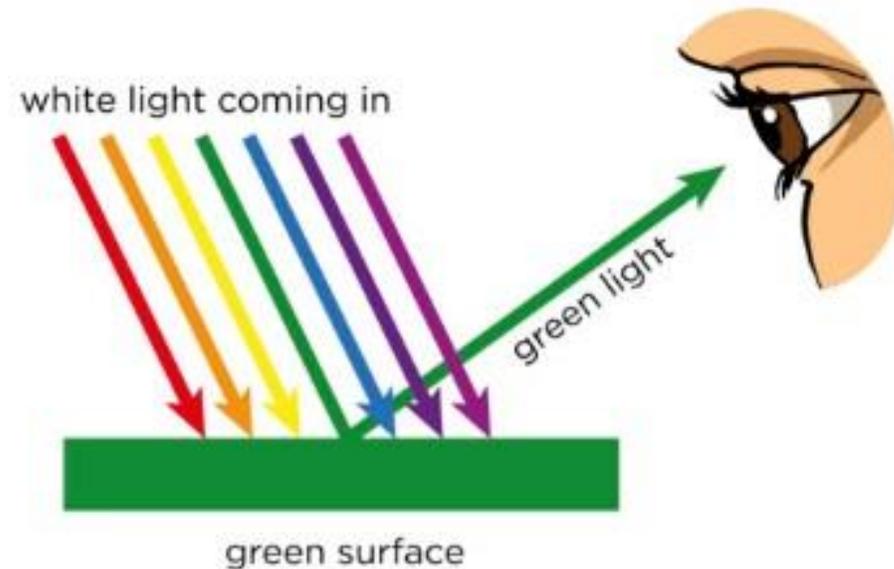
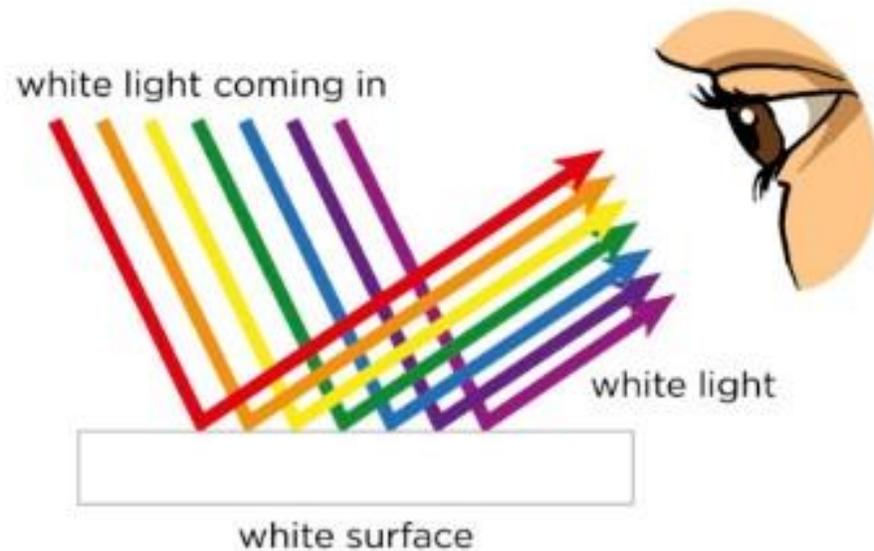


Color Theory

For web designers

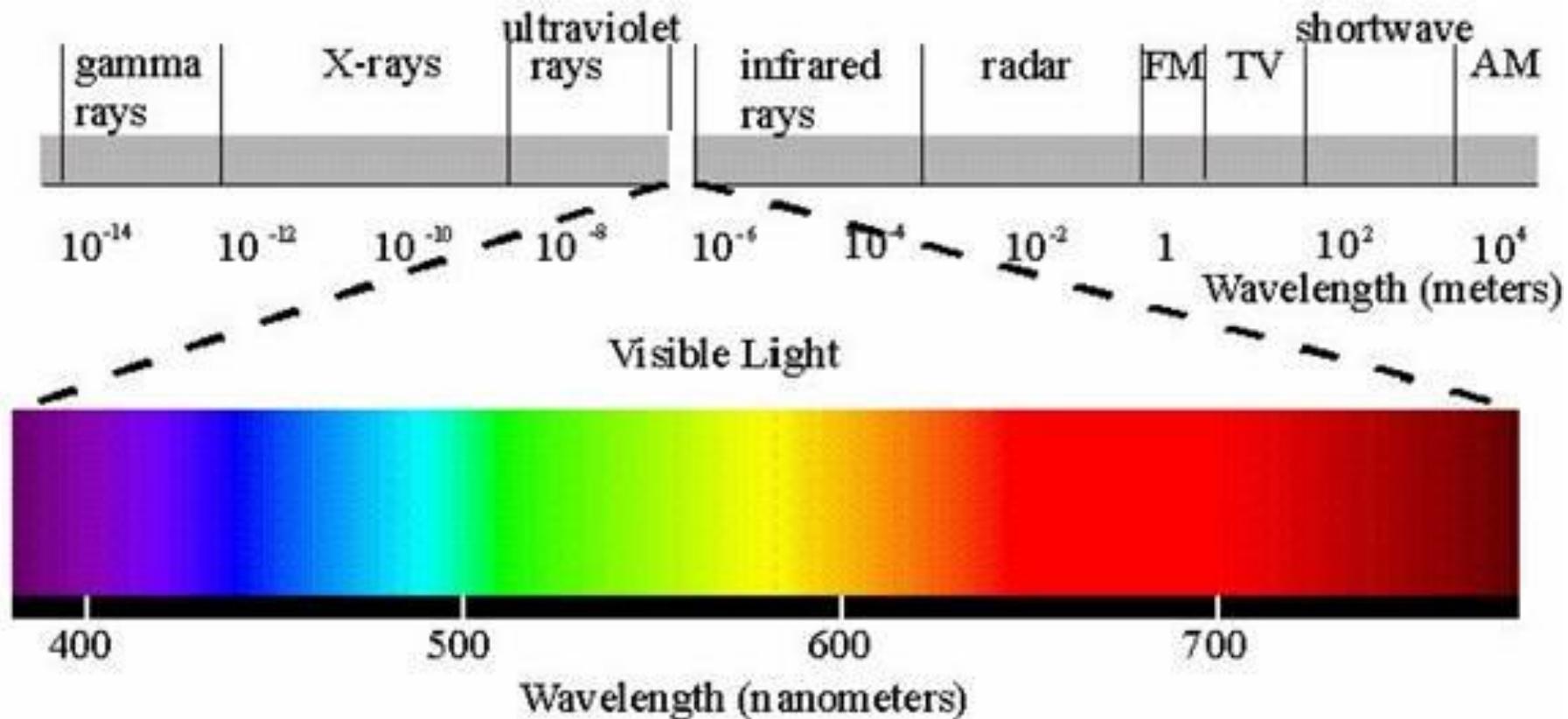
What is color?

- A sensation in the eye that results from the way an object reflects or emits light
- A sensation in the eye that results from light of a particular wavelength



What is light?

- Visible light is a segment of the electromagnetic spectrum with wavelength between 380 nm (violet) and 750 nm (red)

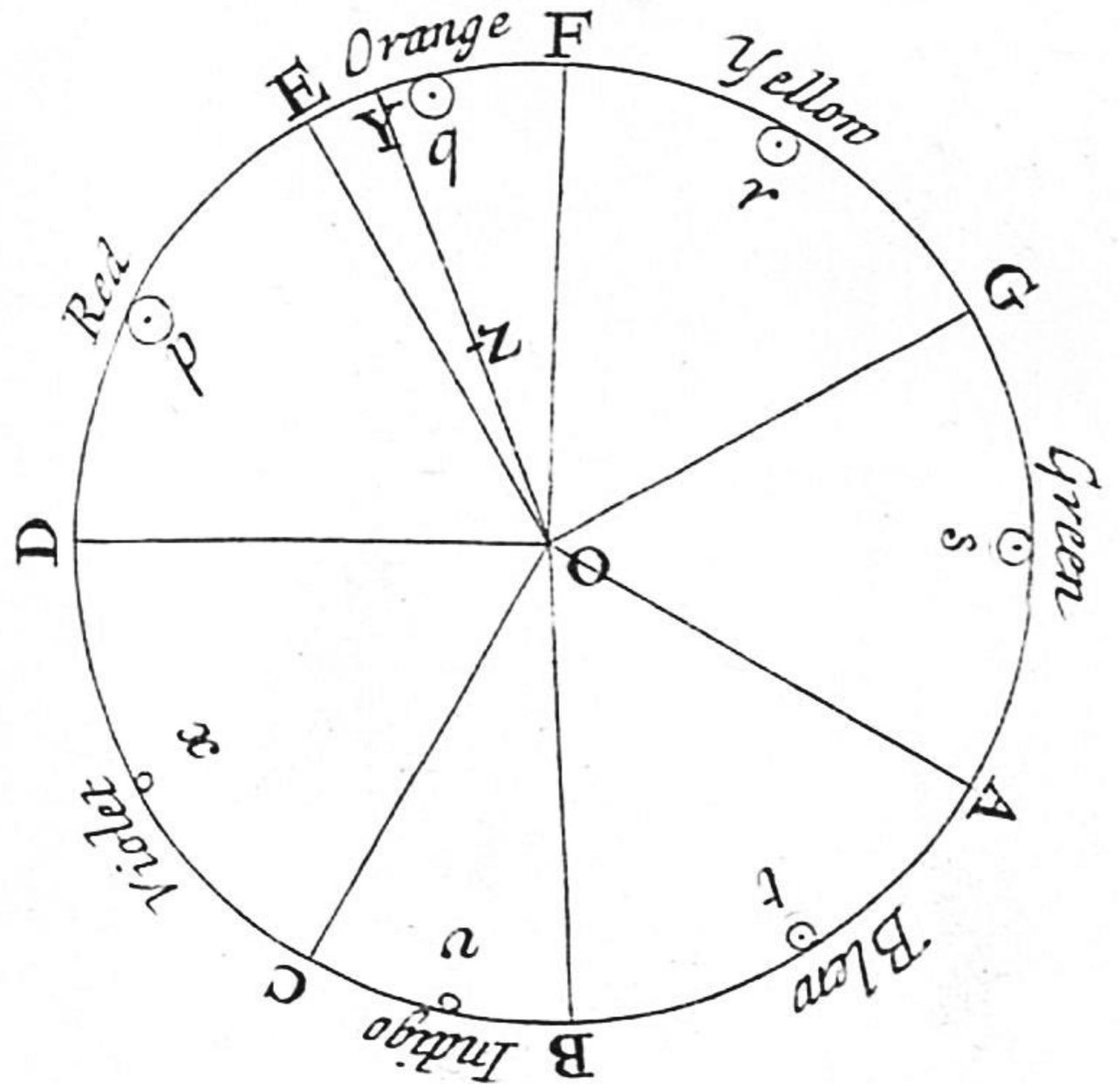


Relationship between colors

- Note that the longest visible wavelength (red) is twice that of the shortest visible wavelength (violet)
- In electromagnetic theory this is called an “octave”
- The same principle applies to musical notes – the wavelength of middle C is twice that of high C
- In both cases harmonies result from notes/colors when wavelengths in particular ratios are juxtaposed

