

# Color Theory I

# Color is a property of light.

- Objects have no color of their own, they just reflect a particular wavelength from the color spectrum. (For example a blue object absorbs all of the wavelengths, EXCEPT for blue. The remaining wavelengths enter our eyes and this is what we see.)
- Light is made of all colors
- White reflects all the wave lengths of the color spectrum.
- Black absorbs all the wave lengths of the color spectrum.
- The spectrum of colors is created by passing white light through a prism.



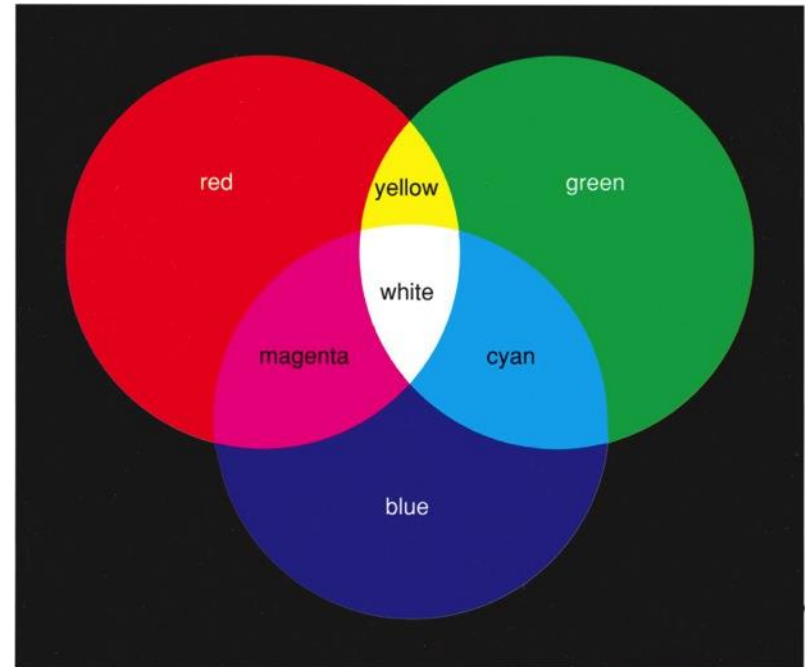
# Color Mixing

***Additive System*** – Color is created from projected light. (Computer art, photography, interior design...)

- Colors mix to create white in an additive system.

***Subtractive System*** – Color is created from pigments, (Painting, drawing, etc...)

- ***Color Wheel*** – most common organization of color for the subtractive system



Colors of light mix according to the **additive process**.

# Properties of Color: Hue, Value, & Saturation

# 1. Hue

# Properties of Color: Hue

*Hue* - The name of the color

- There are not many hues but there are many colors.
- Example: Pink, scarlet, maroon and crimson are colors, but they all have a hue of Red.
- Color sharing the same hue can have many different names. (It's a commercial sales thing.)



The twelve-step color wheel of Johannes Itten.

# Color Wheel

The most common organization for the relationship of the basic colors is the 12 step color wheel. (It comes from the early 18th c.)

## **3 Primary Colors:**

- Red
- Blue
- Yellow

**3 Secondary Colors** - mixtures of the primary colors.

- Orange
- Green
- Violet

**6 Tertiary Colors** - mixtures of a primary and a secondary color.



## 2. Value



# Properties of Color: Value

*Value* - Lightness or Darkness of a hue

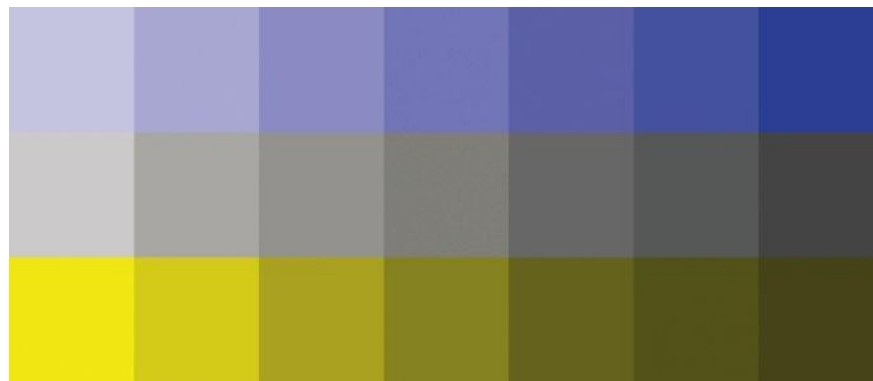
*Tint* - adding white to a hue

*Shade* - adding black to a hue

“Most people can distinguish at least 40 tints and shades of any color.”

## “Normal” Color Value Differ

- “Not all the colors on the color wheel are shown at the same value.”

