

# CHROMATICA

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a color companion  
for designers  
of any skill level

# CHROMATICA

A Shanty Studios Publication

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# CONTENTS



Introduction .....	4
Color .....	6
Models .....	8
Light.....	10
Temperature.....	12
Gamuts.....	14
Red .....	16
Orange.....	18
Yellow .....	20
Green .....	22
Blue .....	24
Purple .....	26
Black .....	28
White.....	30
Tertiary.....	32
Value.....	34
Hierarchy .....	36
Palettes.....	38
Photos.....	40
Resources .....	42

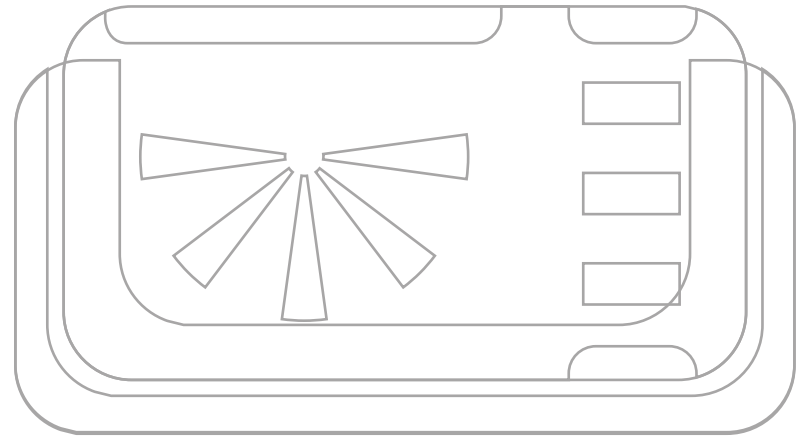
# INTRODUCTION

Welcome to the world of Chromatica! This guide is an introduction to color relationships, specifically those of color theory, light, shadow, and the interactions between colors. Chromatica is a teaching tool to enable you, the reader, to understand how different colors work together.

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This booklet and the tools featured within will help you understand the objective relationships between colors. By visualizing color relationships at your own fingertips, and understanding the objective nature of color, a subjective understanding can be built as well. The tool on the right will help you with not only matching colors and temperatures, but also with seeing how colors shift and change as you go through each section.

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Load the different inserts on each page and move them to see live changes in color relationships and palettes. By mixing the types of inserts that go together well, such as one from the red page and one from the green page, all in the context of the color models covered in the sections ahead, you will begin matching colors! Don't be afraid to see what kinds of color combinations you can make!

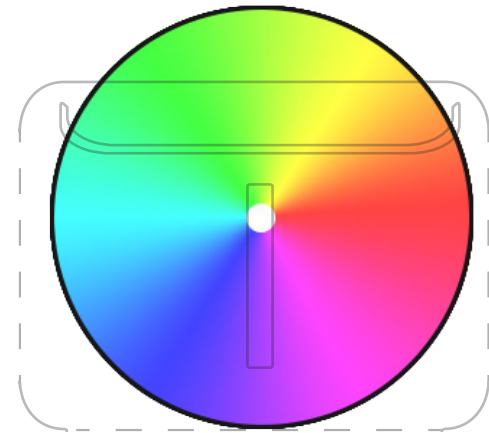
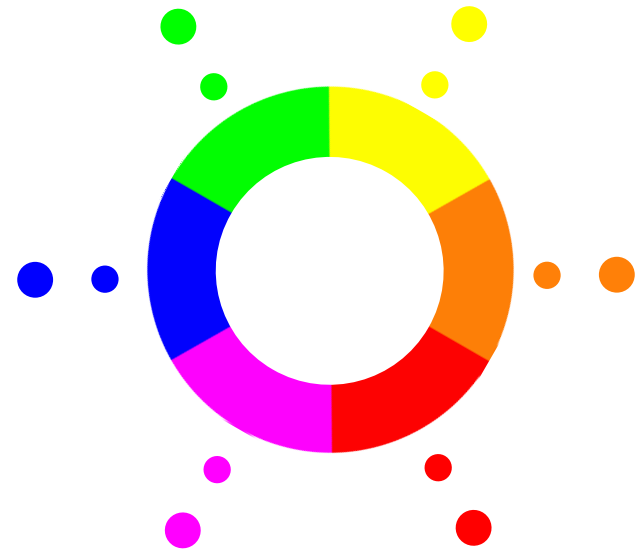
# COLOR

Colors can be categorized on a wheel, as shown on the right. This can be divided into cool colors and warm colors by splitting it vertically. Blue, yellow, and red are all 'primary colors' that cannot be made by mixing. Colors made by mixing two primary colors are called 'secondary colors'.

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Chromatica is not intended to be an exact reference guide for colors, but rather provide a simplified way to understand base colors, specifically the colors of purple, blue, green, yellow, orange, and red. For the sake of this guide, black and white will also be referred to as colors. Each color has unique emotional and cultural meanings. All of these colors are covered in the sections ahead, as well as their relations with each other.

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# MODELS

Color and color theory begin with an objective understanding of color. These models shape how basic color combinations have functioned since the dawn of humanity, and they are a safe place to begin when it comes to understanding how each color works together with another color.

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The three basic models are as follows:

**Complimentary Colors** - Two colors that are directly across one another on the color wheel.

**Analogous Colors** - Two or more colors that are directly next to each other on the color wheel.

**Triadic Colors** - A group of three colors that form a large triangle together on the wheel, spaced evenly apart.

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The Basic Color Wheel



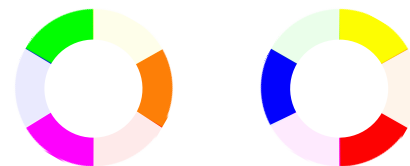
Complimentary Models



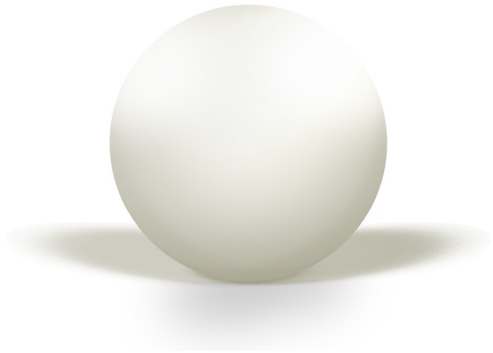
Analogous Models



Triadic Models



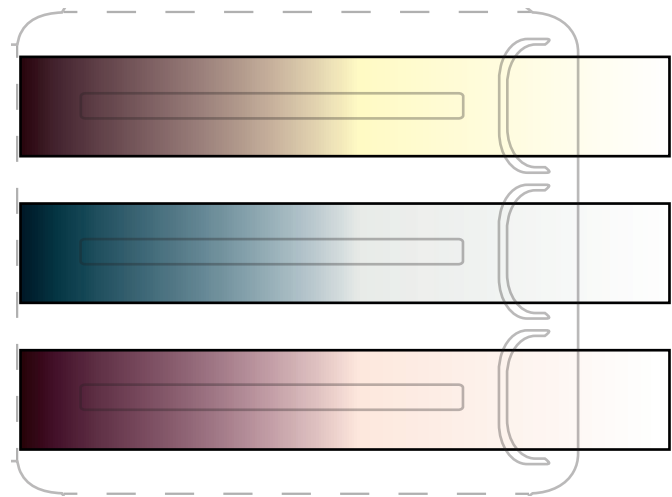
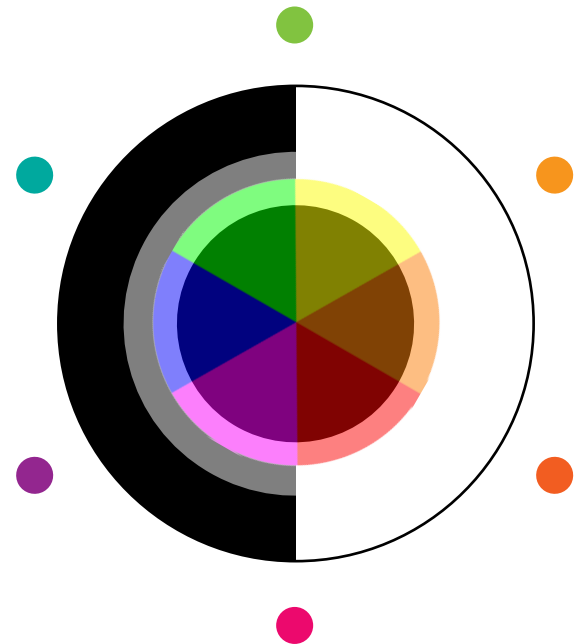
# LIGHT



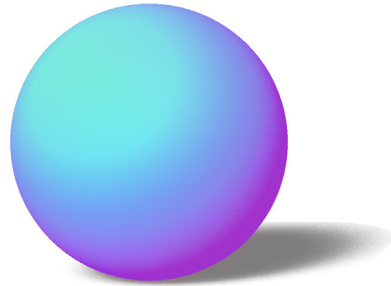
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Light is integral to color and vision, and the presence of light is what creates shadow. Each type of light source is different, and will cast a different type of lighting on a subject. Lighting can be tinted, have different levels of strength, and alter perceived colors. Shading is also integral to capturing form and depth. Balancing highlights and shadows within a work can help give substance, creating the illusion of a constructed space.

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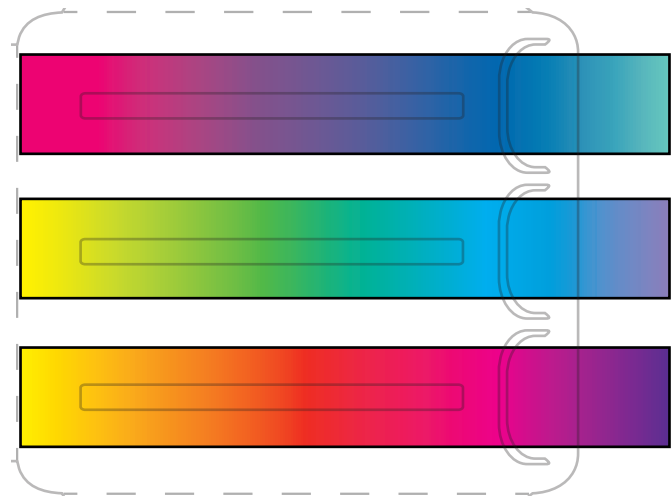
# TEMPERATURE



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Each color has a certain value of temperature. This can range from hot, cold, or anything in-between. Some colors have a neutral temperature value, being neither hot nor cold. Temperature can affect how a subject acts within a space, as warmer colors protrude in visual space, and cooler colors recede in visual space. Adding cool highlights and warm shadows to a subject can give it a dream-like appearance.

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# GAMUTS

A gamut is the term used to define color outputs and color spaces. As digital media and print media display colors differently, the exact colors they produce are not exactly the same. This booklet has colors listed in hexadecimal (#000000), RGB values, and CMYK values.

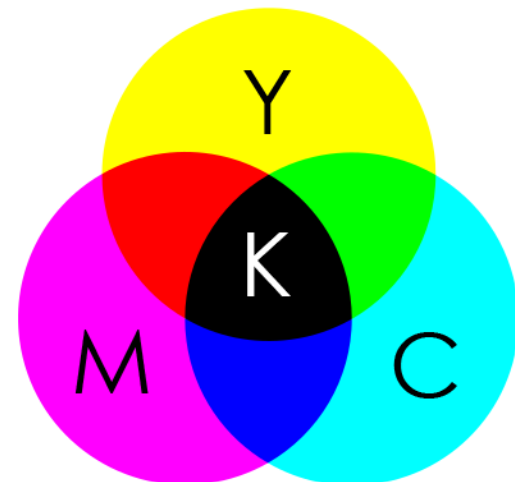
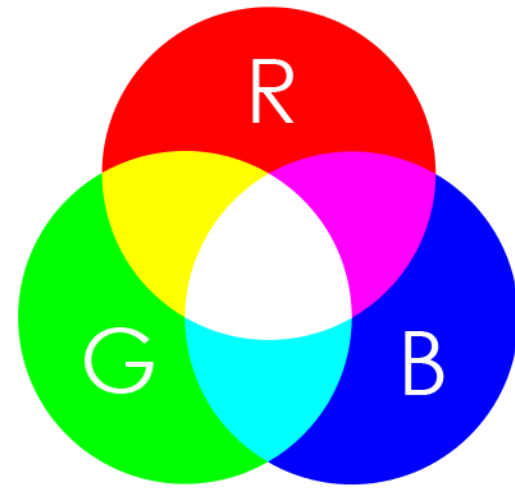
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RGB (red, green, and blue) is additive, with white being produced when all the light values overlap.