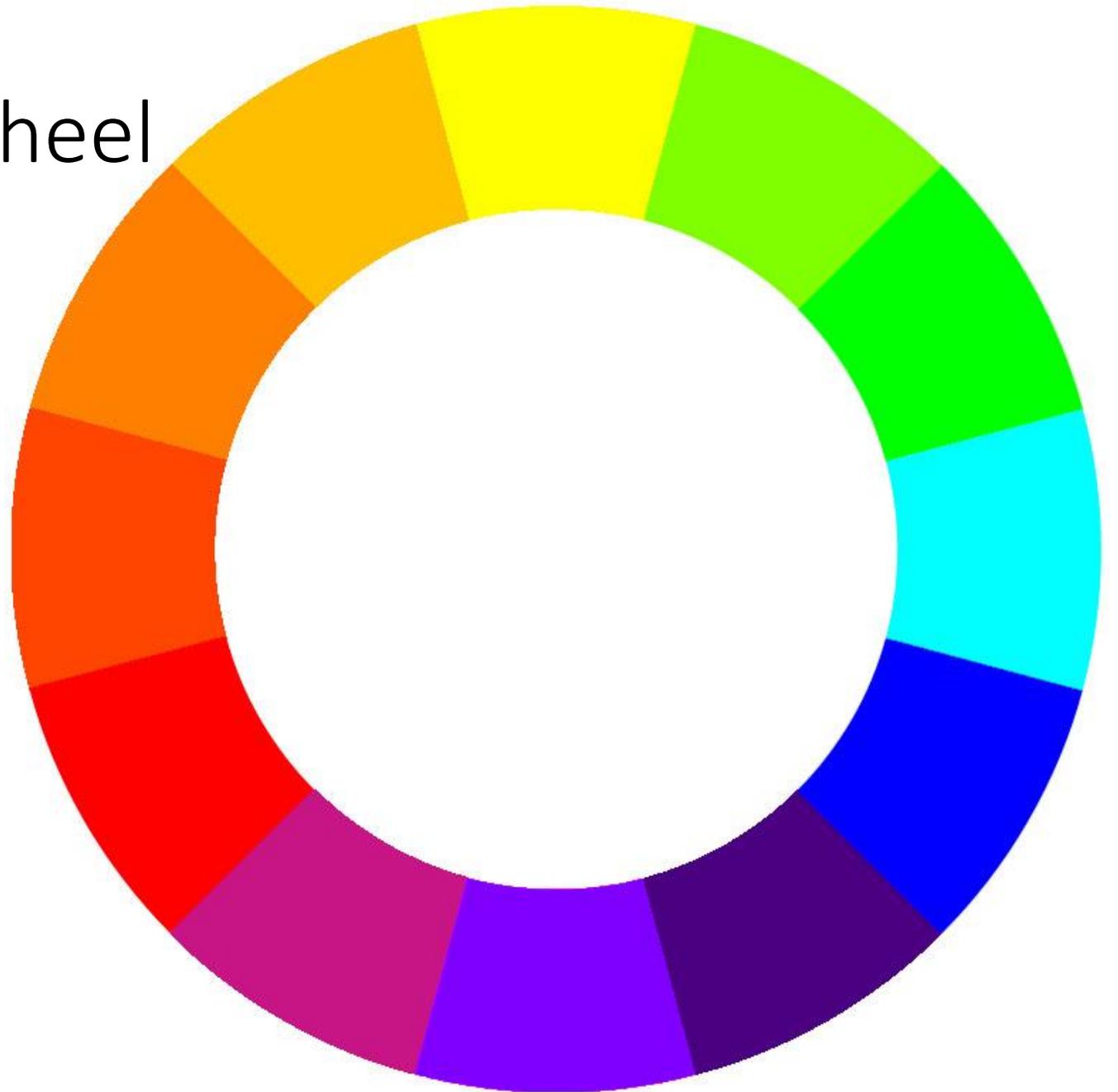
Original Color Circle

- In 1704 Isaac Newton first depicted the colors of the spectrum in a circle
- He correlated the spectral color from red to violet to the notes of the musical scale, starting at D.
- The circle completes a full octave, from D to D



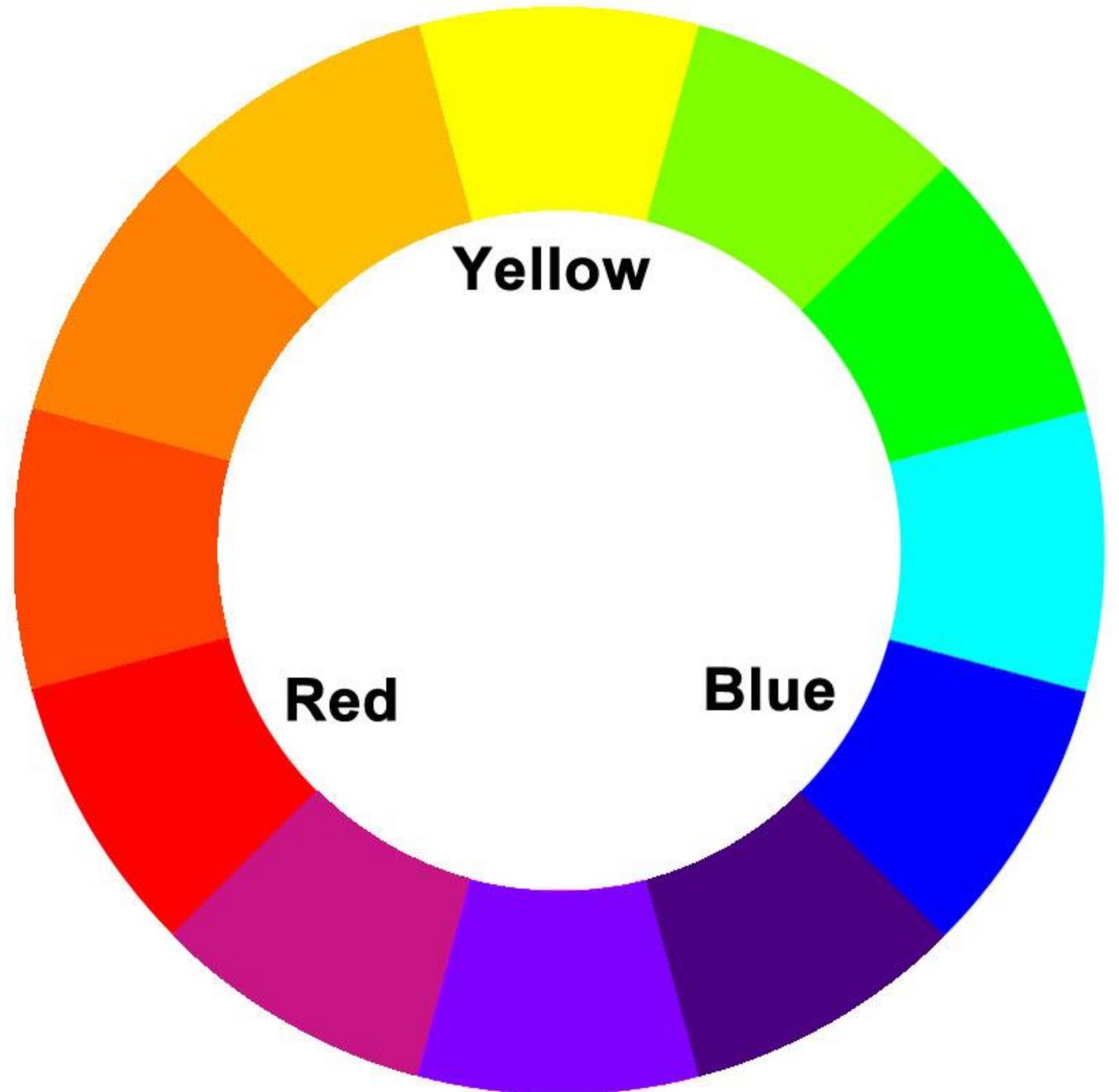
The Modern Color Wheel

- 12 colors arranged in a circle
- Used by artists to understand mixing of paint and other media
- Used to identify color harmonies



Primary Colors

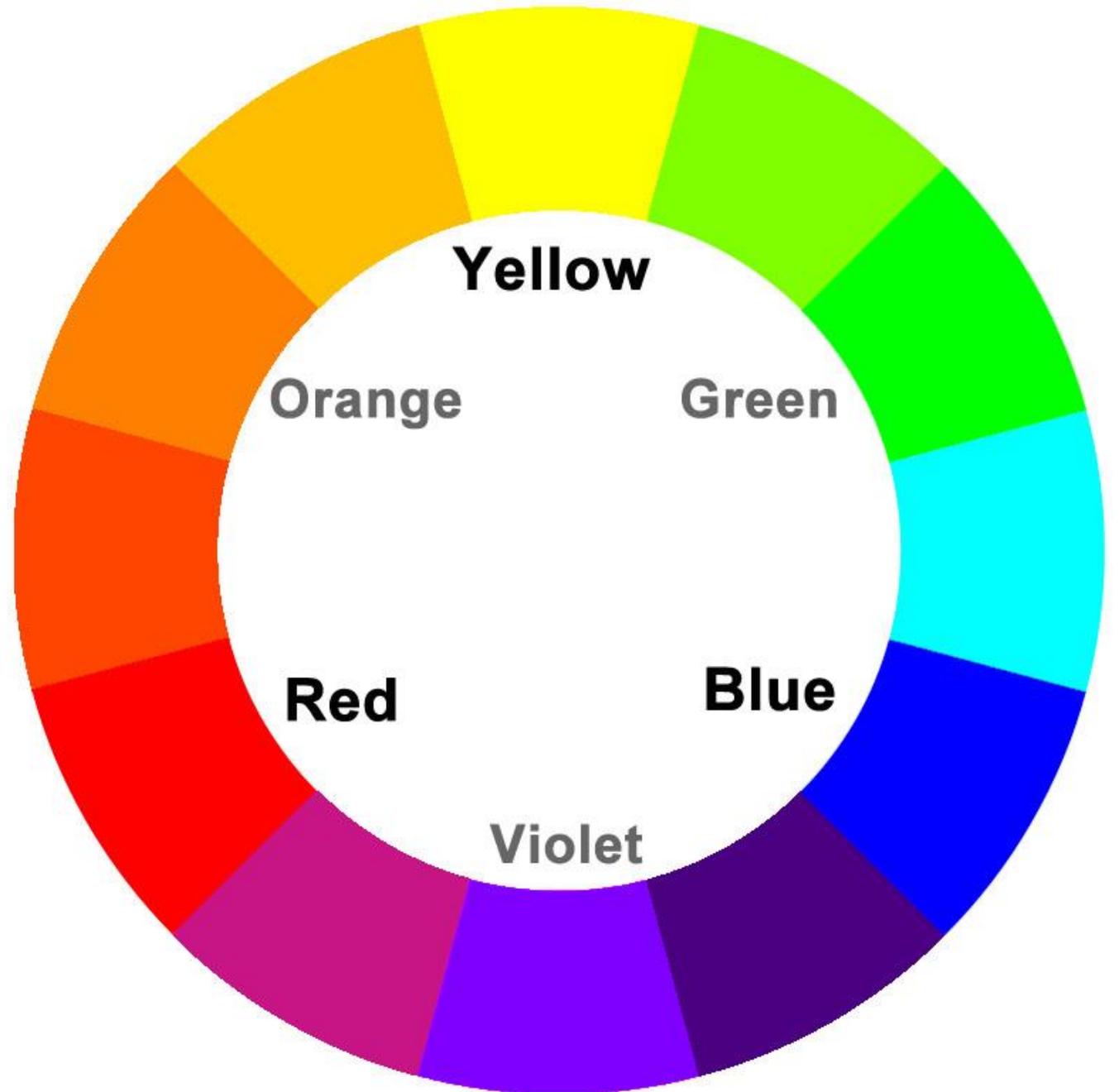
- There are 3 primaries
 - Yellow
 - Red
 - Blue
- All other colors can be derived from these three colors (in theory)



