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Put **Your Art**
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Piet Mondrian's Artwork:



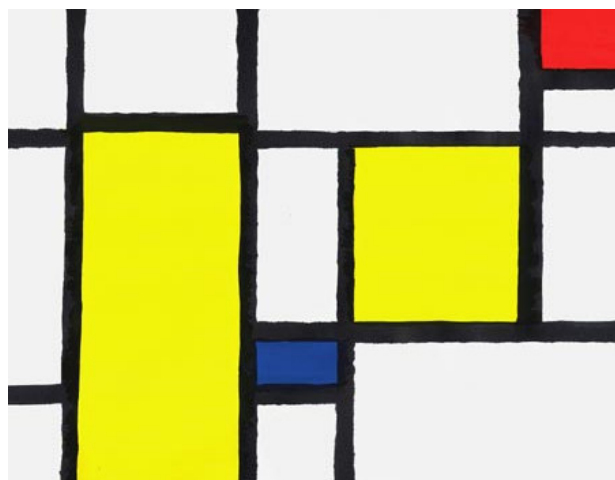
"Composition A"
ca. 1920



"Composition with Red,
Blue and Yellow"
ca. 1930



"Composition 10"
ca. 1939-1942



A Piet Mondrian Inspired Lesson Plan For Geometry & Math!

Brief Description:

Students are introduced to the abstract art of Dutch painter Piet Mondrian, and create their own artwork in his characteristic style. In the process, they learn important geometry vocabulary and mathematical skills.

Keywords:

abstract art, neoplasticism, vertical, horizontal, perpendicular, parallel, converge, diverge, diagonal, perimeter, area.

Materials Needed:

graph paper, #2 pencil, ruler or straight edge, black magic marker, poster paint (red, blue & yellow. White is optional.), photocopier (optional), ArtHouse (recommended).

Note: [high quality watercolor crayons](#) can be substituted for poster paints if a photocopier is available (to remove the graph paper's blue grid lines) or if graph paper isn't used.

Lesson Plan - Motivation:

How would you like to create your own distinctive style of painting, and become so famous other painters, graphic designers, advertisers, architects, and even fashion designers copy you for decades?

When Pieter Cornelius Mondriaan graduated from college, he went to work as an elementary school teacher. Painting was his hobby. As his painting skills matured he changed his name, moved to Paris, and began painting like no one had ever painted before.

Lesson Plan - Background and Historical Information:

The student-made painting above was made in the style of Dutch artist Piet Mondrian, who changed the way many people think about art. His famous paintings featured only pure rectangles of red, blue and yellow (over white backgrounds) outlined by black vertical and horizontal lines.

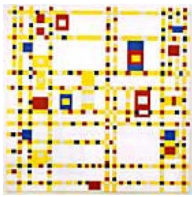
Early in his career, Mondrian was a skilled student of all the popular styles of his day, including "pointillism", "fauvism" and "cubism". A very influential painter and writer, Mondrian went on to create his own "ism" - "neoplasticism". Piet Mondrian defined neoplasticism as a quest for transcendent spiritual experience through an attempt to reduce art to its simplest, clearest form. He sought pure harmony and equilibrium, and believed highly simplified art could model a harmonious ideal world:

"I construct lines and color combinations on a flat surface, in order to express general beauty with the utmost awareness. Nature (or, that which I see) inspires me, puts me, as with any painter, in an emotional state so that an urge comes about to make something, but I want to come as close as possible to the truth and abstract everything from that, until I reach the foundation (still just an external foundation!) of things... I believe it is possible that, through horizontal and vertical lines constructed with awareness, but not with calculation, led by high intuition, and brought to harmony and rhythm, these basic forms of beauty, supplemented if necessary by other direct lines or curves, can become a work of art, as strong as it is true." - Piet Mondrian (1914)

During World War II, when the house next door to his studio was destroyed by German bombs, Piet Mondrian decided to relocate from London to New York City. In these last four years of his life, Mondrian's work was transformed by these new surroundings. His final two paintings, "Broadway Boogie Woogie" and "Victory Boogie Woogie," reflected the excitement of Jazz music, city lights, and the busy streets of Manhattan at night. Yellow rectangles linked other colors together. Piet Mondrian broke free from his famous black gridlines and left them behind.

Lesson Plan - Activity:

A few simple tricks make Mondrian-inspired paintings relatively easy. For example, inaccuracies in the painted color fields can easily be covered by drawing black gridlines last (using a wide black magic marker instead of paint). The intent of these methods is to free students to focus on their compositions, and on underlying geometry concepts.



"Broadway Boogie Woogie" ca. 1942-1943

Inspired by Piet Mondrian



"De Stijl Chair" ca. 1917
Dutch architect & furniture designer Gerrit Rietveld (1888-1964) worked with Piet Mondrian to promote the De Stijl movement. Their De Stijl Chair is one of the most famous chairs ever designed.



