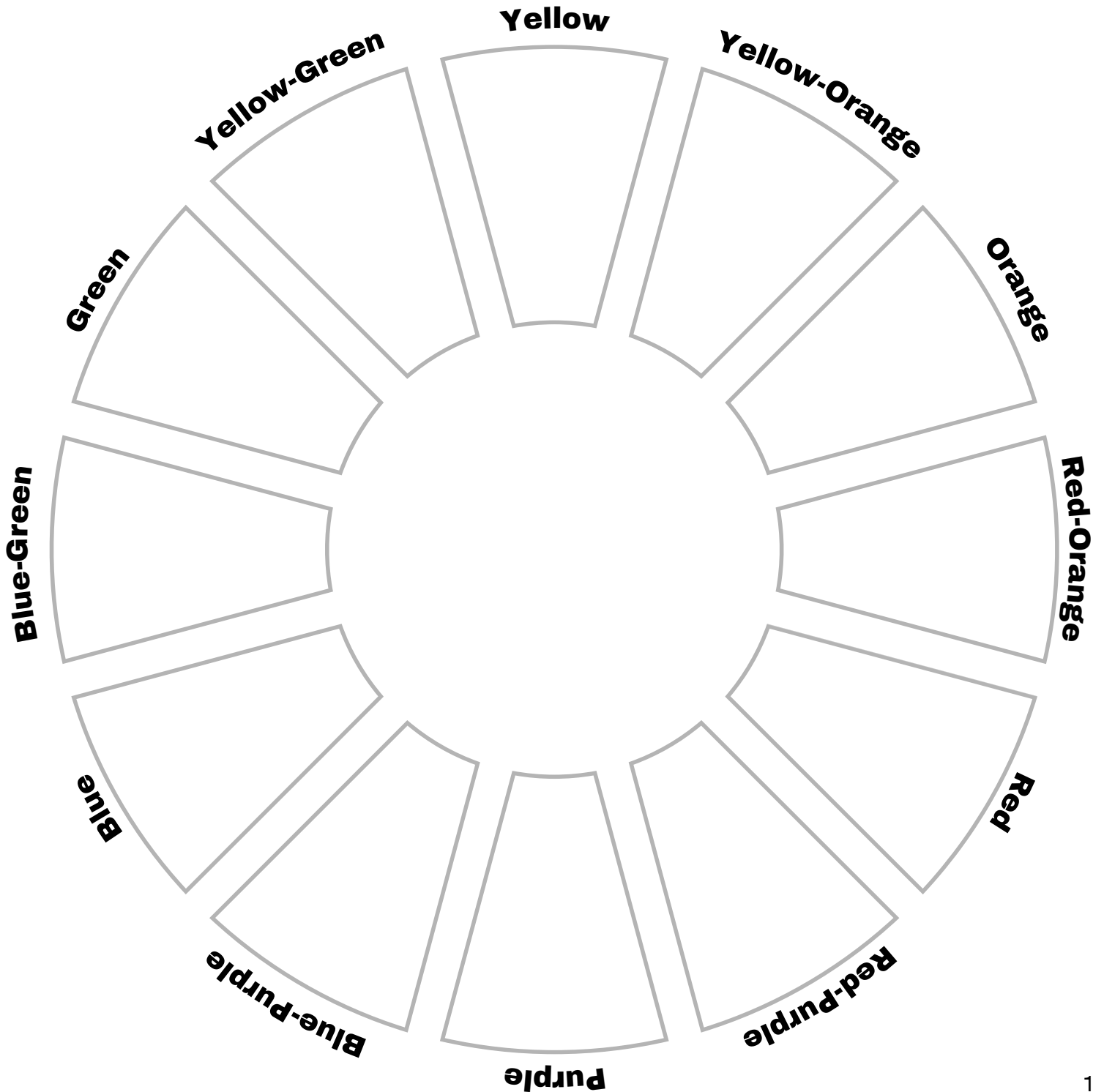


# Color Theory Notes

## Color Wheel (RYB)

Shows the connection between colors and organizes these colors into groups.