Secondary Colors

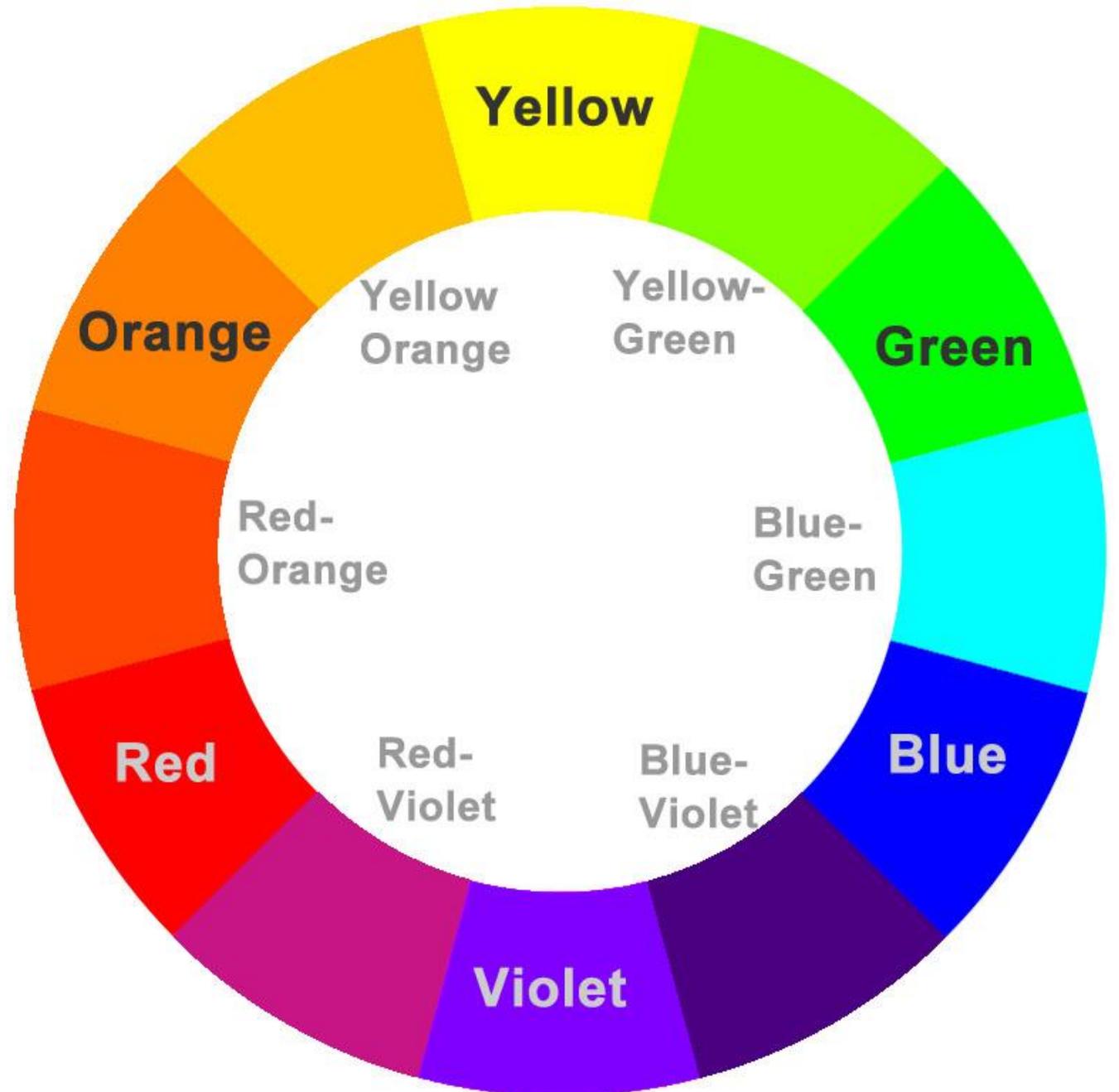
- The secondary colors are half way between the primaries

- Orange
- Green
- Violet



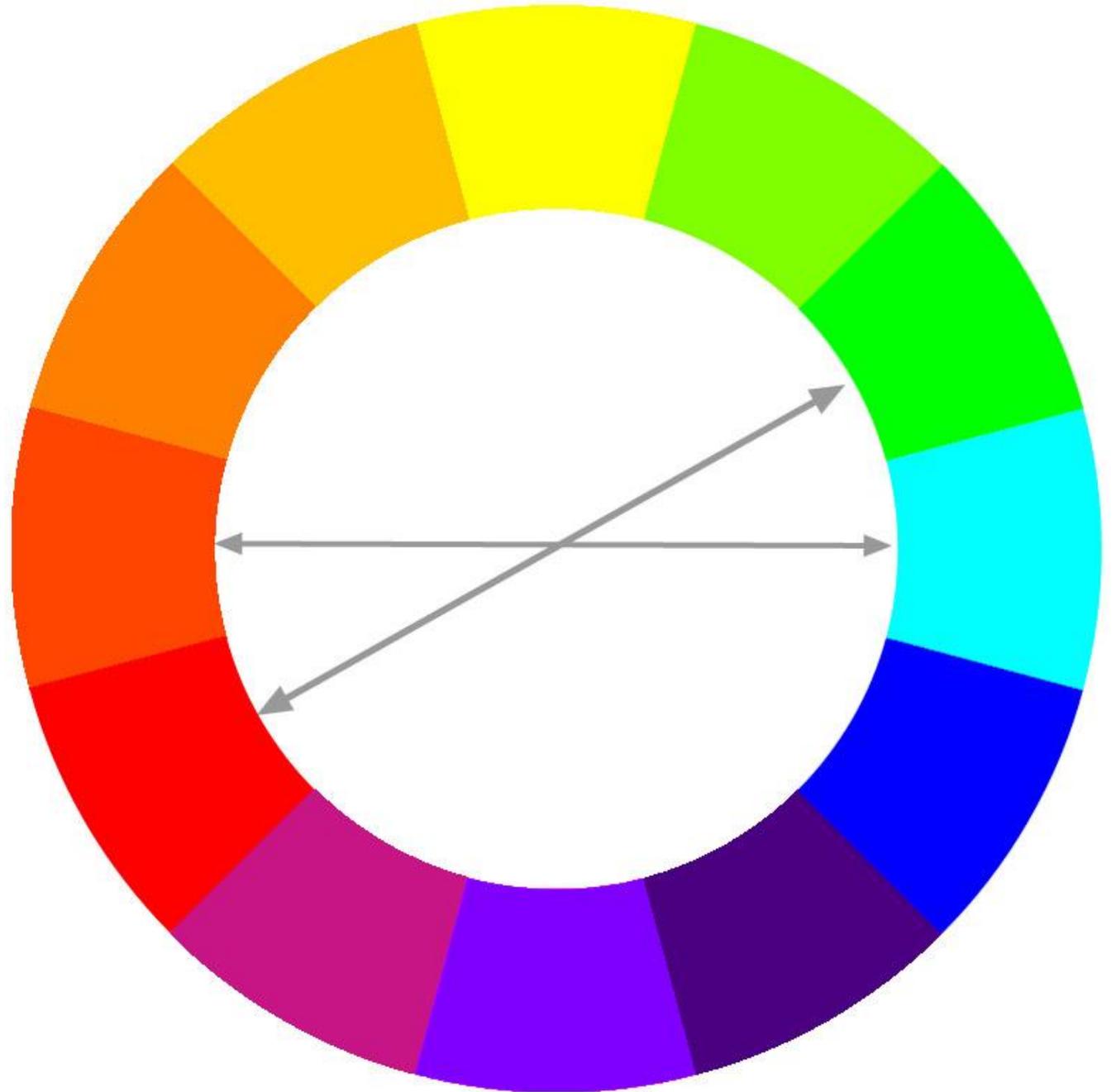
Tertiary Colors

- The six tertiary colors are half way between primary and secondary colors
 - Red-orange
 - Red-violet
 - Yellow-orange
 - Yellow-green
 - Blue-green
 - Blue violet



