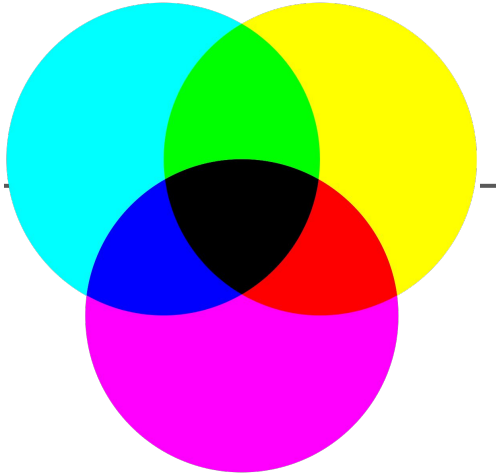
color!

Subtractive Process for Color



With paint and ink, we use a subtractive process. This means all of the colors mixed together will create black. White is the absence of color.

Additive Process for Color

With science and light, we use a additive process. This means all of the colors mixed together will create white. Black is the absence of color.

Think about this - if there is no light, you are in complete blackness. Only when light shines on something, can you see color.

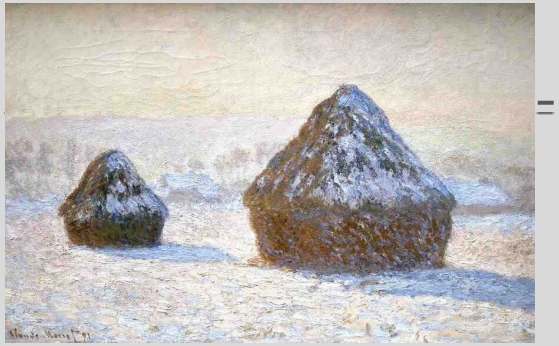
Right: RGB colors are used in computer screens. Screens use light to create color and images rather than paint or ink.

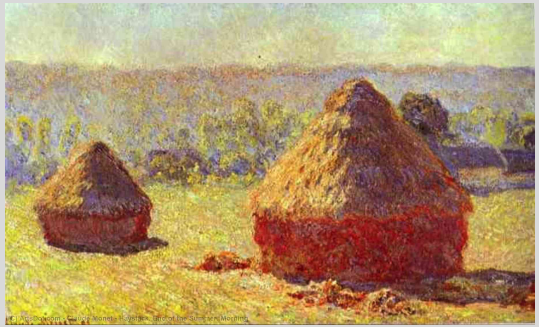
Color Temperature

“Warm” vs “Cool” colors. Depending on how colors are placed next to each and grouped together they can be **interpreted** as warm or cool.

Typically, adding yellow makes something warmer and adding blue will make something cooler.

In color theory, we associate things that look like fire to feel hot and things that look like ice to feel cool.





Above: Monet’s *Haystacks* in winter versus a summer afternoon.

Hue

The pure color (without anything added)

Shade

When **black** is added to a hue to make it darker.

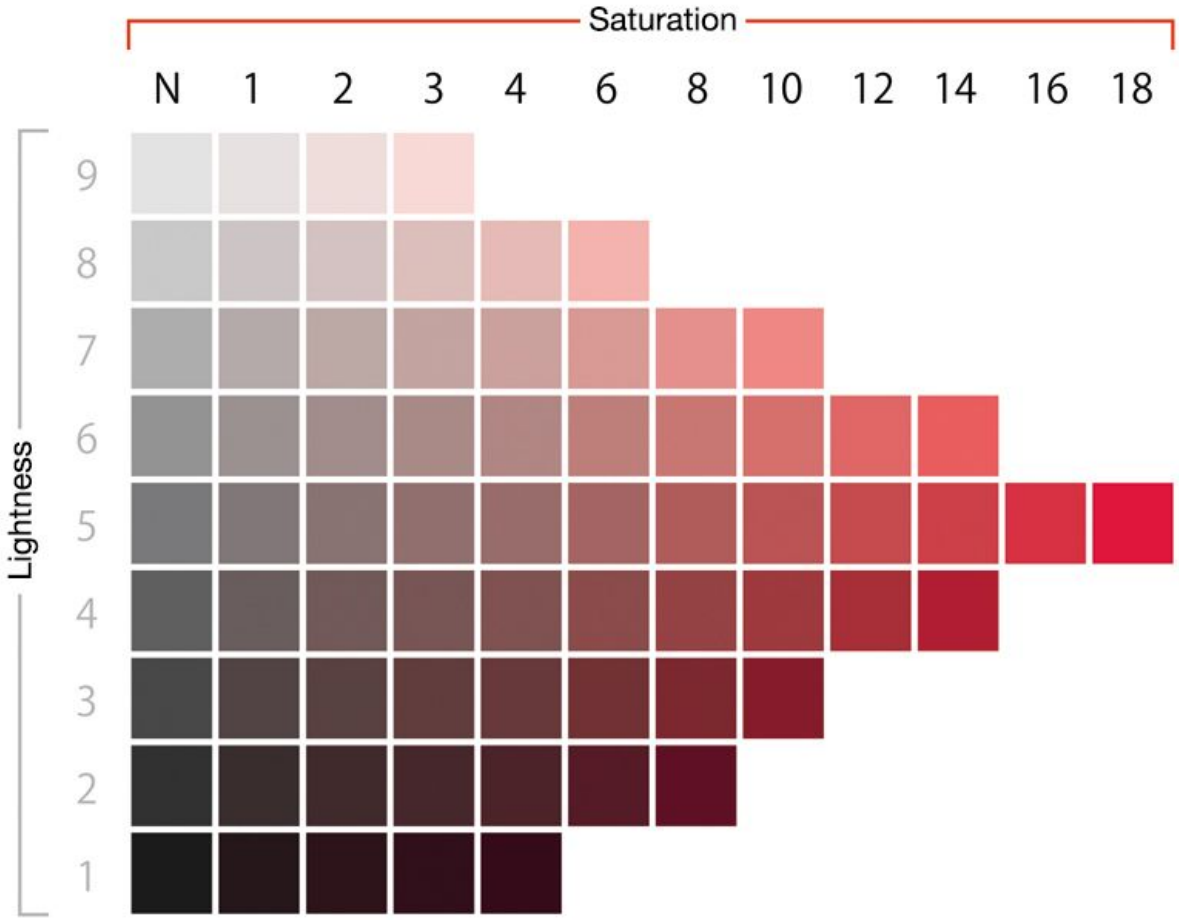
Tint

When **white** is added to a hue to make it lighter.

Tone

When **grey** is added to a hue to make it **desaturated**

Shade (add Black)----------Original Hue----------Tint (add White)



Intensity (also called chroma or saturation) is the brightness or dullness of a color.