# Vocabulary

**Primary Colors** Red, yellow, blue (RYB) or cyan, magenta, yellow (CMY)

Primary colors are foundational colors that **cannot be created by mixing other colors.**

**Secondary Colors** Orange Green Purple

A secondary color is created by mixing two primary colors.

**Tertiary Colors** Yellow-Green Yellow-Orange Blue-Purple Blue-Green  
Red-Orange Red-Purple

Tertiary colors are intermediate colors resulting from mixing a primary and a secondary color.

**Hue** Example: The hue of Navy is blue.

Hue refers to the raw, spectral color, like a primary (red, blue, yellow) or secondary (green, orange, purple) color, before any white, black, or gray is added.

## Value

Value is the lightness or darkness of a color, ranging from white (highest value) to black (lowest value), and is crucial for creating depth, form, and contrast, allowing objects to appear three-dimensional rather than flat.

## Saturation Or Chroma

Saturation is a measure of how pure a color is. You can reduce the saturation by adding gray or a complementary color.

## Color Temperature

Color temperature generally refers to how “warm” or “cool” a color is.

**Warm Colors** Red Yellow Orange

Warm colors (red, orange, yellow) evokes heat and sunshine, creating an energetic feeling and appears to advance in design.

**Cool Colors** Blue Green Purple

Cool colors (blue, green, violet) suggests water, sky, and shade, creating a calming feeling and seems to recede, making them ideal for backgrounds.

## Undertones

Paint undertones are the subtle underlying colors (warm yellow/orange/red or cool blue/green/violet) visible beneath the main color, crucial for mixing vibrant vs. muted tones. Identifying these biases ensures clean mixes, while opposing undertones create muddy or muted colors. Example: Warm red vs cool red

## Tint

Any color + white, making it lighter and less saturated.

## Tone

Any color + black, making it darker.

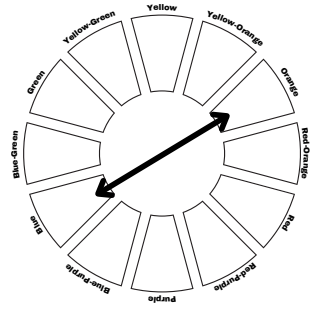
## Shade

Any color + gray (or both black and white), making the color more subtle and less intense.

# Color Combinations or Schemes

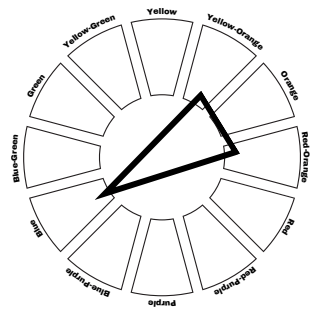
**Complementary** Example: Blue / Orange

- Definition: Two colors opposite each other on the color wheel
- Effect: Highest contrast and impact, appearing brighter and more vibrant.
- Best Use: High-energy designs needing a "pop".



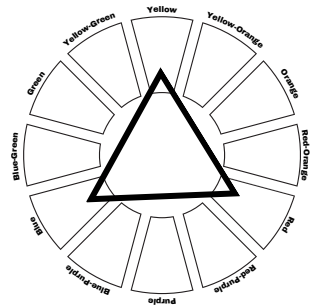
**Split-Complementary** Example: Blue / Yellow-Orange / Red-Orange

- Definition: A base color plus the two colors adjacent to its complement.
- Effect: High contrast without the intense tension of a strict complementary pairing.
- Best Use: Beginners looking for a sophisticated palette.



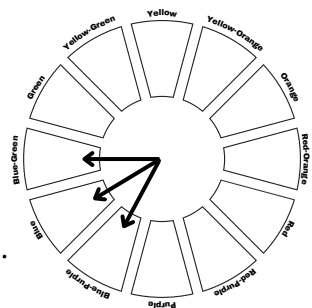
**Triadic** Example: Blue / Yellow / Red

- Definition: Three colors evenly spaced around the color wheel, forming a triangle.
- Effect: Vibrant and high-contrast, yet more balanced than complementary.
- Best Use: Bold, colorful, and harmonious designs.