CMYK (cyan, magenta, yellow, and key [black]) is subtractive, with black being produced when all the ink types overlap.

RGB color is used by digital, electronic displays, and CMYK color is used by physical, printed media.

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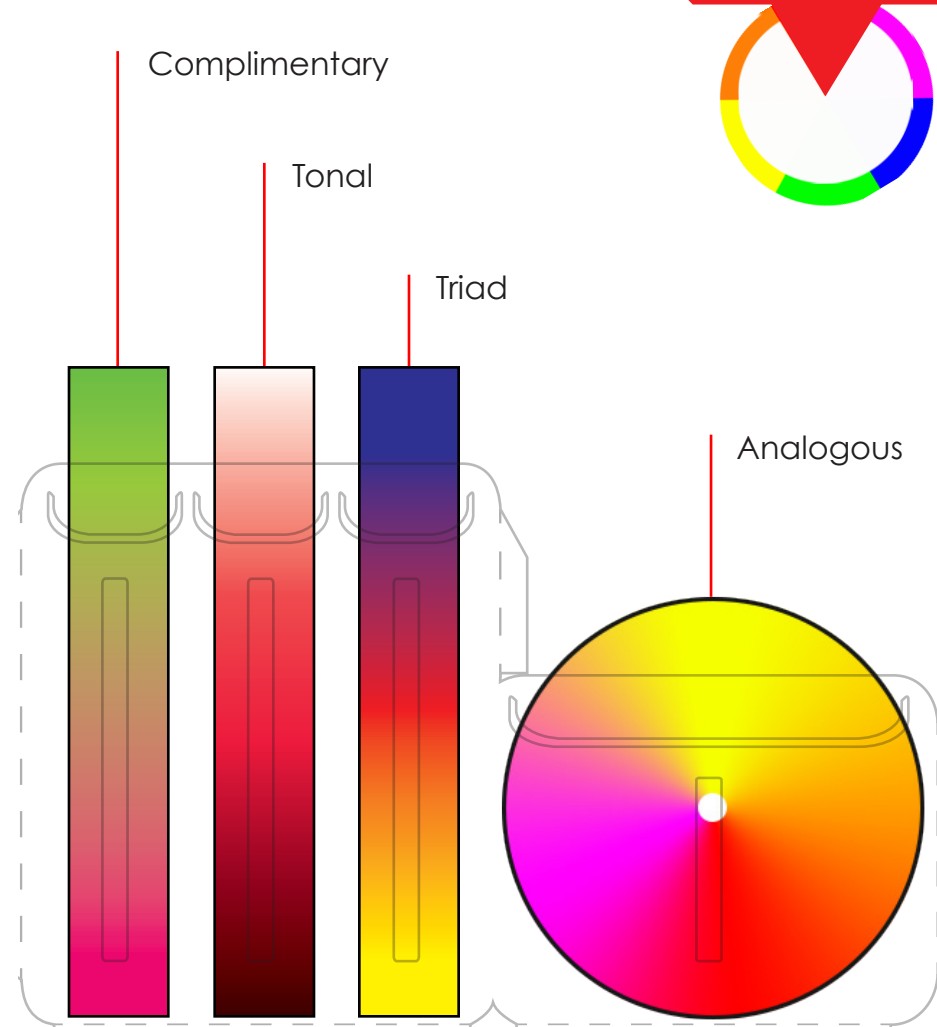
# RED

warm	r232 g53 b109	c2 m93 y32 k0	#e8356d
cool	r241 g106 b111	c0 m56 y54 k5	#f16a6f
dark	r220 g49 b83	c0 m78 y62 k14	#dc3153
light	r255 g128 b170	c0 m50 y33 k0	#ff80aa
neutral	r237 g28 b36	c0 m88 y85 k7	#ed1c24

**Classification** Primary Color  
**Temperature** Warm  
**Associated Emotions** Fervor, Love

A color often associated with life, red is found in both nature and art as a color of warmth, destruction, and love. Full of heat and fervor, pure red acts as both the warmest color and the most visually dominant color.

Africa	Good Luck
India	Beauty
Europe	Revolution
China	Fortune



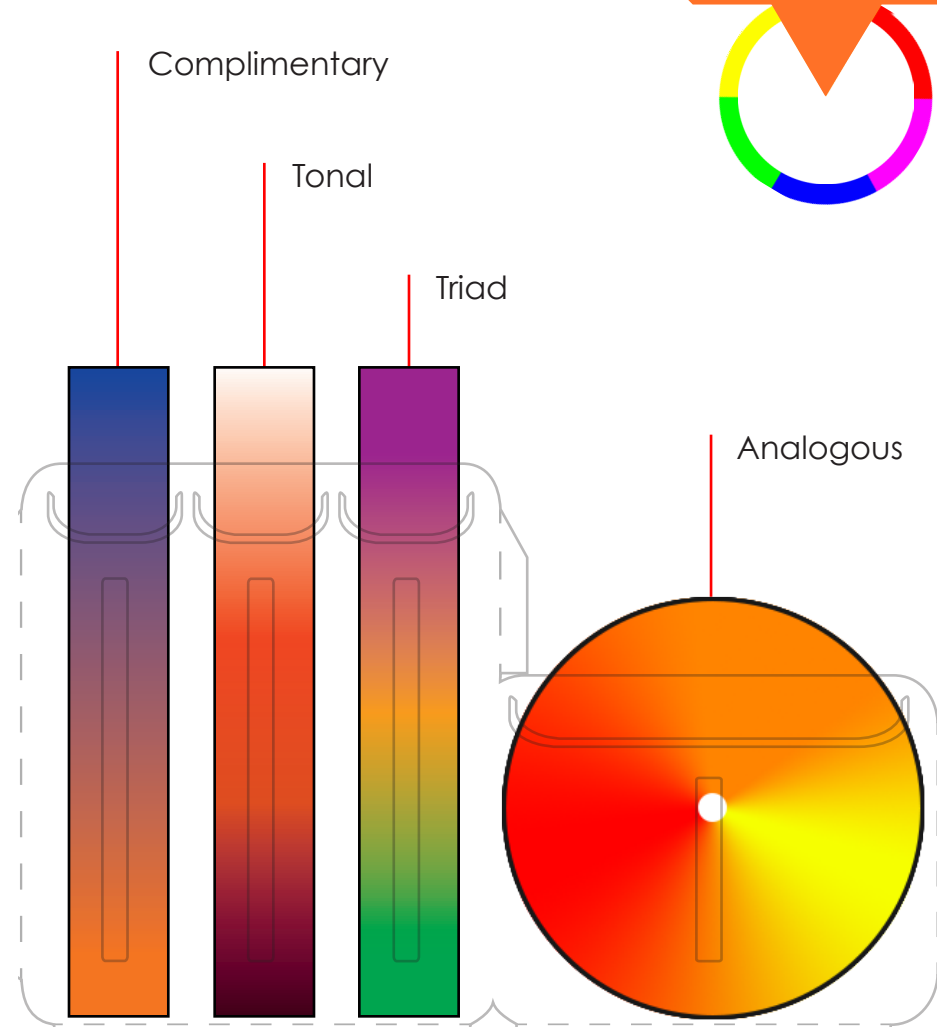
# ORANGE

warm	r255 g71 b15	c0 m72 y94 k0	#ff470f
cool	r255 g121 b75	c0 m53 y71 k0	#ff794b
dark	r211 g94 b10	c0 m55 y95 k17	#d35e0a
light	r255 g149 b88	c0 m42 y65 k0	#ff9558
neutral	r255 g113 b39	c0 m56 y85 k0	#ff7127

**Classification** Secondary Color  
**Temperature** Warm  
**Associated Emotions** Vitality, Enthusiasm

A color often associated with autumn, orange is found in both nature and visual culture as a color of energy and spontaneity. Full of strength, pure orange acts as both a color of warmth, attention, and quality.

India	Balance
China	Kinship
Japan	Energy
Europe	Danger



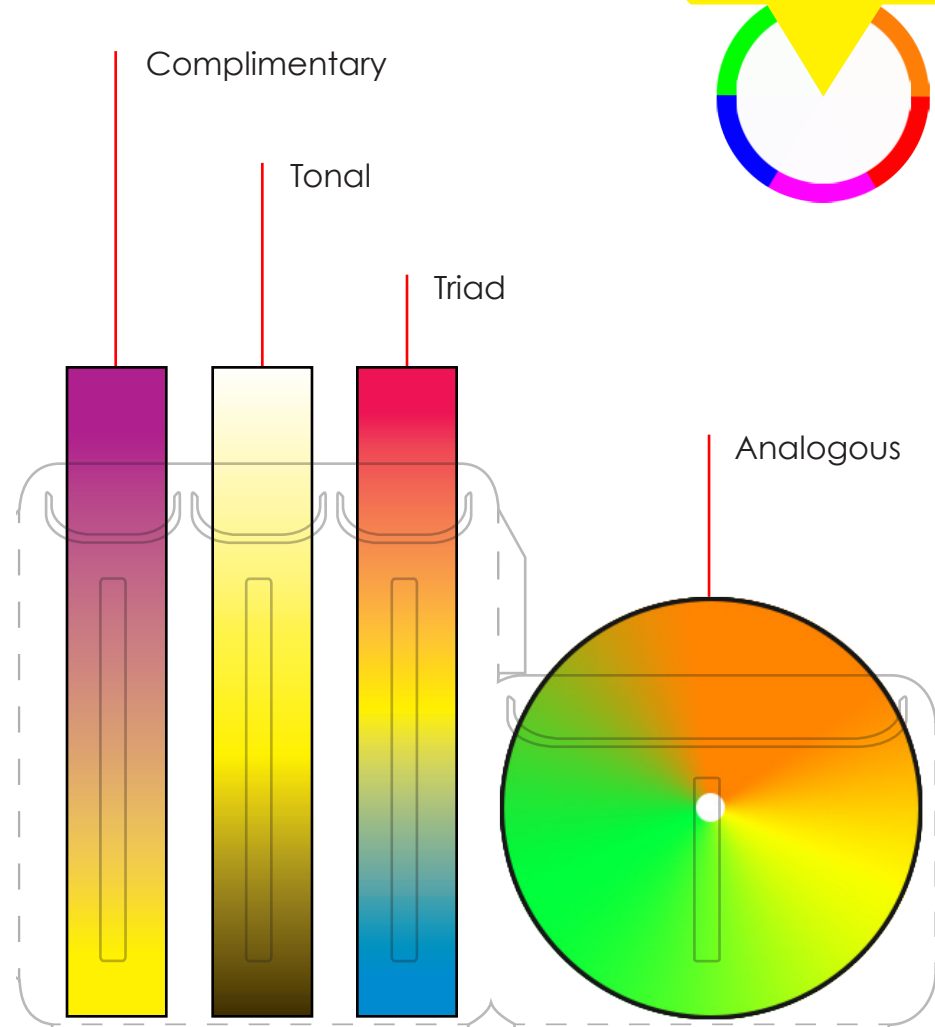
# YELLOW

warm	r255 g224 b0	c0 m12 y100 k0	#ffe000
cool	r234 g255 b46	c8 m0 y82 k0	#eaff2e
dark	r236 g213 b29	c0 m10 y88 70	#ecd51d
light	r255 g255 b141	c0 m0 y45 k0	#ffff8d
neutral	r255 g241 b0	c0 m5 y100 k0	#fff100

**Classification** Primary Color  
**Temperature** Warm  
**Associated Emotions** Happiness, Joy

A color often associated with the sun, yellow is found in both the commercial world and in animals as a color of warning, wealth, and life. Full of vitality and positivity, pure yellow is both energizing and visually striking.

