

Math #3

Title: Making Your Own Tessellation Piece of Art

Learning Targets: Student will be able to identify transformations in a mural and create their own work of art through tessellations made from transformations of reflection, rotation and or translation.

Understandings/Prior Knowledge:

- The definition of congruent/congruence
- Understand transformations reflections, rotation and translation.

Essential Question(s):

1. How does the vision of Mele Murals and the final mural connect with you as a student of this community?
2. Locate a minimum of two locations that show transformations using reflections, rotation, or translation.
3. How can you create your own stencil of a repeating transformation?
4. Create a tessellation and use it to make your own piece of art that relates to you and where you're from.

Key Understanding

Standards Addressed: G-CO.5

- Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.

HA Connection: Belonging

- a. Know who I am and where I am from
- b. Know about the place I live and go to school

Set-up

Classroom Set-Up:

1. Individual or pair work.

Materials and Equipment Needed:

1. Write up on Mele Murals Organization.
2. Index cards
3. Scissors
4. Tape
5. Coloring utensils
6. Computer paper
7. Example of a completed tessellation art piece.

RUBRIC:

Product

<p>A- Exceeds</p>	<ul style="list-style-type: none"> <li>- Student is able to create a tessellation stencil using more than transformations.</li> <li>- Student is able to create an art piece using their stencil and designing the tessellation to represent their culture and or community that matches their write up.</li> <li>- Student is able to clearly explain how the created their tessellation stencil using academic vocabulary and math terminology fluently with smooth transitions and flow.</li> </ul>
<p>B- Proficient</p>	<ul style="list-style-type: none"> <li>- Student is able to create a tessellation stencil using two or more transformations.</li> <li>- Student is able to create an art piece using their stencil and designing the tessellation to represent their culture and or community that matches their write up.</li> <li>- Student is able to clearly explain how the created their tessellation stencil using academic vocabulary and math terminology in some areas with easy to follow transitions.</li> </ul>
<p>C-Meets</p>	<ul style="list-style-type: none"> <li>- Student is able to create a tessellation stencil using only one transformation.</li> <li>- Student is able to create an art piece using their stencil and designing the tessellation to represent their culture and or community that matches their write up.</li> <li>- Student is able to explain how the created their tessellation stencil using limited academic vocabulary and math terminology easy to follow transitions.</li> </ul>
<p>D- Approaching</p>	<ul style="list-style-type: none"> <li>- Student is able to create a tessellation stencil using only one transformation.</li> <li>- Student is able to create an art piece using their stencil and designing the tessellation to represent their culture and or community, but doesn't match their write up.</li> <li>- Student's explanation on how he/she created their tessellation stencil does not use academic vocabulary and math terminology OR uses it incorrectly or inconsistently. Flow of writing is difficult to follow.</li> </ul>
<p>F-Well Below</p>	<ul style="list-style-type: none"> <li>- Student's art piece utilizing a tessellation stencil does not repeat due to incorrect transformations.</li> <li>- Student's explanation on how he/she created their tessellation stencil does not make sense or lacks explanation.</li> </ul>

Lesson Flow	Mins	Procedure:
	0	Pass out a write up about the Mele Mural Organization: individual and have students follow along pausing along the way to
	5	<p><b>EXPLAIN</b> the activity and materials and answer any questions:</p> <p>Activity:</p> <ol style="list-style-type: none"> <li>1. Break up into pairs.</li> <li>2. Each student will get 1 index card, 1 scissors, 1 blank sheet of paper, and tape in the front of room.</li> <li>3. Create a "line" from one corner of the index card to the opposite side making turns or a mixture of lines that will be cut on.</li> <li>4. After cutting it off, take the piece and transform it to another edge of the index card using reflection, rotation or translation.</li> <li>5. Repeat this step to the other straight side of the index card.</li> <li>6. When done, that is your stencil to repeat the shape to cover the entire blank sheet of paper.</li> <li>7. Design and color in each repeating shape the same way.</li> <li>8. Show the example piece to give them an idea.</li> </ol> <p>Materials:</p> <ol style="list-style-type: none"> <li>1. Index card</li> <li>2. Scissors</li> <li>3. Tape</li> <li>4. Coloring utensils</li> <li>5. Computer paper</li> </ol>
	10	<p>Transition, passing out materials, and demonstrating how to create stencil.</p> <ol style="list-style-type: none"> <li>1. Direct students to get into pairs.</li> <li>2. Pass out materials</li> <li>3. Demonstrate the drawing of the "lines," how to cut and paste.</li> <li>4. After creating a stencil, demonstrate how to repeat the shape into a tessellation art piece.</li> </ol>
	30	<p>Group work</p> <ol style="list-style-type: none"> <li>1. Students will work together to make sure each are drawing, cutting, pasting and drawing the repeating image correctly.</li> <li>2. Color in each image the same.</li> <li>3. If time permits, start a write up on how the stencil and coloring design relates to their culture and or community.</li> </ol>
5	<p>Closing:</p> <ol style="list-style-type: none"> <li>1. Students clean up</li> <li>2. Return desks to individual seating.</li> <li>3. clean up trash and return scissors, tape, extra materials.</li> </ol>	

Reflection	<p>How will you check for understanding during instruction and how will you know if learning targets are met? Component 1F → 3D</p>
	<p>While activity is going on, walking around and listening to the conversation will give an idea of the level of understanding. Look for students that may need help with drawing “lines” or where to tape it on the remaining piece of index card.</p>
	<p>When students start using stencil to repeat the shape, how they are doing it will let you know if they know how to repeat the image using translation. If it doesn't repeat, either the stencil is incorrect or he/she is not translating correctly.</p> <p>Check during the designing part. Make sure students are designing/coloring each repeated image the same way.</p>

# MELE MURALS