

Technique Demonstration: Paint a Color Wheel

Color wheels are great ways to understand the relationships between [primary](#), [secondary](#) and [intermediate](#) (tertiary) colors. By painting your own color wheel, you can also get a feel for how to mix the colors you want.

You will need:

- color wheel sheets: blank and colored ([Print them](#))
- Grumbacher Academy Acrylics: Cadmium Yellow, Thalo[®] Blue, Cadmium Red and Thio[™] Violet
- small brush (size 6)
- palette **or** wax paper over white paper (for mixing)
- palette knife **or** popsicle sticks to scoop and mix
- container of clean water for brush rinsing
- paper towels to dry brush



Step 1:

Print out the color wheel to the right. Or draw your own color wheel on heavy drawing paper.

Step 2:

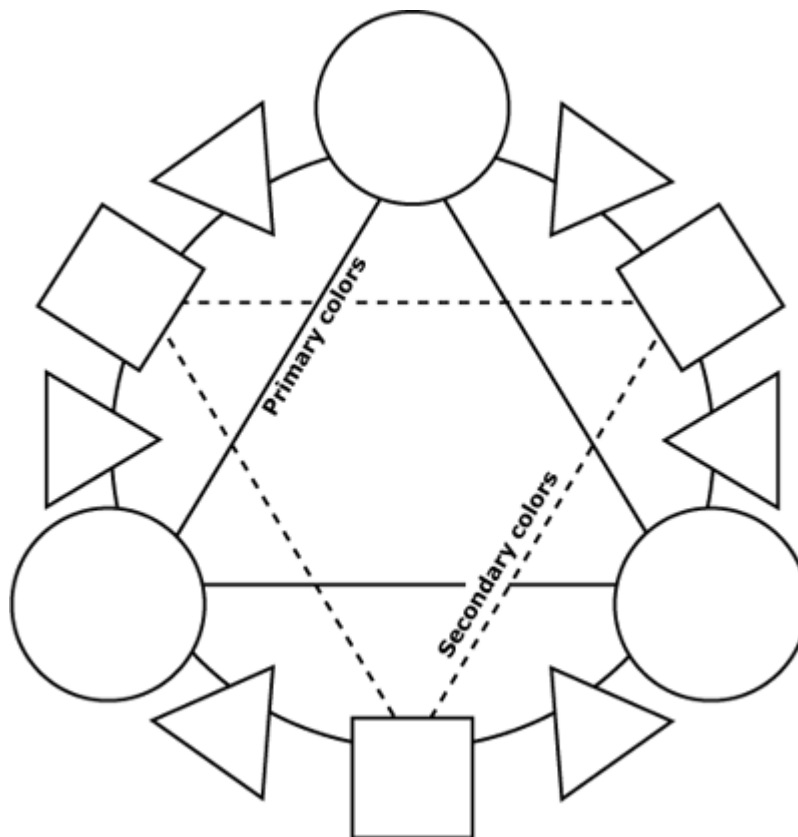
Select paints closest to the [primary colors](#): **blue, yellow and red.**

If you are using **Grumbacher's Academy Acrylics**, you'll have to do a bit of mixing first:

Primary Blue: Mix a bit of Titanium White[®] into Thalo[®] Blue

Primary Red: Mix equal amounts of Cadmium Red and Thio[™] Violet.

Primary Yellow: Just use Cadmium Yellow straight from the tube



I wonder...