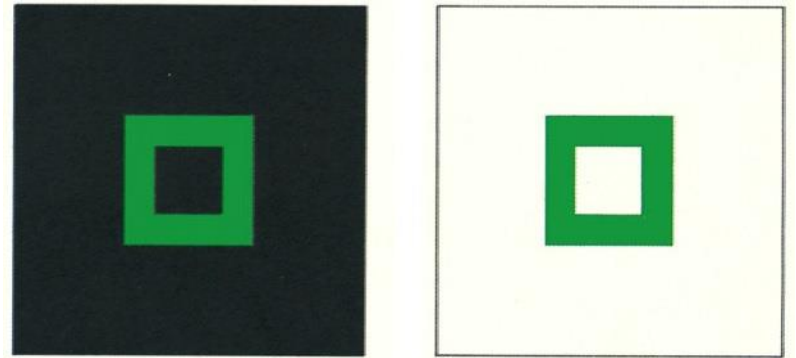


Value scales for blue, gray, and yellow with equal visual steps.

# Properties of Color: Value

## Changing Color Value

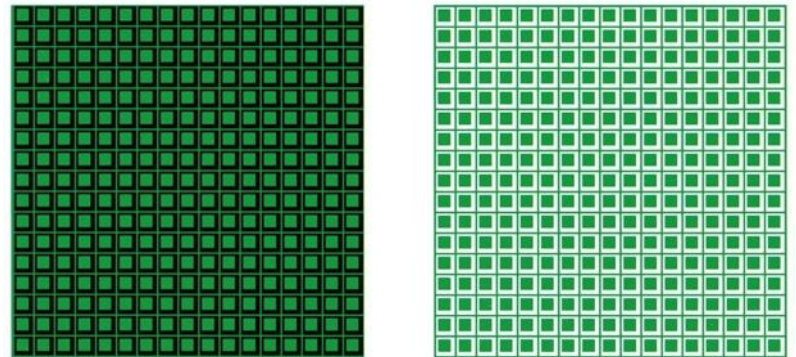
- When working with paint you can thin a color by adding medium.
- You can also alter the value by mixing hues.
- Value is changed by its surroundings.



The same color will appear to change in value, depending upon the surrounding color.

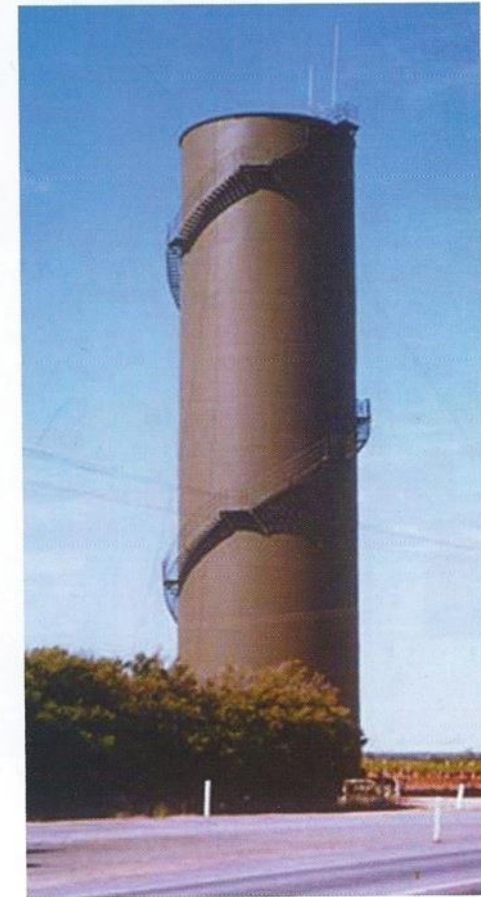
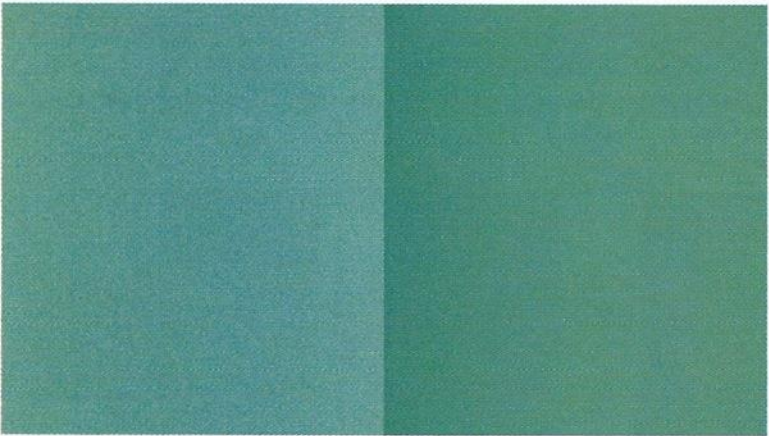
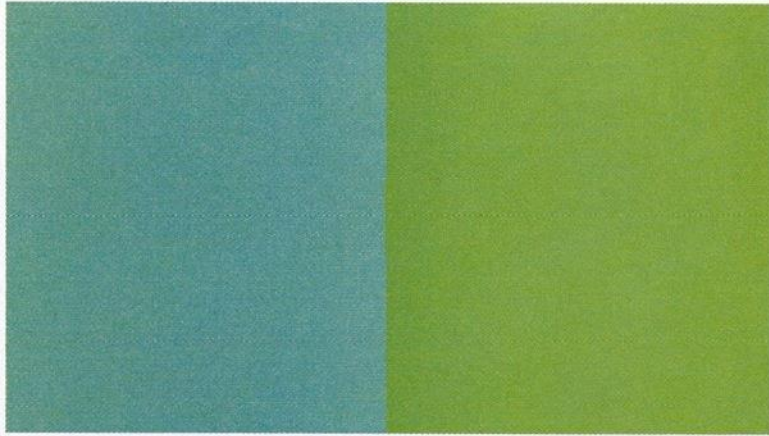
## Color Interaction

- Colors change with context.
- Amounts and repetition are also critical factors.



