Cake"</a></li> </ul> </li> <li>● Ask students to make observations about the images. Then, they should describe the images in terms of fractions.</li> <li>● Project each image on the board. Ask each group to describe their image.</li> </ul>
<p><b>Work Session</b></p>
<ul style="list-style-type: none"> <li>● Tell students that they will be creating pizza artwork inspired by Wayne Thiebaud. Allow students to share their favorite pizza toppings (teacher can substitute any circular food—pie, cake, etc.).</li> <li>● Pass out white drawing paper and 10" x 10" circle templates (students can share templates).</li> <li>● Students will trace the circle on their drawing paper and then cut it out.</li> </ul>



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- Discuss the art of collage with students. Collage is an artistic composition of materials and objects pasted over a surface to create an image or design.
- Have students use a pencil to lightly draw out the crust on their pizzas (or other circular food).
- Next, students will use oil pastels or another medium, such as colored pencils or markers, to color the crust and cheese.
- Next, have students cut out toppings for their pizzas using construction paper. Students should glue them onto their pizzas, burnishing (or rubbing) the toppings on the pizza to make them stick.
- Next, have students cut their pizzas into specified fractions, such as quarters, eighths, etc.
- Place students in small groups of 3-4. Have students write a pizza order as a word problem using each of their pizzas.
  - For example, “Jenn went to a pizza restaurant and ordered two slices of pepperoni, one slice of Hawaiian, and three slices of supreme. How much of a whole pizza did she order?”. Students will add the fractions to determine the answer.
- Go back to the images of Thiebaud’s work that students looked at at the beginning of class. Have students observe the compositions and how Thiebaud used the space on the canvas. Ask students how the different desserts are arranged.
- Next, pass out large paper to students. Have students create a composition like Thiebaud’s displaying various pizzas.
  - Students can choose how to display their pizzas—pizzas can be split into individual slices, as whole pizzas, as whole pizzas with a slice or two missing.
  - Students will need to draw in details, such as a display case, plates, etc.
  - Students will then glue in their pizza collages. *Students do not have to use every piece of each pizza in their final artwork.*
- Finally, have students describe their artwork in terms of fractions. For example,  $\frac{7}{24}$  of the composition is made up of pepperoni pizza slices. Students should simplify fractions when possible.

### Closing/Reflection

- Students will share their collaborative artwork with the class and describe it in terms of fractions.
- Final artwork will be hung together in a class display creating an exciting, educational exhibit.

## ASSESSMENTS

### Formative

Teachers will assess students’ understanding of the content throughout the lesson by observing students’ participation in the activator, discussion of fractions, artmaking process, and ability to express their artwork in terms of fractions.

### Summative

#### CHECKLIST

- Students can use collage to create an artwork demonstrating fractions.
- Students can add fractions with common denominators.
- Students can describe an image in terms of fractions.



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## DIFFERENTIATION

### Acceleration:

- Students can make “real” pizzas with food, or fruit pizzas with whipped cream, cutting the pieces and continuing the mathematical discussions.

### Remediation:

## ADDITIONAL RESOURCES

- [Wayne Thiebaud - WikiArt](#)

*\*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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