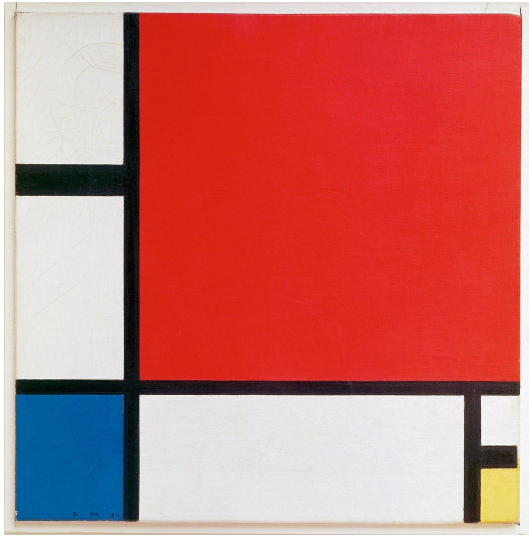
Full saturation is no grey, white, or black added

To desaturate a color, you add grey.

Color Value Scales

Primary Colors	“Process” Primaries
Red	Magenta
Yellow	Yellow
Blue	Cyan

Composition II in Red, Blue, and Yellow
Piet Mondrian
1930



Secondary Colors

Orange
Green
Violet

Intermediate Colors

A primary + a neighboring secondary

The primary color comes first when naming.

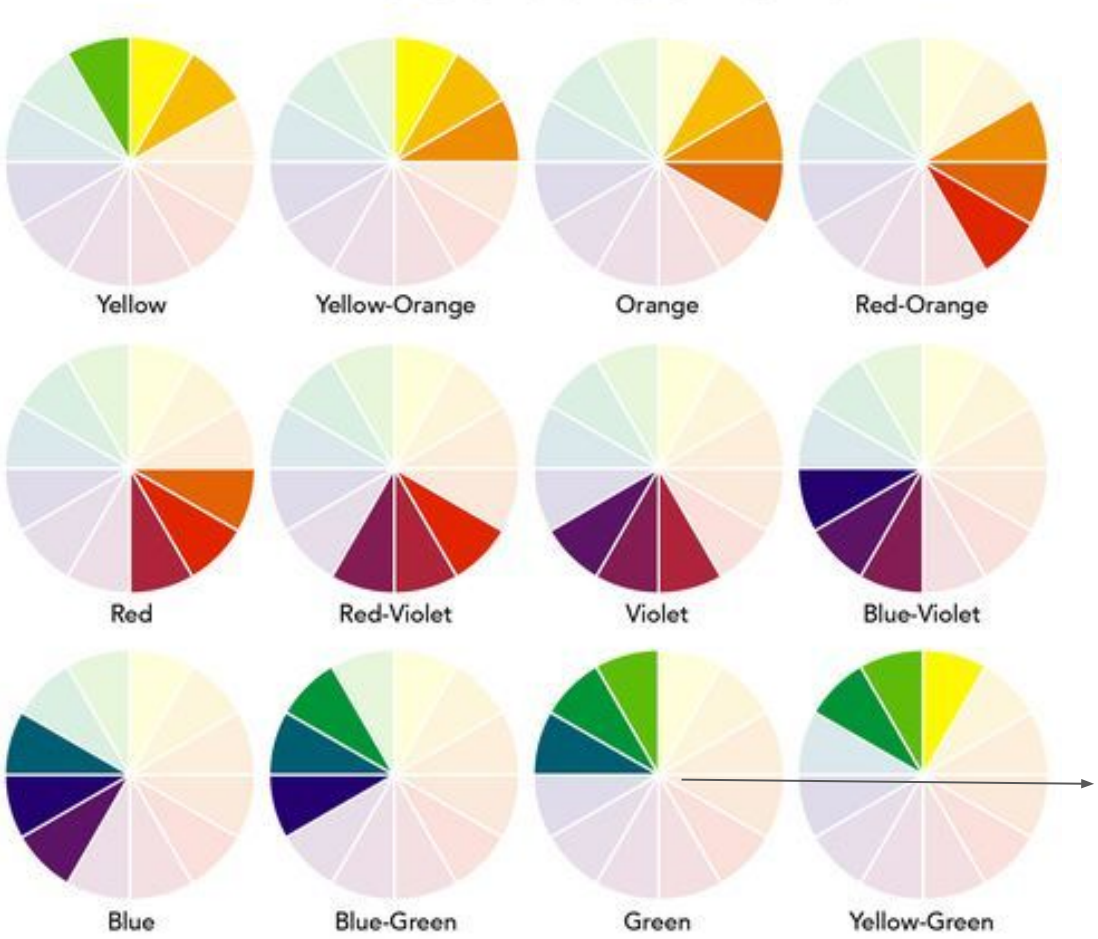
Complementary Colors

Opposite of each other on the wheel

This makes high **contrast**

When using subtractive colors, 2 complimentary colors should create grey

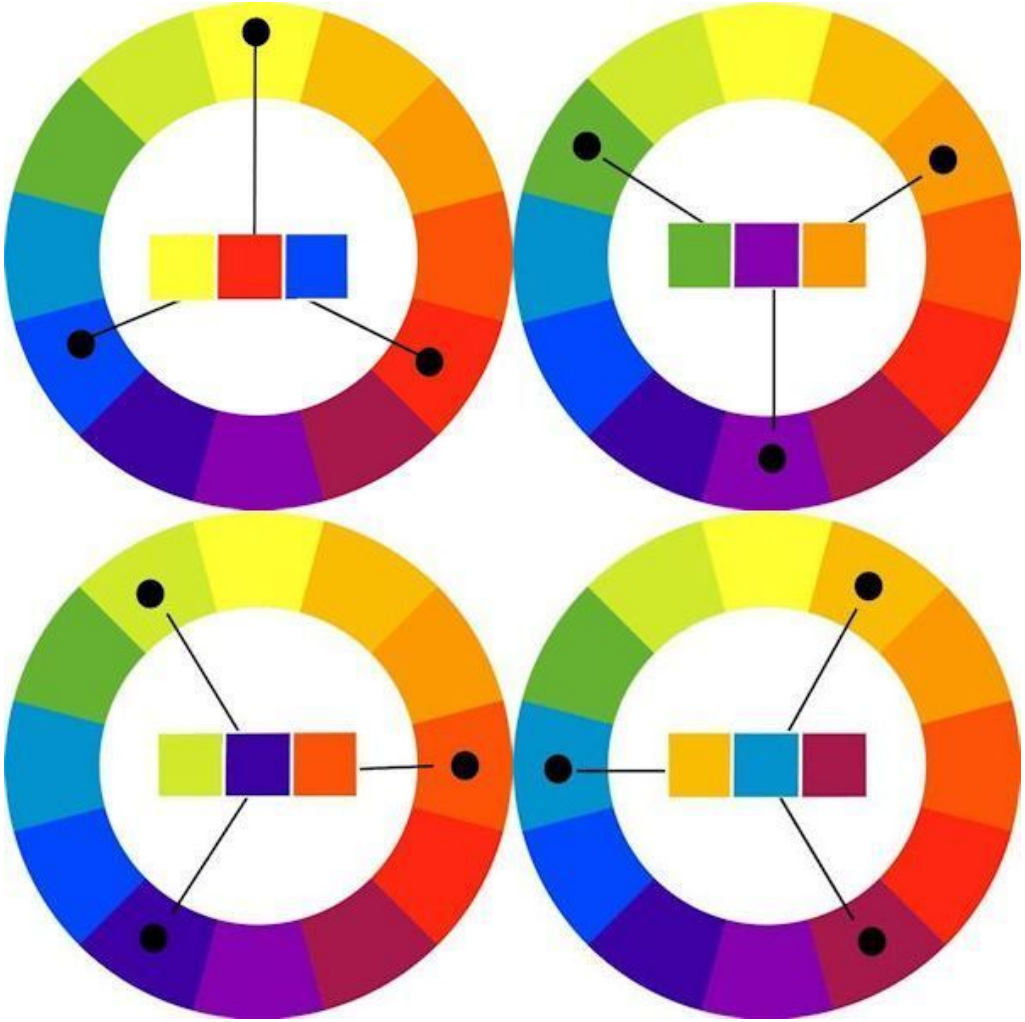
Wheatfield with Crows
Van Gogh
1890



Analogous Colors

Next to each other on the wheel

Banks of the Seine
Claude Monet
1880



Triadic Colors

Creating a **equal** triangle on the color wheel.