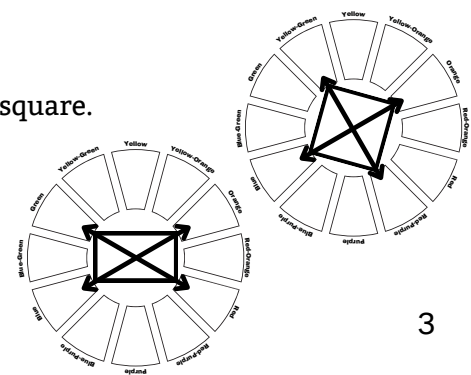
**Analogous** Example: Blue / Blue-Green / Blue-Purple

- Definition: Three or more colors situated next to each other on the color wheel
- Effect: Smooth, tranquil, and harmonious transition.
- Best Use: Creating a calm mood; usually requires a dominant color and accent colors.



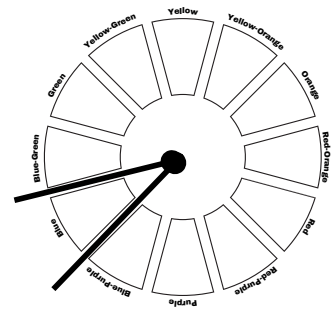
**Tetradic** Examples: Blue / Green / Orange / Red and white  
Blue / Yellow-green / Orange / Red-purple

- Definition: Two pairs of complementary colors that form a rectangle or square.
- Effect: Extremely rich, complex, and dynamic.
- Best Use: Complex projects; works best with one dominant color.



**Monochromatic** Example: Blues

- Definition: Different shades, tones, and tints of a single base color.
- Effect: Subtle, clean, and consistent; very easy to manage.
- Best Use: Elegant, minimalist, or harmonious designs.



# Color Ratio “Rules”

## 60/30/10

60% dominant color, 30% secondary color, 10% accent color (accessories/elements).

## 80/20

80% primary color, 20% complementary color.

## Rule of Odd Numbers

Using an odd number of colors creates a more dynamic and natural interaction.

# Color Relativity

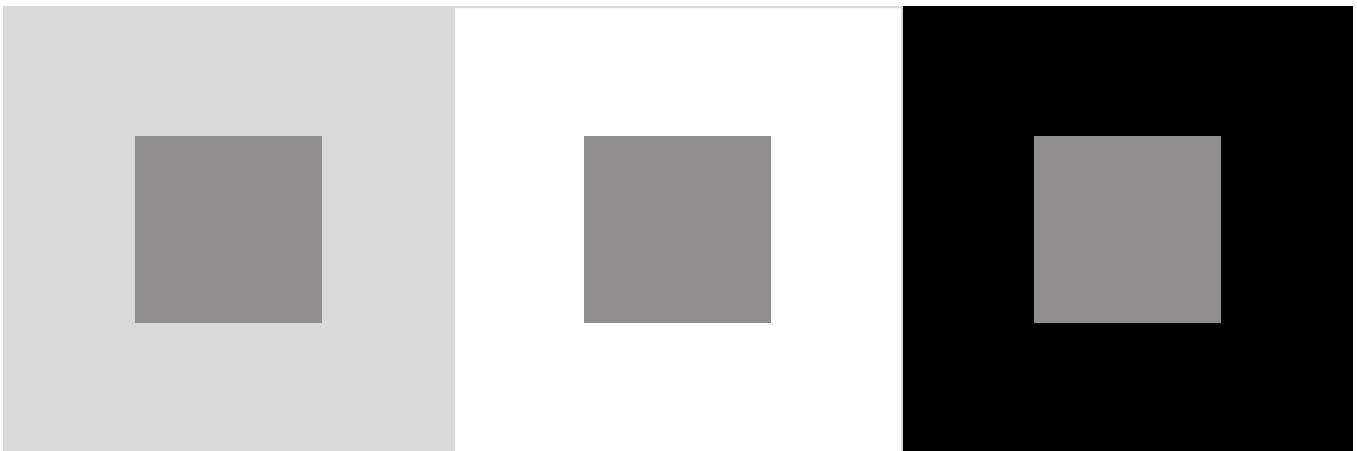
A color is perceived relative to its surroundings rather than as an absolute, fixed hue. A single color can appear as two different shades depending on the background, with surrounding colors influencing perceived brightness, saturation, and temperature