India	Strength
China	Respect
Japan	Courage
America	Peace



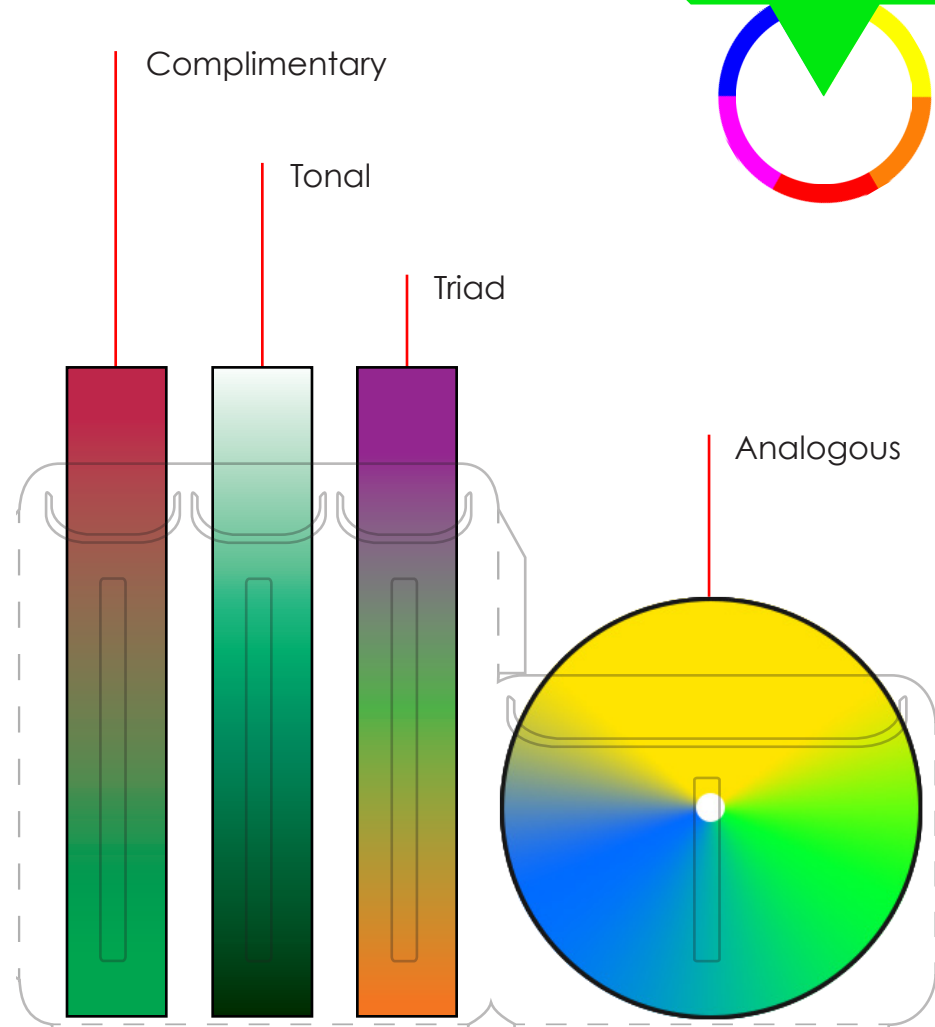
# GREEN

warm	r123 g232 b15	c47 m0 y94 k9	#7be80f
cool	r0 g227 b115	c100 m0 y49 k11	#00e373
dark	r0 g165 b45	c100 m0 y73 k35	#00a52d
light	r104 g255 b104	c59 m0 y59 k0	#68ff68
neutral	r0 g232 b15	c100 m0 y94 k9	#00e80f

**Classification** Secondary Color  
**Temperature** Cool  
**Associated Emotions** Calmness, Purity

A color often associated with nature, green is found in both vegetation and culture as a color of growth, life, and energy. Full of determination and spirit, pure green acts as the color of the environment and freshness.

America	Trust
India	Oneness
Japan	Harmony
China	Growth



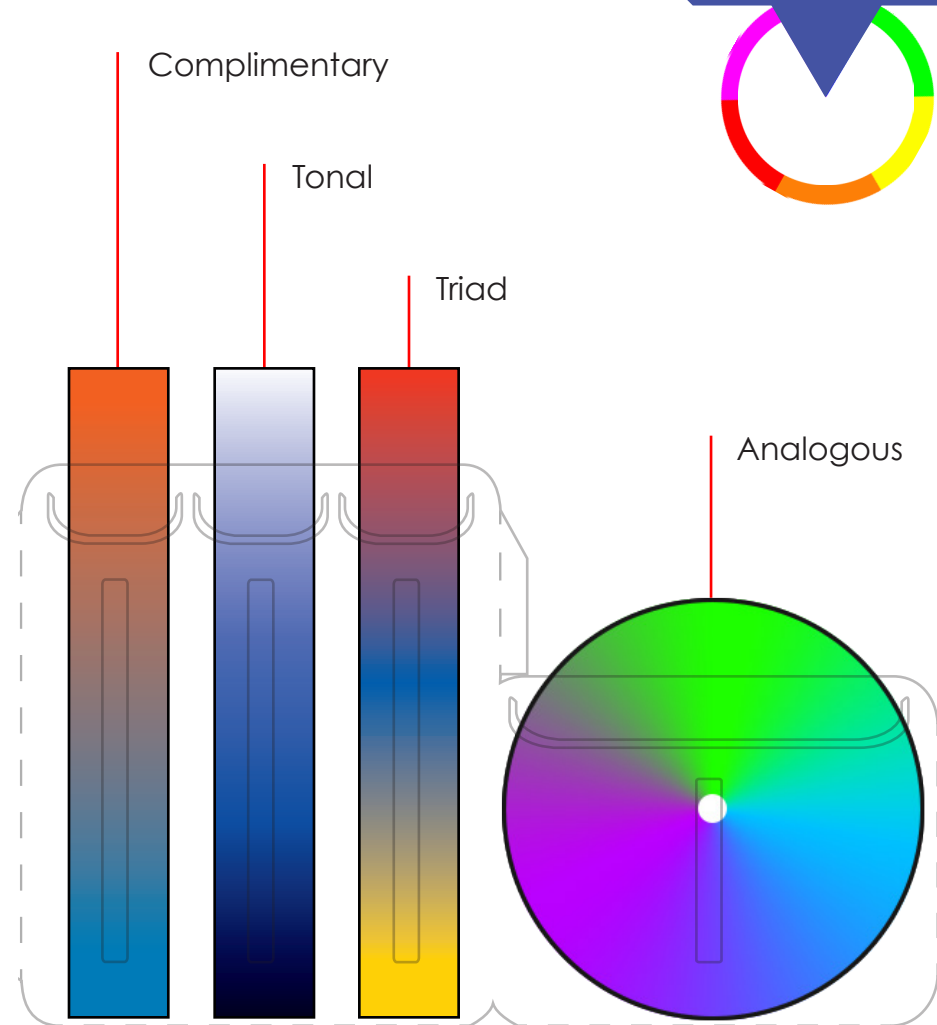
# BLUE

warm	r151 g182 b223	c32 m18 y0 k13	#97b6df
cool	r18 g146 b255	c93 m43 y0 k0	#1292ff
dark	r36 g64 b142	c75 m55 y0 k44	#24408e
light	r69 g207 b242	c71 m14 y0 k5	#45cff2
neutral	r69 g83 b163	c58 m49 y0 k36	#4553a3

**Classification** Primary Color  
**Temperature** Cool  
**Associated Emotions** Hope, Stability

A color often associated with the ocean, blue is found in both nature and science as a color of mystery and beauty. Emanating dignity, pure blue acts as both the coolest color and the most visually subdued color.

America	Royalty
Japan	Technology
India	Communication
China	Wealth



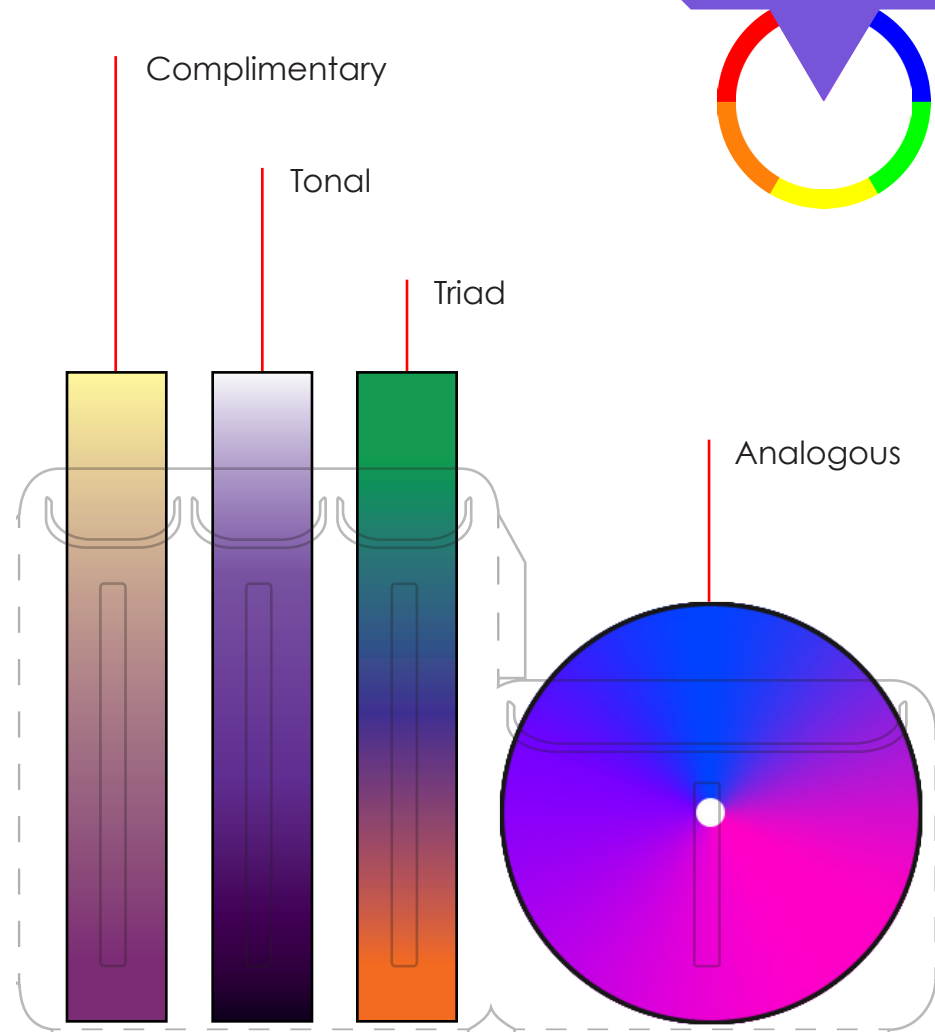
# PURPLE

warm	r154 g85 b217	c29 m61 y0 k15	#9a55d9
cool	r93 g71 b219	c58 m68 y0 k14	#5d47db
dark	r118 g51 b206	c43 m75 y0 k19	#7633ce
light	r151 g145 b220	c31 m34 y0 k14	#9791dc
neutral	r118 g85 b217	c46 m61 y0 k15	#7655d9

**Classification** Primary Color  
**Temperature** Cool  
**Associated Emotions** Tranquility, Mystery

A color often associated with royalty, purple is found in both history and art as a color of class and luxury. Full of serenity, wisdom, and wholeness, pure purple acts as both one of the most regal and authoritative of colors.