Split -Complementary Colors

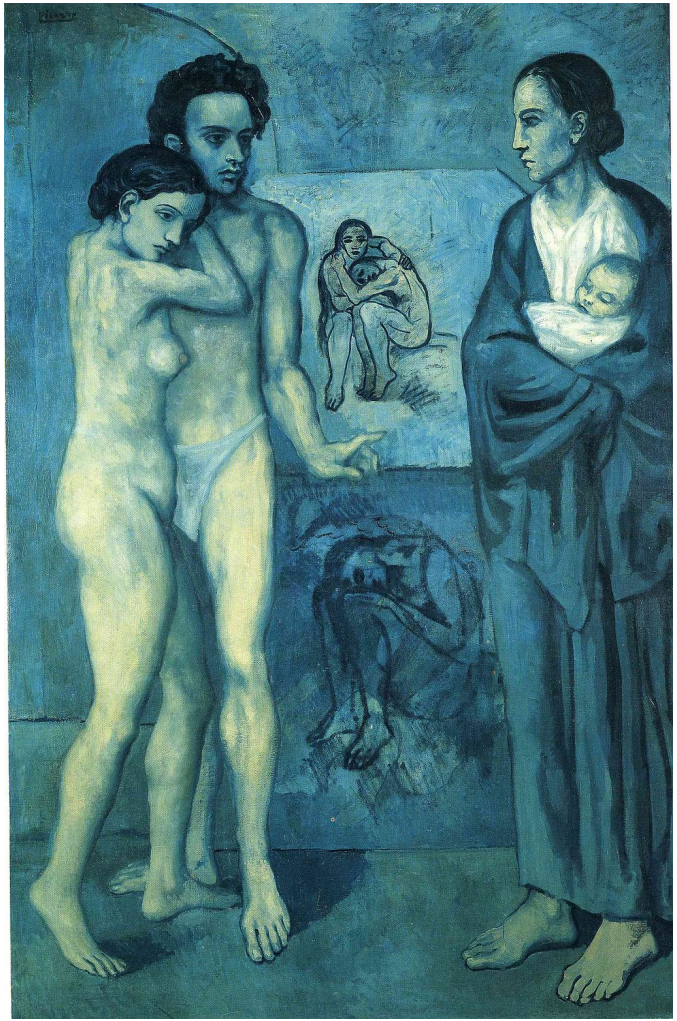
***Almost* Opposite** of each other on the wheel

Tetradic Colors

Creating a square or rectangle on the color wheel.

Monochromatic Color

Using 1 color along with its tints and shades



La Vie
Pablo Picasso
1903

Man with Guitar
George Braque
1911

Local Color uses realistic or natural color palettes.

Jean-François Millet
The Gleaners
1857

Even though Beatrix Potter illustrated animals talking and wearing clothing, she still used local color, which made the situations feel believable.

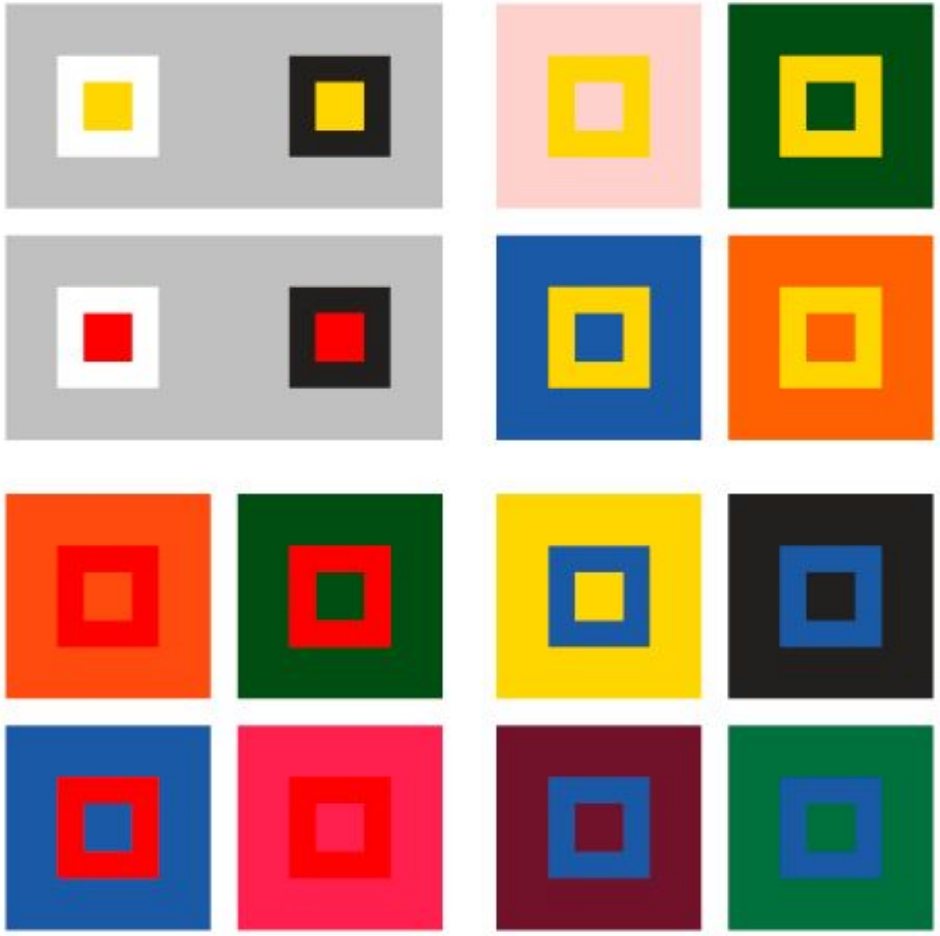
Perceptual Color exaggerates the use of color, but the viewer still perceives it as believable.

When this painting first came out, Monet was criticised for making purple shadows as well as putting pinks and peach colors into the snow. Even with all of those different colors going on up close, we still **perceive** the snow as being white.

Claude Monet
The Magpie
1868

Arbitrary Color uses color in an unrealistic or believable way. In real life, horses aren't blue and humans aren't purple. Sometimes it feels the artist made things different colors for the fun of it.