The visual mixture of green with black and white.

# Using Value to Melt Borders



# 3. Saturation

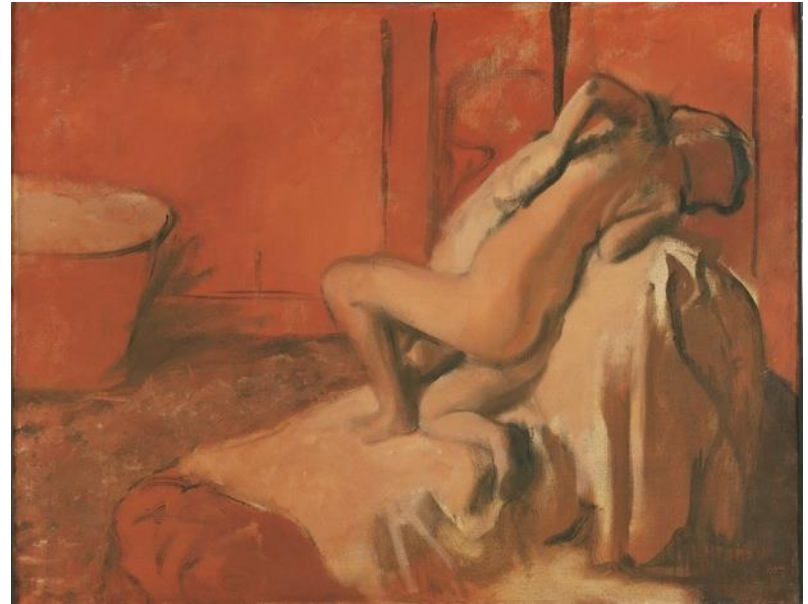
# Properties of Color: Saturation

**Saturation** = brightness of a color (also called *intensity*)

2 ways to lower saturation:  
(or make a color duller)

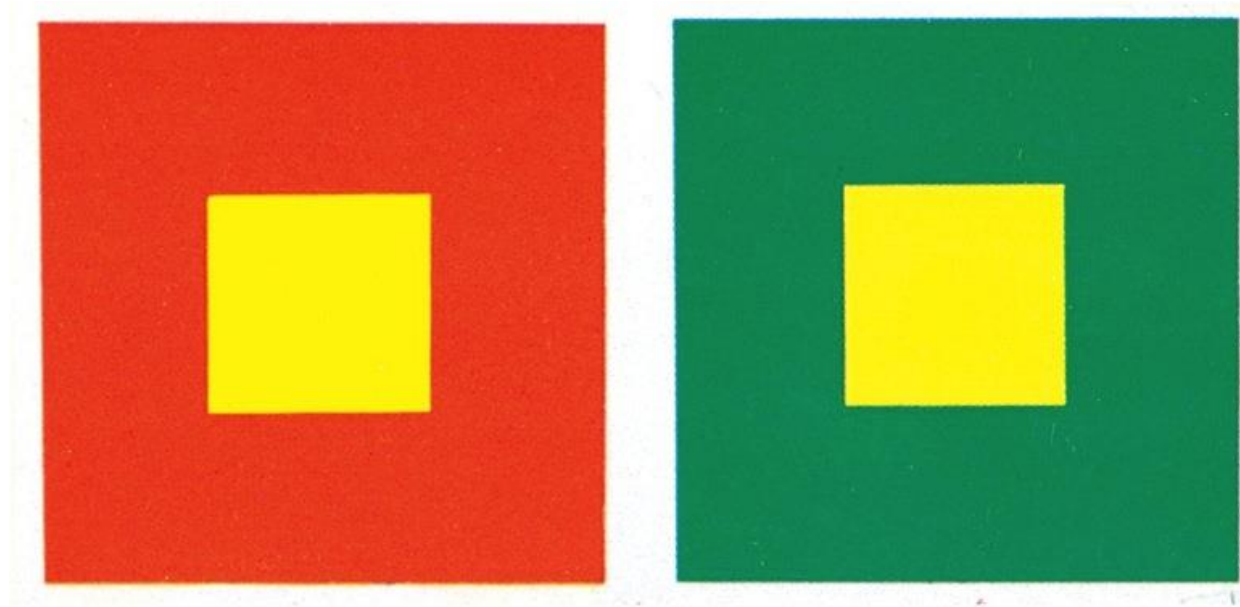
- Mix with Gray
- Mix with hues opposite on the color wheel:

***Complement or Split complement***



New York. Edgar Degas. After the Bath, Woman Drying Herself. c.1896. Oil on canvas, 2' 11" x 3' 9 2/3"

# Influence of Context



A saturated, vibrant color will not show much change despite different surroundings.