America	Romance
India	Intuition
Japan	Wisdom
Europe	Decadence



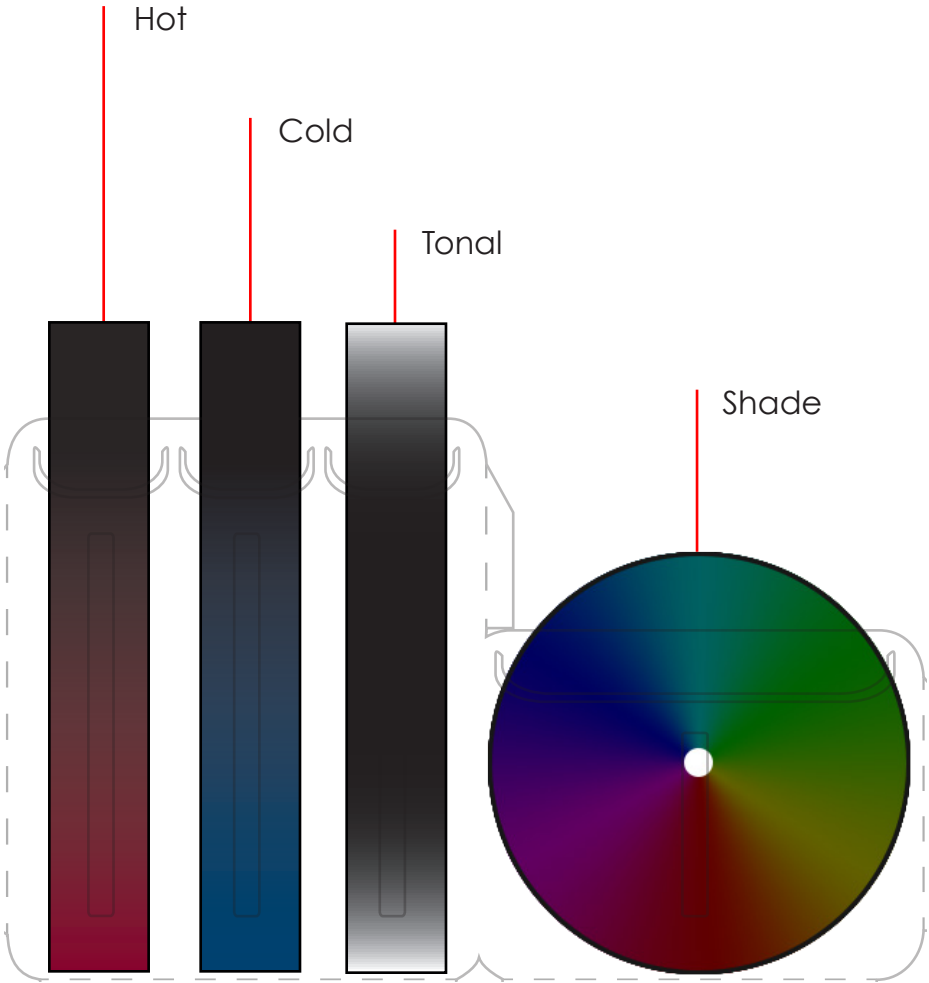
# BLACK

warm	r45	g34	b16	c0	m24	y64	k82	#2d2210
cool	r37	g13	b50	c26	m74	y0	k80	#250d32
light	r61	g62	b62	c2	m0	y0	k76	#3d3e3e
neutral	r0	g0	b0	c0	m0	y0	k100	#000000

**Classification** Absolute  
**Temperature** Neutral  
**Associated Emotions** Fear, Reflection

An absolute often associated with nighttime, black is a color of shadows, death, and mourning. Acting differently depending on the specific culture, black can also represent mystery, knowledge, and eternity.

America Evil  
 India Penance  
 Japan Experience  
 China Style





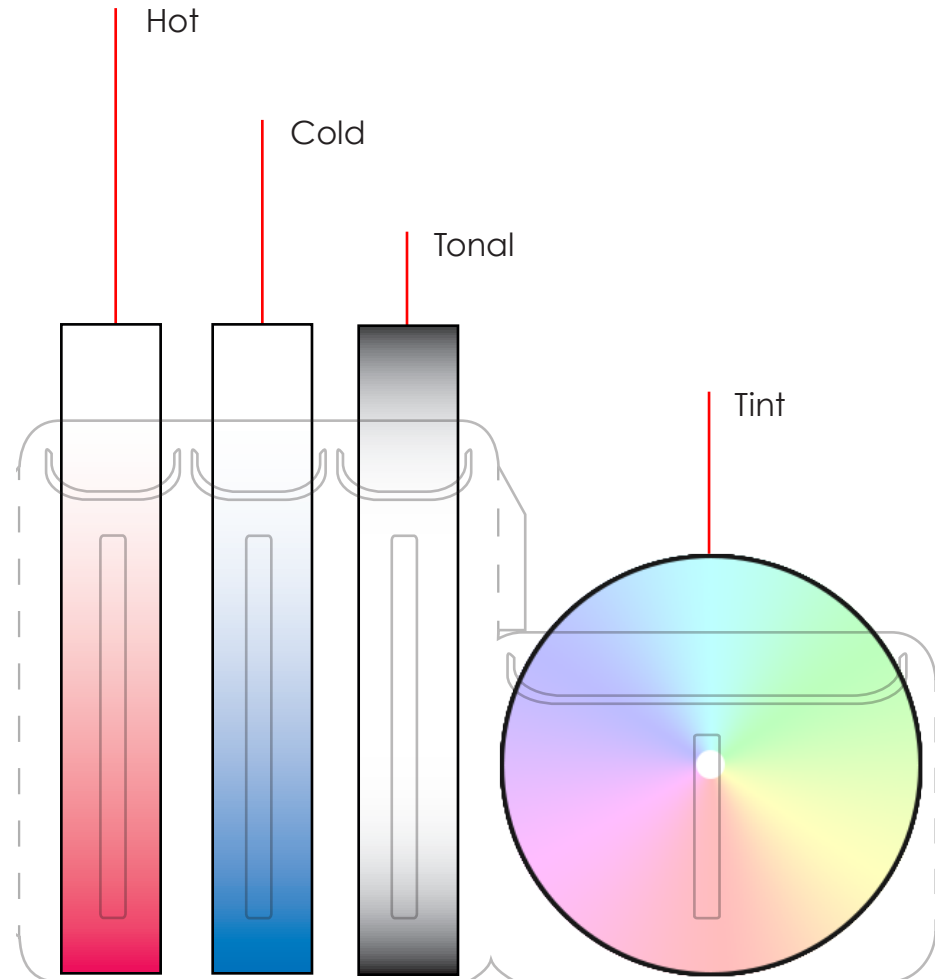
# WHITE

warm	r232 g219 b230	c0 m6 y1 k9	#e8dbe6
cool	r239 g248 b250	c4 m1 y0 k2	#eff8fa
dark	r230 g231 b232	c1 m0 y0 k9	#e6e7e8
neutral	r255 g255 b255	c0 m0 y0 k0	#ffffff

**Classification** Absolute  
**Temperature** Neutral  
**Associated Emotions** Peace, Emptiness

An absolute often associated with daytime, white is a color of tranquility, purity, life, and spirituality. Acting differently depending on the specific culture, white can also represent emptiness, fragility, and sacredness.

America	Luxury
India	Brightness
Japan	Reverence
China	Marriage



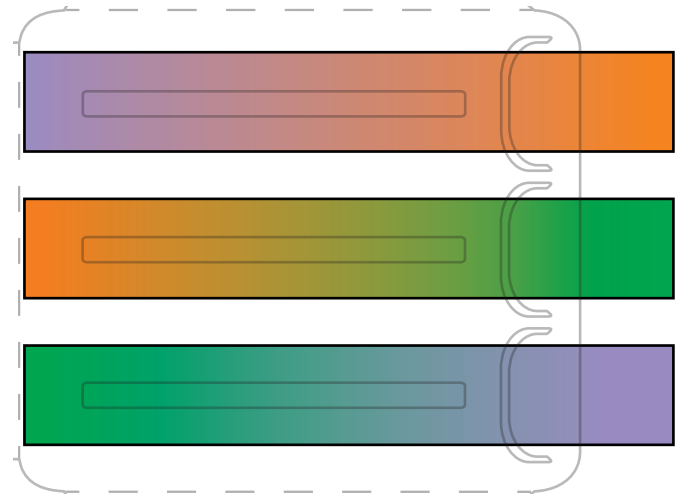
# TERTIARY

The color wheel from earlier is shown to the right, now with a colorful ring around it. As you have learned, secondary colors are formed by combining bases of primary colors. However, secondary colors can also mix with primary colors, making a whole new class of colors: tertiary.

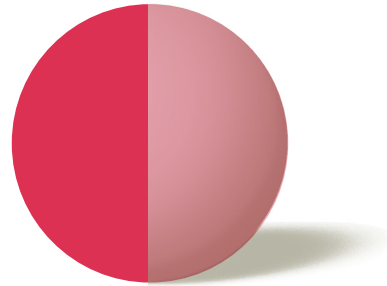
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Tertiary colors are mixtures of primary and secondary colors. On color wheels, they are the in-betweens, wedged between primaries and secondaries. Tertiary colors are not always strictly half-and-half mixtures, as different percentages of the original two colors produce different variations of tertiary. Tertiary colors often inherit the combined meanings of the base colors, and usually have hyphenated names, like blue-green.

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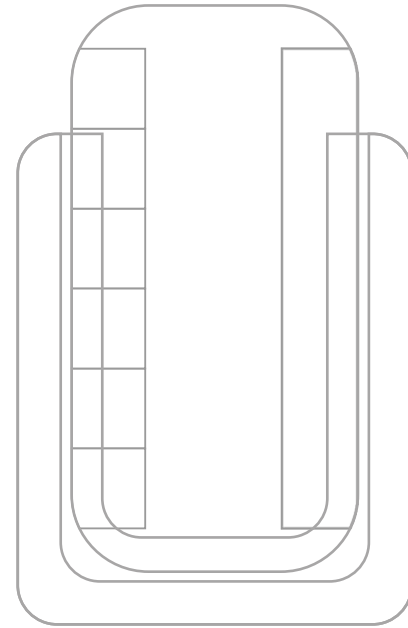
# VALUE



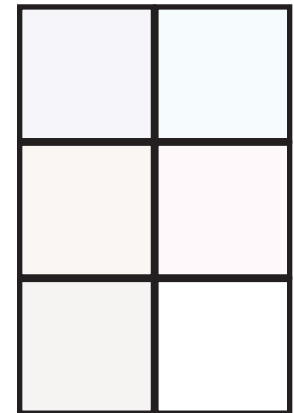
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Lighting and value go hand-in-hand, as value deals with the ranges of lights and darks present in a subject. Being able to identify different levels of black, gray, and white is a vital skill. Not every white is a pure white. Some white surfaces or objects have slight colored tints to them, effecting how they work with colors ever so slightly. The tool on the right allows you to gauge the light, dark, and off-white values of an object, by comparison.

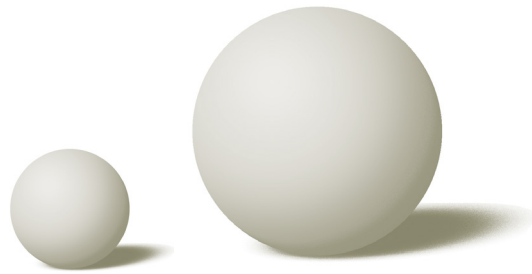
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Give the tool a try! Use it to check the levels of gray in the photograph, or to see which square is really colorless.



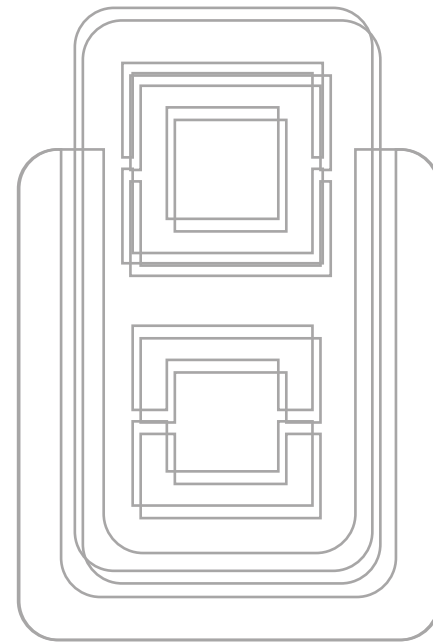
# HIERARCHY



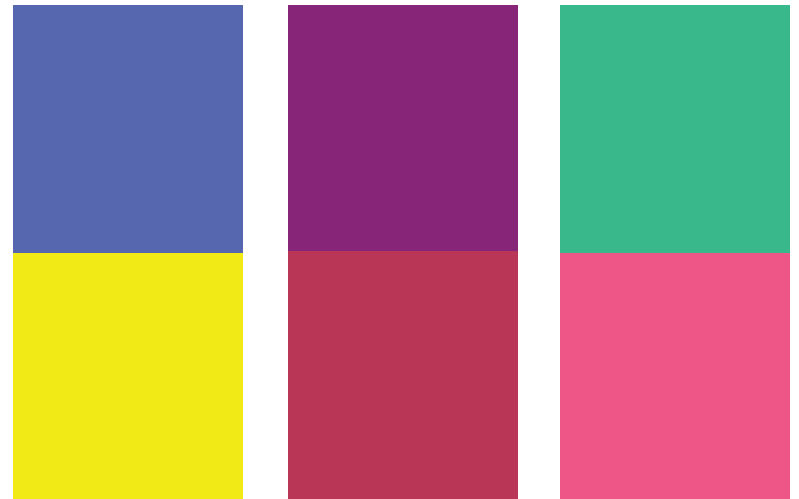
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Hierarchy is the term used to describe the level of relation between subjects. For example, the spheres above have a strong hierarchy, as one is more noticeable than the other. This only works because there are two, different spheres present. Hierarchy can form when changing the size, shape, color, or value of an object. Color can also act as either the dominant element or subdued element, making all the difference.