## Key Principles and Effects:

- Contextual Perception: A neutral gray can appear warm (orange) when placed next to a cool blue, and cool (blue) next to a warm orange.
- Value Relativity: A color's lightness or darkness is determined by its surroundings; a medium-value tone looks dark against light colors and light against dark colors.
- Complementary Vibrancy: Placing complementary colors (e.g., blue and orange) side-by-side makes both appear more vibrant and intense.
- Light and Atmosphere: By using color relativity, artists can simulate the illusion of light and create atmosphere

## Practical Application for Painters:

- Limit the Palette: A limited palette allows individual colors to change character based on their neighbor, creating a more harmonious, cohesive, and "believable" scene.
- Warm vs. Cool: Rather than focusing on a color's absolute hue, artists should observe how it appears warmer or cooler in relation to surrounding shades.
- Avoid "Stuck" Colors: Recognizing that color is flexible helps painters avoid using the same, stagnant color mix, allowing them to adjust mixtures to suit the surrounding, changing, context.



# Tips, Tricks and Tools

Here are some tips for **color mixing**:

- Mixing any two primary colors will create the color between them on the color wheel. For example, by mixing red and blue, you will get purple.
- You can reduce the saturation of a color by mixing it with the color on the opposite side of the color wheel. These are complementary colors. For example, you can reduce the saturation of orange by mixing it with some blue.
- To darken a color, you can add blue, black or an earthy color such as raw umber or burnt sienna.
- To lighten a color, you can add yellow or white. White will neutralize or cool the color.
- To mix a natural black, you can combine a dark blue with raw umber or burnt sienna (you do not need to use black straight from the tube).
- Create Green by adding a touch of black to yellow.
- Try using ultramarine, cadmium yellow, and cadmium red for a warm palette and alizarin crimson, phthalo blue, and lemon yellow for a cooler palette

Why Use **Complementary Colors**?

- High Contrast: Because they share no common colors, they make each other appear brighter and more intense.
- Balance: They create a balance between warm (red, orange, yellow) and cool (blue, green, violet) colors.
- Mixing: When mixed together, they neutralize each other, creating browns or gray-tones.

Finding **Value**

- Take a picture of your art and turn into black and white phot.
- Use a paper value finder tool.
- Use transparent red or green film or glasses to see value.

Finding **Undertone**

- Check out the Quiller Wheel.