# Hue & Saturation

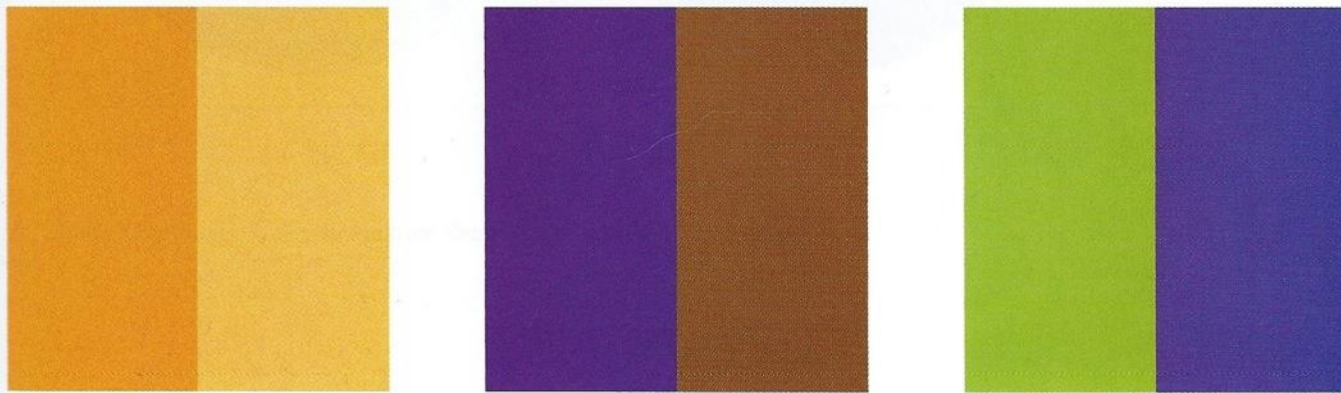




# Hue & Saturation



- Name the hue for each of the 6 colors above



- In each pairing, which color is more saturated?



# Color Mixing: Complementary & Split Complementary Colors

# Color Mixing

***Complementary Colors*** –  
opposite on color wheel

- Red-Green
- Blue-Orange
- Yellow-Purple

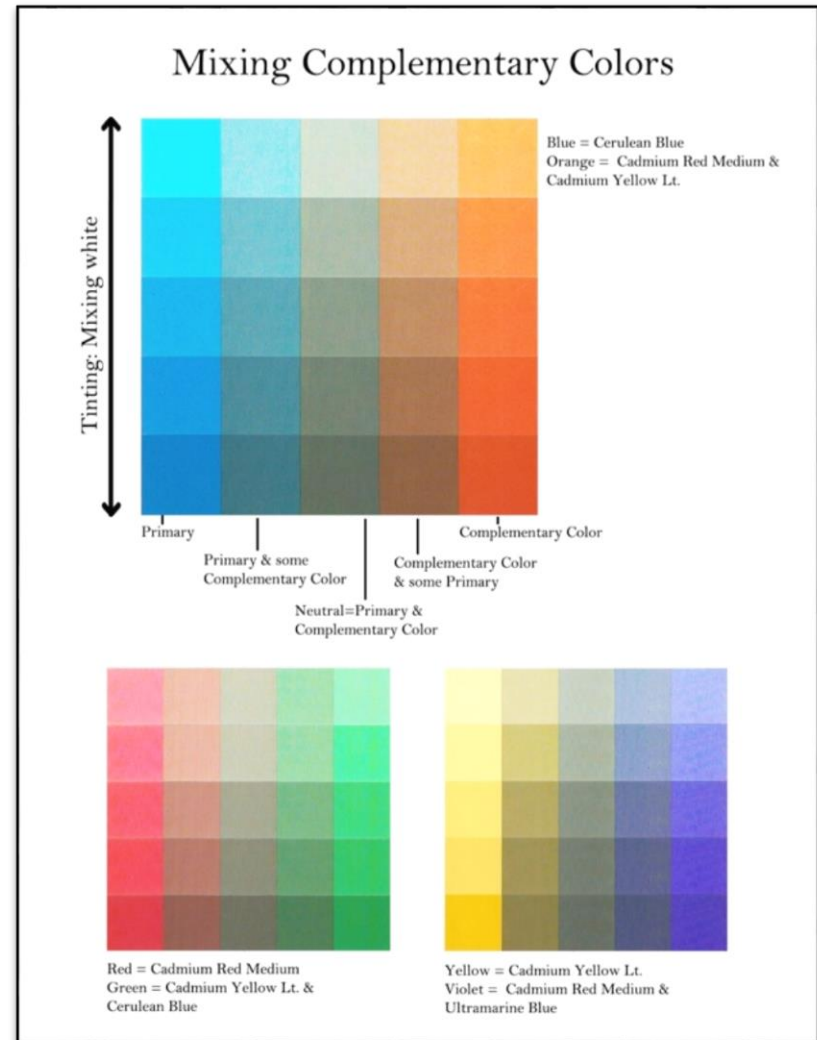
Uses:

- Placing 2 complementary colors side by side creates a brighter image.
- Mixing 2 complementary colors creates gray – desaturating the color



# Mixing: Complementary Colors

- Mixing complementary colors will help you achieve more neutral, naturalistic tones
- Avoid using black, you can achieve darker and more neutral values by mixing complements. You will find that your painting will have stronger color interactions.



