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

LESSON TITLE: Attributes of Polygons: Stretchy Shapes
Dance and Math Lesson

Artist-Mentor - Debbie Gilbert Grade Level: Third Grade

Examples:

Enduring Understanding

Number and type of angles, and number and length of sides can describe and identify shapes.

Target: Creates a dance using a sequence of polygons.
Criteria: Uses body shapes and a prop to represent a series of four shapes: parallelogram, rectangle, square, and triangle.

Target: Identifies and describes two-dimensional polygons.
Criteria: Draws and explains the attributes of four shapes: parallelogram, rectangle, square, and triangle.

Teaching and Learning Strategies

Introduction to Arts-Infused Concepts through Classroom Activities:

Arts-Infused Concepts: Polygon (Parallelogram, Rectangle, Square, Triangle) ; Sequence; Shape

☐ Introduce concepts for math instruction: attributes of polygons, congruence
☐ Introduce the BrainDance.
☐ Introduce dancing safely with the stretchies.

If time is available, explore concepts in everyday life:
☐ Walk in the shape of a polygon on the playground; name it.
☐ Draw the shape of a polygon in the air; name it.
☐ Look for parallelograms, rectangles, squares, and triangles in the world around you; name them.

1. **Prepares students for dancing shapes by discussing shapes in math, in dance, and everyday living.** *Prompts: This is a lesson that is a dance lesson and a math lesson at the same time. We'll be making and dancing shapes. In this lesson, we'll be concentrating on rectangles, squares, triangles, and parallelograms. Where do you see those shapes in the classroom? Tell me what you see that helps you to name each of these shapes.* Analyzes parallelograms, rectangles, squares, and triangles (number of angles, number of sides, right angles? equal sides? parallel sides?).
Student: Considers and discusses the shared concepts of shape in math and dance and life. Discussion based on prior knowledge and review of shape attributes.

2. **Prepares students for dancing by creating agreements/rules for dance behavior.** *Prompts: How can you be creative and safe at the same time?* Charts student responses for classroom dance behaviors.

Student: Contributes to group agreements.

3. **Leads students in *BrainDance* warm-up.** (Originally developed by Anne Green Gilbert, reference: *Brain-Compatible Dance Education,* video: *BrainDance, Variations for Infants through Seniors*). Music: "Geometry BrainDance (3rd grade)" #1, *Geometry Dances*. *Prompts: The BrainDance is designed to warm up your body and make your brain work better at the same time. We'll use a few examples of our dance and math word "shape" as we do the BrainDance.* **Demonstrates the dance using the following sequence of movement patterns:**

Breath: Inhales and exhales. Repeats. *Prompts: Your muscles and your brain need oxygen, so inhale through your nose and exhale through your mouth*.

Tactile: Rubs hands. Taps body lightly from head to toe. Stomps feet.

Core-Distal: Gradually increases the size of the body, growing from the center of the body into a large **square shape** and then shrinking back into a small square shape. Repeats. *Prompts: Make a big square shape. Shrink into a small square shape. Grow into a big square shape. Shrink into a small square shape.*

Head-Tail: Stretches into a large **rectangle shape**. Curls the body forward from head to tailbone. Returns to the same rectangle shape. Curls it backwards. Returns to the same rectangle shape. Repeats. *Prompts: Make a giant rectangle. Curve it forwards. Go back to the same rectangle shape — a **congruent** shape. Curl it backwards. Return to a congruent rectangle shape.* Curves from side-to-side several times.

Upper Half and Lower Half: Stabilizes the lower half of the body and only the top half dances, drawing shapes with different body parts. *Prompts: The top half of your body is in motion, while the lower half is frozen. Draw **triangles** in the air with your hands, then with your elbows. Draw **parallelograms** with your shoulders, then with your nose.* Stabilizes the upper half of the body. Only the lower half dances, staying in one spot. Draws shapes with the lower half of the body. *Prompts: The lower half of your body is in motion, while the upper half is frozen. Draw **triangles** on the ground with your feet, then in the air with your knees. Draw **parallelograms** on the ground with your feet, then in the air with your knees.*

Body-Half Right and Left: Stabilizes the left side of the body and only the right side dances, drawing **shapes** in the air. Repeats on the opposite side. *Prompts: Your left side is frozen and only the right side dances. Draw shapes in the air with only the right side of your body. Now the right side is frozen and the left half dances. Draw shapes in the air with only the left side of your body.*

Cross-Lateral: Reaches across the body with one hand and then the other. Crosses the center of the body to reach to ***vertices*** of a ***rectangle***. *Prompts: Use your hands to draw lines crossing in front of your body. Reach across to a high left diagonal, then a high right diagonal, then a low left diagonal, then a low right diagonal. You are reaching each vertex of a rectangle.* Repeats several times.