# Time to Play!

## Tint

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Color + White

## Shade

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Color + Grey

## Tone

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Color + Black

## Using complementary colors to tone and neutralize

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Green

Red

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Blue

Orange

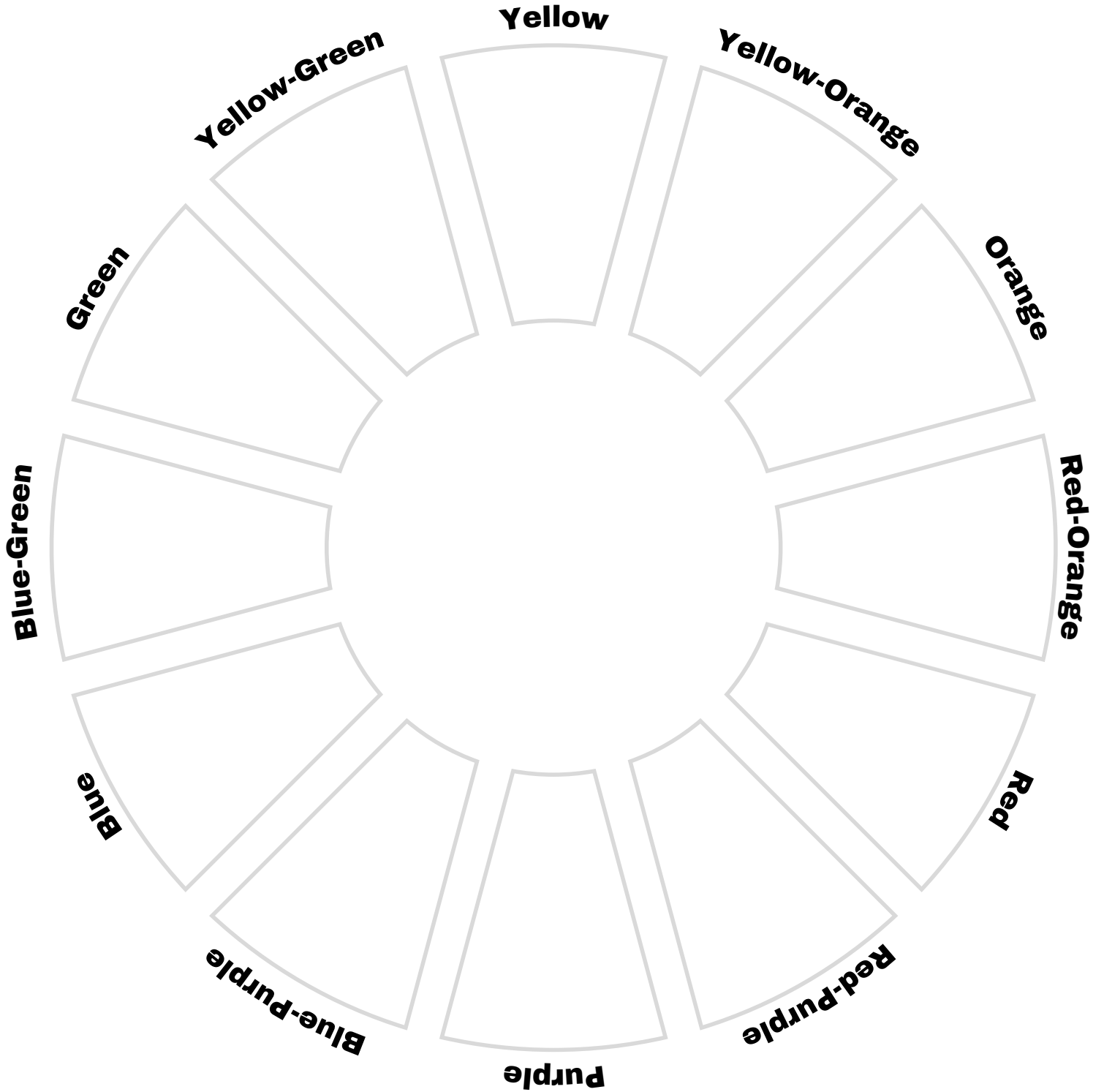
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Purple