# Intensity/Complementary Colors

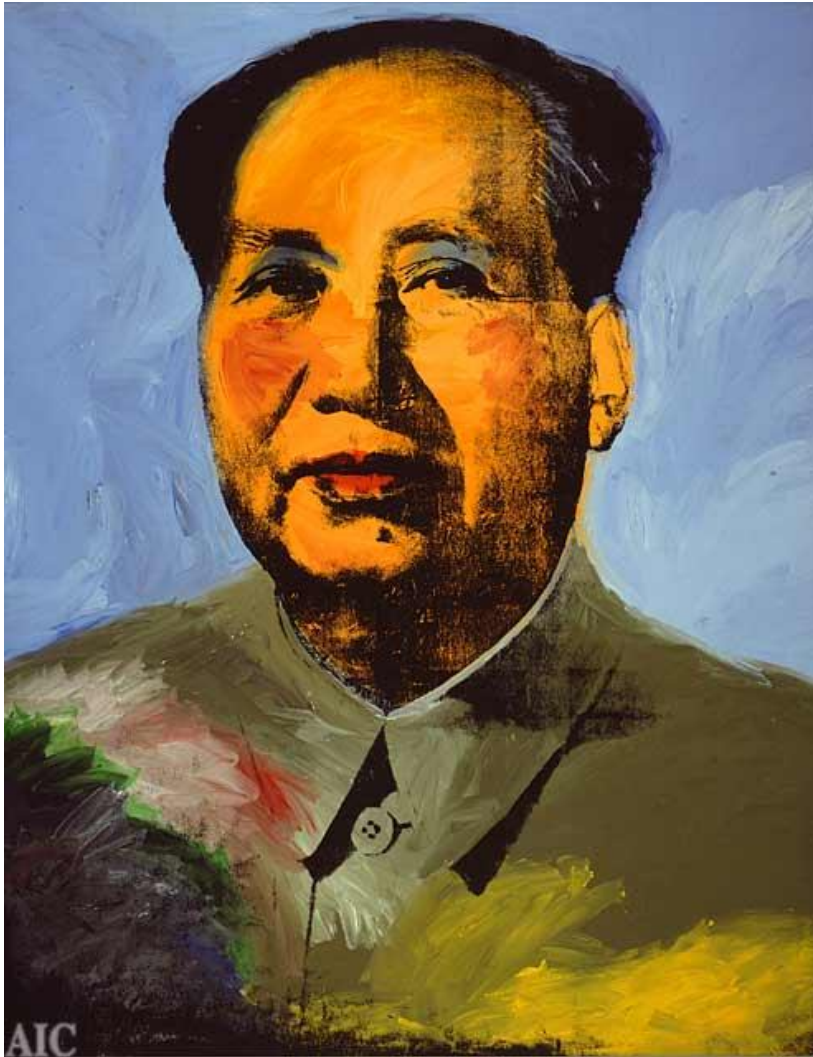
To Make Colors Appear  
Brighter use:

- **Simultaneous contrast** –  
when 2 complements are  
next to each other they  
increase the visual  
brilliance of each other