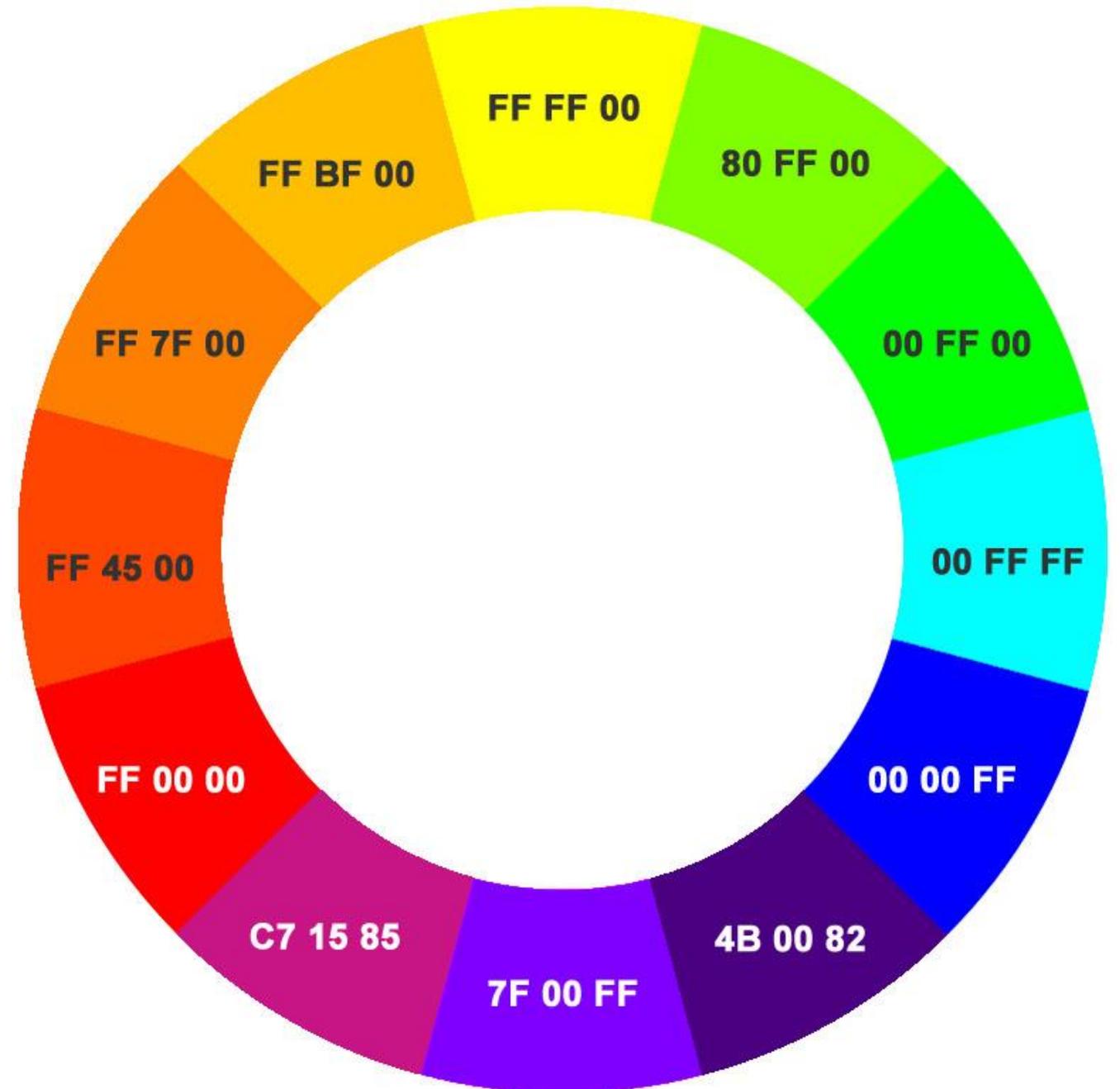
Complements

- Complementary colors are opposite each other on the color wheel. E.g.,
 - Red – green
 - Yellow – violet
 - Blue - orange
 - Red-orange – blue-green
- Complements are the simplest form of harmony



Hexadecimal Codes

- Red – First 2 digits
- Green – Second 2 digits
- Blue – Third 2 digits
- Hexadecimal is a base 16 numbering system
- 0, 1, 2, ... 9, A, B, C, D, E, F
- There are $256^3 = 16,777,216$ possible colors!

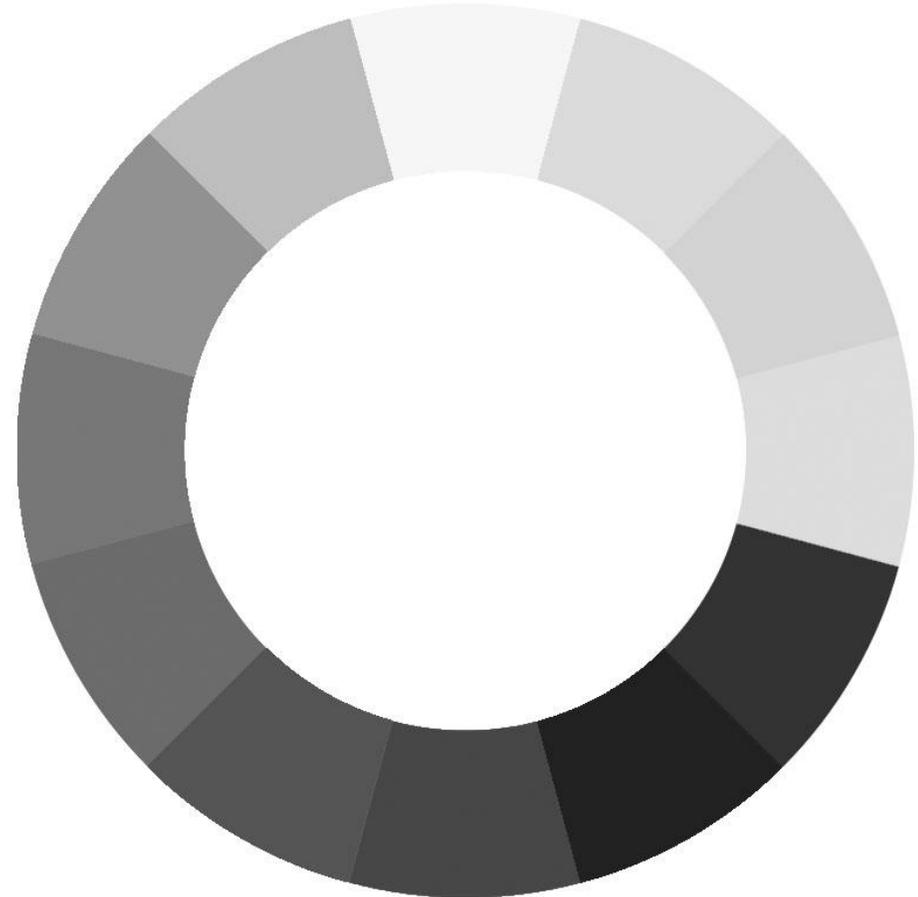


Definitions

- Color = Hue, e.g., red, blue, yellow-orange
- Value = the relative lightness or darkness of a color

Values of color wheel hues

Darker values work better for text



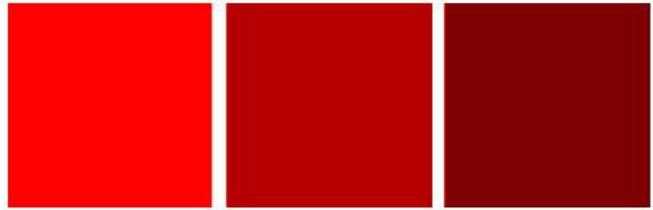
More definitions

- Tint = lightened color (increase brightness, add white)
- Shade = darkened color (reduce brightness, add black)
- Tone = desaturated color (reduce saturation, add gray)
- Neutral = desaturated color (add complement)

Tints, Shades, Tones and Neutrals



Tint - lighter color



Shade - darker color



Tone - less saturated color



Neutral - between complemnts

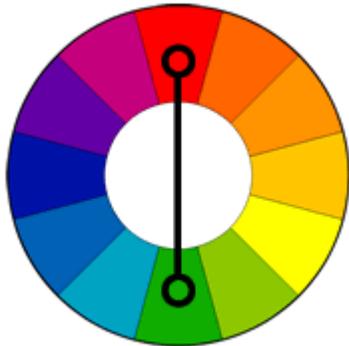
Natural Color Harmonies

Color Harmonies

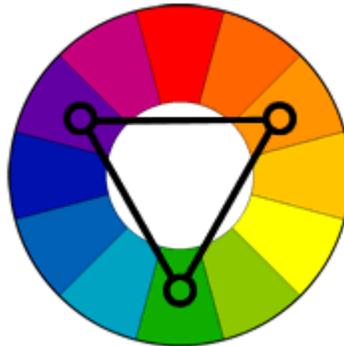
<http://www.tigercolor.com/color-lab/color-theory/color-harmonies.htm>

- Color harmonies are defined by the relation of colors to each other on the color wheel.

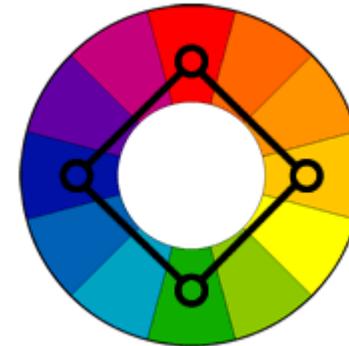
Complementary



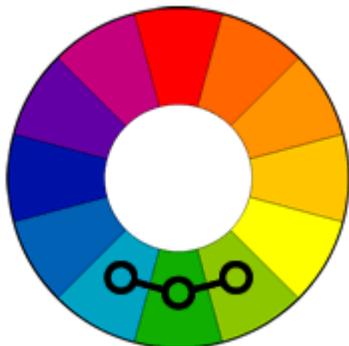
Triad



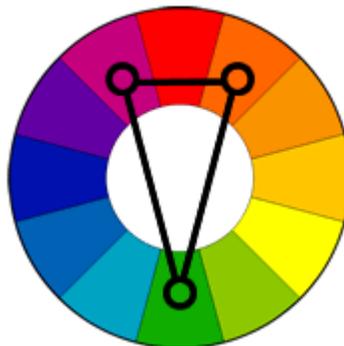
Square



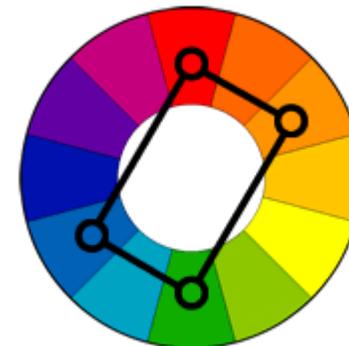
Analogous



Split Complementary

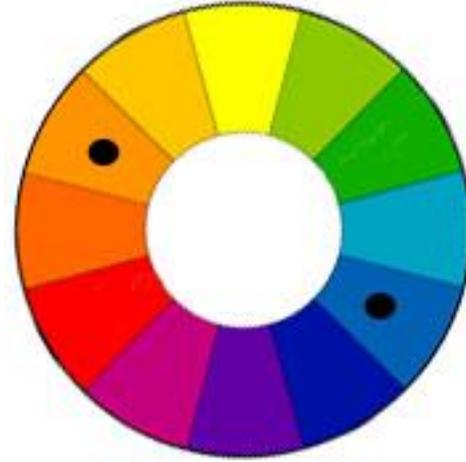


Rectangle (Tetradic)



Complementary

- Colors that are opposite each other on the color wheel
- The high contrast of complementary colors creates a vibrant look especially when used at full saturation. This color scheme must be managed well so it is not jarring.
- Complementary colors are tricky to use in large doses, but work well when you want something to stand out.
- Complementary colors are really bad for text.