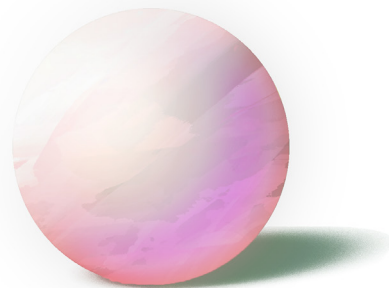
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Give the tools a try! Place a tool over the squares below to see which color is dominant. See what happens with the same squares for each tool.



# PALETTES



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Some of the most famous works of art can be recognized by their colors alone. All forms of art can be memorable or inspiring. By breaking down the base colors that went into the palette used, the combination of colors becomes clear. This method of breaking down palettes is a perfect way to learn, and studying the colors and methods used by your favorite artists can be a great way to improve your own palettes and colors.

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*Rose Water, 2015*



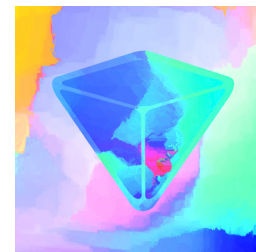
Extracted Palette



Base Values



*Vertex Universe, 2017*



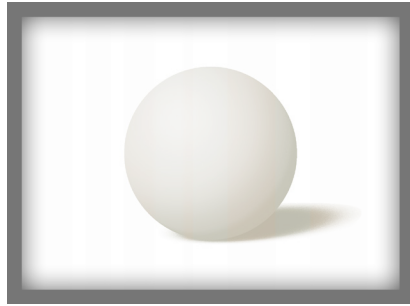
Extracted Palette



Base Values



# PHOTOS



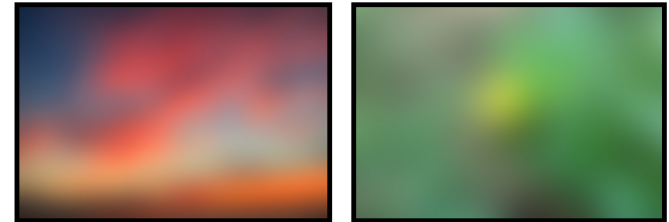
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Photographs are images of moments, full of color, significance, and emotion. Extracting the lighting and colors used in your own photographs is a good way to create palettes. One useful technique for determining the colors present in a photograph is to look at it from very far away, or to blur it digitally. Seeing the photograph on a smaller scale allows the minor colors to fade away, bringing the major colors into view for observation.

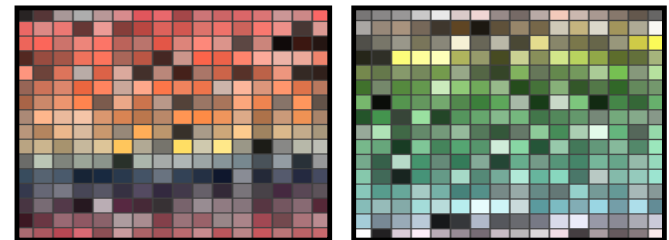
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The original photographs are here, shown above in an unaltered state,



Blurred versions of the photographs show zones of dominant colors.



The digitally generated palettes of both photographs are close to the blurs.

# RESOURCES



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Chromatica is available online. Visit the Chromatica website at: [www.chromatica.shantystudios.com](http://www.chromatica.shantystudios.com) The website has a PDF version of the booklet, complete with paper modular tools and inserts you can print out and make yourself. There is also a motion video that is available to watch on the website. The video covers color theory and color relationships, complete with narration and visuals.

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Chromatica's digital version is also printable! Together with the video, a printed PDF and assembled paper modular tools allows you to have your very own Chromatica set. All you need is a printer, computer, cutting tools, glue, and a little elbow grease. I hope you enjoy your experiences working with color, and find Chromatica to be helpful. I wish you the best of luck!



**Good  
Luck!**



This section contains DIY paper tools and booklet inserts, which you can cut out and paste into the booklet.

Solid black outlines are cut lines, and dotted outlines are fold lines.

For the pages on paper module tools, *gray-outlined* shapes are the holders for the tools, while *black-outlined* shapes are the tools themselves.

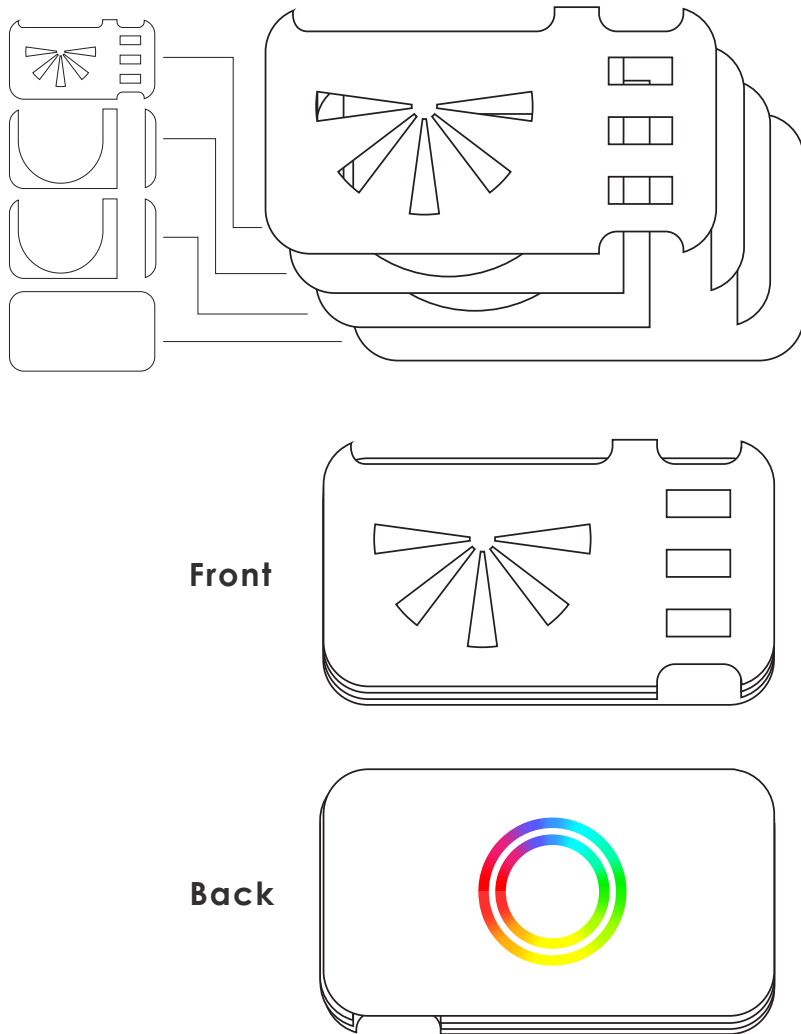
Pictures of the tools are shown below for reference of assembly.



The palette tool is easy to assemble, and is made of four layers.

Each layer is shown in the correct gluing order below.

Make sure the back panel logo faces outward.

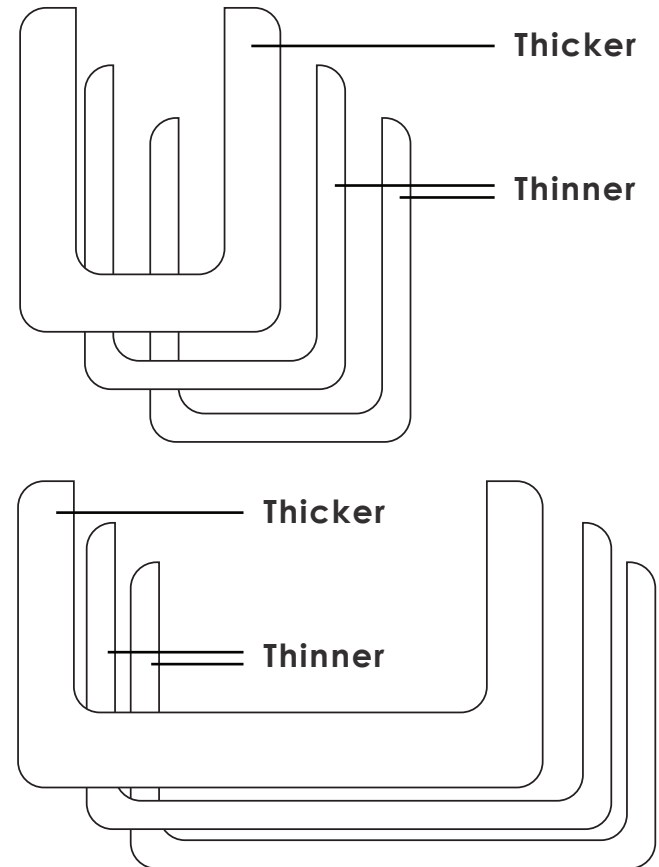


Each gray-outlined tool holder works the same way.

