

DANCE

Integrated Lesson Plan | Mirroring Strategy

Content Area: Math	Fine Arts Area: Dance	Lesson Title: Dancing Angles
Grade Level: 6-8	Duration: 60-90 minutes	Teacher:

Standards and Alignment

Content Area Standard(s): CCSS.MATH.CONTENT.8.G.A. Understand congruence and similarity using physical models, transparencies, or geometry software.		Fine Arts Standard(s): Dance: Artistic Process: Creating Anchor Standard: Organize and develop artistic ideas and work	
Big Idea:	Identify the congruence of angles in relationship with one another	Essential Question:	How can you manipulate angles to be congruent?
21st Century Skills:	Creativity, Collaboration, Problem Solving, Critical Thinking, Innovation	Key Vocabulary:	Acute, right, obtuse, angle, wedge, polygon, degree, pattern, repetition, contrast, balance, variety and unity/harmony

<p>Vertical Alignment</p>	<p>Before Lesson:</p> <p>Identification and measurement of acute, obtuse and right angles</p>	<p>During Lesson:</p> <p>Manipulating the congruence between two or more shapes using parallel lines, line segments and angles of the same measure</p>	<p>After Lesson:</p> <p>Describing the effects of translations, rotations and rotations using coordinates</p>
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<p>Materials List:</p>	<p>LCD projector/SMART Board, See, Think, Wonder Chart, internet connection, computer, speakers, video recorders or cell phones (optional), iMovie or other video editing software (optional), Synchronous Objects (http://synchronousobjects.osu.edu/content.html#/fullVideoScore)</p>
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Instructional Delivery (guided, collaborative, and self-directed)

<p>Student Learning Outcome(s):</p>	<p>I can create a choreographed dance that demonstrates congruence between partners.</p>
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Pre-Engagement:**Pre-assessment:**

Allow students to watch 2-3 minutes of The Dance from the website <http://synchronousobjects.osu.edu/content.html#/fullVideoScore> Ask students to write down what they see, what they think and what they wonder about the video clip. Students may share out with the whole group from each column. Write these ideas down for the class.

Engagement:

Ask students to view the video again, but this time to raise their hands each time they see an angle. Upon raising their hands, pause the video and ask students to identify the angle, line or line segment that they see. Students should write down these answers, along with a visual representation of what is being identified (i.e.: if an acute angle is identified, students should draw an acute angle and label it as such)

Focal Lesson:

Ask students to get into pairs and to select one of the angles that they identified from the video. As pairs, students should use the Mirroring Strategy to create this angle in congruence with each other.

Partners will then get into a larger group with two other sets of partners who had the same angle. As a group of 6, they must now work together to create the same angle, while keeping congruent lines throughout their movement. What was challenging about this exercise?

Hang 2 large pieces of bulletin board paper (6' by 4' at least) somewhere in the room. Ask students to get back into their original pairs. The teacher will tell students that they will listen to a piece of ambient music, similar to what they saw in *The Dance*, and that one partner will move to the music using their body to create angles and arcs in front of one piece of paper. The other partner will trace the angles onto the paper. Students will form two lines of pairs. Each pair will have approximately 30 seconds to complete their dance angle traces. When their time is complete, they will go back to their seats. The music is found here: Play the ambient music "The Storm Within", found at this site: http://www.dreamstate.to/audio/the_storm_within.mp3

Students will then measure their own angle and draw a mirrored congruent angle directly on the paper.

Integrated
Assessment and
Extension

Angled Choreography

As a class, create a choreographed dance of congruent angles. Write the choreography and identify the angles being used. Perform the dance with the ambient music originally used in class. If possible, record the dance as a video and play back for students to identify their use of congruent angles throughout the piece. As an extension, students may upload the recording to a piece of software, such as iMovie, and add images of the identified angles to appear during the dance, similar to the Synchronous Objects video from the beginning. If this is done, the measurements of the angles should also be added to the video.

Suggested Grade-Band Extensions

K-2: Use the lesson to focus on analyzing, comparing, creating and composing shapes with their bodies. Instead of focusing on angles, focus on the larger shapes being made through the dance.

3-5: Try using this lesson to explore lines of symmetry when creating mirrored angles and defining the vertices within the angle.

9-12: Use this same lesson, but adjust it to include the use of a transversal crossing a parallel line. Have students measure the angles with the transversal to test for congruency in corresponding angles.

Reflection Opportunities			
Student Reflections Prompts:	Key Questions to Ask Students: 1. What makes something congruent? 2. What is the difference between congruence and parallel?	Teacher Reflection Prompts:	Key Questions to Ask Yourself: 1. Was there a seamless connection between the dance and math in this lesson? 2. What pieces of this lesson were a challenge? Which pieces were most engaging for me and my students?

Dancing Angles Checklist Assessment

Content Standard Assessed: **CCSS.MATH.CONTENT.8.G.A.** Understand congruence and similarity using physical models, transparencies, or geometry software.

Arts Standards Assessed: Dance: **Artistic Process:** Creating **Anchor Standard:** Organize and develop artistic ideas and work

FOCAL ASSESSMENT QUESTIONS

Math: Can this student demonstrate understanding of congruent angles?

Dance: Can this student create a choreography sequence which is based upon congruent angles?

Math Look-Fors	Dance Look-Fors
<ul style="list-style-type: none">□ Student can define congruence□ Student can correctly identify congruent angles◦ Student can create a congruent angle accurately◦ Student can measure a congruent angle with accuracy	<ul style="list-style-type: none">□ Student can recognize the appearance of angles in body movement◦ Student can correctly identify dance elements needed to create an angle◦ Student can create a congruent angle accurately with their body◦ Student can develop a sequence of choreography that highlights congruent angles