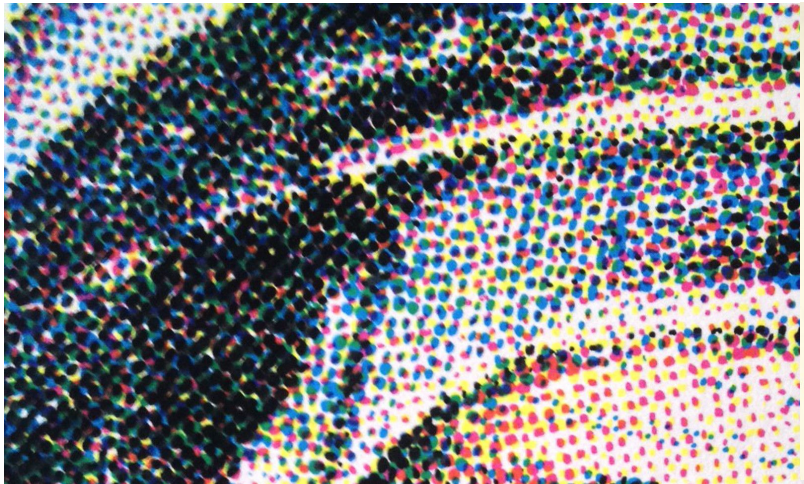
Franz Marc
The Dream
1912



Optical Color

Here, none of the colors change. They *appear* very different based on the color they are placed next to.

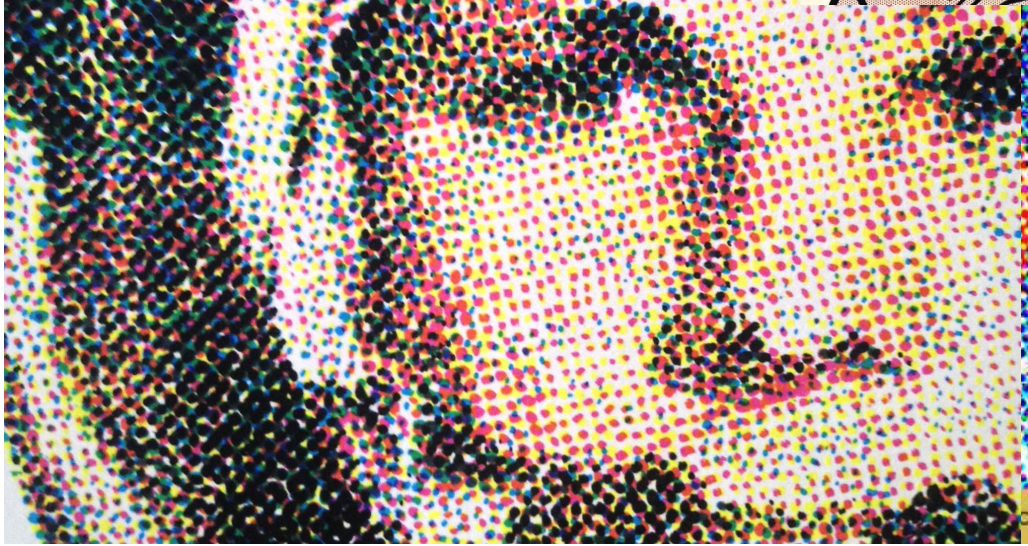
Below: Optical color mixing with halftones creates the *illusion* of brown.

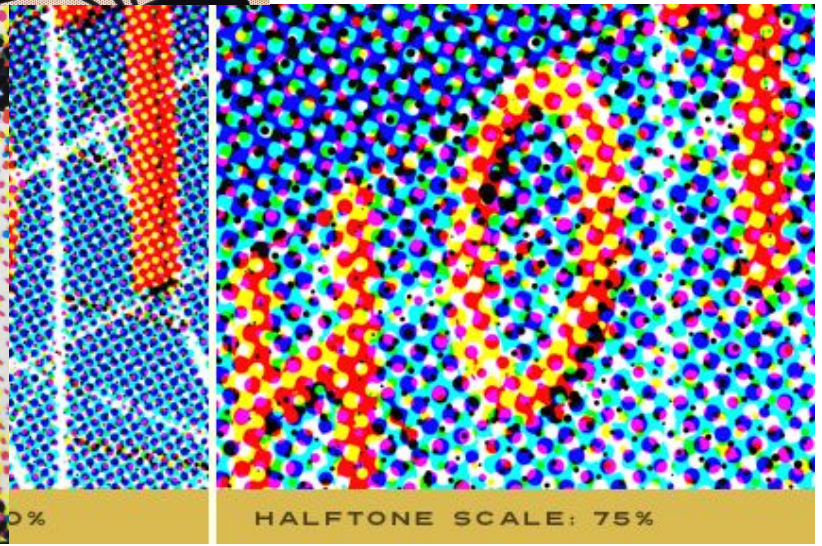


CYMK Halftones

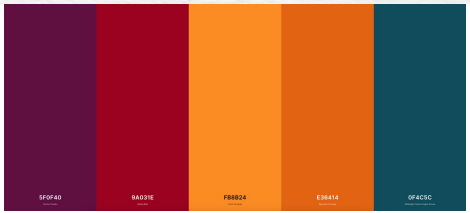
The printing process of layering cyan, yellow, magenta, and black to mix colors.

This is the original way we were able to mass produce print full color images.





Restricted palette only uses a group of defined colors.

