

## ARTS IMPACT LESSON PLAN

### Visual Arts and Math Lesson

#### *Shape Compositions*

Authors: Courtney O’Catherine with Kim Newall

Grade Level: Pre-kindergarten

#### Enduring Understanding

Geometric shapes can be defined by the negative space that surrounds them.

#### Lesson Description (Use for family communication and displaying student art)

*Students experience negative and positive space through developmentally appropriate exploration.*

*Students name geometric shapes and reposition them to create a composition on a white field.*

*Students spray diluted watercolor onto shapes and surrounding space, then remove shapes. Students spray the whole field with a second color that will mix with the first to highlight the negative space.*

*Students will be able to find shapes in peer compositions by looking at negative space around them.*

#### Learning Targets and Assessment Criteria

**Target:** Understands positive space is represented by the geometric shapes.

**Criteria:** Names and places 3-4 cutout shapes on a piece of paper and points at the positive space.

**Target:** Explores how different placement of shapes changes negative space.

**Criteria:** Repositions at least 2 shapes.

**Target:** Demonstrates perseverance.

**Criteria:** Develops control and persists until color is sprayed over the whole picture.

**Target:** Understands negative space is represented by the area with mixed color.

**Criteria:** Points at the negative space.

#### Vocabulary

Arts Infused:

Shape  
Space

Math:

Geometric Shapes

Arts:

Composition  
Mixed Color  
Negative Space  
Positive Space

#### Materials

##### Museum Artworks or Performance

Seattle, WA

Seattle Art Museum

Tacoma, WA

Tacoma Art Museum

##### Materials

Geometric shape cutouts; Repositionable adhesive; 9x13 white paper; Spray bottles; Liquid watercolor; Smocks; Class Assessment Worksheet

*continued*

#### Learning Standards

*For the full description of each WA State Arts Grade Level Expectation, see:*

<http://www.k12.wa.us/Arts/Standards>

1.1.2 Elements: Shape and Form  
1.1.5 Elements: Space  
4.2.1 Connection between Visual Arts and Math

##### Early Learning Guidelines, if applicable

*For a full description of Washington State Early Learning and Child Development Guidelines see:*

<http://www.del.wa.gov/development/guidelines/>

(Ages 3-4) 6. Learning about my world:  
Knowledge (cognition): Learn by doing hands-on and through the senses. Math: Sort and describe items by size, color, and/or shape. Arts: Dance, sing, drum, use rattles, draw or paint; look at artwork from different cultures.

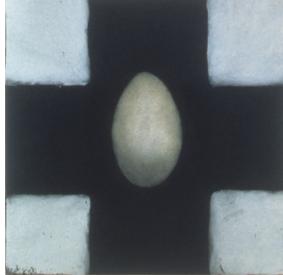
*continued*

Tacoma Art Museum images:

*After Scarlatti*, 1990, Mary Henry



*Egg and Cross*, 1996, Michael Gregory



*Dancer in the Role of Harlequin*, 1882-1885, Edgar Degas



**Common Core State Standards (CCSS) in Math**

<http://www.k12.wa.us/CoreStandards/Mathematics/default.aspx>

- K.CC.B. Count to tell the number of objects
- K.G.A. Identify and describe shapes.
- K.G.B. Analyze, compare, create and compose shapes

**CCSS Mathematical Practices**

- 4. Model with mathematics.
- 5. Use appropriate tools strategically.
- 6. Attend to precision.

## ICON KEY:

 = Indicates note or reminder for teacher

 = Embedded assessment points in the lesson

## Pre-Teach

Introduce geometric shapes and positive and negative space.

## Lesson Steps Outline

**1.** Introduce and guide art analysis of shape and space in *After Scarlatti* by Mary Henry, *Egg and Cross* by Michael Gregory, and *Dancer in the Role of Harlequin* by Edgar Degas from the Tacoma Art Museum collection. Direct students to create a composition on a white field using repositionable geometric shapes exploring negative space by changing position of at least two shapes.

 Criteria-based teacher checklist: Names and places 3-4 cutout shapes on a piece of paper and points at the positive space. Repositions at least 2 shapes.

**2.** Guide students as they first spray watercolor to cover shapes and entire white field, then remove geometric shapes. Tell them that they are using the 21<sup>st</sup> Century Skill of Perseverance to keep working and to spray a second color to cover entire field again.

 Criteria-based teacher checklist: Develops control and persists until color is sprayed twice over the whole picture.

**3.** Ask students to identify the negative space by pointing out areas of mixed color.

 Criteria-based teacher checklist: Points at the negative space.

**4.** Guide students to look at their own and peer works and identify shapes that are defined by negative space.

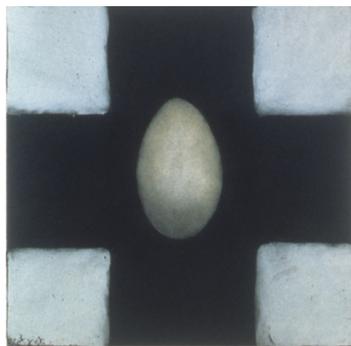
 Criteria-based self-assessment, reflection: Names geometric shapes. Points at the negative space.

