

<b>TEAM Lesson Plan Template</b>	
Teacher: Karla Banks	
Class: 1st-5th CDC	
Course Unit: Geometry	
Lesson Title: Symmetry	
<b>LESSON OVERVIEW</b>	<b>Summary</b> of the task, challenge, investigation, career-related scenario, problem, or community link.
Students will identify line symmetry in plane shapes and in artwork. Student will create their own piece of artwork with symmetry using geometric shapes.	
<b>STANDARDS</b>	<b>Identify what you want to teach.</b> Reference State, Common Core, ACT College Readiness Standards and/or State Competencies.
0306.4.4 Identify, create, and describe figures with line symmetry. 2.8 Create works of art with intended meaning.	
<b>OBJECTIVE</b>	<b>Clear, Specific, and Measurable - NOT ACTIVITIES</b> Student-Friendly
<ol style="list-style-type: none"> <li>1. Students will define symmetry.</li> <li>2. Students will identify line symmetry in plane shapes.</li> <li>3. Students will identify symmetry in artwork.</li> <li>4. Students will create artwork with symmetry.</li> </ol>	
<b>ASSESSMENT/EVALUATION</b>	<b>Students show evidence of proficiency through a variety of assessments.</b> Aligned with the Lesson Objective Formative/Summative Performance-Based/Rubric Formal/Informal
Students will be evaluated by their oral responses to questions and questions they ask. They will be evaluated on their work and explanation of their work at the smartboard. Students will identify lines of symmetry in plane shapes independently. Students will also be evaluated on their finished project and written response about symmetry in their artwork. (Rubric attached)	

<b>MATERIALS</b>	<b>Aligned with the Lesson Objective</b> Rigorous & Relevant
<ol style="list-style-type: none"> <li>1. Smartboard and Symmetry Lesson</li> <li>2. worksheet for independent practice</li> <li>3. plane shapes in a variety of shapes, colors and sizes</li> <li>4. large paper for background</li> <li>5. glue</li> <li>6. rubric for assessment of art activity</li> <li>7. written response for art activity</li> </ol>	

<b>ACTIVATING STRATEGY</b>	<b>Motivator/Hook</b> An Essential Question encourages students to put forth more effort when faced with a complex, open-ended, challenging, meaningful and authentic questions.
Did you ever notice things in nature are the same on both sides? Flowers, butterflies, people, and insects are just a few things that are the same on both sides.	
<b>INSTRUCTION</b>	<b>Step-by-Step Procedures-Sequence</b> Discover/Explain - Direct Instruction Modeling Expectations - "I Do" Questioning/Encourages Higher Order Thinking Grouping Strategies Differentiated Instructional Strategies to Provide Intervention & Extension
<p>1. Begin the lesson by reviewing congruent shapes. All students will have a turn at the smartboard. Each student will determine if two shapes are congruent or not. They will be expected to defend their answer and give reasons to explain why they chose their answer. We will review flips, turns, and slides. Each student will have a turn at the smartboard. Each student will decide if the shapes show a flip, turn, or slide. They will be expected to defend their answer and give reasons to explain why they chose their answer.</p> <p>2. Introduce students to the new vocabulary: symmetry, symmetric figures. Explain to students that we are going to examine figures that are symmetric. Ask students if they know what symmetric means or what a symmetric figure is. Accept reasonable answers. Explain to students that a symmetric figure is a figure that you can draw a line through the middle of and both sides match. Demonstrate symmetry with a triangle. Ask students if they can think of things in the classroom or in nature that are symmetric.</p>	
<b>GUIDED &amp; INDEPENDENT PRACTICE</b>	<b>"We Do"- "You Do"</b> Encourage Higher Order Thinking & Problem Solving Relevance Differentiated Strategies for Practice to Provide Intervention & Extension

3. Each student will come to the smartboard and draw a line of symmetry in one plane figure. After each student has drawn a line of symmetry in a figure, ask, "Do both sides of the figure match? Did you draw a line of symmetry for the figure?" Allow students to explain their answers and how they found the line of symmetry.
4. After each student has an opportunity to come to the smartboard and work through a problem with the help and support of the teacher and peers, show a shape that does not have a line of symmetry, but do not tell the students it is not symmetric. Have a student come to the board to draw a line of symmetry for the figure. Question the student with the support of the class about the line they drew. Ask if it is symmetric, and if both sides match. Allow the students to discover that the figure is not symmetric and all shapes are not symmetric.
5. Show students plane shapes that have all of the sides the same length. Explain to students that a regular polygon with equal sides, will have the same number of lines of symmetry as the number of sides it has. Show students several regular polygons where this rule is true. Have them find all of the lines of symmetry in each shape. Have students find at least one line of symmetry in 3 different figures on their own. Reteach/ offer additional instruction as needed based on student performance.
6. Introduce Wassily Kandinsky and give students a little background about him. He was born in Russia in 1866. He was a lawyer. One day, he visited an art museum and saw the painting Haystacks by Monet. It made it mad, because he thought the painting should look like the object he painted. He didn't think it was very realistic. He decided to go to art school in Germany and learn about life drawing. Soon after, WWI broke out. He decided to move back to Russia, away from the war. He wasn't happy in Russia because he didn't agree with how the artists were creating art. He was creating abstract art. Art that he created was about music and often titled with musical terms. He decided to move back to Germany. In Germany, the Nazi's had taken over and destroyed all abstract art which included many of his paintings. Kandinsky decided to move to France and continue to create his art. He is thought of being the founder of abstract art.
7. Show students some of Kandinsky's art work (included in the smartboard lesson.) Have them find symmetry in his work. Have students explain where the symmetry is using math vocabulary.
8. Hand out large paper for the background of the students' artwork. Give students an assortment of shapes in different sizes and colors. Have the students to fold their paper in half creating a line of symmetry to create their artwork around. Have students put shapes on one side of the line of symmetry they created. After they have the first side completed, students should complete the second side of their paper creating a symmetric piece of artwork.
9. After students complete their artwork, they are to explain how they created symmetry in their artwork in writing.

<b>CLOSURE</b>	<b>Reflection/Wrap-Up</b> Summarizing, Reminding, Reflecting, Restating, Connecting
Students will define and explain symmetry again. They can use their artwork while they are explaining symmetry.	
<b>CROSS-CURRICULAR CONNECTIONS</b>	
This lesson also addresses visual art standards. Students will create a piece of original artwork. They will also learn background information about Kandinsky, an artist who uses symmetry in his artwork.	

**NOTES:**

This is the first lesson the students have had on symmetry. They have learned several skills in geometry and have surprised me with their ability to understand geometric concepts. I believe the majority of the students will be able to master symmetry with only this one main lesson as long as we continue to review symmetry in the next several lessons. The students will also be assessed on symmetry in the end of unit test. Symmetry/geometry is also assessed on the TCAP/Discovery ED tests, which most of my students will take.