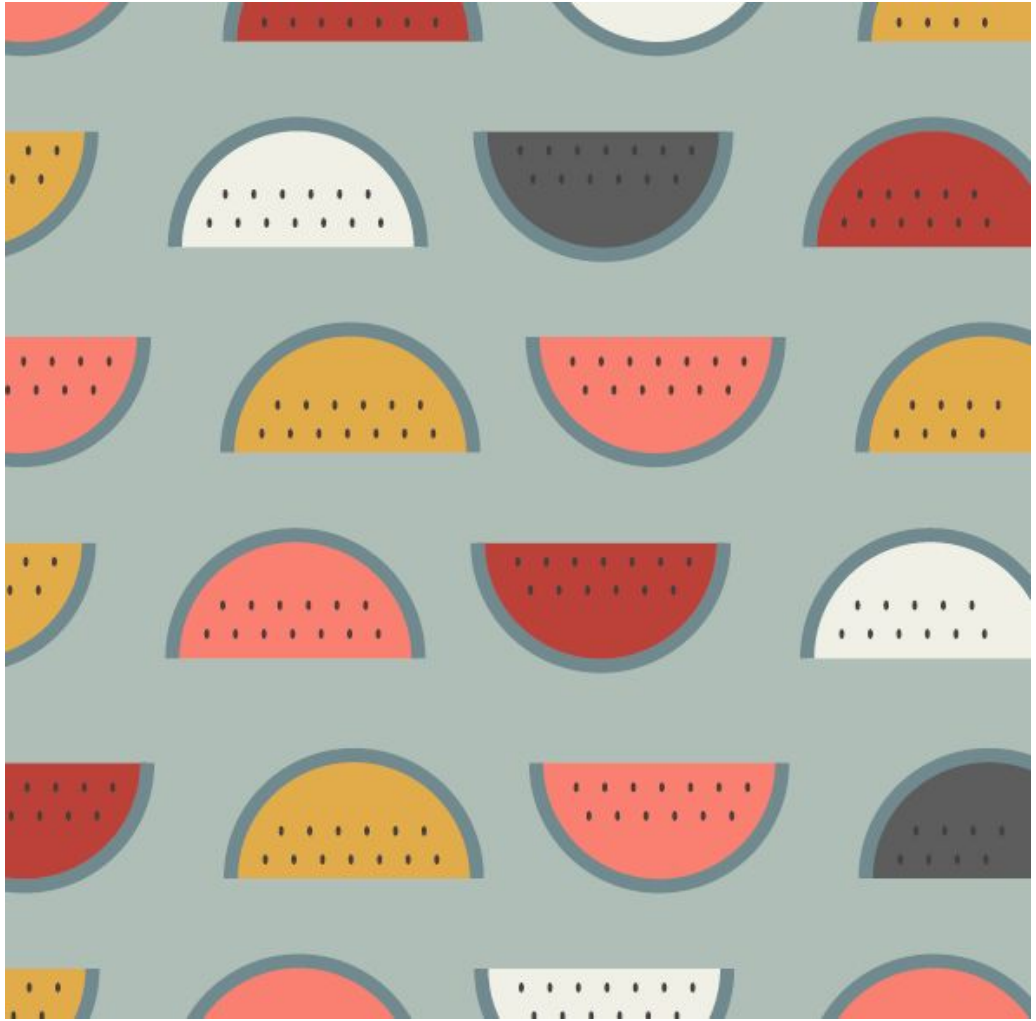


pattern!

A **pattern** is a design in which lines, shapes, forms or colors are repeated.

The part that is repeated is called a **motif**.

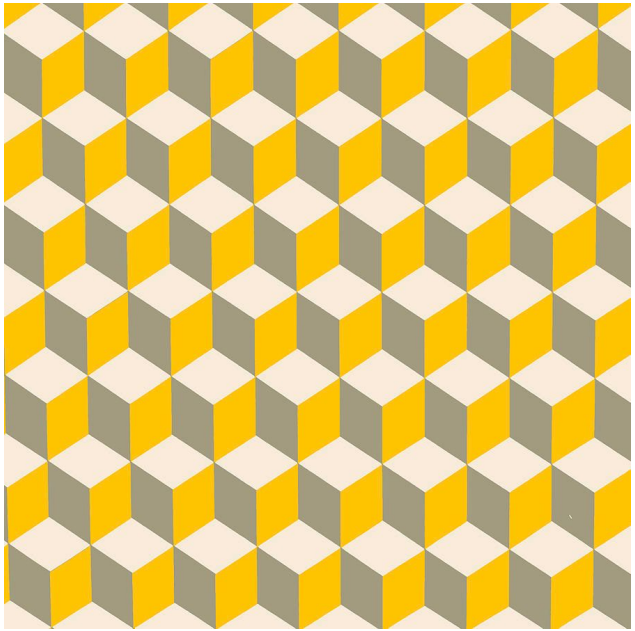
Patterns can be regular or irregular.



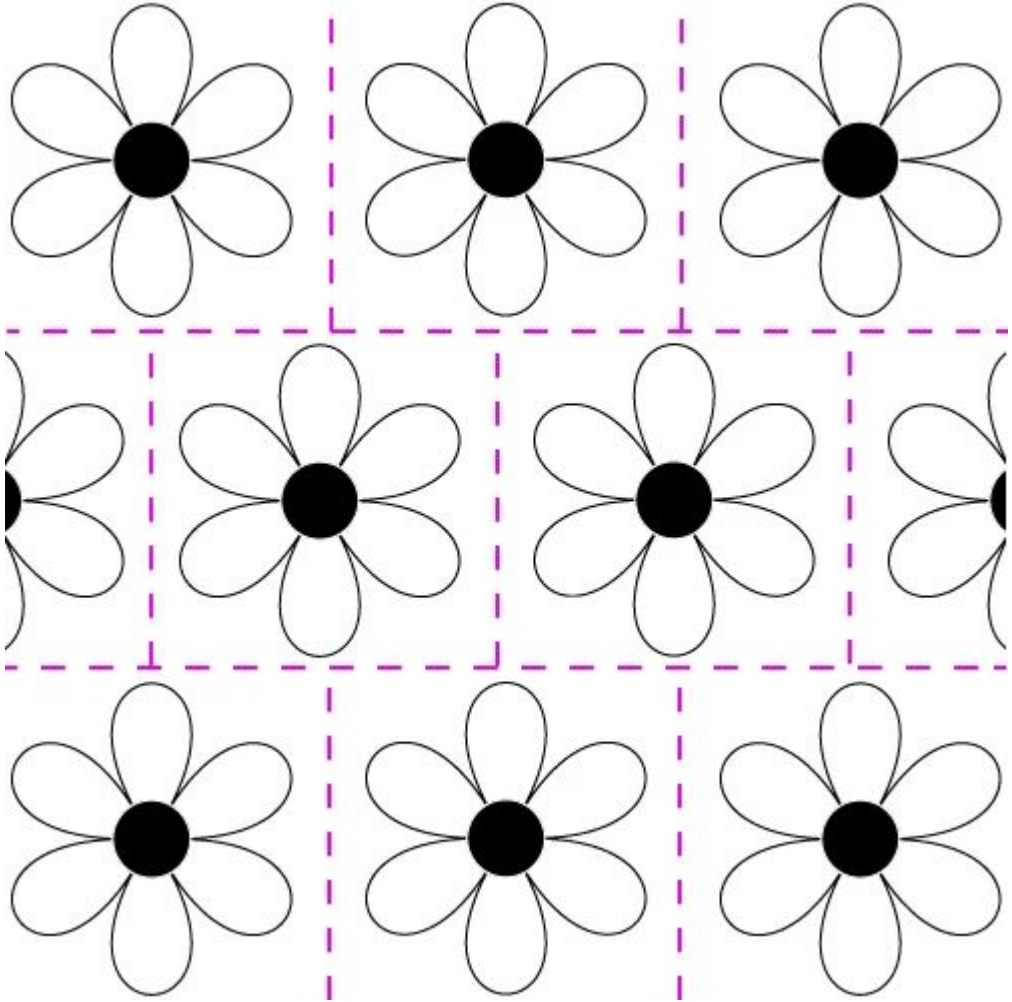
Repeat Pattern

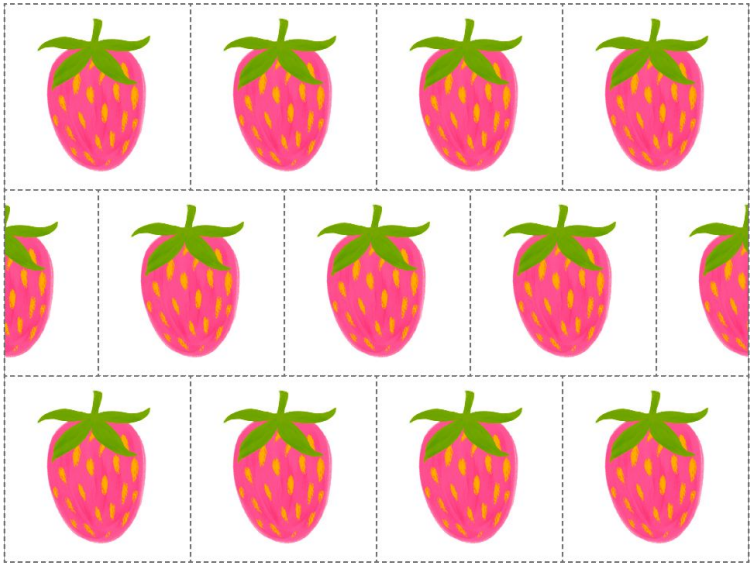
The watermelon is the motif that gets repeated in a consistent and predictable manner.

