

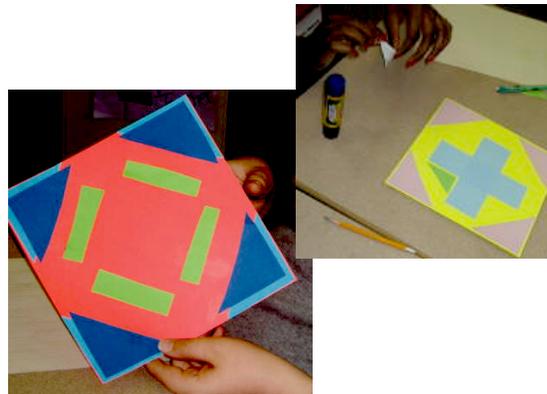
## **ARTS IMPACT—ARTS-INFUSED INSTITUTE LESSON PLAN (YR2-AEMDD)**

LESSON TITLE: Locations and Transformations: Polygon Collages

Visual Art and Math Lesson

Artist-Mentor – Meredith Essex

Grade Level: Fifth Grade



### **Enduring Understanding**

Transformations of geometric shapes/figures: translations, reflections and rotations can create artistic compositions.

### **Geometry Search Journal**

**Target:** Identifies and locates shapes/figures in rotation, reflection, and translation.

**Criteria:** Turns shapes/figures  $90^\circ$  and  $180^\circ$ ; flips shapes/figures to produce a mirror image; and slides shapes/figures.

**Target:** Creates a composition using a designated transformation (change of figure position) of polygons.

**Criteria:** Specifically labels and demonstrates concept of rotation, reflection or translation in organization of collage.

**Target:** Uses color for contrast.

**Criteria:** Layers warm shapes on cool background or cool shapes on warm background in collage.

**Target:** Uses craftsmanship in collage.

**Criteria:** Cuts clean edges and attaches paper shapes smoothly and securely to background paper.

### **Teaching and Learning Strategies**

#### **Introduction to Arts-Infused Concepts through Classroom Activities:**

#### **Arts-Infused Concepts: Transformations; Symmetry; Shape; Balance**

- Show understanding of translations, reflections, and rotations by manipulating pattern blocks.
- Find transformations in the classroom environment and buildings.

1. Shows *And Neck, Neck And* and *Reel* by Mike Shea. Introduces/reviews geometry concept of transformations: changing a shape/figure's position through rotation, reflection or translation. Prompts: Compositions in art can demonstrate transformations of geometric shapes/figures: translations/slides, reflections/flips and rotations/turns. Find an example of each

*transformation in this art. In your Geometry Search Journal draw figures that show rotation at 90° and 180°, reflection and translation. Self-check for accuracy.*

Student: Identifies and draws translations/slides, reflections/flips and rotations/turns.

Embedded Assessment: Criteria-based self-assessment

**2. Demonstrates cutting polygon collage shapes.** *Prompts: These strips, small squares, and rectangular papers can easily be folded in half or quarters to cut create triangles or rectangles. By making straight cuts, you can also create all kinds of other polygons with different properties: congruent sides, right angles, a rhombus, a parallelogram. What is another (besides folding) strategy for creating multiples of one shape? (layering paper and cutting through more than one thickness) Notice my use of craftsmanship in using precise cutting techniques. Also, when I cut geometric shapes from the paper provided, I always return a usable piece of scrap paper (also left in a geometric shape) to the paper container that is a square or rectangle. This extends the life of high quality papers.*

Student: Observes cutting demonstration.

**3. Introduces the color wheel and creating contrast using overlapping warm/cool colors.** *Prompts: Who can identify a warm color or a cool color on the color wheel? What happens when I layer warm and cool colors or place them adjacent? (they jump out and contrast each other). I'm making sure that I am overlapping shapes/figures using a warm and cool color combination. That means that the shapes that I am cutting out are all warm colors and my background is a cool color. You may choose to do the opposite with all cool shapes against a warm background.*

Student: Contributes ideas, observes demonstration of using warm and cool colors in a composition.

**4. Demonstrates choosing transformation for collage composition and writing it on back of paper.** *Prompts: I am going to show a reflection in my collage—so I am writing "reflection" on the back of it. I will be flipping shapes with attention to using the whole background paper. I am placing my warm shapes in reflection on my cool background. I am now laying out more warm shapes to continue to build my composition and further illustrate the concept of reflection—the transformation I chose. I am checking with a neighbor to make sure my chosen transformation written on the back of my paper matches my layout of composition. Once you think you have it figured out, we will check it and hand you a glue stick. Notice as I glue, that I am applying the glue stick along all of the edges of the reverse side of papers for full, smooth adhesion and rubbing the shape around the edges to make sure all edges are smooth and flush.*

Student: Observes gluing and paper management techniques.

Embedded Assessment: Criteria-based peer critique

**5. Guides students in creating collage.** *Prompts: Plan your collage—don't forget to write rotation, reflection or translation on the back of the composition. Use the paper folding and cutting techniques to guide cutting your shapes—you do not need pencils.*

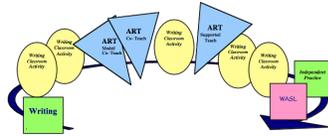
Student: Conceptualizes, labels transformation, and creates collage.