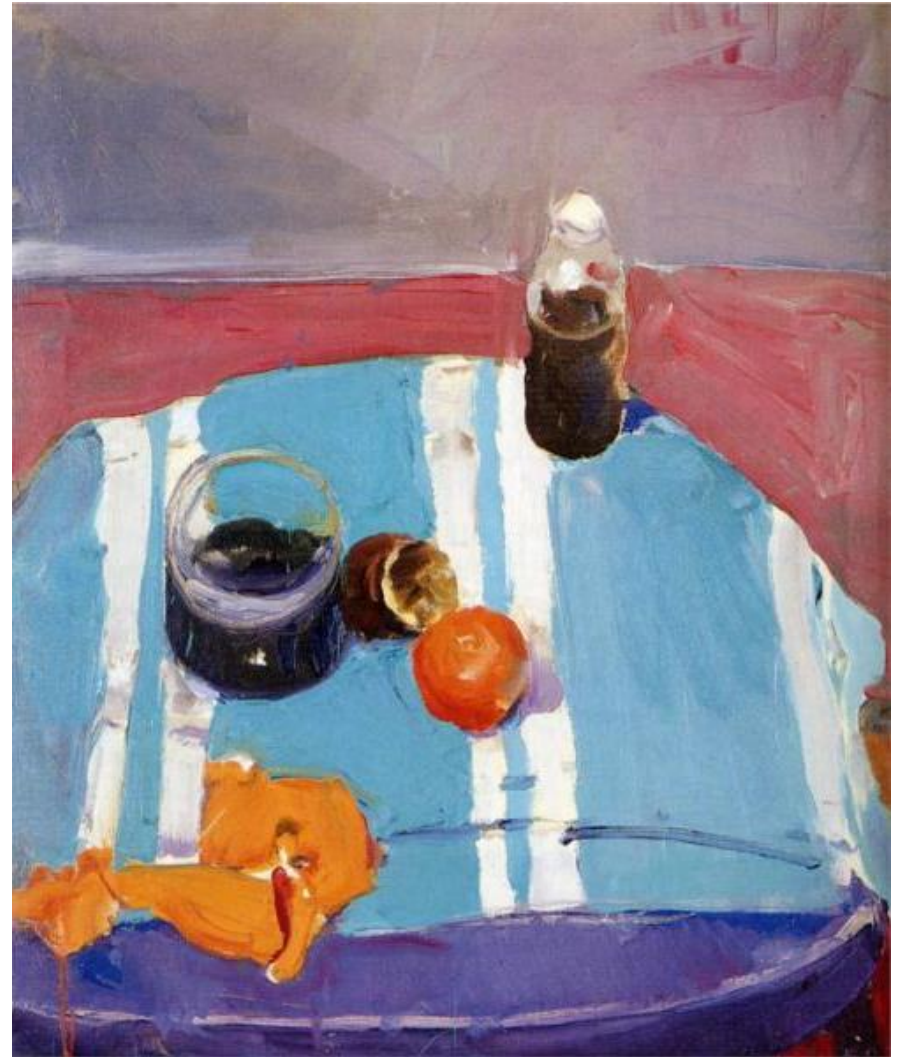


Casanova Table and Side Chairs. Domus  
Design Collection, New York.