Pure Colors

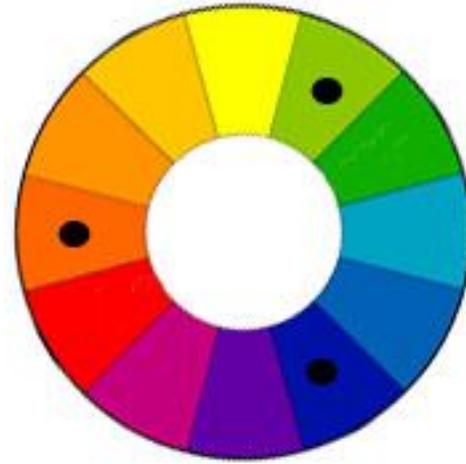


Tone

Tint

Triad

- A triadic color scheme uses colors that are evenly spaced around the color wheel.
- Triadic color harmonies tend to be quite vibrant, even if you use pale or unsaturated versions of your hues.
- To use a triadic harmony successfully, the colors should be carefully balanced - let one color dominate and use the two others for accent.



Pure Colors



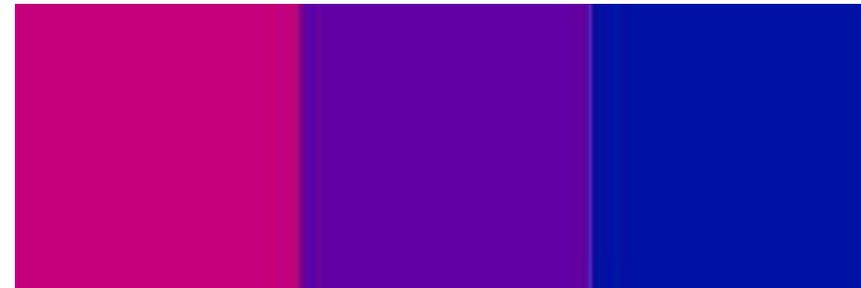
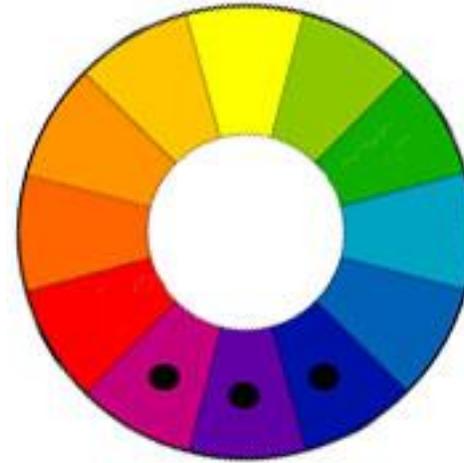
Shade

Tint

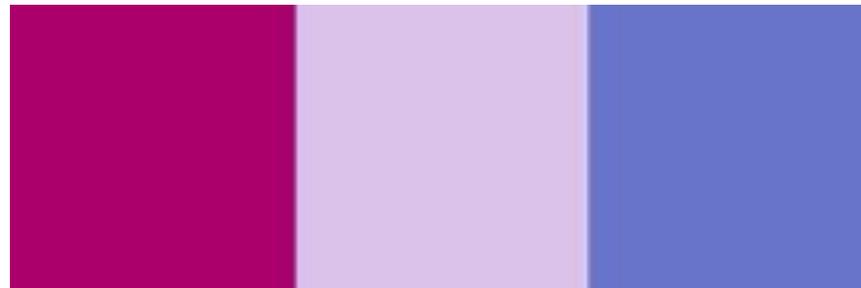
Tone

Analogous

- Analogous color schemes use colors that are next to each other on the color wheel. They usually match well and create serene and comfortable designs.
- Analogous color schemes are often found in nature and are harmonious and pleasing to the eye.
- Make sure you have enough contrast when choosing an analogous color scheme.
- Choose one color to dominate, a second to support. The third color is used (along with black, white or gray) as an accent.



Pure Colors



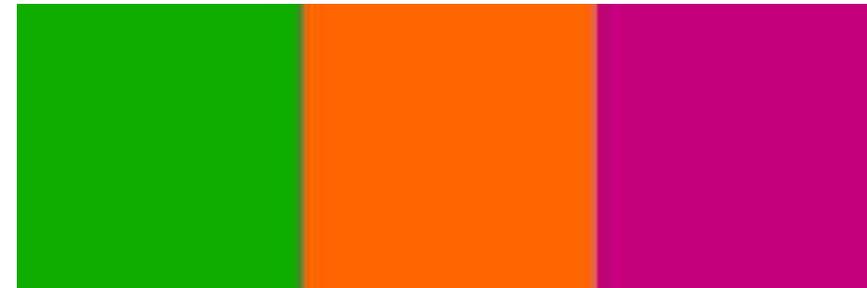
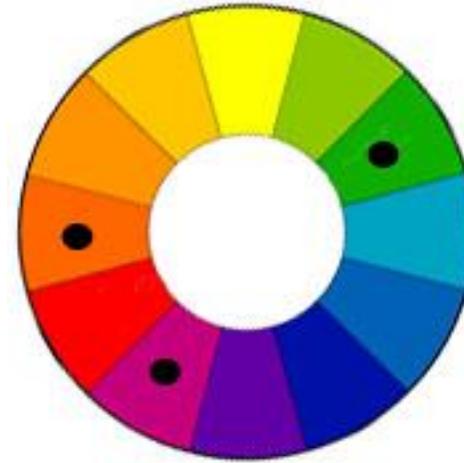
Shade

Tint

Tone

Split Complementary

- The split-complementary color scheme is a variation of the complementary color scheme. In addition to the base color, it uses the two colors adjacent to its complement.
- This color scheme has the same strong visual contrast as the complementary color scheme, but has less tension.
- The split-complimentary color scheme is often a good choice for beginners, because it is difficult to mess up.



Pure Colors



Tint

Tint

Shade

AAUW Branding Guide

AAUW Branding Guide – Color Standards

- Implementing a strong color palette will enhance the impact of the AAUW brand.
- Used consistently over time, colors become associated with organizations.
- Consistent use of the AAUW color palette will make us more recognizable and our communications more uniform.
- Colors provide a strong visual link across a wide range of applications.

AAUW Color Palette

- Two main colors
- Six secondary colors
- None are pure hues from the color wheel
- All are shades or tones
- **The HEX codes are incorrect in the branding guide!**



AAUW Color Palette – use these HEX codes!

Leaf Green

R92 G135 B39

HEX 5C 87 27



Admiral Blue

R23 G74 B124

HEX 17 4A 7C



Paprika

R227 G111 B30

HEX E3 6F 1E



Perfect Ruby

R163 G0 B70

HEX A3 00 46



Honey Gold

R222 G180 B8

HEX DE B4 08



Eggplant

R92 G41 B70

HEX 5C 29 46



Fern

R69 G90 B3

HEX 45 5A 21



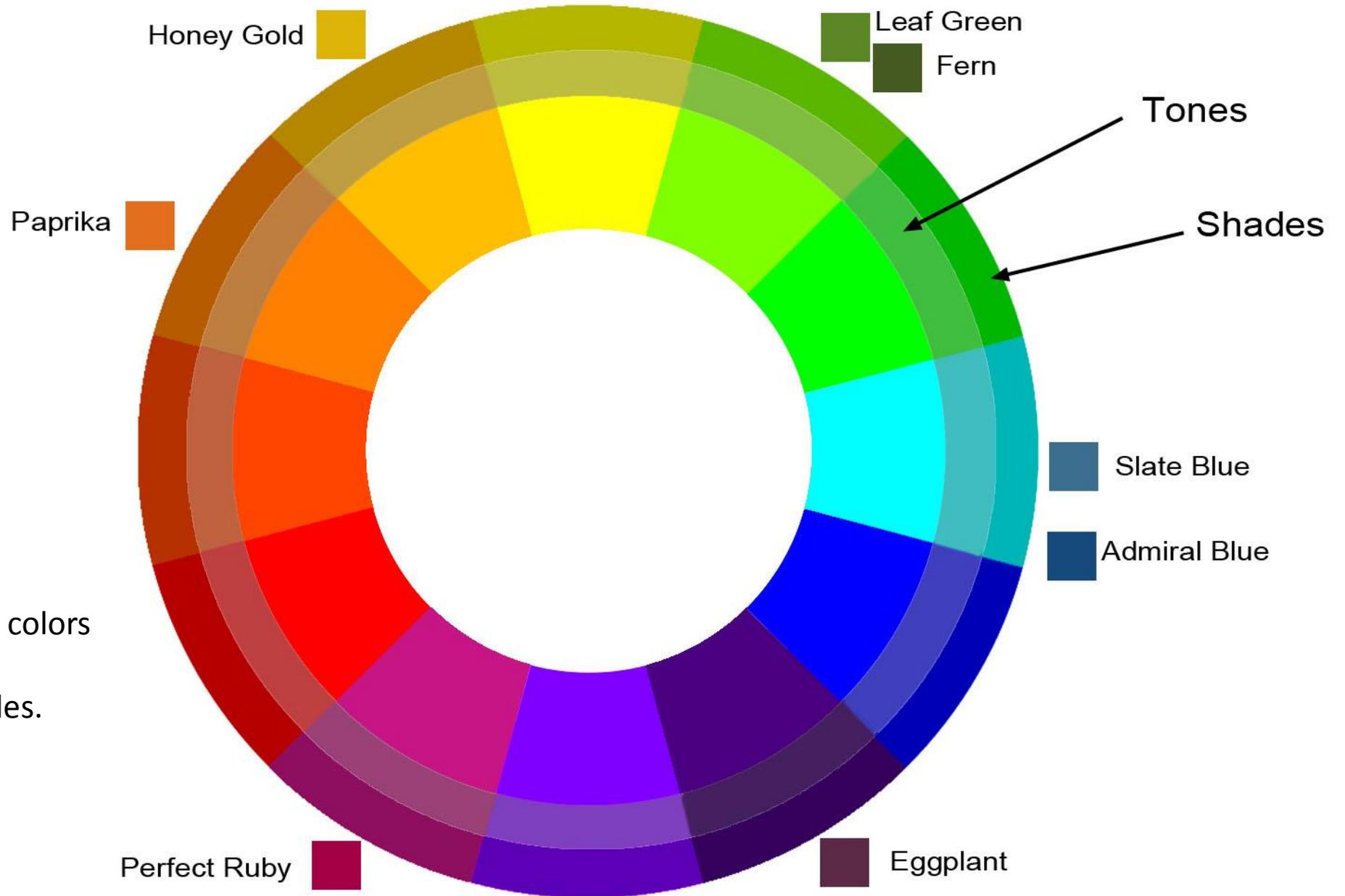
Slate Blue

R59 G110 B143

HEX 3B 6E 8F



AAUW Colors on the Wheel



- None of the AAUW colors are “pure” hues
- All are tints or shades.