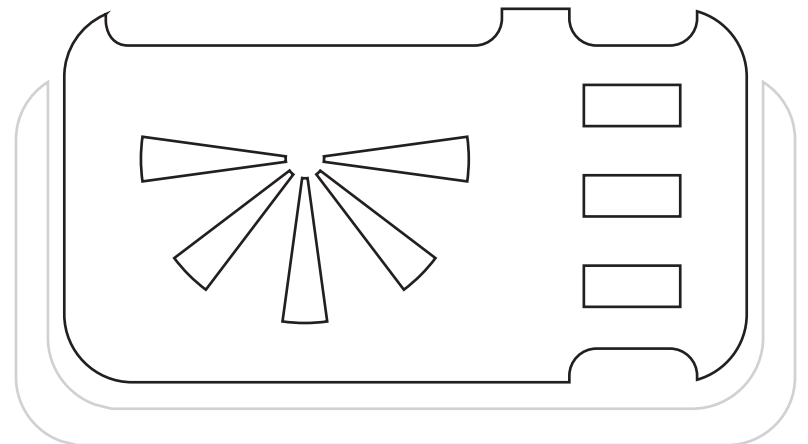
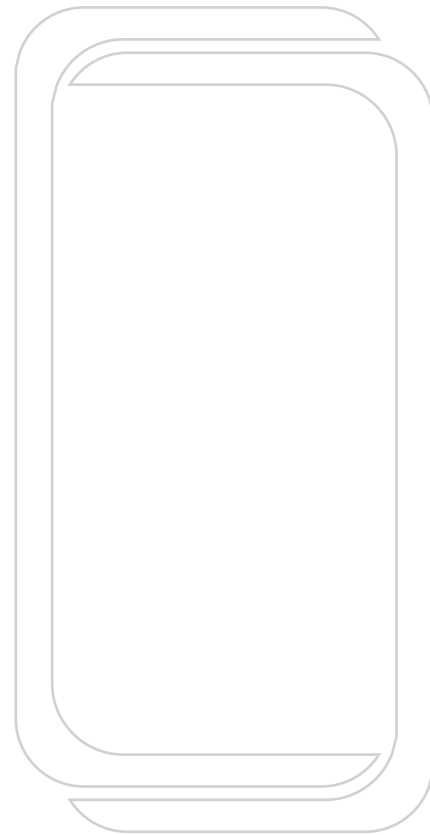
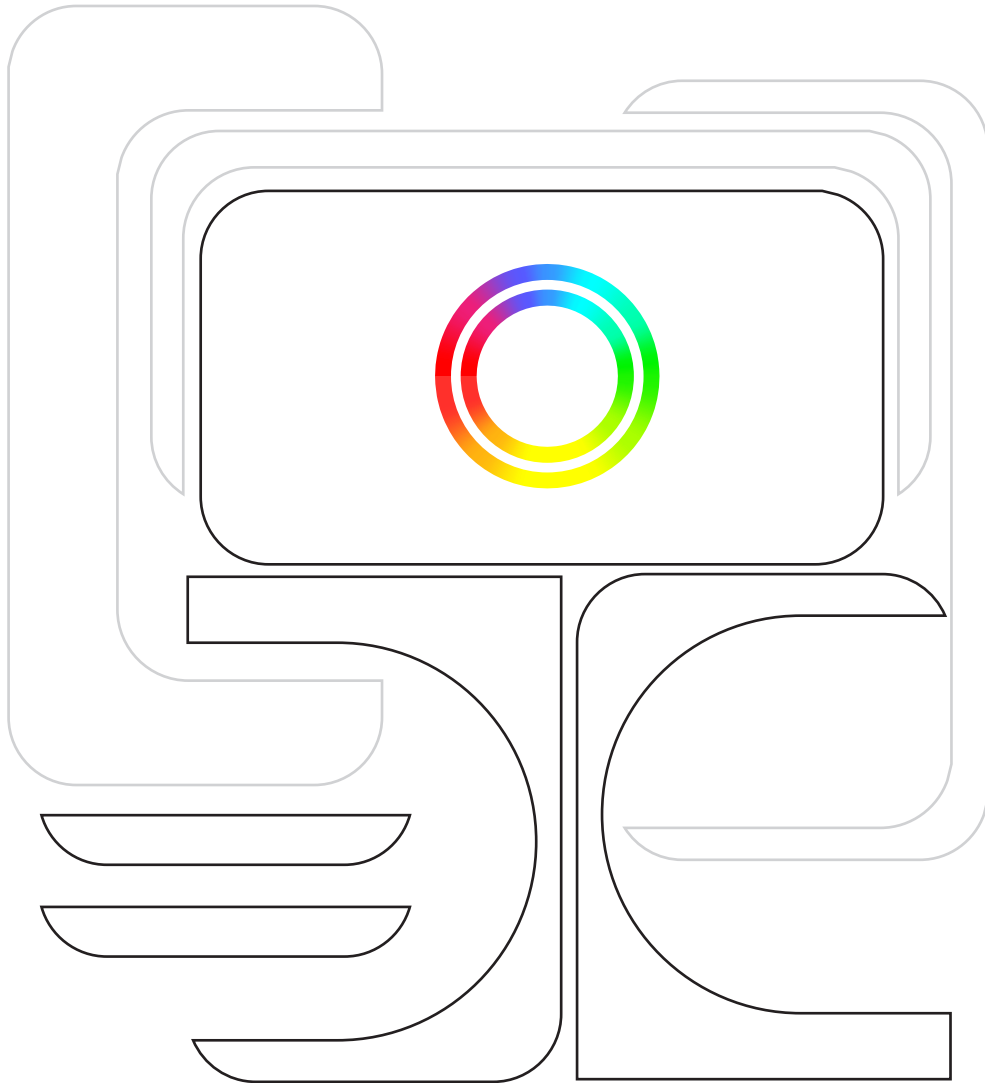
Glue the thinner parts together, stacked on top of one another. The amount of thinner layers varies, but as long as they're all stacked it will work fine.

Once the thinner stack has dried, glue the widest part on top of the stack.

After all the parts have dried, adhere the finished holder into the booklet on the respective page, widest layer facing up, away from the page.

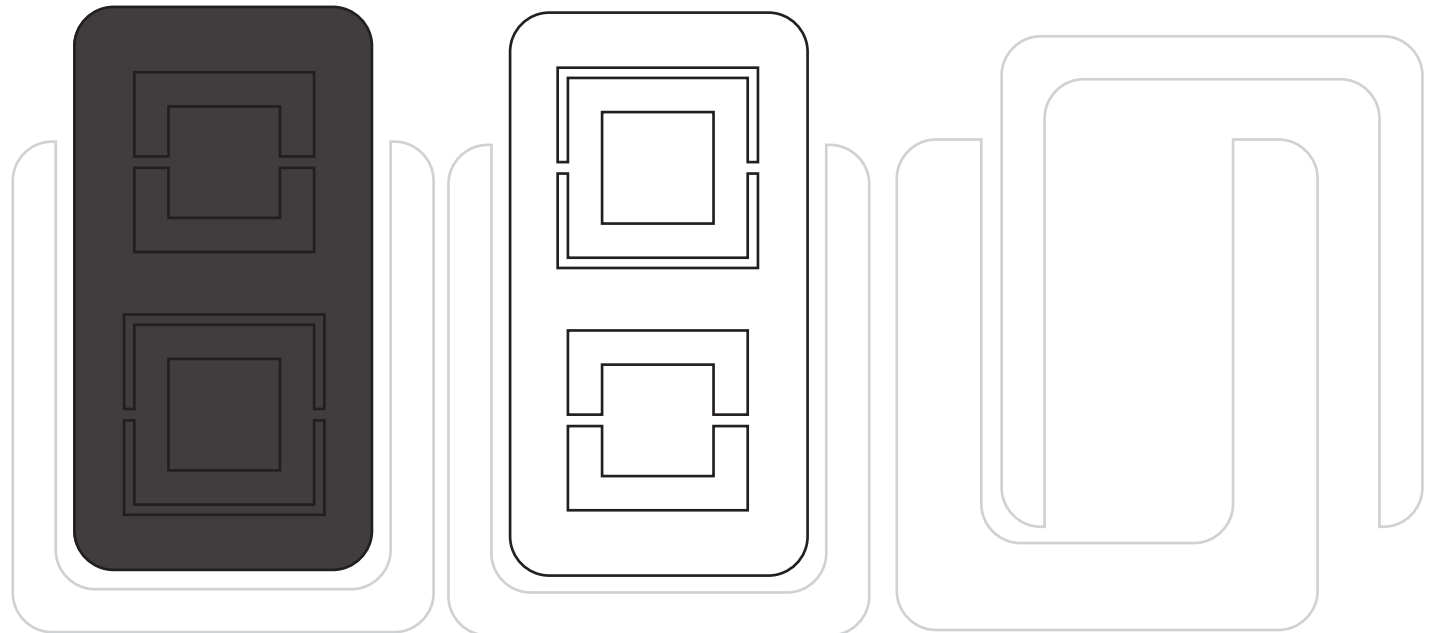
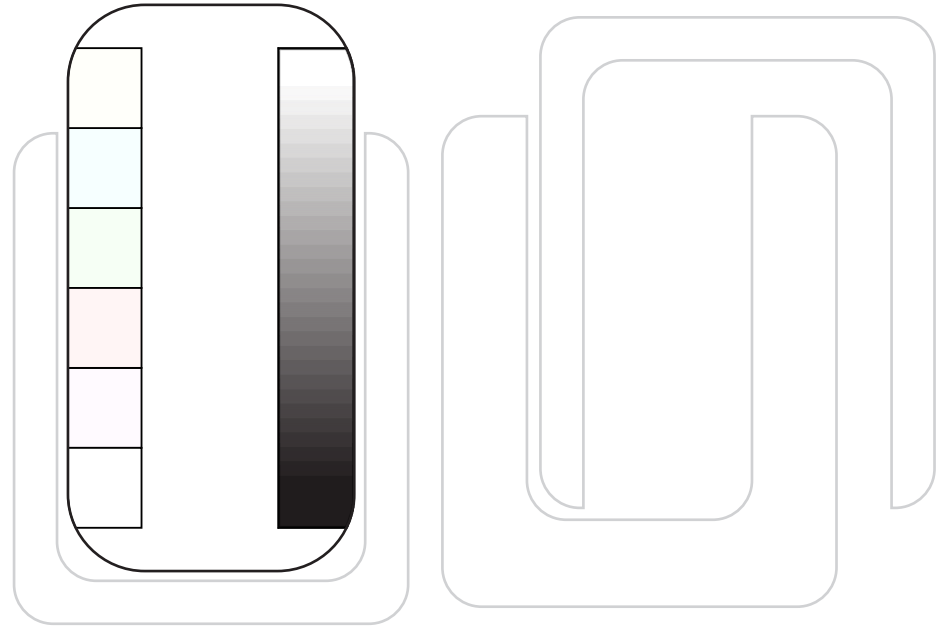


Palette Tool Cut Page



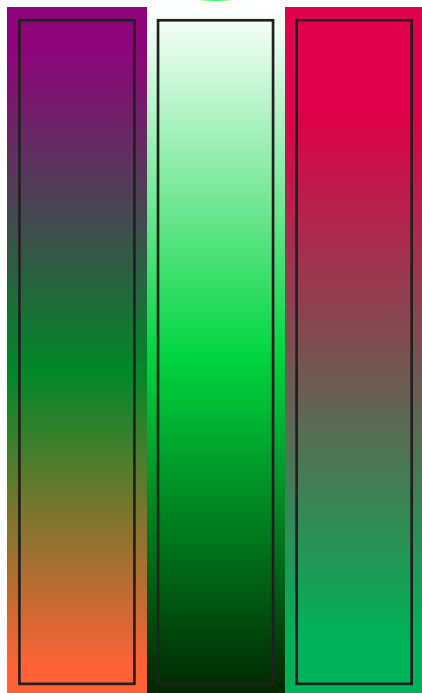
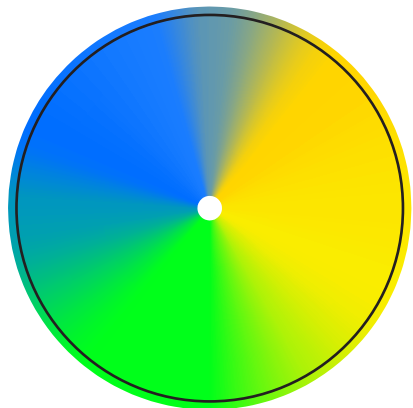
Value and Off-White Tool Cut Page

Hierarchy Tool Cut Page

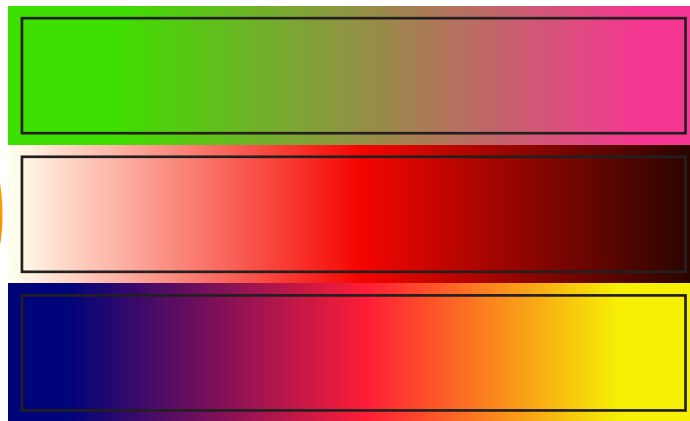
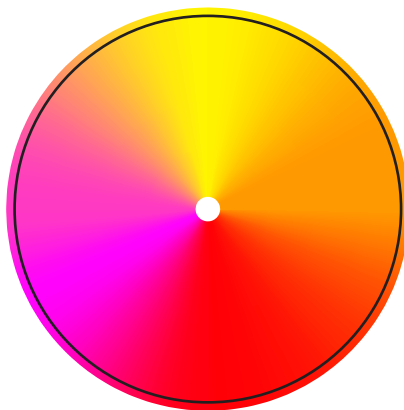


# Color Insert Cut Pages

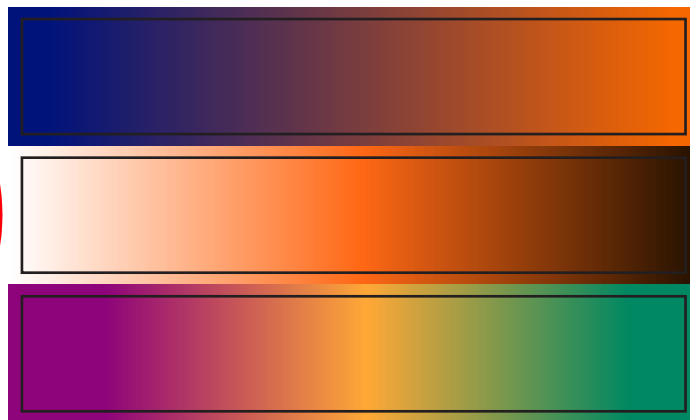
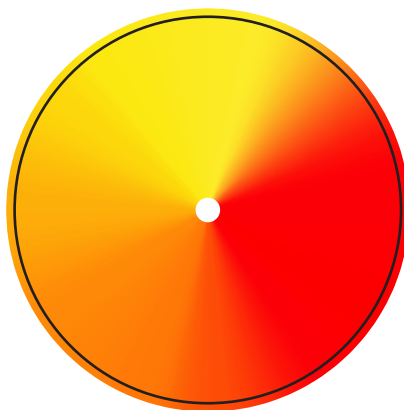
Green