# Using Simultaneous Contrast



Andy Warhol - Mao

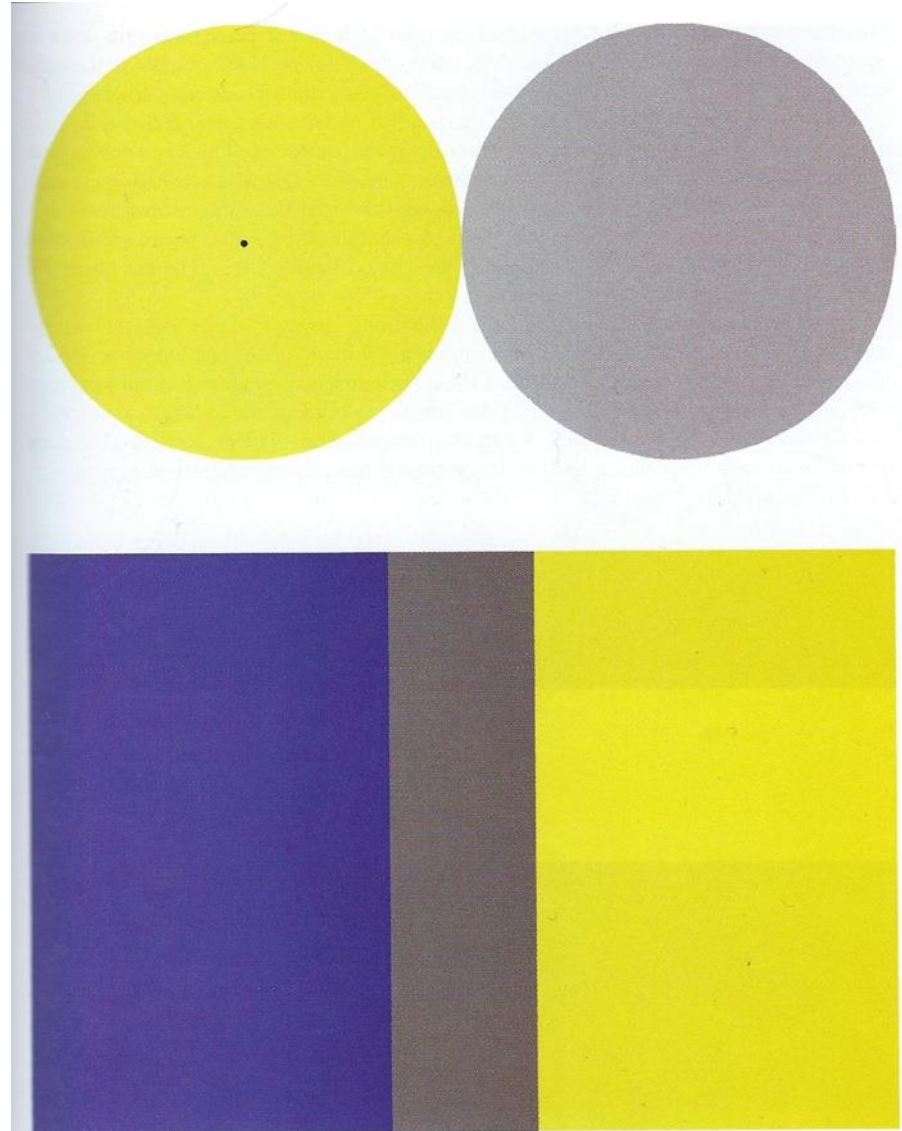


Still Life with Orange Peel, 1955  
Richard Diebenkorn

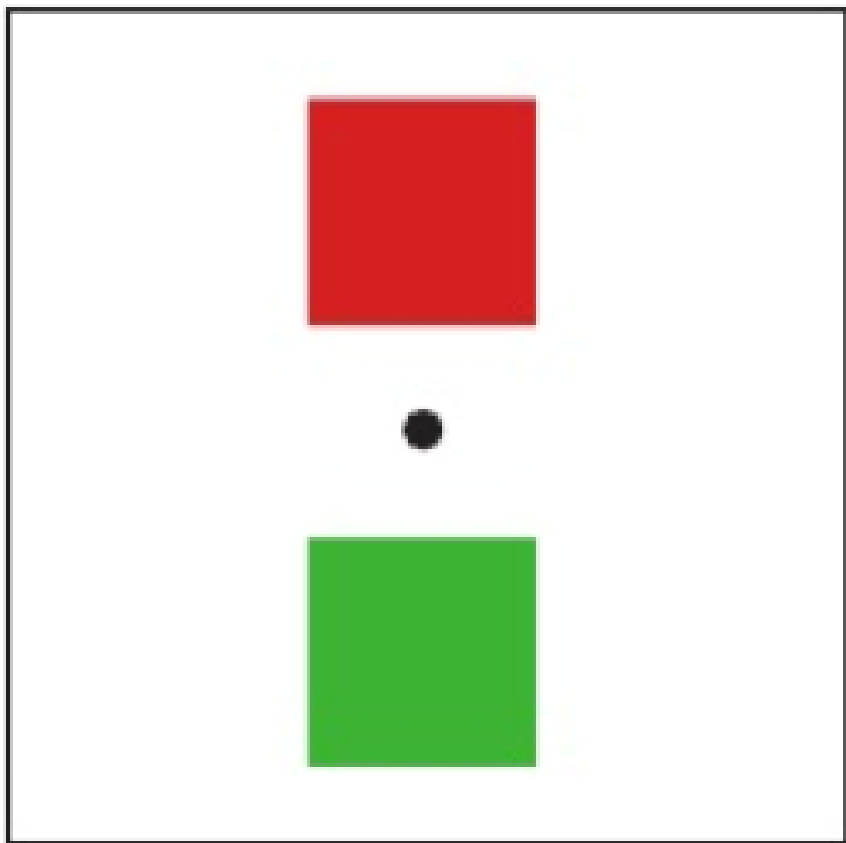


# Afterimage Effect

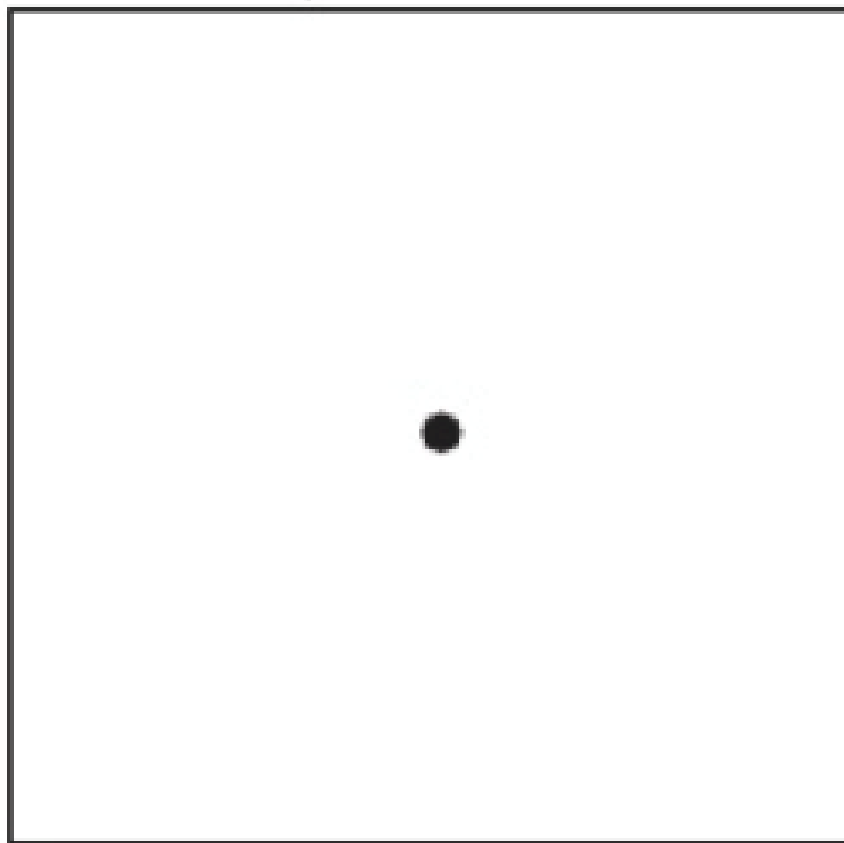
- *Afterimage effect* – when you stare at an intense color and then look away you will see the complementary color



# Afterimage Effect



**a**



**b**

# Mixing: Split Complements

*Split Complementaries*— one color and the two hues adjacent to the complement.