Yellow

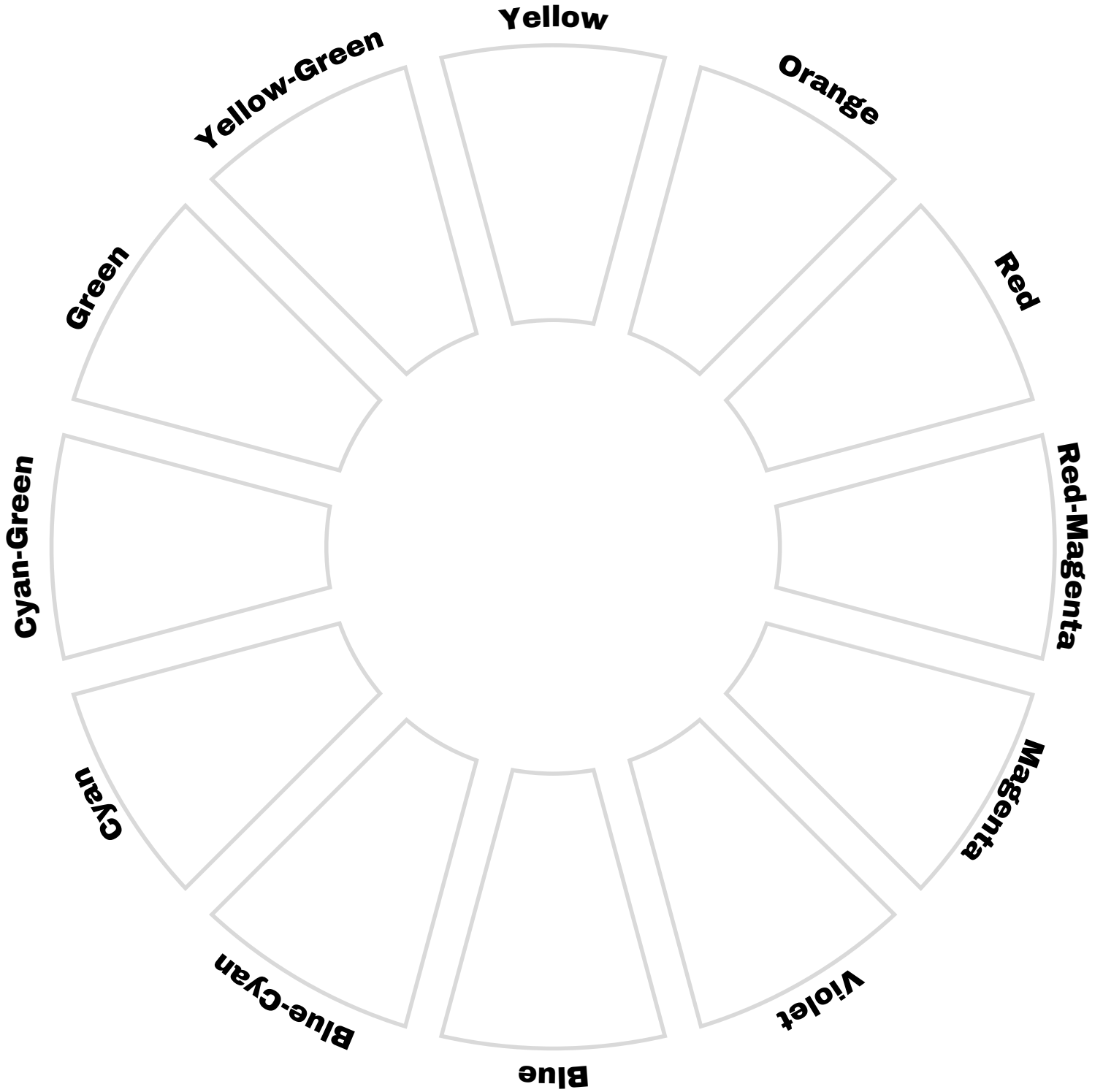
# Color Wheel (RYB)

Using red, blue, and yellow paint the color wheel.