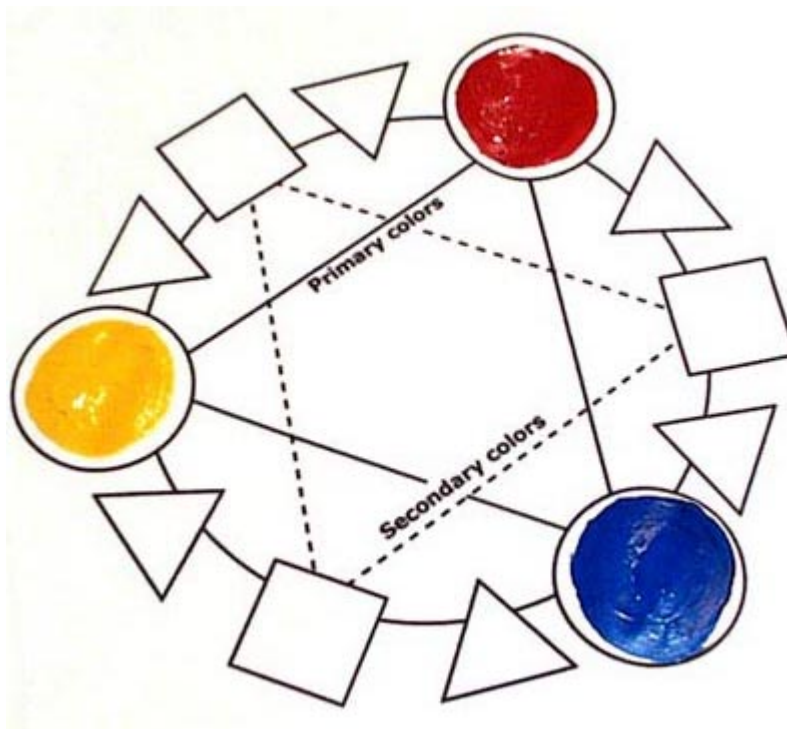
Why do I have to mix to get primary red?

Find out!



Step 3:

After mixing to create your primary colors (if necessary), **paint primary blue, red and yellow** in the three large circles (labeled primary) on your color wheel.



I wonder...

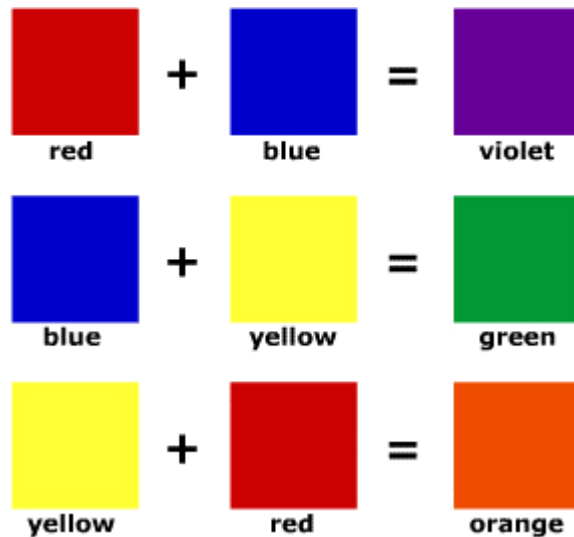
What is the difference between color mixing of pigments (additive) and light (subtractive)?

Find out!

Step 4:

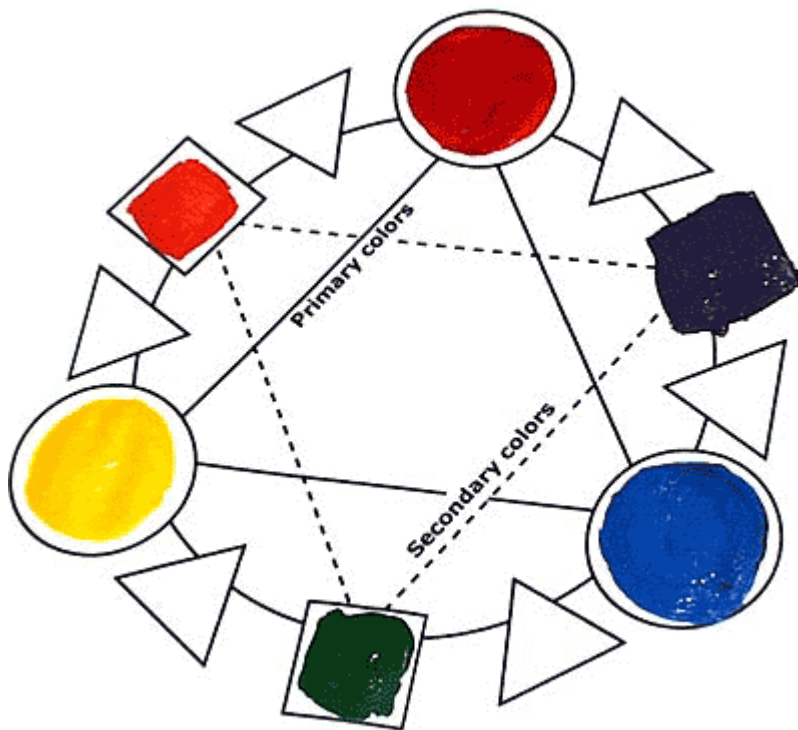
Mix pairs of primaries to make the three secondary colors.