## LESSON STEPS

**1. Introduce and guide art analysis of shape and space in *After Scarlatti* by Mary Henry, *Egg and Cross* by Michael Gregory, and *Dancer in the Role of Harlequin* by Edgar Degas from the Tacoma Art Museum collection. Direct students to create a composition on a white field using repositionable geometric shapes exploring negative space by changing position of at least two shapes.**

▣ Seat 3-5 students per table with an adult at each table. Provide an assortment of shapes to choose from in the middle of the table. Each student has a piece of 9x12 paper and 3-5 repositionable shapes of their own choosing.

▣ Display the following artworks from the Tacoma Art Museum: Mary Henry, *After Scarlatti*, Michael Gregory, *Egg and Cross*, Fay Jones, *Body Fires* and Edgar Degas, *Dancer in the Role of Harlequin*.



▣ The Tacoma Art Museum's collection is available on-line at:  
<http://tacomaartmuseum2.tru-m.com/Page.aspx?nid=128>

- *What are the shapes you see in the art? Is there space around shapes? We'll call that the negative space.*
- *Now let's make our own artworks with shape and space.*
- *What geometric shapes do you see that we can use in our artwork?*
- *What are the different ways we can put our shapes on our paper?*
- *Point to the positive space.*
- *Move at least two of your shapes. How does the white space, the negative space, change when we move our shapes?*

☑ Criteria-based teacher checklist: Names and places 3-4 cutout shapes on a piece of paper and points at the positive space. Repositions at least 2 shapes.

**2. Guide students as they first spray watercolor to cover shapes and entire white field, then remove geometric shapes. Tell them that they are using the 21<sup>st</sup> Century Skill of Perseverance to keep working and to spray a second color to cover entire field again.**

▣ Provide each student with the same primary color in spray bottle. After all students have covered the entire field, collect spray bottles. Have students peel off geometric shapes. Provide all students with a second primary color in spray bottles.

- *Spray the watercolor to cover your whole picture, even the shapes.*
- *Remove the shapes by peeling them off.*
- *We have more to do and we won't give up! We will be using the 21<sup>st</sup> Century Skill of Perseverance! Will you repeat that word with me? PER-SE-VER-ANCE. Let's tap the word into our knees while we say it again. PER-SE-VER-ANCE. Now let's tap while crisscrossing. Tap your right knee with your left hand and tap your left knee with your right hand. PER-SE-VER-ANCE.*
- *We are going to spray another color on our artwork. Spray a different color, covering the whole picture again.*

Criteria-based teacher checklist: Develops control and persists until color is sprayed twice over the whole picture.

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**3. Ask students to identify the negative space by pointing out areas of mixed color.**

- *Where is the negative space in your composition?*
- *Describe the color that shows the negative space.*

Criteria-based teacher checklist: Points at the negative space.

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**4. Guide students to look at their own and peer works and identify shapes that are defined by negative space.**

- *What geometric shapes can you find in your own composition?*
- *What geometric shapes can you find in your friend's composition?*
- *What do you see around the shapes? And what is that called?*
- *Point to the negative space in your artwork.*

Criteria-based self-assessment, reflection: Names geometric shapes. Points at the negative space.

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**ARTS IMPACT LESSON PLAN Visual Arts and Math Infusion**

Pre-kindergarten: *Shape Compositions*

**CLASS ASSESSMENT WORKSHEET**

Disciplines	<b>VISUAL ARTS/MATH</b>	<b>VISUAL ARTS</b>	<b>VISUAL ARTS</b>	<b>VISUAL ARTS</b>	Total 4
Concept	<b>Positive Space/Shape</b>	<b>Negative Space/Shape</b>	<b>Perseverance</b>	<b>Negative Space</b>	
Criteria	Names and places 3-4 cutout shapes on a piece of paper and points at the positive space.	Repositions at least 2 shapes.	Develops control and persists until color is sprayed over the whole picture.	Points at the negative space.	
Student Name					
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
Total					
Percentage					

*What was effective in the lesson? Why?*

*What do I want to consider for the next time I teach this lesson?*

*What were the strongest connections between visual arts and math?*

Teacher: \_\_\_\_\_ Date: \_\_\_\_\_

**ARTS AND MATH INFUSED LESSON: *Shape Compositions***

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Dear Family:

Today your child participated in a Visual Arts and Math Infused lesson. We talked about geometric shapes and about negative and positive space.

- We named and then placed different geometric shapes in different places on our composition.
- We sprayed watercolor paint onto our shapes and the surrounding area.
- We removed the shapes and then sprayed a second color on our compositions. The single color showed the positive space and the mixed color showed the negative space.

At home, you could look positive and negative spaces on your living room walls or outside your house. Identify geometric shapes that you see on your walls.

**Enduring Understanding**

Geometric shapes can be defined by the negative space that surrounds them.