Explore math themes and concepts with your students through the process of movement!

Embodying Math Concepts • Angles • Plane Shapes • Geometric Solids • Classification

Highlights:
- Angles
- Plane Shapes
- Geometric Solids
- Classification

Notes/Reflections:

Idea Contributed by Melissa Dittmar-Joy
Use movement and the creation of human structures to aid in comprehension of angles, plane shapes and geometric solids.

**Essential Question:**
How can dance/movement aid in comprehension of geometry concepts?

**Process**
- Basic movement warm-up
- Explore (with bodies) ways to create angles (right, acute, obtuse), plane shapes and geometric shapes.
- View dance photography
- Identify angles, plane shapes and geometric shapes found in photos. Outline each type in a different color crayon/marker. Discuss the attributes and classification of the shapes as appropriate for grade level.
- Break class into groups
- Students will select or be assigned one type of: angle, plane shape and/or geometric shape (as appropriate for grade level) and create human structures utilizing selection.
- Perform to whole group.
- Audience will identify shapes and angles within structure.

**Assessment**
- Students should correctly create given shape/angle.
- Students should correctly identify performed shape/angle.

**Materials**
- Music
- CD player
- Markers or crayons
- Dance photography
- Colored tape

**Vocabulary**

**Pathway**
The designs traced on the floor as a dancer travels across space; the designs traced in the air as a dancer moves various body parts

**Space**
An element of movement involving direction, level, size, focus, and pathway

**Formation**
The placement of dancers in a performance space

**Choreography**
The art of composing dances and planning and arranging the movements, steps, and patterns of dancers

**Choreographer**
A person who creates dances

**Acute Angle**
an angle less than 90 degrees but more than 0 degrees

**Obtuse Angle**
an angle between 90 and 180 degrees

**Right Angle**
An angle of 90°, as in a corner of a square

**Plane Shape**
A plane shape is a flat, 2-dimensional shape. Example: circle, triangle, square, etc.

**Curved Shape**
the trace of a point whose direction of motion changes

**Angular Shape**
a shape having one or more sharp angles

**Classroom Tips**
Set up chairs and tables in a circular format to maximize students' engagement and ability to see their peers during the activity and performance. Also establish parameters for acceptable movement choices and discuss audience behavior/etiquette with students.

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**Common Core Georgia Performance Standards**

**MATHEMATICS**

**GRADE K**

**MCC.K.G.2:** Correctly name shapes regardless of their orientations or overall size.

**MCC.K.G.4:** Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/*corners*) and other attributes (e.g., having sides of equal length).

**MCC.K.G.5:** Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

**MCC.K.G.6:** Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”

**GRADE 1**

**MCC.1.G.1:** Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

**MCC.1.G.2:** Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.

**GRADE 2**

**MCC.2.G.1:** Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

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**Georgia Performance Standards**

**DANCE**

**GRADE K**

**DKFD.1:** Identifies and demonstrates movement elements, skills, and terminology in dance

**DKFD.2:** Understands and models dance etiquette as a classroom participant, performer, and observer

**DKCR.1:** Demonstrates an understanding of creative and choreographic principles, processes, and structures

**D2CO.4:** Demonstrates an understanding of dance as it relates to other areas of knowledge

**GRADE 1**

**D1FD.1:** Identifies and demonstrates movement elements, skills, and terminology in dance

**D1FD.2:** Understands and models dance etiquette as a classroom participant, performer, and observer

**D1CR.1:** Demonstrates an understanding of creative and choreographic principles, processes, and structures

**D1CO.4:** Demonstrates an understanding of dance as it relates to other areas of knowledge

**GRADE 2**

**D2FD.1:** Identifies and demonstrates movement elements, skills, and terminology in dance

**D2FD.2:** Understands and models dance etiquette as a classroom participant, performer, and observer

**D2CR.1:** Demonstrates an understanding of creative and choreographic principles, processes, and structures

**D2CO.4:** Demonstrates an understanding of dance as it relates to other areas of knowledge

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**National Standards**

**DANCE**

**Standard 1:** Identifying and demonstrating movement elements and skills in performing dance

**Standard 2:** Understanding choreographic principles, processes and structures

**Standard 4:** Applying and demonstrating critical and creative thinking skills in dance

**Standard 7:** Making connections between dance and other disciplines