- Split complements function similarly to complementary colors when mixing and as a compositional tool
- More complex color structure and widely used





# Split Complements - David Hockney uses greens and blue-greens to help balance the saturated red focal point.



**Portrait of an Artist (Pool with Two Figures), 1972**  
David Hockney

# Color Temperature

# Color Temperature

- An artist may use warm and cool color relationships to create depth and volume.
- Color temperature is also used to create a strong sense of light



# Warm Colors

## Red, Orange, Yellow

- Warm colors advance spatially.
- Represents – Fire, Sunlight
- Implies – Happy, energy, anger

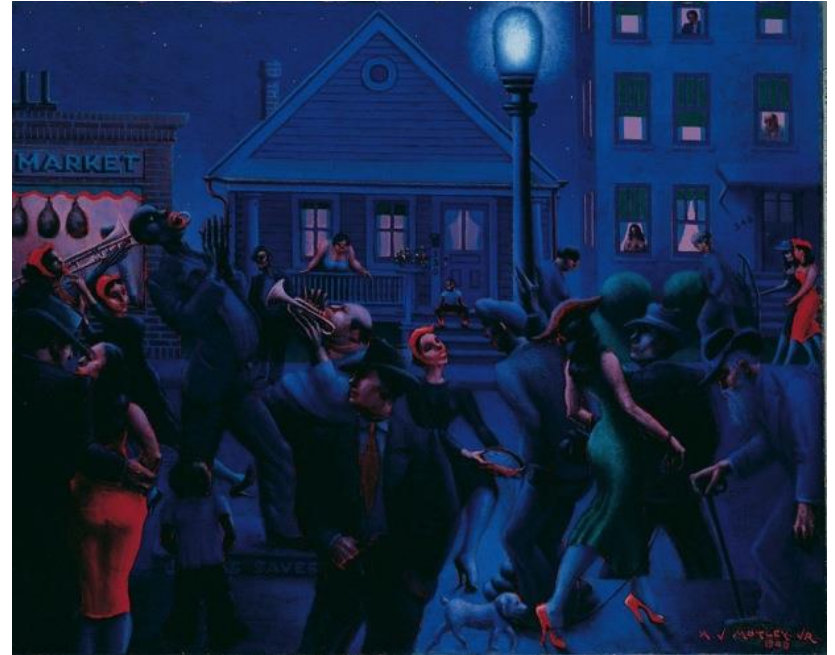


Georgia O'Keefe, "Red Canna"

# Cool Colors

## Blue, Green, Purple

- Cool colors recede spatially.
- Represents – Sky, Water, Grass
- Implies – Sadness, Depression, Night



Archibald J. Motley Jr. Getting' Religion.  
1948. Oil on canvas, 2' 7 7/8" x 3' 3 1/4" ..



# Color and Space

## Color's Spatial Properties

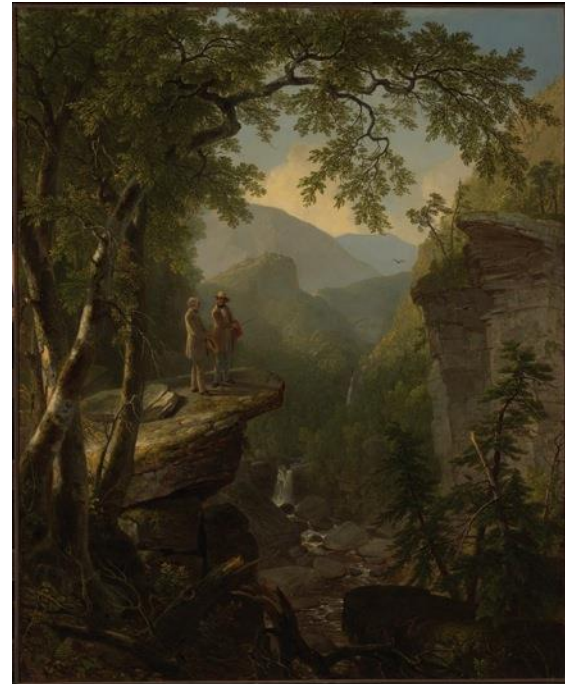
- Color creates depth
- Intense, warm colors come forward, cool colors go back.

## Atmospheric Perspective

- As things go back into the distance dust in the air makes them fading to blue-gray.

## Using color to Emphasize Flatness

- Color can also be used to flatten space



Asher B. Durand. Kindred Spirits. 1849. Oil on canvas, 3' 8" x 3'.



David Hockney. Mulholland Drive: The Road to the Studio. 1980. Acrylic on canvas, 7' 2" x 20' 3"