



artsNOW

Integrated learning solutions

PERFORMING PERIMETER Grade Band: 2-3 Content Focus: Dance & Math



LEARNING DESCRIPTION

In this lesson, students will calculate the perimeter of various geometric figures and will represent the perimeter of these figures and their angles with a movement phrase. Students watching the perimeter performance will determine what shape was demonstrated.

LEARNING TARGETS

Essential Questions	"I Can" Statements
How can you show the perimeter of various geometric figures and angles using movement?	<p>I can correctly calculate the perimeter of geometric figures.</p> <p>I can accurately represent the perimeter of a geometric figure with movement.</p> <p>I can identify a geometric figure by watching a perimeter movement phrase performance.</p>



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	I can use my body to represent different types of angles accurately.
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GEORGIA STANDARDS

Curriculum Standards	Arts Standards
<p>Grade 3: 3.GSR.8: Determine the perimeter of a polygon presented in real-life, mathematical problems.</p>	<p>Grade 3: ESD3.CR.1 Demonstrate an understanding of the choreographic process.</p> <p>ESD3.CR.2 Demonstrate an understanding of dance as a form of communication.</p> <p>ESD3.PR.1 Identify and demonstrate movement elements, skills, and terminology in dance</p> <p>ESD3.RE.1 Demonstrate critical and creative thinking in dance.</p>

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
<p>Grade 3: 3.MDA.6 Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</p>	<p>Anchor Standard 1: I can use movement exploration to discover and create artistic ideas and works.</p> <p>Anchor Standard 2: I can choreograph a dance.</p> <p>Anchor Standard 3: I can perform movements using the dance elements.</p> <p>Anchor Standard 7: I can relate dance to other arts disciplines, content areas, and careers.</p>

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> ● <u>Perimeter</u> - Distance around a two-dimensional object ● <u>Polygon</u> - A two-dimensional plane shape with straight sides ● <u>Angle</u> - The degrees between two straight lines that have a common 	<ul style="list-style-type: none"> ● <u>Movement phrase</u> - A series of movements linked together to make a distinctive pattern ● <u>Non-locomotor</u> - This refers to a movement that does not travel through space



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endpoint (the vertex)

- Vertex - The point where two or more straight lines meet

- Locomotor - This refers to a movement that travels through space
- Steady beat - An unchanging, continuous pulse
- Space - An element of movement involving direction, level, size, focus, and pathway
- Level - One of the aspects of the movement element space; in dance, there are three basic levels: high, middle, and low
- Choreography - The art of composing dances and planning and arranging the movements, steps, and patterns of dancers
- Choreographer - A person who creates dances
- Shape - This refers to an interesting and interrelated arrangement of body parts of one dance; the visual makeup or molding of the body parts of a single dancer; the overall visible appearance of a group of dancers

MATERIALS

- Sound source and music with a steady beat
- Geometric shape cards
- Paper and pencil

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Begin by engaging students in movement that introduces students to the Elements of Dance.
 - Have students arrange themselves in the classroom with enough personal space to move freely without touching a neighbor.
 - Turn on instrumental music with a steady beat.
 - Element of Body: First, have students bring awareness to their bodies by leading them through gentle stretches starting from the head and moving to the toes (e.g.,



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head circles, shoulder shrugs, toe touches, etc.). Then, ask them to make different shapes with their bodies, such as circles, triangles, etc.

- Element of Action - Locomotor/non-locomotor: Tell students that these movements they just performed were non-locomotor, meaning that they didn't move to a new location. Direct students to perform a movement that requires moving from one place to another, such as step-together, step-together moving side to side.
- Have students practice what they just learned by saying words such as "locomotor" and have students create a spontaneous locomotor movement.
- Have students return to their seats.

Work Session

- Review types of angles with students: Right, acute and obtuse.
 - Demonstrate how to make angles using different parts of your body, such as arms, legs, torso, etc.
 - Call out different types of angles, such as right, acute, and obtuse; ask students to explore different ways they can make the angles with their bodies.
- View different geometric figures and model how to find the perimeter.
 - Display a polygon and illustrate the perimeter by doing a locomotor movement for the distance of each side, and a non-locomotor movement for each angle.
 - Model the perimeter of several figures and ask students to copy your movements.
- Tell students that they will now create their own choreography to demonstrate the perimeter and angles of a polygon.
- Divide students into small groups.
 - First, students will solve the perimeter of six basic geometric figures on the shape cards provided.
 - Assign one geometric figure to each group to represent using movement.
 - After calculating the perimeter of each figure, the groups will decide how to represent the perimeter of their assigned figure with movement.
 - Tell students that the distance should be shown through locomotor movement and the types of angle at the vertices should be shown through nonlocomotor movement.

Type of Angle	Type of Movement
Acute angle	Low angular
Right angle	Middle angular
Obtuse angle	High angular

- Allow time for students to choreograph and practice. Circulate to work with students and check for understanding.

Closing/Reflection

- Students will perform their choreography for their classmates. Discuss appropriate audience participation and etiquette prior to performances.



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- After each performance, the audience will determine which shape matches the performance. Students should refer to the movements and shapes the dancers made with their bodies when justifying their answers.

ASSESSMENTS

Formative

Teachers will assess students' understanding of the content throughout the lesson by observing students' participation in the activator, review of types of angles and how to calculate perimeter, movement responses to types of angles, and collaboration with groupmates to choreograph their movement phrase.

Summative

CHECKLIST

- Students can correctly calculate the perimeter of each geometric figure.
- Students can accurately represent the perimeter of a geometric figure using locomotor movements.
- Students can identify a geometric figure by watching a perimeter movement phrase performance.
- Students can use their bodies to represent different types of angles accurately.

DIFFERENTIATION

Acceleration:

- Challenge students to create choreography that demonstrates the formula for calculating perimeter.
- Challenge students to create a movement phrase showing the area of their geometric figure.

Remediation:

- Provide formulas for students to use to support mathematical equations.
- Calculate perimeter of the figures together as a class; then assign individual groups a figure to create a movement phrase for.
- Focus only on perimeter and omit angles from instruction.

ADDITIONAL RESOURCES

NA

**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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