- Mix **two parts** of the lighter primary color with **one part** of the darker color. You may need to adjust this formula as you go-creating true primary and secondary colors with paint can be tricky even with professional paints!
- Stir well with a palette knife or popsicle stick. Add colors as needed.
- Rinse and dry your brush thoroughly between colors.



Step 5:
















Now paint each secondary color onto the squares (labeled secondary) of your color wheel. Place each secondary color **in between the primary colors** you used (i.e. orange goes between red and yellow).



Step 6:

Mix each intermediate color by mixing **equal amounts** of each **primary** and each **secondary** color. There are **six** intermediate (tertiary) colors.



 blue	+	 violet	=	 blue-violet
 blue	+	 green	=	 blue-green
 yellow	+	 green	=	 yellow-green
 yellow	+	 orange	=	 yellow-orange
 red	+	 orange	=	 red-orange

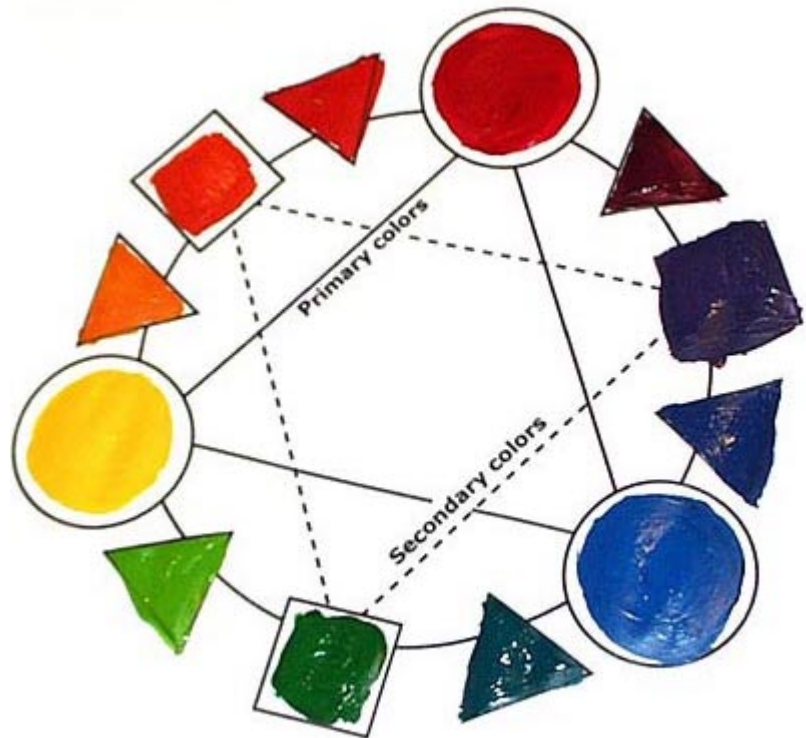
Step 7:

Paint each intermediate (tertiary) color on your color wheel. They should be placed **in between the primary and secondary color that you mixed** (i.e. red-violet goes between red and violet).

