**Geometry Decoded (Marker Version)**

**Objectives**
Over one or several lessons, students will be introduced to important ideas in art, using simple geometric forms.

Depending on age and grade, students will look at the work of Dutch artist Piet Mondrian, who with Theo van Doesburg founded a movement called De Stijl or “The Style” following World War I. Additional in-depth units can examine how artists have continued to develop these ideas into their own methods of abstraction, with geometric structure as a unifying element. In addition to Mondrian and Van Doesburg, some of these influential artists include:

* Kazimir Malevich (founder of the very structured Suprematism movement)
* Josef Albers (influential painter and color theorist)
* Stanley Whitney (contemporary painter working in New York City)
* Mark Rothko (minimalist painter, smudged geometric compositions)
* Bridgit Riley (op art painter using geometric forms to create movement and tension)
* The Gee Bend Quilters (rural Alabama women using brilliant quilted geometrics)
* John Biggers (muralist and printmaker who combined figures with “sacred geometry”)
* Kenneth Noland (painter known for his circles and color theories)
* Frank Stella (influential modernist who shaped canvases with geometric themes)
* Barnett Newman (minimalist geometric painter and sculptor)
* Donald Judd (minimalist geometric sculptor)
* Agnes Martin (minimalist abstract painter)
* Dan Flavin (neon and lighting pioneer)

In the initial lesson, each student will create a work in the style of Mondrian. This lesson may be used as a preamble to a coding exercise.

**Materials**

* Rag translucent marker paper or tracing paper (suitable for markers) 8.5 x 11”
* Gridded paper 8.5 x 11”
* Grid template with X axis and Y axis marked
* Broad-tipped markers (red, yellow, blue and black)
* Tape

**Lesson**
Step 1
Tell students, "We will learn about the art of Dutch artist Piet Mondrian, a modern artist who developed an abstract style which combined squares and rectangles using only primary colors separated by black lines."

Step 2
Show students Mondrian's oil on canvas paintings *Composition II in Red, Blue, and Yellow* (1921). Ask “What do you see in this painting?”

Step 3
Tell students, "While it may look very simple to paint, figuring out a perfect arrangement of squares, rectangles and black lines can be a challenge. Mondrian was able to compose the artistic elements together in painting after painting, helping to make him the influential artist that he was. Can you relate some ways his artwork may have influenced products or things we see every day?”

Step 4
Tell students, "Our art project will be to create your own version of this art masterpieces. At your tables you will find gridded paper and translucent or tracing paper. Tape the translucent paper over the gridded paper. Using the markers, draw rectangles and squares of different sizes on the translucent paper, staying within the grid lines. Leave some areas white. Try to vary the sizes and placement of the rectangles and squares. Separate them with black lines around each shape. Because there are 3 primary colors plus black and the white of the paper, think about how you want your eye to follow the colors and how you might create a balance in where they are placed.

*Alternate step 4: To reinforce comprehension of fractions, have the students cut dimensional rectangles and squares, that is, squares that are one-half the size of the first one cut, or rectangles twice the size of the first one cut, etc.*

Step 5
Use the following vocabulary during the lesson and tell them more about Piet Mondrian as they work:

* Composition: The way the parts of the artwork are arranged by the artist
* Abstract Art: Art that is either a stylized impression of what the artist saw or non-representational art that is completely detached from things that we see, including only lines, shapes colors and texture
* Primary Colors: A fundamental color from which all other colors can be made by mixing.
* Geometric: using shapes with straight lines, circles, squares or parts formed thereof
* Asymmetric: Not the same on both sides; not a mirror image

* Cubism: An art style which fragments forms and space, frequently bringing the subject and background together or mixing them up

About Piet Mondrian:

Piet Mondrian was a Dutch painter who created a geometrical abstract style known as neo-plasticism. It had widespread influence on modern painting, architecture and design. He was born in 1872 and went to art school in Amsterdam where he began painting meadows, farms, cows and windmills.

He studied and tried different art styles before his experiments in cubism. These experiments led him to develop its ideas even further, and he gradually eliminated all figures and subjects from his paintings. He met other Dutch painters Bart van der Leck and Theo van Doesburg and with them founded an influential new movement called *De Stijl* or *The Style*.

His work after this time evolved to compositions divided into rectangles of different sizes, each painted a uniform color. He moved to the use of the three primary colors because with white and black he felt they represented the strongest, purest contrasts. In most of his compositions, he divided his pictures asymmetrically with a grid of black vertical and horizontal lines, painting in some of the resulting rectangles with yellow, blue, red or black. White became an important grounding element in his paintings. He broke ties with DeStijl in 1925 when his friend Van Doesburg started to use diagonal lines.

He lived in Paris from 1919 to 1938 and in London from 1938 to 1940. He moved to New York where his work was influenced by the city and by the music form jazz. He died in New York in 1944.

**Follow-up discussion points:**

* Now that you have created a work of art in the style of Mondrian, can you relate more examples of this style in our everyday lives?
* Mondrian worked realistically early in his career, then experimented with various styles. He liked the fact that cubism allowed him to change shapes and space, and he eventually settled on the style we saw in the art example. Can you think of ways that artists might further reduce the visual information they use in artwork? What might the artists be saying in these works? How might they be considered to be fine art?