

Objective

By the end of this lesson, the student will understand the relationship between math and art, particularly how geometric shapes and patterns can be used in artistic designs. The student will create their own piece of art that incorporates mathematical concepts such as symmetry, angles, and shapes.

Materials and Prep

- Paper
- Pencil
- Ruler (or any straight edge)
- Compass (or any circular object for drawing circles)
- Colored pencils or markers (optional for coloring the final artwork)

Before the lesson, it's helpful to review basic geometric shapes and their properties, such as triangles, squares, circles, and how to measure angles. A brief introduction to symmetry and patterns will also enhance the understanding of the activities.

Activities

1. **Geometric Pattern Creation:** The student will use a ruler and compass to create a series of geometric shapes on their paper. They can experiment with different sizes and arrangements to form an interesting pattern. This activity will help them understand how shapes can fit together and create a cohesive design.
2. **Symmetry Art:** The student will fold their paper in half and draw a design on one side, ensuring that it is symmetrical. After unfolding the paper, they can trace the design to create the other half. This will introduce them to the concept of reflection and symmetry in both math and art.
3. **Angle Exploration:** The student will create a piece of art that incorporates various angles. They can draw lines at different angles and connect them to form a unique shape or object, discussing how angles are measured and their significance in both math and artistic design.
4. **Coloring and Final Touches:** Once the geometric designs are complete, the student can use colored pencils or markers to add color to their artwork. They can discuss how color choices can impact the perception of their geometric designs.

Talking Points

- "Math is not just about numbers; it's also about patterns and shapes that we see in art every day."
- "Symmetry is like a mirror image; can you find things around you that are symmetrical?"
- "Angles help us create interesting designs. Can you find examples of different angles in your surroundings?"
- "Every geometric shape has its own properties. How do you think these shapes can come together to create something beautiful?"
- "Color can change the mood of your artwork. What colors do you think will make your design

stand out?"