It can be repeated an infinite number of times.



Brick Repeat

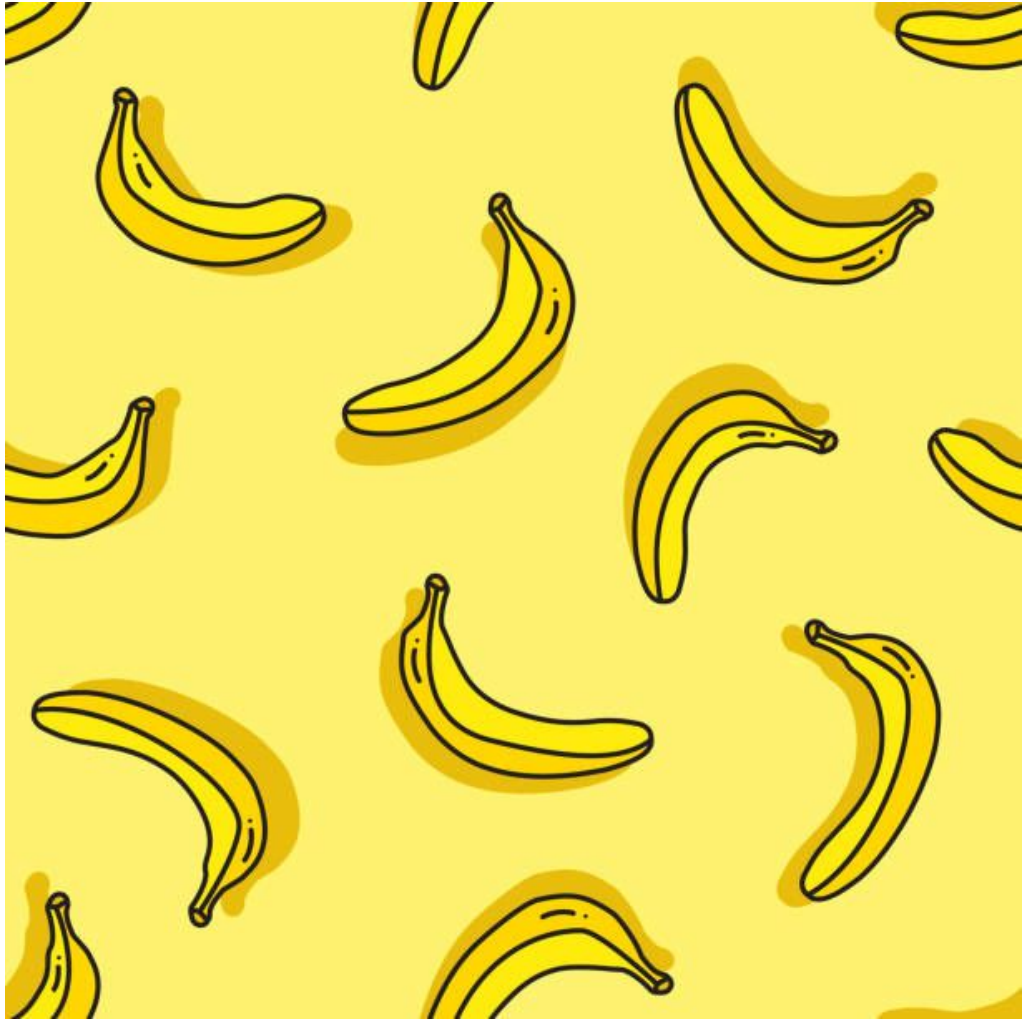




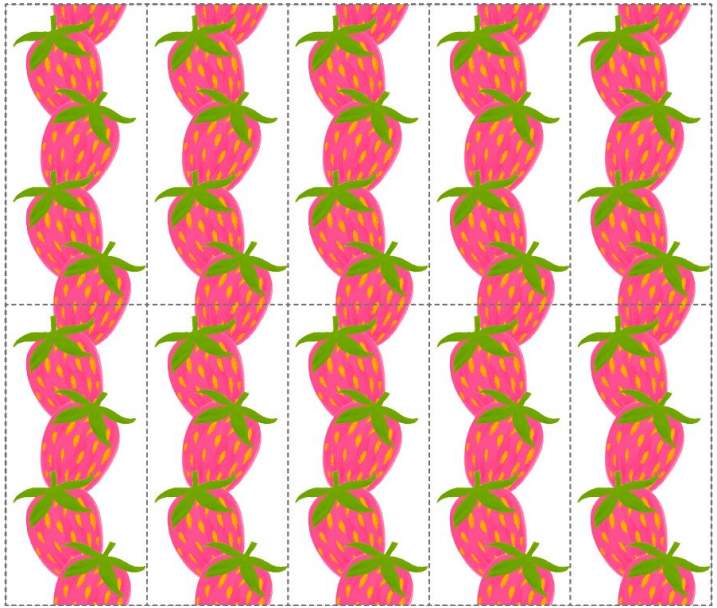
Half-Drop Repeat

Diamond Repeat

Turnover or Random Repeat



Stripe Repeat

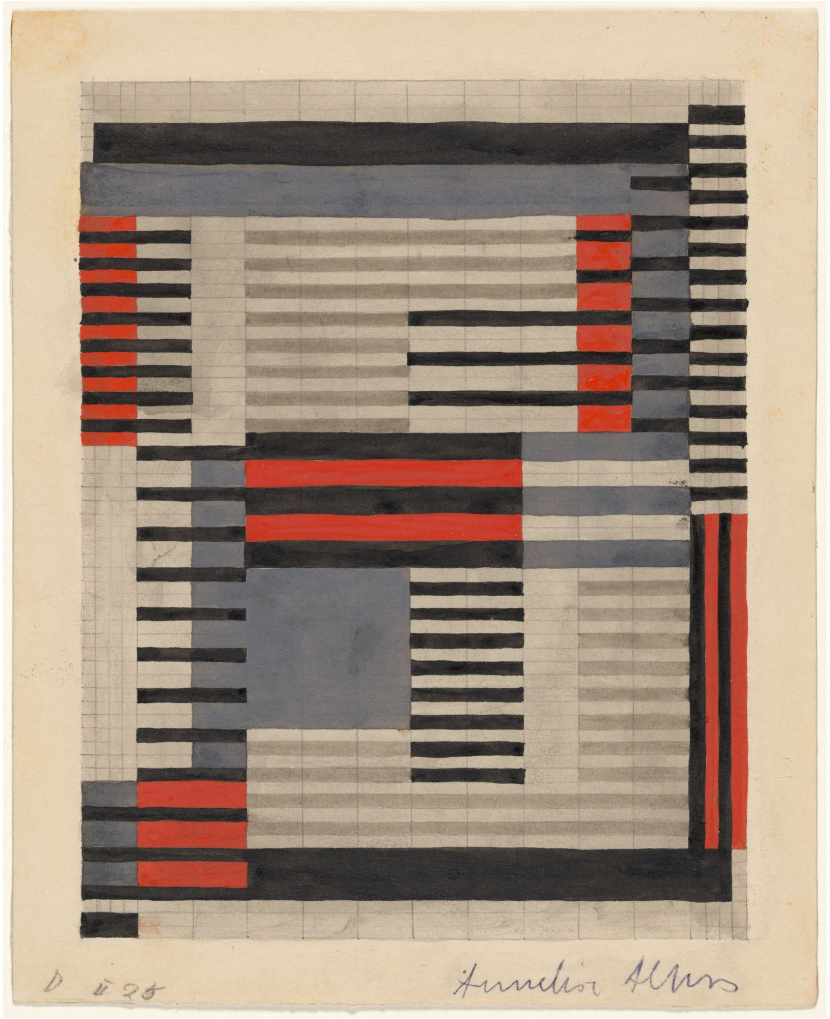


Overlapping Repeat

Mirror Repeat

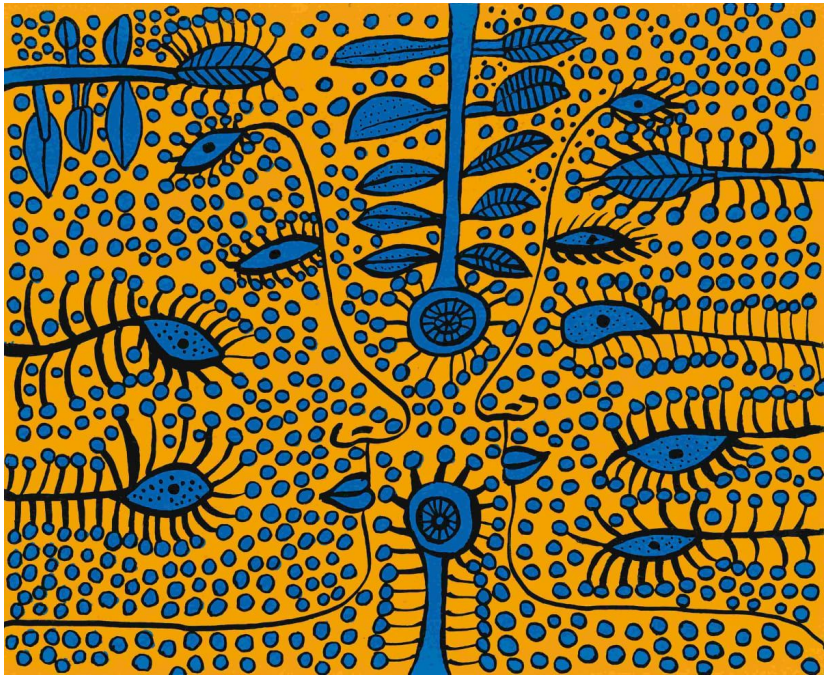
William Morris
1834-1896

Grammar of Ornament
Owen Jones
1856

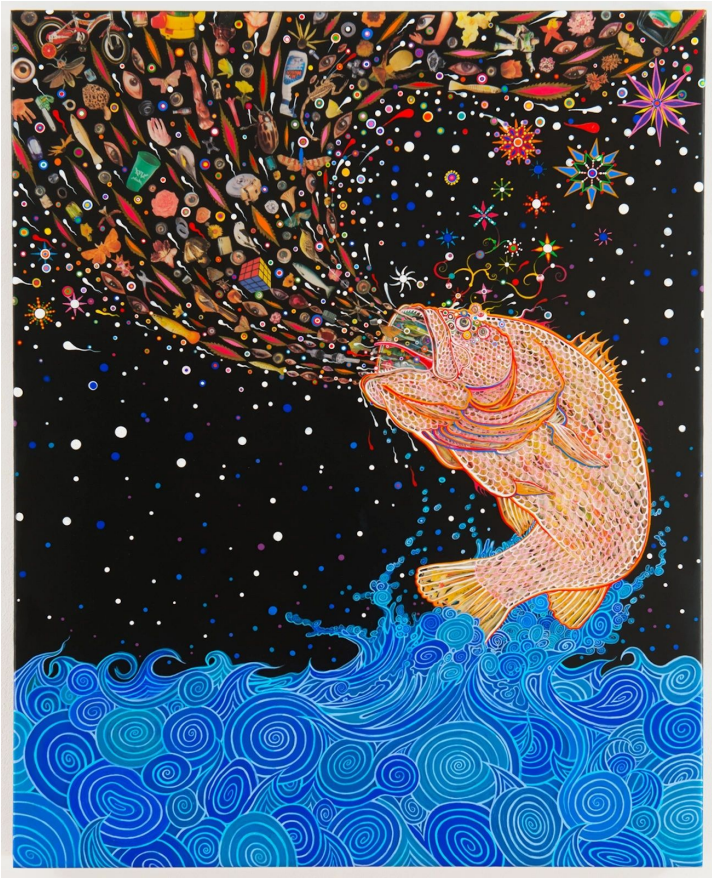