(Designer Unknown)

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1. Start by placing an 8 1/2" by 11" piece of graph paper in "landscape" orientation.
2. With a #2 pencil and your ruler as a guide, make a straight line from the top of the page to the bottom, drawing neatly along a graph paper line. **A line that runs up-and-down is vertical.**
3. Select a point along the line. Using your ruler as a guide, draw along a graph paper line to the edge of the paper. **A line that runs side-to-side is horizontal.**
4. Observe how the second line sticks straight out from the first line. **A line that sticks straight out from another line is perpendicular to the first line.**
5. Select a point along the horizontal line and draw another vertical line from it to the top or bottom edge of the page. Observe that the horizontal line is perpendicular to both vertical lines. **If two different lines are both perpendicular to a third line, then the two lines are parallel.**
6. Count graph paper squares between the new line and the first vertical line. Does it matter where you measure? Parallel lines are an equal distance apart no matter where they're measured. If they don't stay a constant distance apart, they aren't parallel. **If two lines begin to get closer together, they converge. If two lines begin to get further apart, they diverge.**
7. Continue by drawing five to ten additional lines, making sure to stay on graph paper lines. Observe that every time you draw a line you create more rectangles. A rectangle has four lines, and each line is perpendicular to the lines it connects to.
8. Note: **A straight line that is at an angle to the grid is diagonal.** (A diagonal line combined with two perpendicular lines makes a "right triangle!") In this lesson we're not drawing diagonal lines because they weren't Piet Mondrian's style.
9. What is the size of a rectangle? There are several ways to measure it! One way is to draw the rectangle on graph paper and count the squares inside. **The measurement of space inside a flat shape is called area.** Count the squares inside one of the rectangles you've drawn.
10. Counting squares can be a slow way to measure area. Sometimes it's faster to calculate area mathematically. The area of a rectangle is calculated by multiplying height times width. Calculate the area of your chosen rectangle. Do you get the same answer?
11. Another way to measure the size of a rectangle is to count distance along each of the four sides and add them up. **The distance all the way around a rectangle is its perimeter.** Measure the perimeter of your rectangle.

(Many classes stop here to divide the lesson over several days.) Note: If you have access to a copier, consider making copies of student art at this stage. Photocopiers can remove the blue grid of graph paper while reproducing drawings. Also, it's fun to make different paintings based on a common drawing, or trade and paint friends' drawings.

You may be surprised how many different ways students can paint their patterns. The example above has fourteen cells. Each cell can be painted any of four colors. Therefore the number of possible color combinations is 4 to the 14th power: over 250 million combinations. Now, consider that you can flip the whole design upside down. That's over half a billion Mondrian-style compositions from this one example pattern!

Viewed up close, Mondrian's paintings reveal more complexity than reproductions usually show. Sometimes Mondrian painted very light "ghost lines" in the white areas to give his designs an unexpected sense of depth. Piet Mondrian didn't paint all colors the same texture either. Typically black grid lines were very smooth and flat, but in some paintings he deliberately faded lines as he worked toward edges of the canvas. Piet Mondrian usually painted bright colors with careful parallel strokes, but he built white paint up much thicker and with more texture.

Have students look at the examples of Piet Mondrian paintings at left. Are their drawings similar? How Piet Mondrian would complete them? The next step in this lesson plan is the fun one - filling in the color! Students should try to paint as neatly as they can right up to their drawn lines but not over them! Piet Mondrian would fuss over a single painting for years. A perfectionist, he'd come back to an old painting and make tiny revisions. Students shouldn't approach their paintings recklessly; like Piet Mondrian, they should try to find balance and harmony between red, blue and yellow.

Let the paint dry. Then, with a broad-tipped black magic marker, go over the original drawn lines. Make the lines wider as necessary to cover gaps or overruns in the painting process. When the magic marker is dry, display the completed artwork in ArtHouse. **All children's art looks great in ArtHouse!**

Lesson Plan - A Few More Project Ideas:

You don't have to start with graph paper! Laying out Mondrian-style compositions without graph paper is excellent for developing skill with rulers and other basic drawing tools. You could take this opportunity to:

- introduce drafting triangles & t-squares,
- make parallel lines by sliding a triangle along a ruler's edge,
- show students how to make perpendicular lines with compass & ruler, (Swing arcs from two points along a line, & connect the intersections of the arcs.)
- verify a rectangle's adjacent sides are perpendicular by comparing diagonals across it,
- develop organization skills by entering areas & perimeters into tables or charts,
- take this opportunity to discuss ratios (e.g. aspect ratios),
- teach mapping concepts such as coordinates & borders.

Lesson Plan - Assessment

Have students stand up and present their paintings, using the geometry vocabulary they've learned. ArtHouse is ideally suited for displaying student artwork for classroom presentations and discussions. Follow up on the geometry lesson with a quiz, so you can have measurable results.

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