How does AAUW use color on websites?

- National: <http://www.aauw.org/> (large patches of color)
- States:
 - <http://aauw-va.aauw.net/>
 - <http://aauw-fl.aauw.net/>
 - <http://www.aauwarizona.org/> (gray background)
- Site Resources Branches: (green background)
 - <http://conway-ar.aauw.net/> (typical)
 - <http://southeastvalley-az.aauw.net/> (clashing colors)
 - <http://www.aauwprescott.net/> (more bold in sidebar)

Website Color Harmonies



AAUW Prescott Branch



- HOME
- ABOUT US
- CALENDARS
- JOIN**
- INTEREST GROUPS
- PUBLIC POLICY
- COMMUNITY ACTION
- FUNDS

Membership Information

Dear Prospective Member,

If you hold an associate's, bachelor's, or higher degree from a regionally accredited college or university, you can join AAUW. Your membership dues cover membership in the Prescott Branch and the state and national organization.

Yearly dues (July 1-June 30th) are \$85. If you join between Jan 1 and March 15th, dues are half price - \$42.50. If you join after March 15th, dues of \$85 cover membership until July 1st of the following year. \$46 of the annual dues is tax deductible.

If you are interested but would like time to to look us over, you may attend two monthly general meetings before joining. If you would like to attend interest group meetings, that can be arranged by contacting us. prescottaauwbranch@gmail.com

If you would like to join our branch, there are 2 steps to the process:

1. Click on [online membership application](#). (recommended)
2. Mail your dues check payable to *AAUW-Prescott Branch* to:

AAUW Prescott
P.O. Box 10881
Prescott, AZ 86304

OR

1. Click on [printable membership application](#); Print it, fill it out, and
2. Mail the completed application along with your dues check payable to *AAUW Prescott Branch* to the above address.

Current News & Events

- Let's Go: Legislative Day Feb 23rd
- Good Times at New Member Coffee
- Sign Up for Wine Tour!
- Volunteer to Help with Tech Savvy
- Spring Conference April 2nd
- AAUW AZ News - Jan 2016

Newsletters

- Jan-Feb 2016 Newsletter
- Archived Newsletters

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Join AAUW Prescott

Calendar

Click to Display Full Month Calendar

Today

- Monday, February 8
 - 1:00pm Genealogy Grou
- Tuesday, February 9
 - 5:00pm Movie Group
- Thursday, February 11
 - Sister-to-Sister

+ Google Calendar

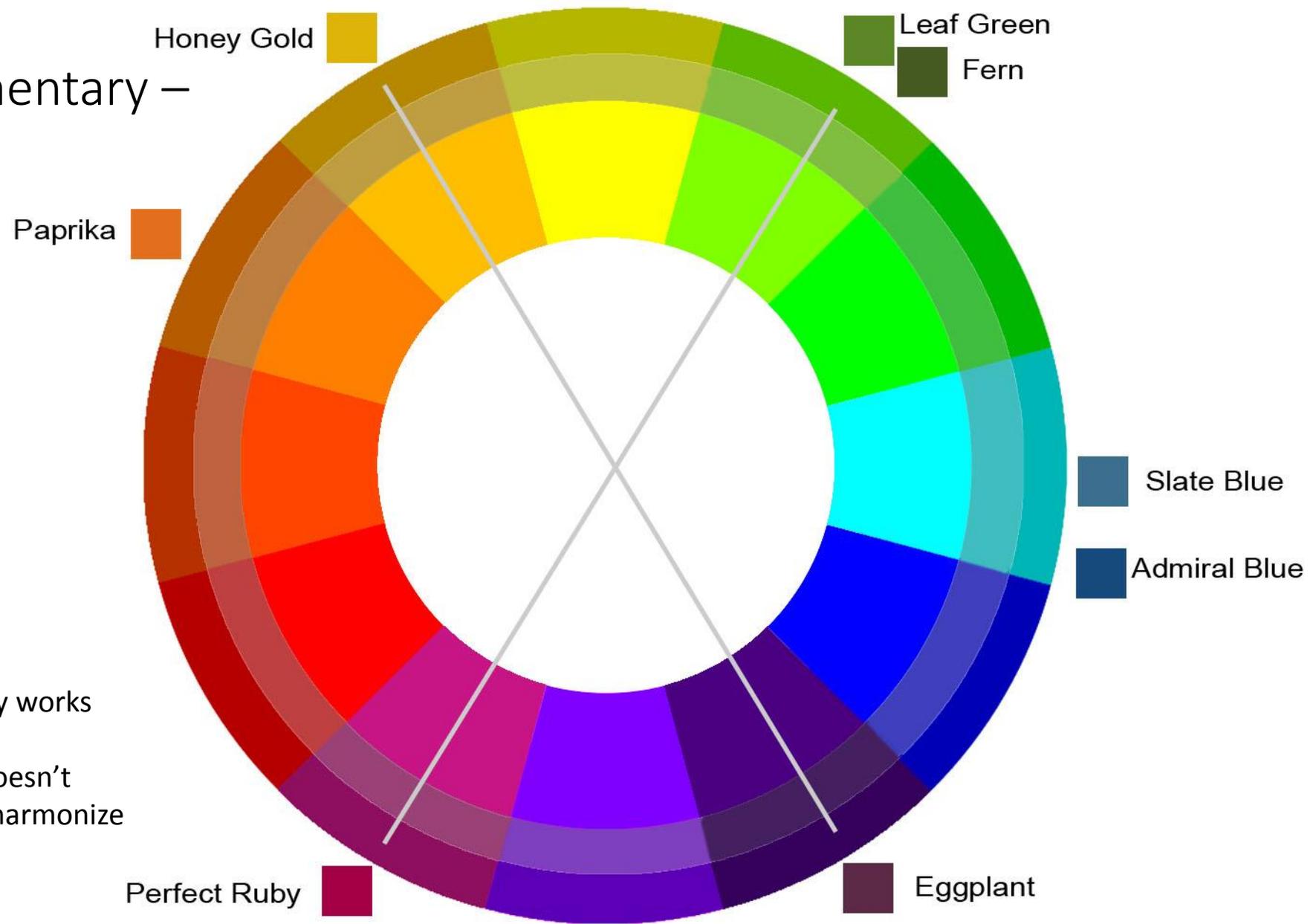
AAUW Links

- AAUW Arizona
- AZ Sun Winter 2016 Issue

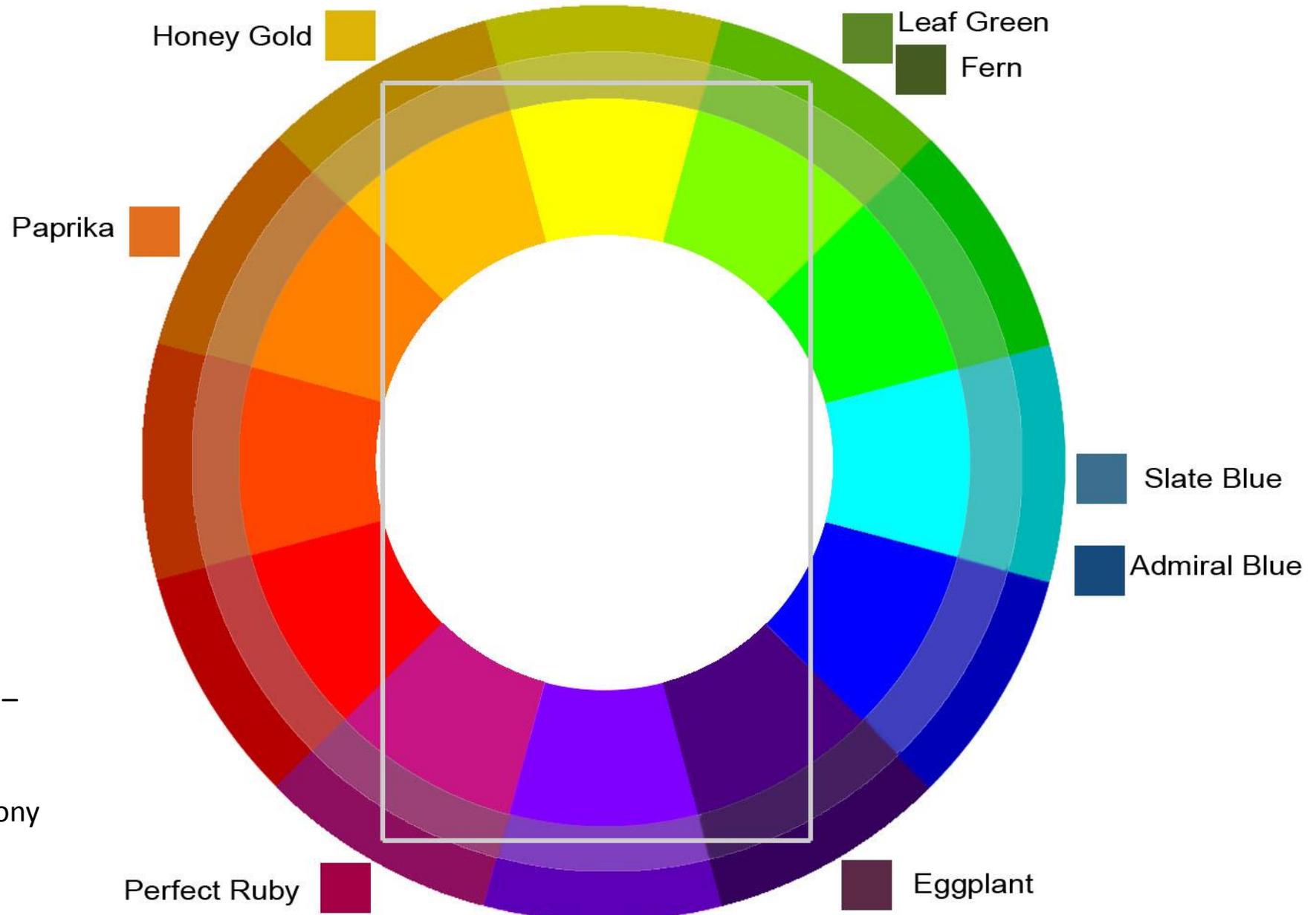
Color Harmonies using the AAUW Palette

- Leaf Green is the dominant color on our website
 - The side panels are full strength Leaf Green hue
 - The side panels are the largest area on a wide screen display
- To be in harmony, our website colors should work with Leaf Green
- Other Colors on all of our pages in smaller (less significant) amounts are:
 - Admiral Blue (logo)
 - Eggplant (navigation)
 - Perfect Ruby, tone (sidebar navigation)