Spin/Vestibular: Turns clockwise. Stops and freezes in a shape. Turns counterclockwise. Stops and freezes in a shape. Repeats. *Prompts: Glue your arms to your sides. Turn. Freeze in a **square** shape. Turn. Freeze in a **rectangle** shape. Turn. Freeze in a **parallelogram** shape. Turn. Freeze in a **triangle** shape. Inhale. Exhale.*

Prompts: What shapes did you make in the BrainDance?

Student: Participates in warm-up according to teacher prompts.

4. **Introduces the dance concepts of locomotor and non-locomotor movement and shape.**

a. **Demonstrates the concepts**. *Prompts: **Locomotor movements** move the body through space. They travel. Actions of the body that do not cover space and stay in one spot are **non-locomotor movements**. When you are frozen, like a statue, you are in a **shape**.*

b. **Directs *Move and Freeze*** with locomotor and non-locomotor movements and shapes. Plays the drum and cues the students. *Prompt: When you hear the music you move and when it stops, you freeze in a shape. Use a locomotor move, hopping, to travel through the empty space in the room.* (Plays drum for a few seconds then stops playing.) *Freeze in a shape. Use a non-locomotor move, stretching, to move in one spot.* (Plays drum for a few seconds then stops playing.) Repeats with other locomotor movements (e.g. walk, skip) and non-locomotor movements (e.g. shake, bend). Refers to locomotor and non-locomotor movement chart for additional suggestions.

Student: Analyzes and explores the concepts as cued by teacher.
Embedded Assessment: Criteria-based room scan

5. **Guides students in using a prop** to dance with locomotor and non-locomotor movements and shapes.

☐ **Introduces the prop for dancing shapes: stretchy bands**. (The stretchies are strips of 4-way stretch fabric about 3 inches wide and 4-6 feet long tied tightly together to make a loop.) Discusses how to move safely and appropriately with them. *Prompts: How can we dance safely with the stretchy bands? When you start moving, remember to keep empty space around you. Find different ways of working with the prop. Do not wrap it around your neck. What should we do with our props when we are listening to directions* (e.g. on the floor in front of you, or "sit criss-cross and make the stretchy disappear")? Hands a stretchy band to each student.

☐ **Leads a Move and Freeze exploration with the stretchies**. *Prompts: When you hear the drum playing, do a non-locomotor movement in one spot with your stretchy. When the drum stops, freeze in a shape. Now try a locomotor movement that travels through the space when you hear the drum, and freeze in a shape when the drum stops.* Plays the drum and cues students to dance with the props with non-locomotor movements and locomotor movements and freeze in shapes.

Student: Shares strategies for dancing safely with the stretchies and explores non-locomotor movements, locomotor movements, and shapes with the prop.
Embedded Assessment: Criteria-based room scan

6. **Directs students in making polygon shapes with the stretchies. Demonstrates to fill in understandings.** *Prompts: What is a parallelogram? (four sides, four angles, two pairs of parallel sides) How would you make a parallelogram with the stretchy? Think about the four angles in the parallelogram. How can you use your body with the stretchy to show those angles?* Demonstrates as necessary. Describes a few of the different parallelograms created by the students. Repeats the same process (define the shape, make the shape with the prop, describe student shapes) with rectangles, squares, and triangles.

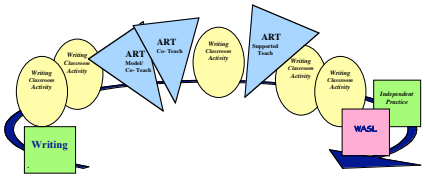
Student: Explores making parallelograms, rectangles, squares, and triangles with the prop.
Embedded Assessment: Criteria-based room scan; criteria-based self-assessment

7. **Guides choreography of an Instant Shape Dance**. Facilitates selection of four shapes (parallelogram, rectangle, square, and triangle) with stretchies. Puts the shapes into a sequence and adds music. Music: "Andean Altitude" #14 *Music for Creative Dance*, *Volume II,* by Eric Chappelle. *Prompts: We are going to create an instant shape dance. Someone show me a parallelogram shape with your stretchy. Everyone copy that shape. Make it the same size and shape so it is congruent.* Guides students in doing the same with a rectangle, a square, and a triangle. *Prompts: Now let's put them together with music. We'll do the parallelogram shape for 8 counts, the rectangle shape for 8 counts, the square shape for 8 counts, and the triangle shape for 8 counts.*

Student: Contributes to group choreography. Dances a sequence of four shapes.
Embedded Assessment: Criteria-based teacher checklist