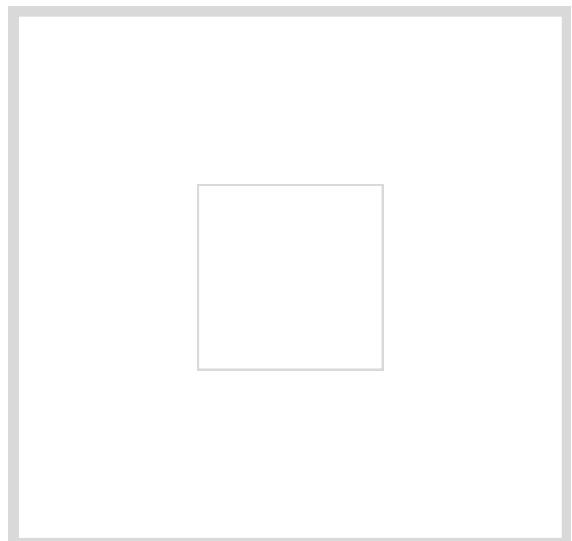
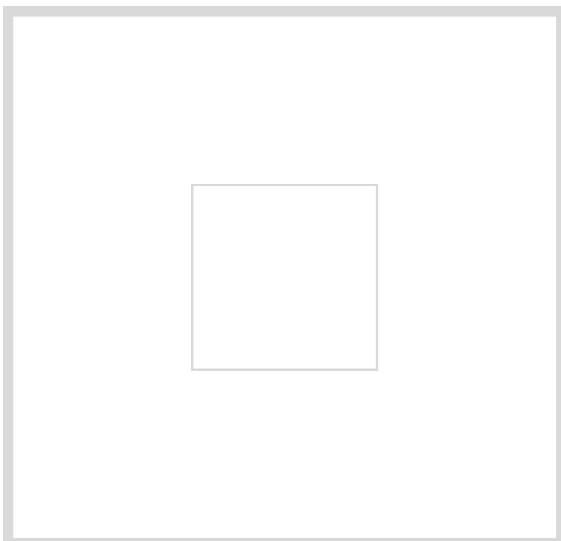
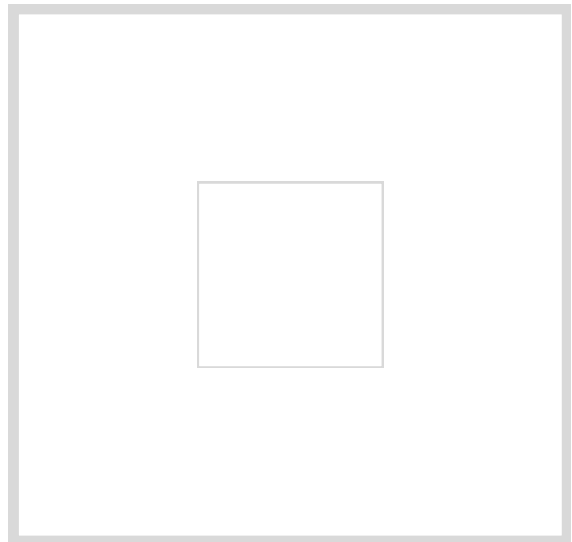
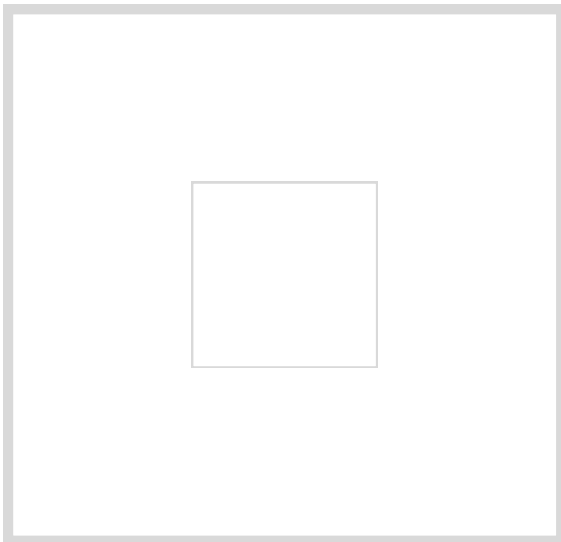
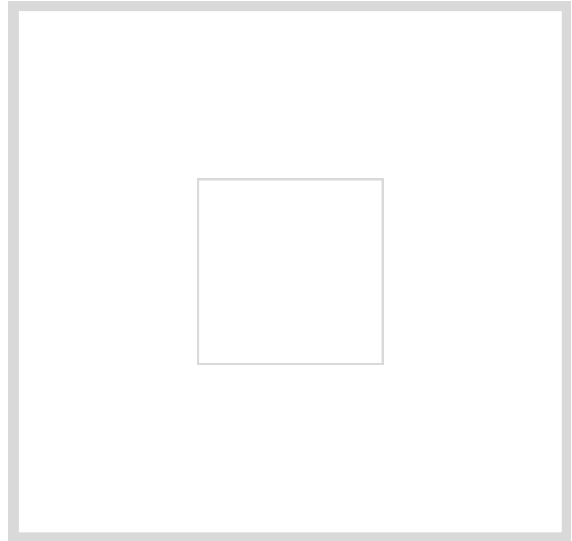
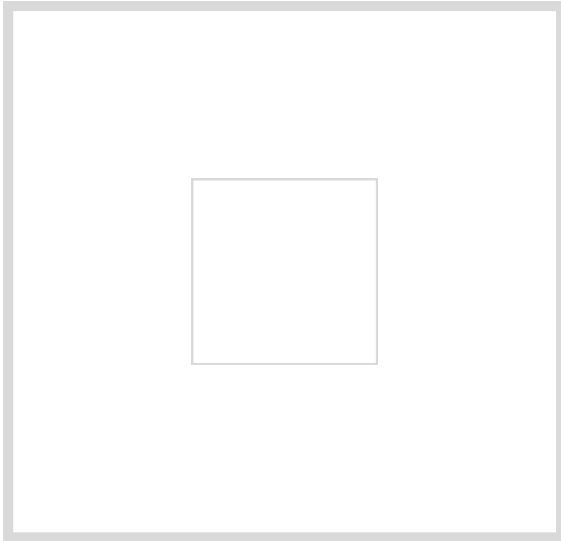
# Color Wheel (CMY)