Anni Albers
1899-1994

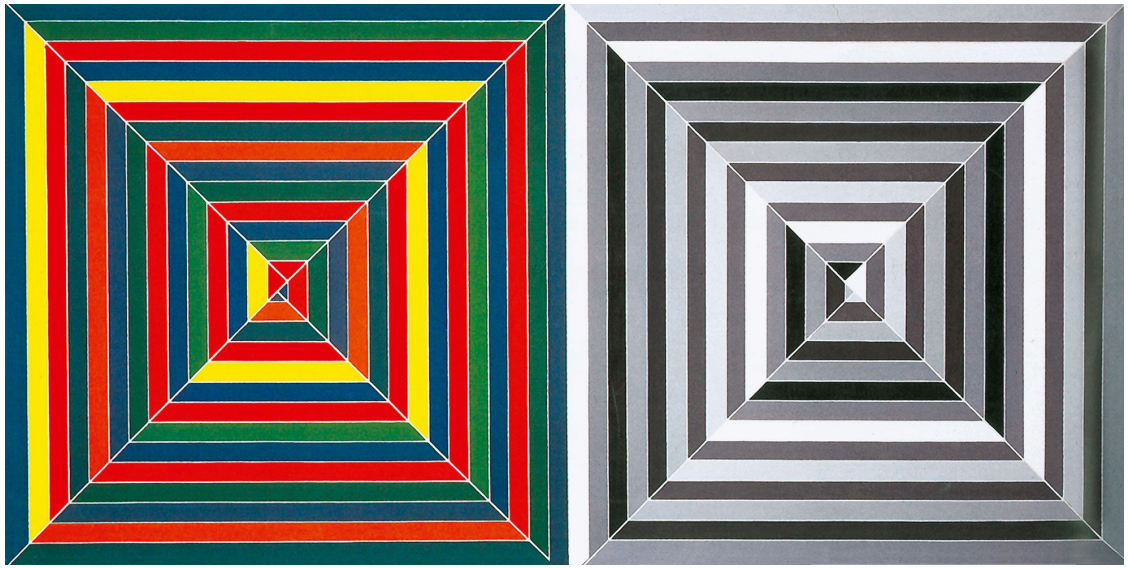
Yayoi Kusama
b. 1929



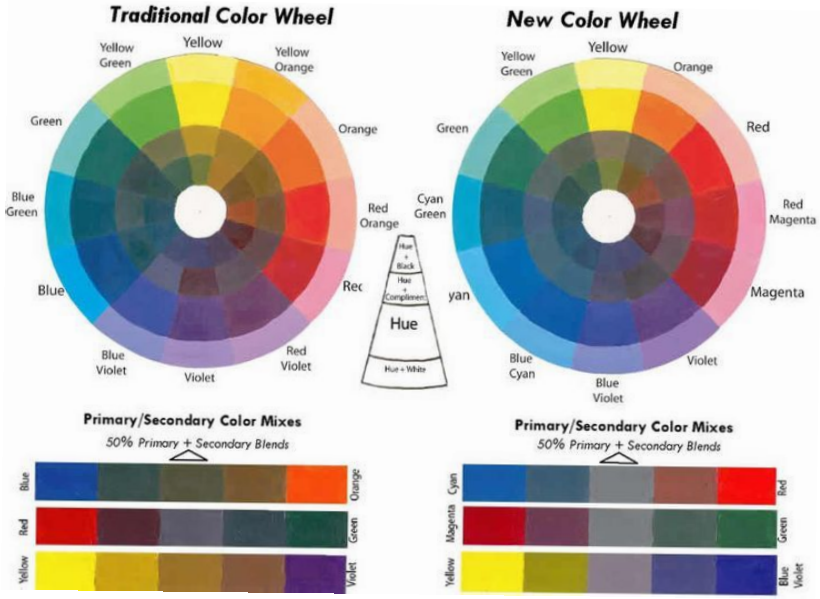
Fred Tomaselli
b. 1956

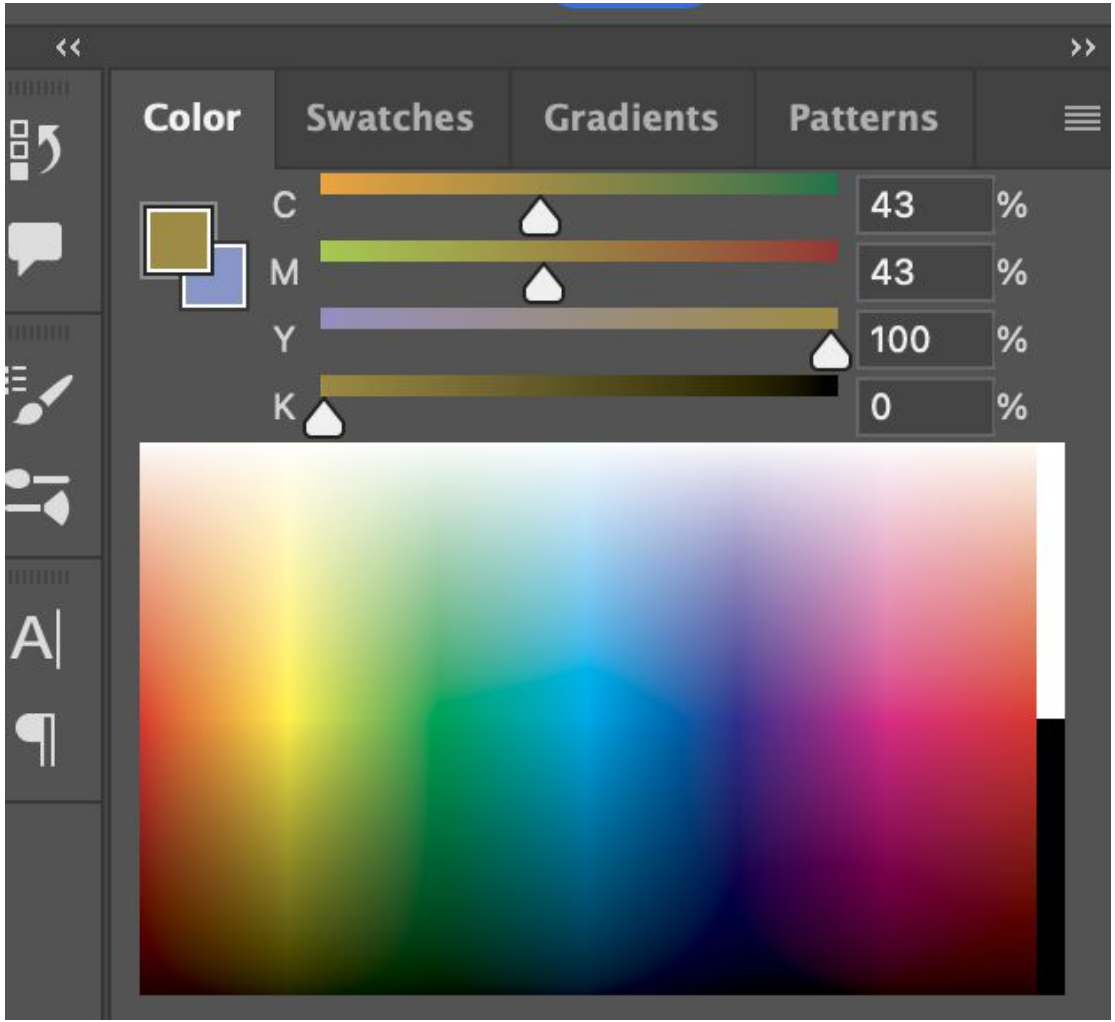


Frank Stella
b. 1936




Purple
Blue
Green
1
2
3
4
5
6
7
Yellow
Orange
Red


Traditional Color Wheel
Yellow
Yellow Orange
Orange
Red Orange
Red
Red Violet
Violet
Blue Violet
Blue
Blue Green
Green
Yellow Green
Hue + Black
Hue + Compliment
Hue
Hue + White
New Color Wheel
Yellow
Orange
Red
Red Magenta
Magenta
Violet
Blue Violet
Blue Cyan
yan
Cyan Green
Green
Yellow Green
Primary/Secondary Color Mixes
50% Primary + Secondary Blends
Blue
Orange
Red
Green
Yellow
Violet
Primary/Secondary Color Mixes
50% Primary + Secondary Blends
Cyan
Red
Magenta
Green
Yellow
Blue Violet



In this exercise and project, you will learn how to mix colors both manually with paint and digitally.