Two Complementary – harmonies



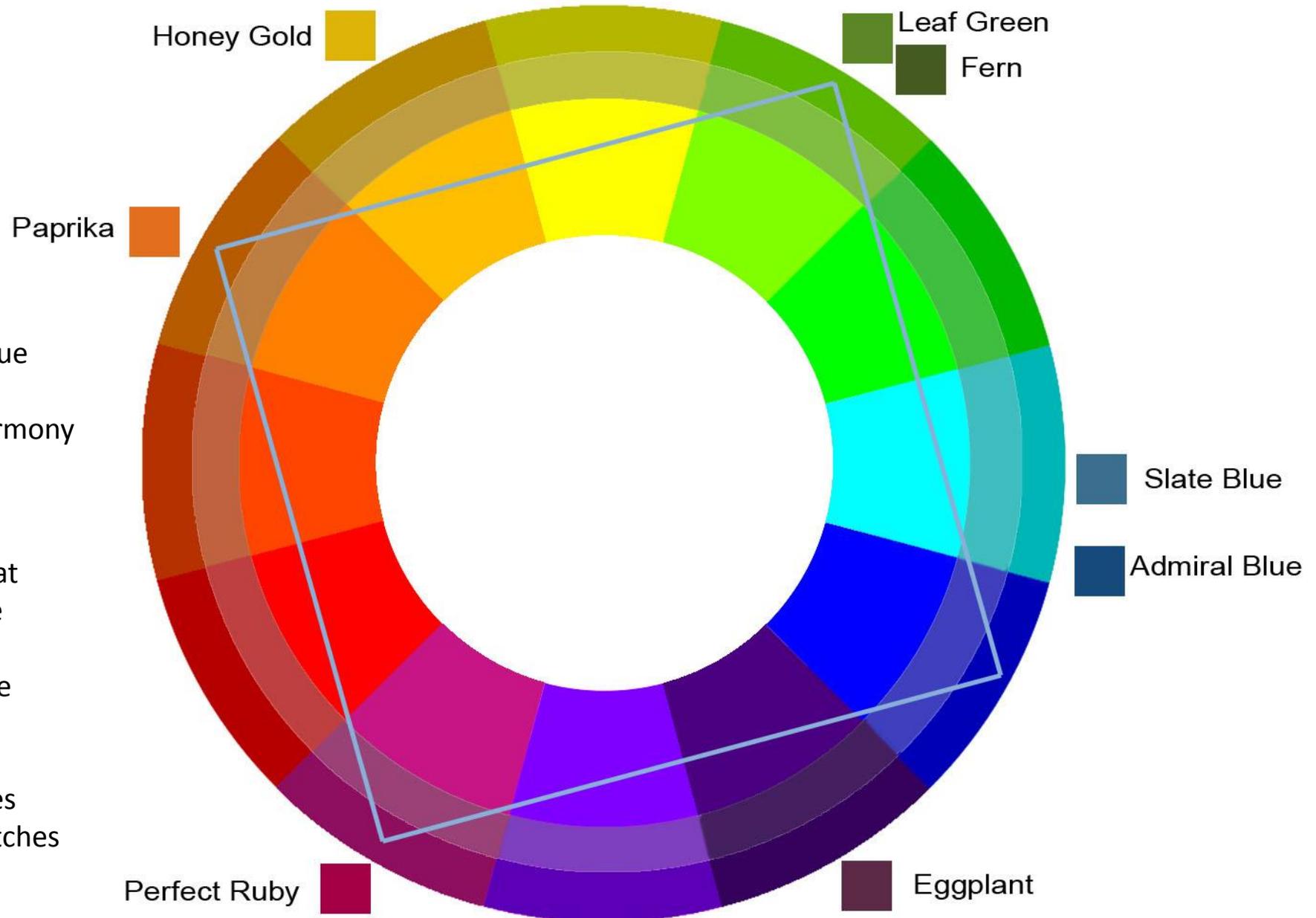
Tetradic



Leaf Green – Honey Gold –
Perfect Ruby – Eggplant

This is a good basic harmony
to use on our web pages

Square (almost)

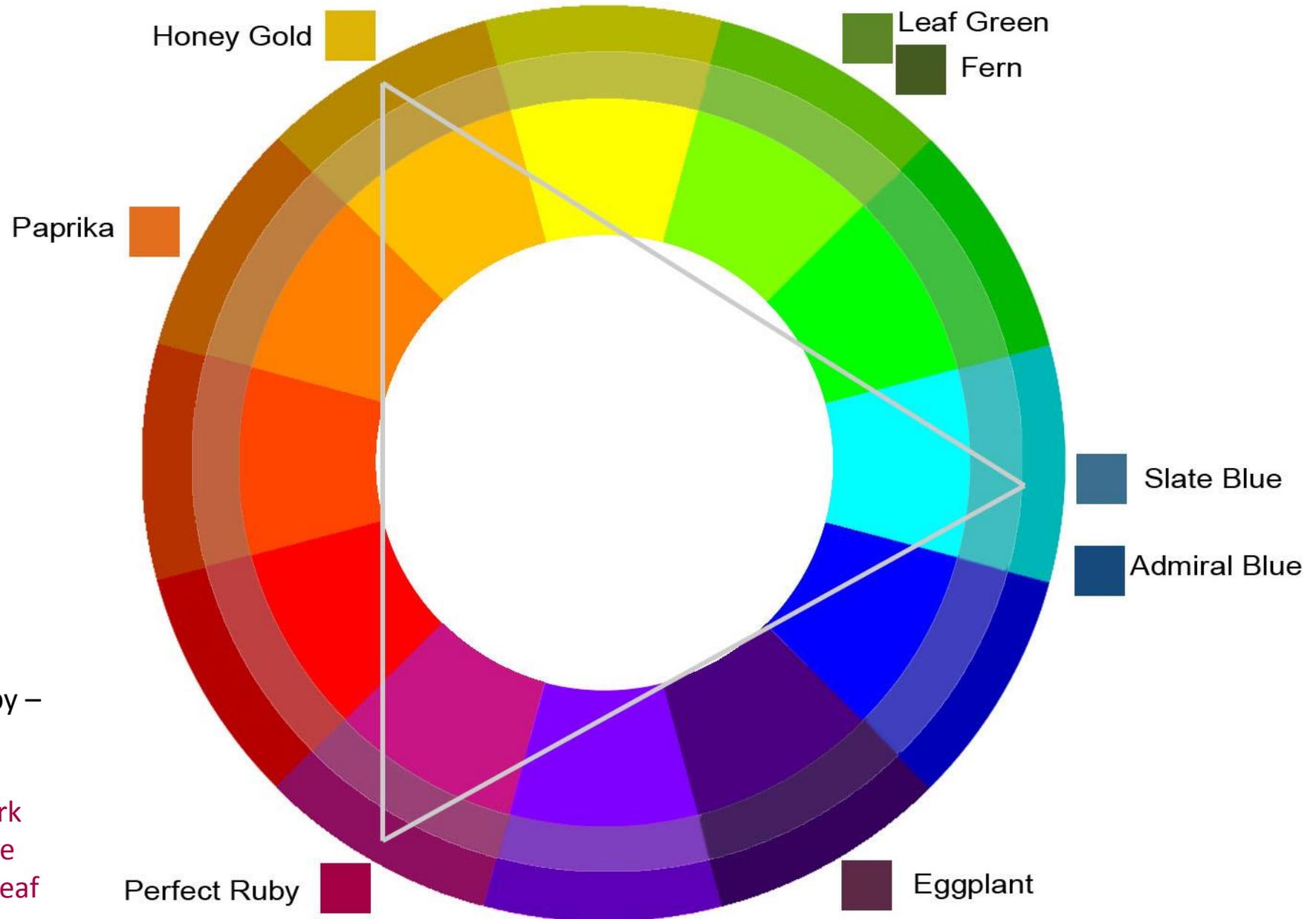


Leaf Green – Paprika –
Perfect Ruby – Admiral Blue

This is a another basic harmony
to use on our web pages

This harmony assumes that
Admiral Blue is in the blue
family, not blue-green. In
reality it is close to the line
between the two hues.
If used it should be used
In small amounts of shades
or tones, not in large swatches
of color.