8. **Leads students through a performance of the Instant Shape Dance followed by a responding process.** Asks half the class to perform the Instant Shape Dance and half to be the audience, then they will switch roles. Reviews performer and audience behavior. Hint: After each group performs, collect their stretchies. *Prompts: Performers what do you want from your audience? Audience what do you want from your performers?* After the dance is performed, ask the following questions. *Prompts: How did you know the first shape was a parallelogram? How did you know the second shape was a rectangle? How did you know the third shape was a square? How did you know the fourth shape was a triangle? Did the dance use locomotor or non-locomotor movement?* (non-locomotor) *Why?*
Student: Performs the dance and responds.
Embedded Assessment: Criteria-based teacher checklist, self-assessment, class critique

9. **Directs the students to draw and describe the shapes from the dance** to help students transfer their dance learning into math learning. Distributes Instant Shape Dance Worksheet. *Prompts: Now you'll have a chance to show what you know in writing. Draw each one of the shapes from the dance and describe them.* (Note: This strategy can be done in the dance space, or after students have returned to their desks.)
Student: Draws and describes the shapes from the dance.
Embedded Assessment: Criteria-based teacher checklist, self-assessment with written worksheet



Before next DANCE lesson:

Math

1. Repeat the BrainDance frequently to reinforce the learning.

Math

2. Explore the math concepts using your math curriculum.

Math

If time is available, explore the concepts in other ways:

3. Use stretchies to explore other polygons;
4. Use pattern blocks or grid paper to create a series of shapes and then use the stretchies to make the series of shapes.

Independent Practice: Hand dance it! Draw it on paper! Polygons: How many sides? How many angles? Any sides equal length? Any sides parallel?

Vocabulary	Materials and Community Resource	WA Essential Learnings & Frameworks
Arts: locomotor movement non-locomotor movement shape Arts Infused: congruent parallelogram polygon rectangle shape square triangle	**Performance:** Broadway Center for the Performing Arts, Tacoma, WA: *Do Jump, Peking Acrobats* **Art Materials or Performance Materials:** CD player *Music for Creative Dance, Volume II* *Geometry Dances* drum stretchies blank paper for group agreements chart markers BrainDance chart locomotor and non-locomotor movement chart assessment checklist student worksheets: instant shape dances pencils	*AEL 1.1 concepts:* shapes *AEL 1.1.2 principles of organization:* creates basic movement sequences *AEL 1.2 skills and techniques:* concentration and muscle control *AEL 1.4: audience skills:* uses criteria to respond to performance *AEL 2.1 applies creative process:* organizes shapes into a creative work *AEL 4.2: dance and math connection:* shape *MEL 1.3.2 geometric sense:* understands and applies attributes and properties to two-dimensional shapes and figures **Math State Frameworks** *Grade 3:* uses attributes and properties to identify, name, draw two-dimensional shapes and figures; draws and labels two-dimensional figures given particular attributes; identifies, names, and describes the attributes and properties of polygons

Instant Shape Dance Student Worksheet

Name: _____ Date: _____

Draw the shape.	**Describe the shape.** These questions might help you: How many angles does the shape have? How many sides does the shape have? Are any sides equal in length? Are any sides parallel? Are any angles right angles?
1. parallelogram	
2. rectangle	
3. square	
4. triangle	

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ASSESSMENT WORKSHEET

Disciplines	DANCE AND MATH	MATH	Total
Concept	SHAPE: Polygons **Instant Shape Dance**	SHAPE: Polygons **Instant Shape Dance Student Worksheet**	2
Student	Uses body shapes and a prop to represent a series of four shapes: parallelogram, rectangle, square, and triangle	Draws and explains the attributes of four shapes: parallelogram, rectangle, square, and triangle	
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23.			
24.			
25.			
26.			
27.			
28.			
Total			
Percentage			

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

Self-Reflection: *Draw each one of the shapes from the dance. How would you describe them?*

Peer to Peer: *How did you know the first shape was a parallelogram? How did you know the second shape was a rectangle? How did you know the third shape was a square? How did you know the fourth shape was a triangle?*

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

DANCE AND MATH LESSON – Attributes of Polygons—Stretchy Shapes

Dear Family:

Today your child participated in a **dance and math** lesson. We talked about how we could learn more about **shapes** in geometry by dancing them.

- We discussed the attributes of these **polygons**: **parallelogram, rectangle, square, triangle**.
- We danced while traveling (**locomotor movements**) and moving in one spot (**non-locomotor movements**) and made shapes with our bodies.
- We used stretchy fabric to make gigantic shapes and created an Instant Shape Dance about the four polygons.
- We drew images and described the polygons with words.
- We learned about the **attributes of shapes** by describing them, dancing them, and drawing them.

You could look for parallelograms, rectangles, squares, and triangles in your house or in your yard. How many sides do they have? Ares any sides parallel? How many angles do they have? Are any angles right angles?

Enduring Understanding

Number and type of angles, and number and length of sides can describe and identify shapes.