Embedded Assessment: Criteria-based teacher checklist

**6. Facilitates criteria-based reflection. Displays collages on the board.** *Prompts: Find an example of a turn (rotation) slide (translation) or a flip (reflection) in a peer's art. Note the artist and draw and label what you see it in your Geometry Search Journal. Where do you see contrast of warm and cool colors? What were some of the challenges of collage craftsmanship that you encountered?*

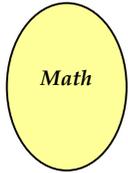
Student: Participates in critique.

Embedded Assessment: Criteria-based class critique

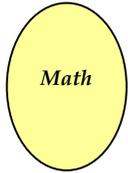


**After VISUAL ART lesson and before INDEPENDENT PRACTICE:**

**Math Centers**



1. Creates another collage demonstrating understanding of another transformation.



2. Draws an animal, machine, or plant by tracing pattern blocks or using shape templates: includes turns, flips and slides of shapes in design.

**Independent Practice: Slide to make a Translation! Flip to make a Reflection! Turn to make a Rotation!**

Vocabulary	Materials and Community Resource	WA Essential Learnings & Frameworks
<p><b>Arts-Infused:</b> geometric shapes parallelogram symmetry triangle</p> <p><b>Art:</b> collage composition contrast craftsmanship overlapping warm/cool colors</p> <p><b>Math:</b> congruent polygon reflection/ flip rhombus rotation/ turn slide/ translation transformation</p>	<p><b>Museum Artworks :</b> TAM Mike Shea, <i>And Neck, Neck And ,and Reel</i>, 2000</p> <p><b>Art Materials:</b> Geometry Search Journal color wheel</p> <p>variety of colored (warm and cool colors) fadeless craft paper, : 1, 2, 3 in. strips, 3x6, and 3x4 in. rectangles scissors</p> <p>8.5 x 8.5 in. colored card stock in primary and secondary colors</p> <p>glue sticks glue books/newsprint</p>	<p><i>AEL 1.1 concepts:</i> line, shape, warm/cool color <i>AEL1.1.2 principles of organization:</i> balance, repetition, contrast <i>AEL 1.2 skills and techniques:</i> collage <i>AEL 4.2 connections between arts and other content areas:</i> geometry: reflections, rotations, and translations</p> <p><i>MEL 1.3.4 geometric sense:</i> understands and applies single transformations using a translation (slide) or reflection (flip)</p> <p><b>Math State Frameworks</b> <i>Grade 3:</i> describes and compares congruent 2D figures; draws a shape that is congruent to a given 2D shape <i>Grade 4:</i> solves problems involving congruence (creates a design made out of congruent shapes, simulates translations and reflections using objects; records results of a translation (slide) or reflection (flip), creates designs using translations (slides) or reflections (flips) <i>Grade 5:</i> draws congruent figures and shapes in multiple orientations using a transformation</p>

# **ARTS IMPACT—ARTS-INFUSED INSTITUTE LESSON PLAN (YR2-AEMDD)**

## **LESSON TITLE: Locations and Transformations: Polygon Collages**

### **ASSESSMENT WORKSHEET**

Disciplines	VISUAL ART AND MATH			VISUAL ART	VISUAL ART		Total
Concept	Transformations/Shape			Color	Craftsmanship		
Student	Draws figures in rotation, reflection, and translation		Specifically labels, and demonstrates concept of rotation, reflection <u>or</u> translation in organization of collage	Layers warm shapes on cool background or cool shapes on warm background in collage.	Folds and cuts smoothly	Cuts clean edges and attaches paper shapes smoothly and securely to background paper	7
	Turns	Flips					
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26.							
27.							
28.							
Total							
Percentage							

**Criteria-based Reflection Questions:** (Note examples of student reflections.)

**Self-Reflection:** *Find an example of a turn (rotation) slide (translation) or a flip (reflection) in a peer’s art, note the artist and draw and label what you see it in your Geometry Search Journal. Where do you see contrast of warm and cool color?*

**Peer to Peer:** *I am checking with a neighbor to make sure my chosen transformation matches my layout of composition.*

**Thoughts about Learning:**

*Which prompts best communicated concepts? Which lesson dynamics helped or hindered learning?*

**Lesson Logistics:**

*Which classroom management techniques supported learning?*

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

## **ARTS IMPACT—ARTS-INFUSED LEARNING FAMILY LETTER**

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### **VISUAL ART AND MATH LESSON – Locations and Transformations—Polygon Collages**

Dear Family:

Today your child participated in a **visual art and math** lesson. We learned about **geometry concepts** and used them in our art.

- We found **rotation, reflection** and **translation of shapes/figures** in three works of art by Mike Shea. We identified places where a **congruent shape (same size, color, and shape)** can be seen that **turn/rotate, flip/reflect** or **slide/translation** from one **location** to another.
- We created paper **shapes/figures (polygons-straight sided shapes)** by folding and cutting. We combined **warm** and **cool colors** for **contrast**.
- We organized shapes/figures in our **composition** in a way that showed our understanding of geometry concepts.
- We used **craftsmanship** in **collage** by folding and cutting smoothly and securely gluing shapes/figures to paper.

You could find examples of shapes that flip, turn and slide in your home—you could experiment with creating designs by changing location of shapes.

### **Enduring Understanding**

Transformations of geometric shapes/figures: translations, reflections and rotations can create artistic compositions.