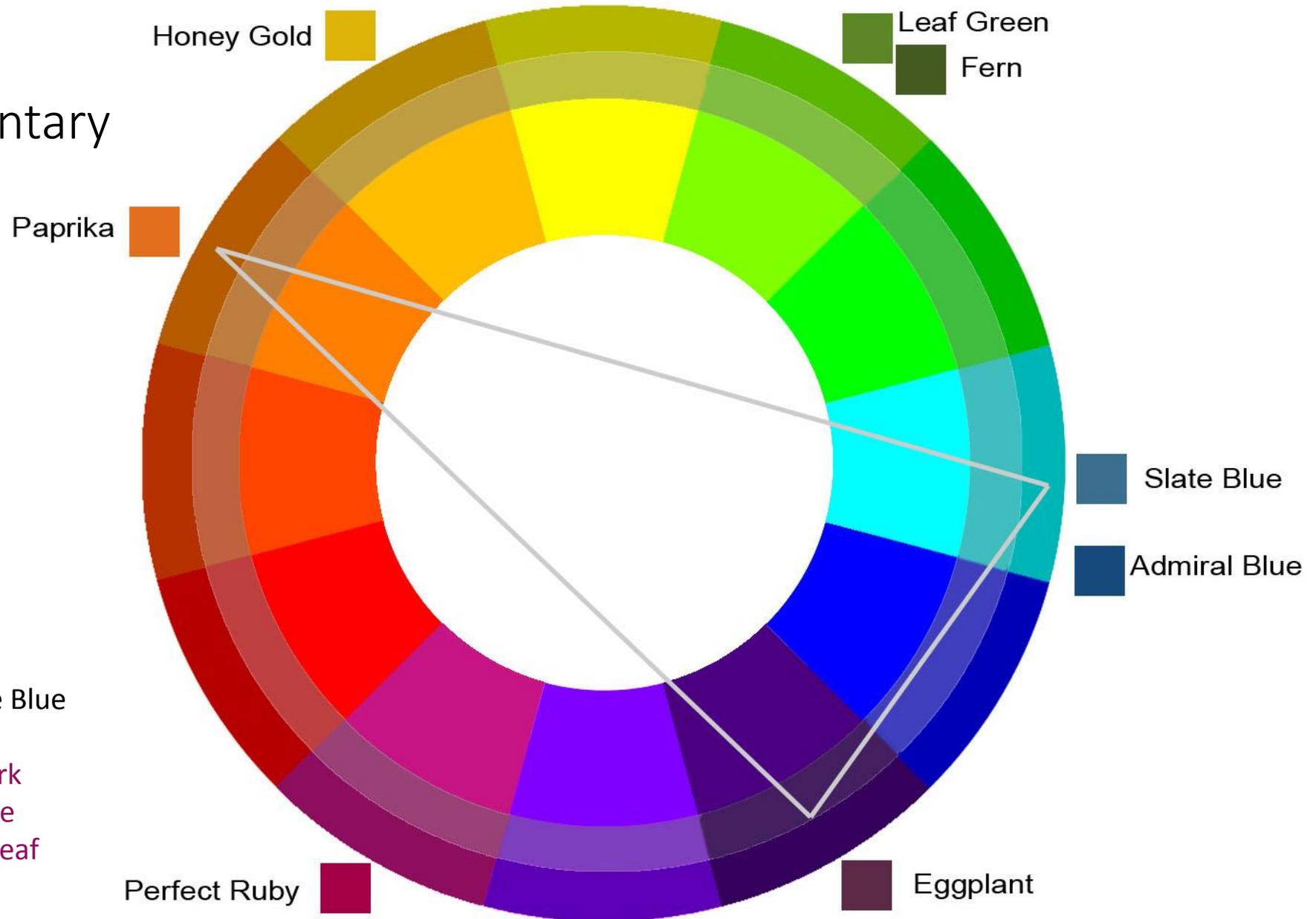
Triad



Honey Gold – Perfect Ruby –
Slate Blue

This harmony will not work
on our web pages because
doesn't harmonize with Leaf
Green.

Split Complementary



Paprika – Eggplant – Slate Blue

This harmony will not work on our web pages because doesn't harmonize with Leaf Green.

Analogous –
none

Paprika

Honey Gold

Leaf Green
Fern

Tones

Shades

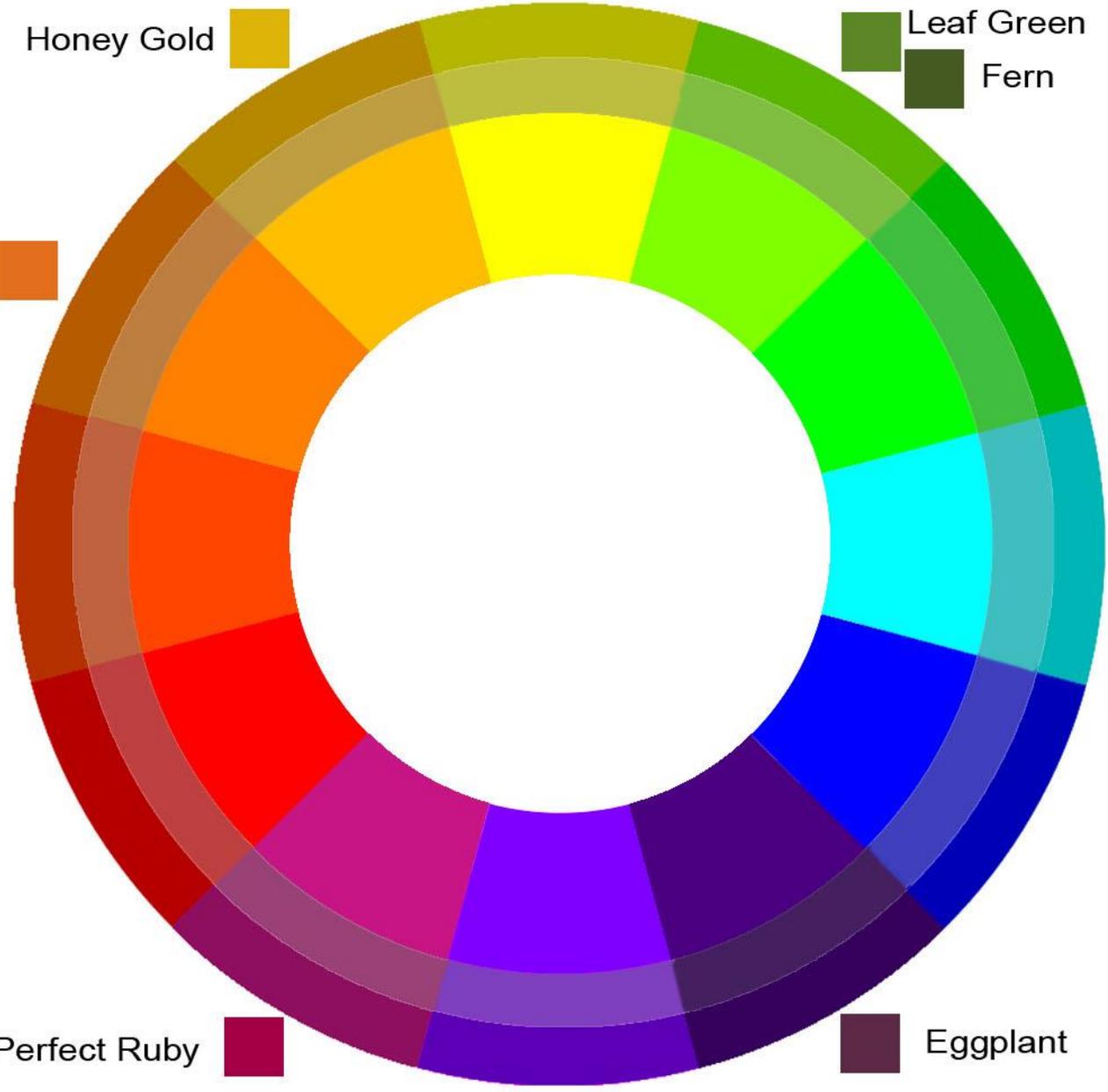
Slate Blue

Admiral Blue

There is no set of three
adjacent AAUW colors.

Perfect Ruby

Eggplant



Analogous Color Scheme



- Our previous banner was an analogous harmony which included a color not in the palette
 - Yellow-green
 - Green (not in AAUW palette)
 - Blue-Green
- Unfortunately, no other colors harmonize with an analogous color scheme

Two example webpage
harmonies that work



HOME ABOUT US CALENDARS JOIN INTEREST GROUPS PUBLIC POLICY COMMUNITY ACTION FUNDS

Color Theme – Tetradic

Tetradic Harmony

Leaf Green, Fern, Harvest Gold, Perfect Ruby, Eggplant

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a odio arcu. Suspendisse vitae convallis dui. Phasellus congue quam nec consequat commodo. Proin vel varius ante, in fringilla mauris. Nulla rhoncus orci ac nulla finibus, sed efficitur nunc dignissim. Nunc sit amet accumsan massa.



Aenean interdum mollis mauris in ultricies. Maecenas ac bibendum mauris. Vestibulum sodales neque vel orci dictum dictum.

Integer ut viverra elit, in sagittis lectus. Nullam a felis arcu. Nunc quis tristique nisl. Pellentesque pellentesque consectetur ultrices. Vestibulum faucibus odio id lacus luctus faucibus. Ut nec aliquam elit. Sed mi odio, fermentum ut eleifend eget, ultricies vitae erat. In nec est eget ante dapibus dapibus in vitae tellus.

Integer vel neque nec commodo!

Donec non placerat mauris. Quisque nec odio eu ipsum congue vestibulum. Maecenas quis leo ornare, semper ligula vel, feugiat justo. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Nullam scelerisque enim et odio euismod, et luctus risus placerat. Ut mi augue, convallis eu nulla pharetra, luctus interdum ante. In hac habitasse platea dictumst. Quisque tristique suscipit lorem. Donec rhoncus nulla cursus, mattis leo quis,

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Sister-In-Sister

+ Google Calendar

AAUW Links

AAUW Arizona
AZ Sun Winter 2016 Issue
AAUW National
AAUW National on

Contact Us

Tetradic:

Leaf Green – Honey Gold –
Perfect Ruby – Eggplant

Color harmony works well
with image



Color Theme – Square Square Harmony

Leaf Green, Paprika, Perfect Ruby, Admiral Blue



Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce a odio arcu. Suspendisse vitae convallis dui. Phasellus congue quam nec consequat commodo. Proin vel varius ante, in fringilla mauris. Nulla rhoncus orci ac nulla finibus, sed efficitur nunc dignissim. Nunc sit amet accumsan massa. Aenean interdum mollis mauris in ultricies. Maecenas ac bibendum mauris.

Vestibulum sodales neque vel orci dictum dictum.

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Sister, In, Sister

Google Calendar

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- AAUW Arizona
- AAUW National
- AAUW National on 

Contact Us

Square:

Leaf Green– Paprika –
Perfect Ruby – Admiral Blue

Images, background, and fonts
create a unified whole

Color Harmony Pages

- Tetradic Harmony Example Page - <http://www.aauwprescott.net/practice-pages/training-pages/color-theme-tetradic/>
- Square Harmony Example Page- <http://www.aauwprescott.net/practice-pages/training-pages/color-theme-square/>

Using the Eyedropper Tool

- With Firefox
 - Click Menu Icon
 - Click Developer
 - Click Eyedropper
 - Put color over desired color pixel and click mouse or write down Hex code
- Color Palette with tints, shades and tones - <http://www.aauwprescott.net/practice-pages/training-pages/color-palette/>

Another way to create tints, shades and tones for the website

- Use <http://www.colorpicker.com>
 - Type in an AAUW color HEX code
 - Drag the bubble to the upper left corner for tints
 - Drag the bubble down for shades
 - Drag the bubble left for tones
 - Record the resulting HEX code for your selection
 - All hues in the box are variations of the AAUW hues and will thus harmonize in the same way
- | | |
|----------------|---------|
| • Leaf Green | #5b8727 |
| • Admiral Blue | #174a7c |
| • Paprika | #e36f1e |
| • Perfect Ruby | #a30046 |
| • Honey Gold | #deb408 |
| • Eggplant | #5c2946 |
| • Fern | #455a21 |
| • Slate Blue | #3c6e8f |

Slate Blue 3c6e8f

HEX Code

3C6E8F

Pure color

The image shows a color picker interface for the color Slate Blue. It features a large square color gradient with a central point labeled "Slate Blue". Three arrows originate from this point: one pointing up and to the left labeled "Tints", one pointing left labeled "Tones", and one pointing down labeled "Shades". To the right of the gradient is a vertical color bar with a slider. Below the color bar are input fields for color values: H: 204, S: 58, B: 56, R: 60, G: 110, and B: 143. A button labeled "Add to My Colors" is located at the bottom right of the interface.

<http://www.colorpicker.com/>