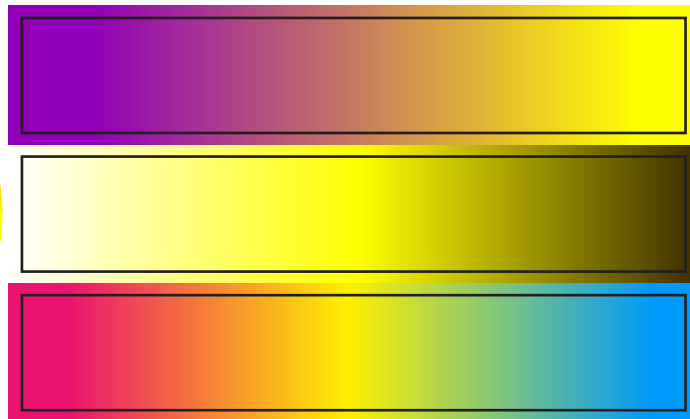
Red



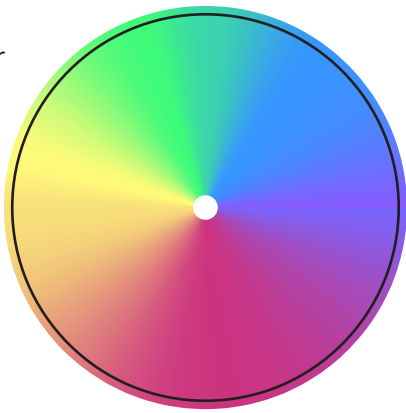
Orange



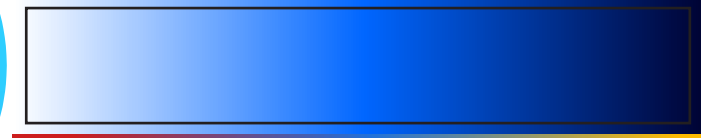
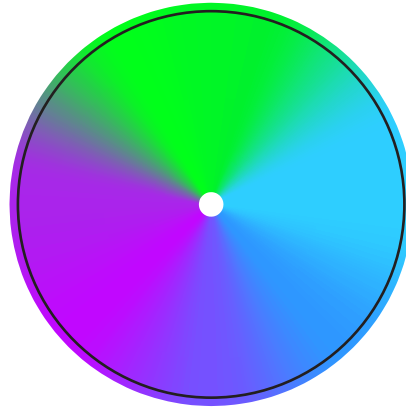
Yellow



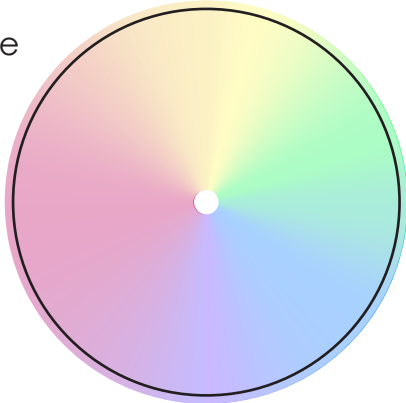
Color



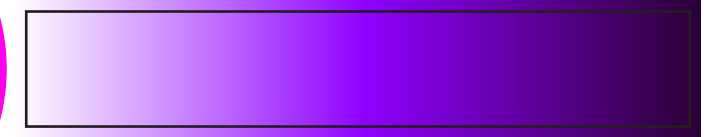
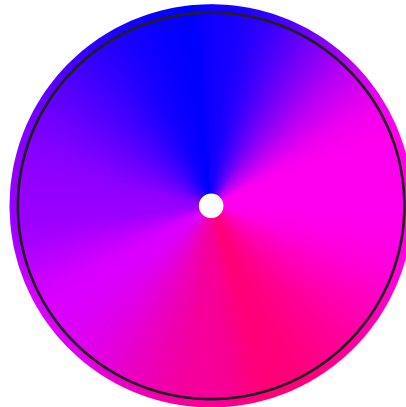
Blue



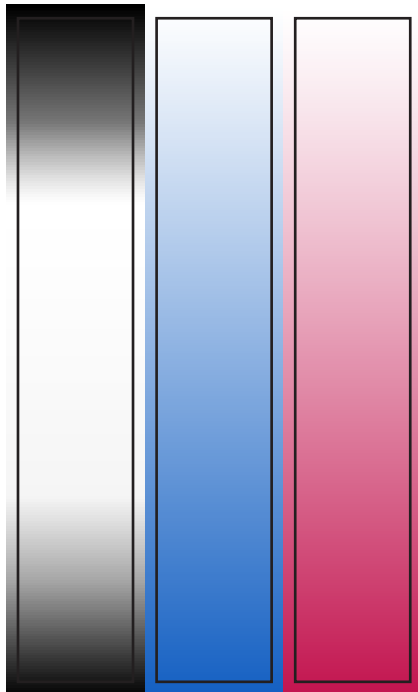
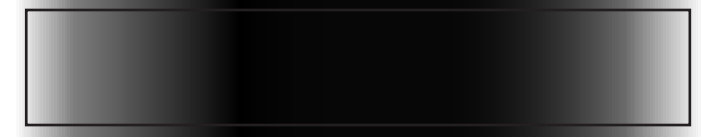
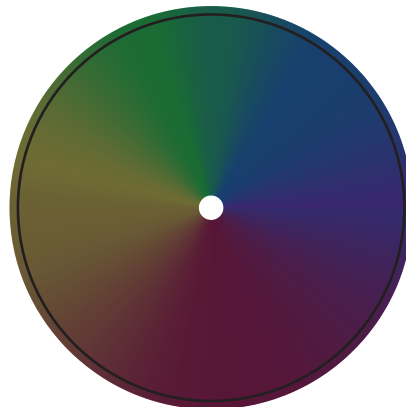
White



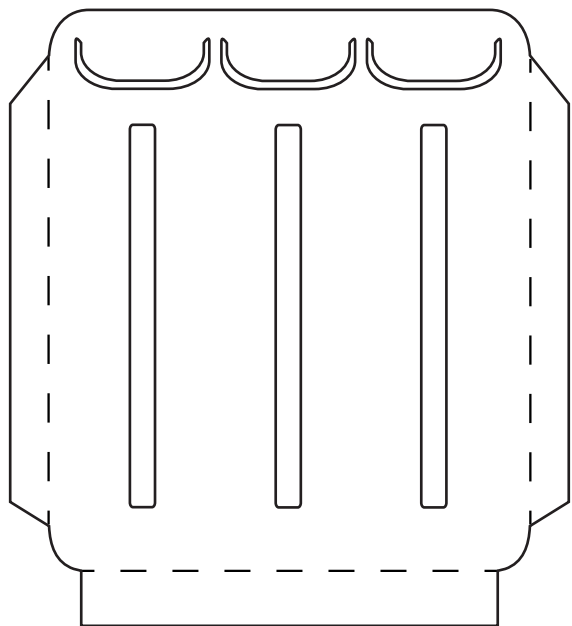
Purple



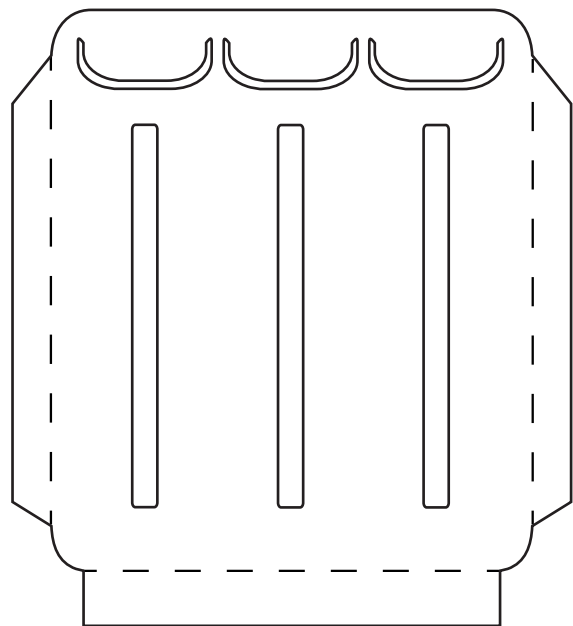
Black



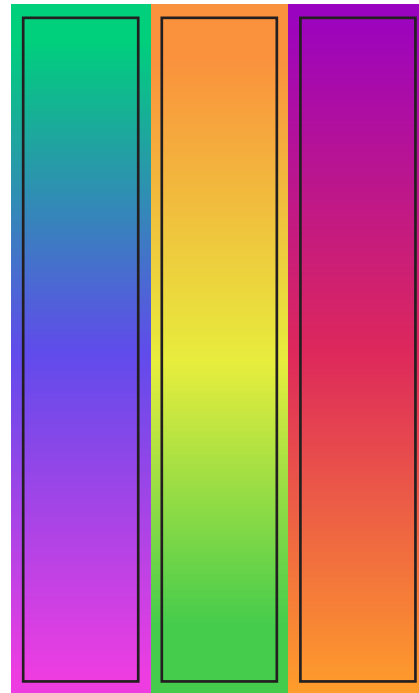
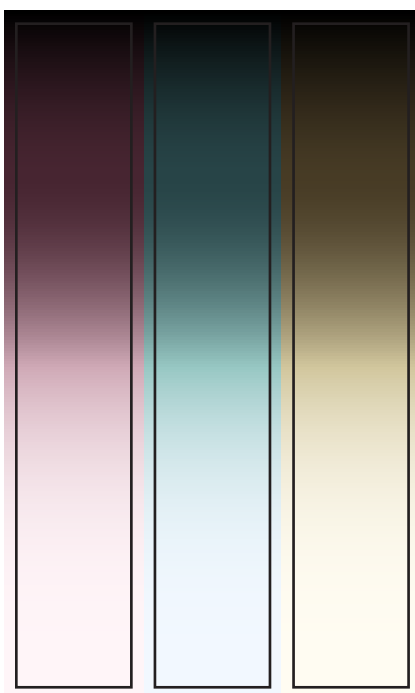
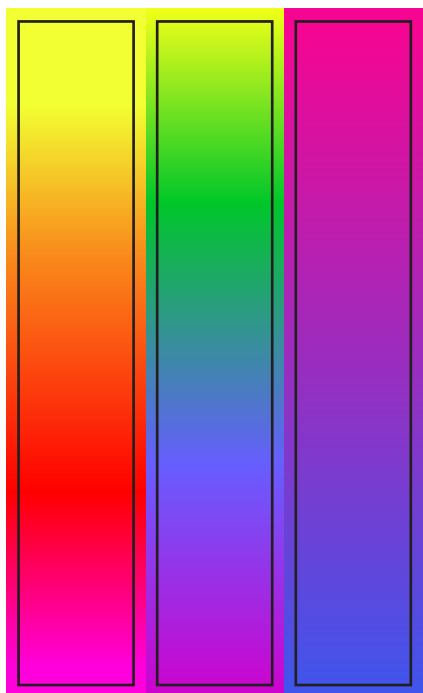
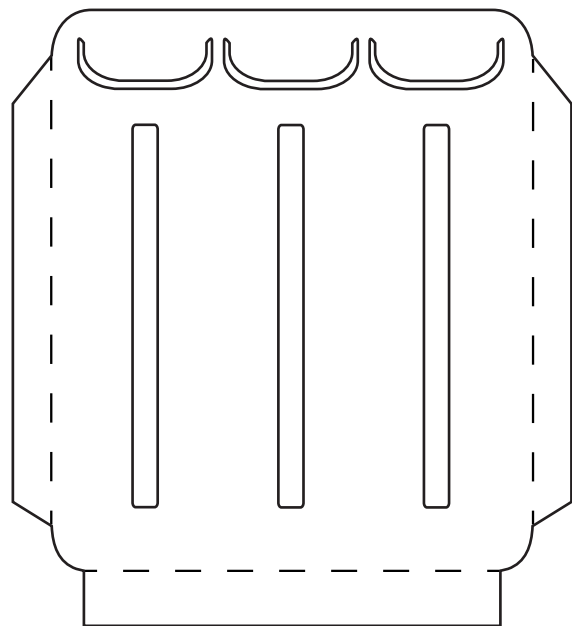
Temperature