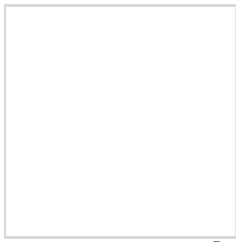
Using magenta, cyan, and yellow paint the color wheel.



# Color Relativity

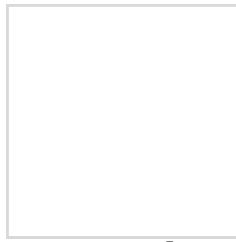
Paint each inside square the same color. Then paint the outer squares different colors and values. Notice how the colors and values affect the perception of the color of the middle square.





**Warm Red**

**+**



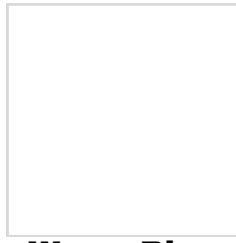
**Warm Blue**

**=**



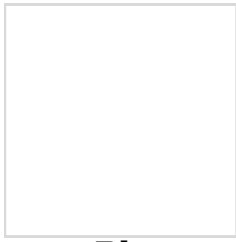
**Cool Red**

**+**



**Warm Blue**

**=**



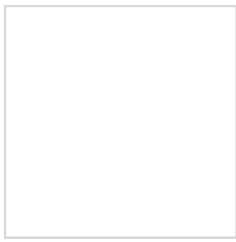
**Blue**

**+**



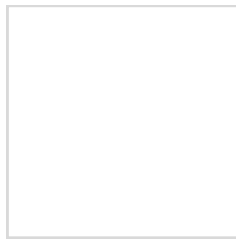
**Orange**

**=**



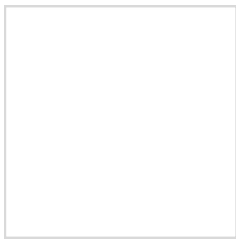
**Red**

**+**



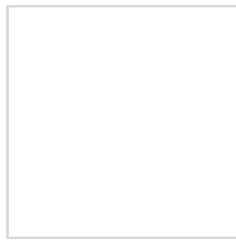
**Green**

**=**



**Purple**

**+**



**Yellow**

**=**