Step 8:

You are done! Use any extra mixed paint to paint a picture. Learn more about color in our ArtAdventure, presented by A Lifetime of Color:

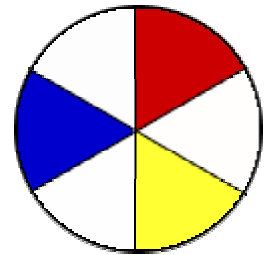
[Color Theory vs. Dr. Gray and his Dechromatizers](#)



Definition:

Primary Colors

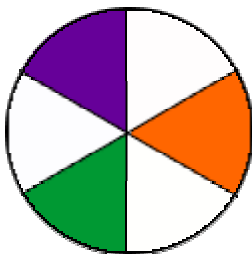
The primary colors are red, blue and yellow. Primary colors cannot be made from other colors. Artists create secondary and intermediate colors by mixing primary pigments.



Definition:

Secondary Colors

The secondary colors are orange, green and violet.

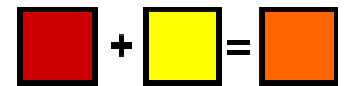


A secondary color is made by mixing two primary colors. Each secondary color is made from the two primary colors on either side of it in the color wheel.

The secondary colors are orange, green and violet.



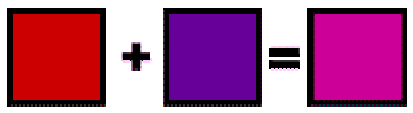
red + blue = violet



red + yellow = orange



yellow + blue = green



red + violet = red-violet



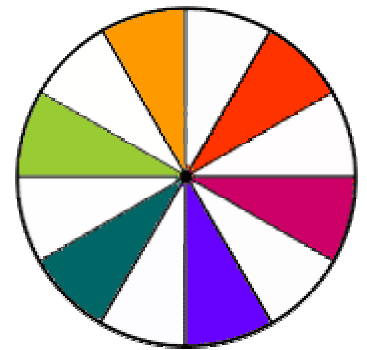
yellow + green = yellow-green

Definition:

Intermediate Colors

Intermediate colors, sometimes called tertiary colors, are made by mixing a secondary and a primary color together.

Some examples of intermediate colors are red-violet and yellow-green.



I wonder...

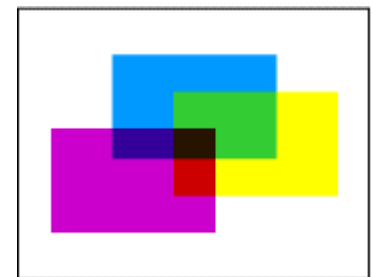
What is the difference between color mixing of pigment (additive) and light (subtractive)?

Color wheels are based on color theory, which is based on the physics of light. There are two common types of color: additive color and subtractive color.

Additive color refers to the mixing of colors of *light*. *Example 1* shows how the light from red, green and blue flashlights would appear if shone on a dark wall. The three primaries in light are *red*, *blue*, and *green*. When all of the colors of the spectrum are combined, they add up to white light.

Subtractive color refers to the mixing of colors of *pigment*, such as paint or the ink in your computer's printer. This type of color is what is used in the art and design world. When learning basic color theory, students typically use familiar colors like red, yellow, and blue to mix other colors. Printers' primaries—yellow, cyan, and magenta—are typically used by professional designers and printing presses.

Example 2 illustrates subtractive color by showing how primary colors mix on a piece of white paper.



Example 2: Subtractive principle of color combining (pigment)



Example 1: Additive principle of color combining (light)

I wonder...

Why do I have to mix to get primary red and blue?

Paints straight from the tube will not always exactly match the hues of the light spectrum. You may have to mix to get a good match. This can be confusing because we are generally taught that the primary colors are the pure colors that cannot be mixed. However natural and chemical pigments used in paint and other media are not as pure and bright as the colors in the light spectrum.