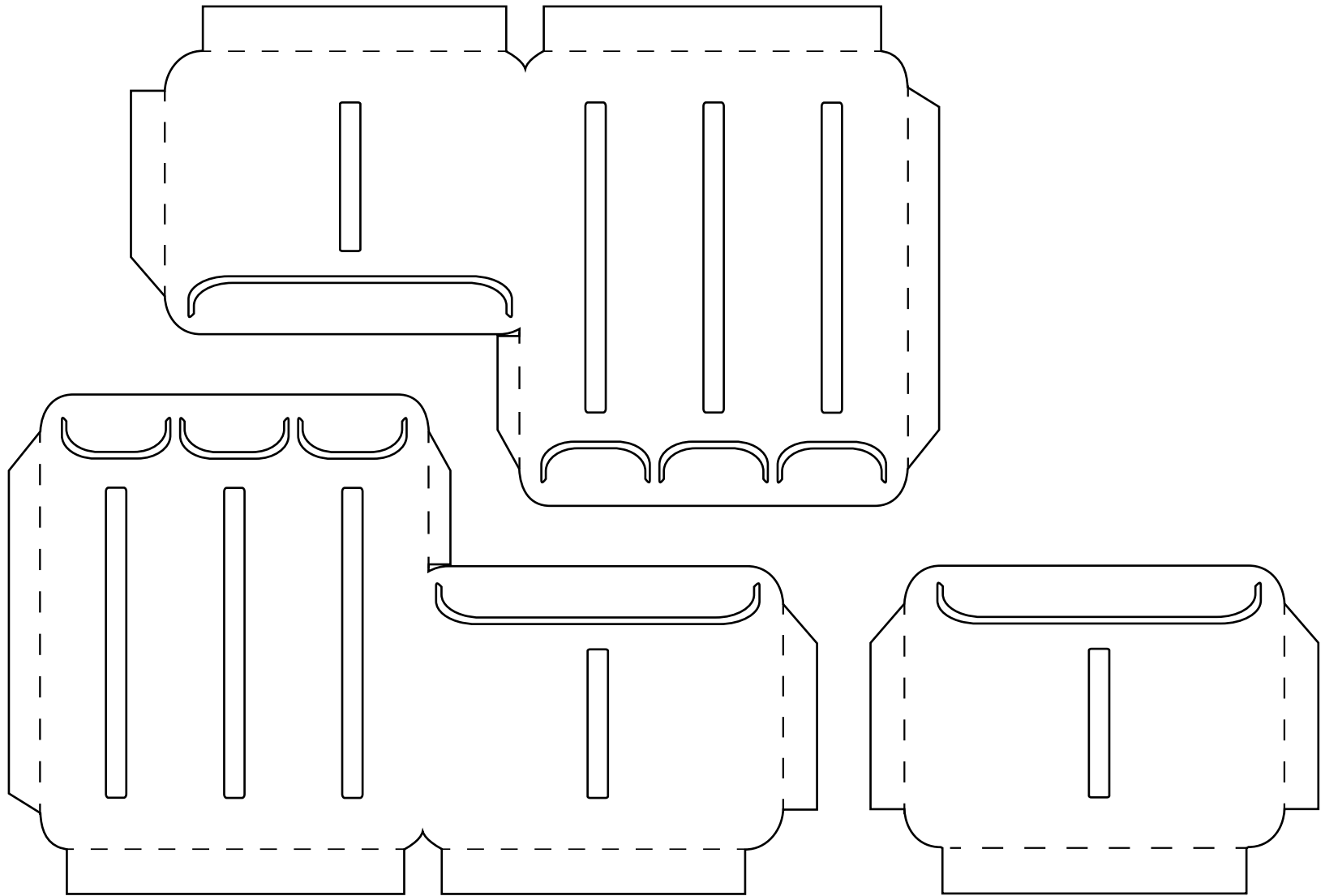
Light



Tertiary

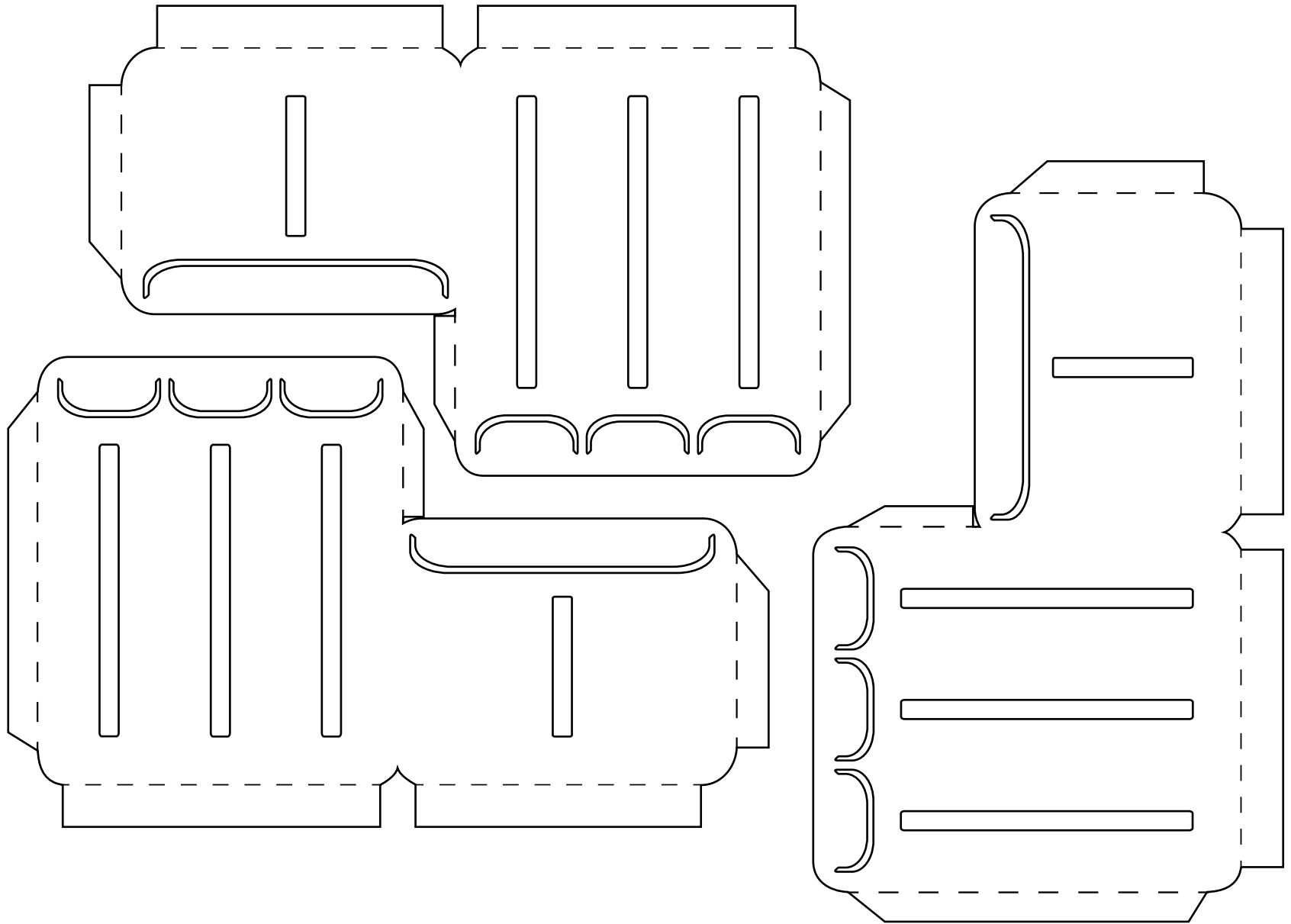


Outlines are present on the pages where each insert-holder fits into place.

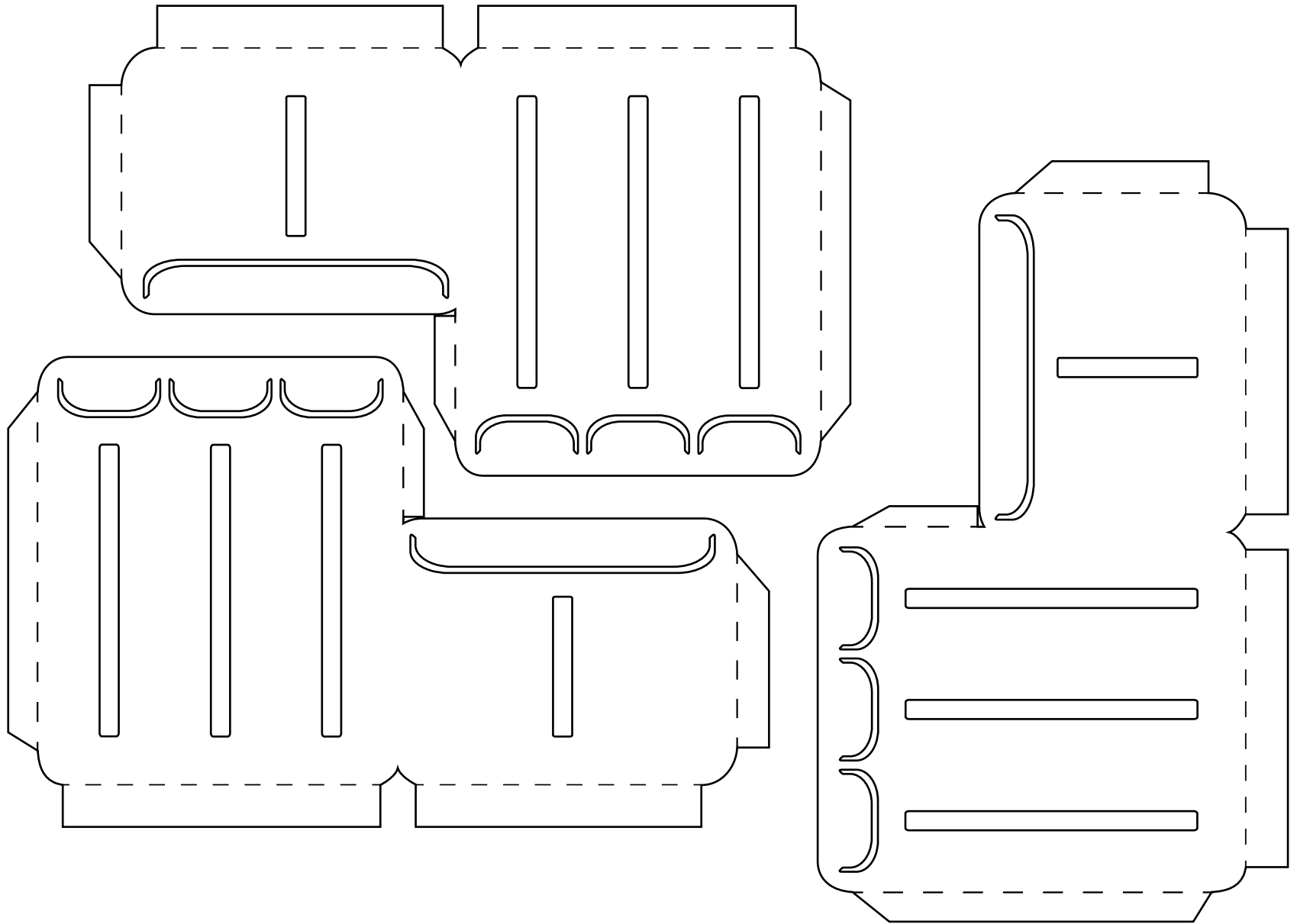





Outlines are present on the pages where each insert-holder fits into place.



Outlines are present on the pages where each insert-holder fits into place.





Why is color so important to design?  
Why do certain colors work better together?  
Not sure where to begin working with color?  
Chromatica presents color in tangible forms,  
providing a tactile, physical method that  
will allow you to visualize color relationships.  
Soon, you'll better your understanding of  
color, and better yourself!

