



artsNOW

Integrated learning solutions

MOVEMENT AND MEASUREMENT

Grade Band: 2-3

Content Focus: Dance & Math



LEARNING DESCRIPTION

In this math and dance lesson, students will compare tall and short height through dance levels. With partners, they will participate in a mirror dance demonstrating their understanding of levels and measurements.

LEARNING TARGETS

Essential Questions	"I Can" Statements
How can dancers use levels to compare movements that are taller and shorter?	I can use levels to compare movements that are taller and shorter.
How can you use your body to demonstrate changes in levels and size?	I can use my body to demonstrate changes in levels and size.
What instruments can we use to determine height?	I can use instruments of measurement, such as a ruler or meter stick, to test my conclusions.



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	Grade 3: I can choreograph a dance and organize the data into a line plot.
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GEORGIA STANDARDS

Curriculum Standards	Arts Standards
<p>Grade 2 2.MDR.5: Estimate and measure the lengths of objects and distance to solve problems found in real-life using standard units of measurement, including inches, feet, and yards.</p> <p>2.MDR.5.2 Estimate and measure the length of an object or distance to the nearest whole unit using appropriate units and standard measuring tools.</p> <p>2.MDR.5.3 Measure to determine how much longer one object is than another and express the length difference in terms of a standard-length unit.</p>	<p>Grade 2 ESD2.PR.1 Identify and demonstrate movement elements, skills, and terminology in dance. a. Apply dance terminology to describe and create movement (e.g. levels, pathways, directions, speed, rhythm, energy, qualities, shapes).</p> <p>ESD2.CN.3 Identify connections between dance and other areas of knowledge.</p>

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
<p>Grade 2 2.MDA.3 Estimate and measure length/distance in customary units (i.e., inch, foot, yard) and metric units (i.e., centimeter, meter).</p> <p>2.MDA.4 Measure to determine how much longer one object is than another, using standard length units.</p> <p>Grade 3 3.MDA.4 Generate data by measuring length to the nearest inch, half-inch and quarter-inch and organize the data in a line plot using a horizontal scale marked off in appropriate units.</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



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Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> ● <u>Measurement</u> - The size, amount, degree, or capacity of something; it is typically determined by using an instrument or device marked in standard units ● <u>Inches</u> - A unit of length in the United States customary systems of measurement; twelve inches make a foot ● <u>Foot</u> - A unit of length in the United States customary systems of measurement ● <u>Meter</u> - The base unit of length in the International System of Units (SI) ● <u>Meter stick</u> - A tool that measures meters ● <u>Ruler</u> - A tool that measures inches 	<ul style="list-style-type: none"> ● <u>Movement</u> - The various actions performed by the body to create and express motion, rhythm, and emotion ● <u>Mirror dance</u> - A type of dance exercise or performance in which two dancers face each other and perform movements that mirror each other's actions, as if one dancer is the reflection of the other in a mirror ● <u>Shape</u> - The positioning and form of the dancer's body ● <u>Levels</u> - The use of different heights or vertical spaces through which dancers move and position their bodies (high, middle, low) ● <u>Choreography</u> - The art of designing and arranging movements to create a structured and cohesive performance

MATERIALS

- Photos of dancers demonstrating different levels
- Drum or music
- Meter stick
- Ruler

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Show students several photographs of dancers in various positions that show different heights. Ask students to compare the height of the different positions. Tell students that the height of a dancer's movement is called a level (high, middle, low).

Work Session

- Lead exploration of taller and shorter shapes and movements with "Move and Freeze".
 - *Teacher will need a drum or music for accompaniment.*
 - Tell students that they are going to dance "Move and Freeze". This means that when they hear the drum or music, they move, and when it stops, they freeze in a shape, like a statue.
 - Remind students to make sure that they have a "space bubble" around them so that they don't bump or touch anyone.



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- Tell students that they will dance in “self-space”, which means that they will stay in one spot.
- Begin the exercise. When the teacher stops the drum or music, tell students to freeze in a shape at a high level. Then, to stretch their shape taller, and freeze again, then stretch taller, and then freeze again. Do the same with low levels to make a shape shorter.
- Reflect by asking students whether they were able to make their high level shapes taller and their low level shapes shorter. How do they know?
- Next, tell students that they will be creating a mirror dance with a partner to explore tall and short shapes and movements.
 - Ask students to find a partner. One will start as the leader and one as the follower.
 - Students will face each other; as the leader moves, the follower will mirror the leader’s movements.
 - Verbally cue leaders as they demonstrate tall and short movements for their partner to mirror.
 - Tell leaders to start by making tall movements with high levels; then, to freeze in a tall shape.
 - Tell leaders to use even taller movements; then, to freeze in a shape.
 - Tell leaders to use shorter movements with a low level. Then, to freeze in a short shape.
 - Tell leaders to use even shorter movements and freeze in a shape.
 - Once students understand the concept, allow them to choreograph their own movements.
 - Allow the followers to participate in the leader role and the leaders to participate in the follower role.
 - Facilitate pair-share reflection.
 - Tell students to respond to the following questions:
 - What types of movements and levels did you pick when you were the leader? Tall, short?
 - Partners, how did you know that was true (that they were tall or short)?
- Tell students that “Dancing Mathematicians” wonder why things are true, so they will test their conclusions.
 - Review units of measurement with students: Inches, feet and meters.
 - Review how to use a measuring device such as a meter stick and/or ruler.
 - Ask for two student volunteers. Volunteer 1 will make a short shape at a low level. Volunteer 2 will make a tall shape at a high level.
 - The class should state which is taller and which is shorter. Ask students what instrument they could use to determine the difference between the heights and determine if their conclusions were correct.
 - Ask a third volunteer to measure the difference between the heights. Discuss findings as a class.

Grade 3 extension:

- Tell students that they will be choreographing a dance using high, middle, and low levels.
 - They can choose the movements and body shapes they would like to use in each level.
 - They should have at least eight movements in their choreography and should have movements in each level.



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- They can repeat levels, movements, and shapes however they would like.
- After they have choreographed their dance, students should interpret their choreography into data and organize their data into a line plot.
- Students will perform choreographed dances for the class and share their line plots.

Closing/Reflection

- Ask students to explain how they used levels to make shapes and movements that were taller and shorter in height.
- Ask students to explain how they determined which movements were taller and which were shorter.
- Ask students to explain how these strategies can help them estimate measurement in other scenarios.

ASSESSMENTS

Formative

Teachers will assess students' understanding by observing students' discussion of levels in dance photography, participation in "Move and Freeze", and their participation in the mirror dance and choreography.

Summative

CHECKLIST

- Students can use levels to compare movements that are taller and shorter.
- Students can use their bodies to demonstrate changes in levels and size.
- Students can use instruments of measurement, such as a ruler or meter stick, to test their conclusions.

Grade 3 extension:

- Students can choreograph a dance with eight movements that show low, middle, and high levels.
- Students can interpret choreography as data and organize data into a line plot.

DIFFERENTIATION

Accelerated:

- Students can compare objects in the room by length (long/short) and create choreography with long and short locomotor movements (any movement that travels through space from one location to another).
- Students can estimate the height of their movements and check them with a ruler or meter stick.
- Students can choreograph a dance that uses low, middle, and high levels.

Remedial:

- For students who struggle with understanding space, this activity can be done outside to allow more space.
- Physically adapt this lesson so that students use only upper or lower body movement.



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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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