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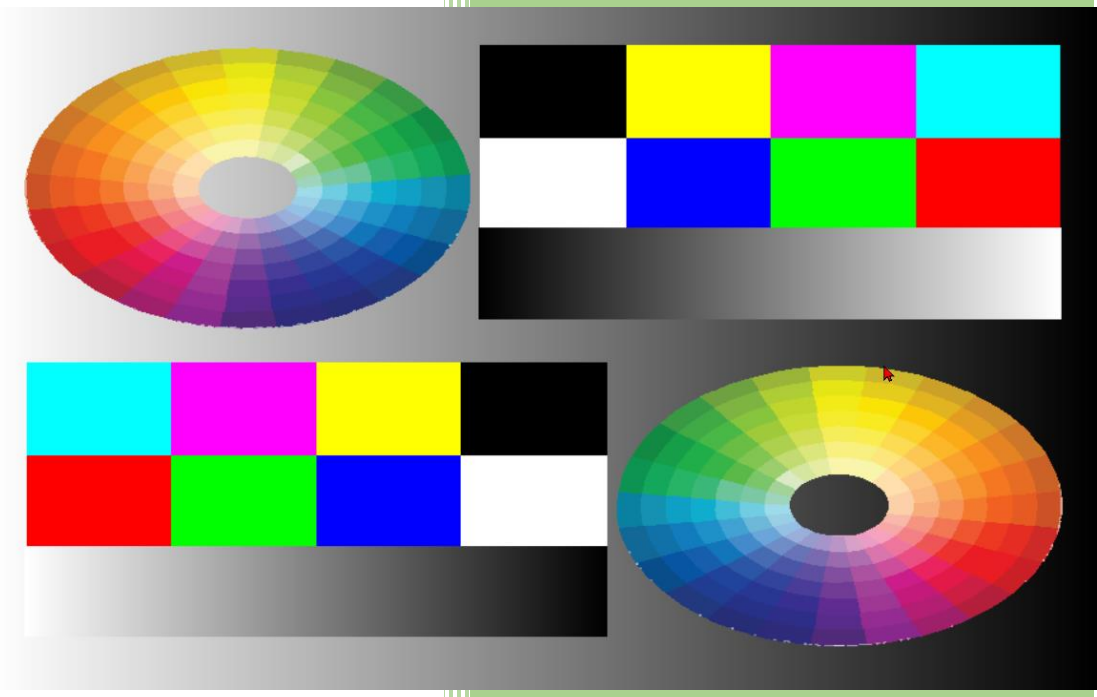
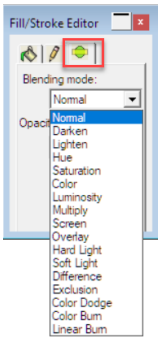
Blending Modes in FlexiSIGN



Mark Rugen, Dir. Of Education

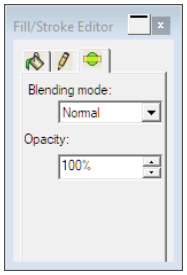
MUTOH AMERICA

Introduction



Let's understand bending modes in FlexiSIGN. These are found when using the lens or transparency effect in the Fill/Stroke Editor.

Like other design software, such as Photoshop, blending modes are typically used when one layer of design is over the top of another.

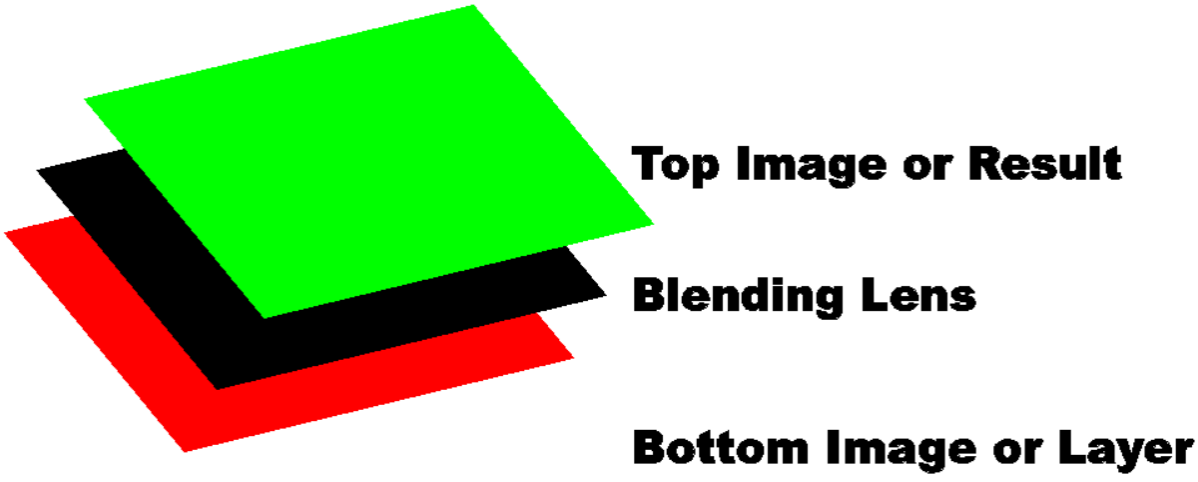


The "NORMAL" blinding mode is the default in Flexi and this simply means that when one image I placed over another the top image hides everything beneath it. The opacity option allows you to change the intensity of the blending mode.

However, understanding the other blending modes can greatly enhance your design capabilities. So, with that in mind, let's dive into each of the blending modes. You can get some interesting and powerful effects so easily by using blending modes. It's always a good idea to cycle through a few different modes and see what results you come up with. You may be surprised. It's the Blending modes that separate the pros work from the novices.

FlexiSIGN Blending Modes

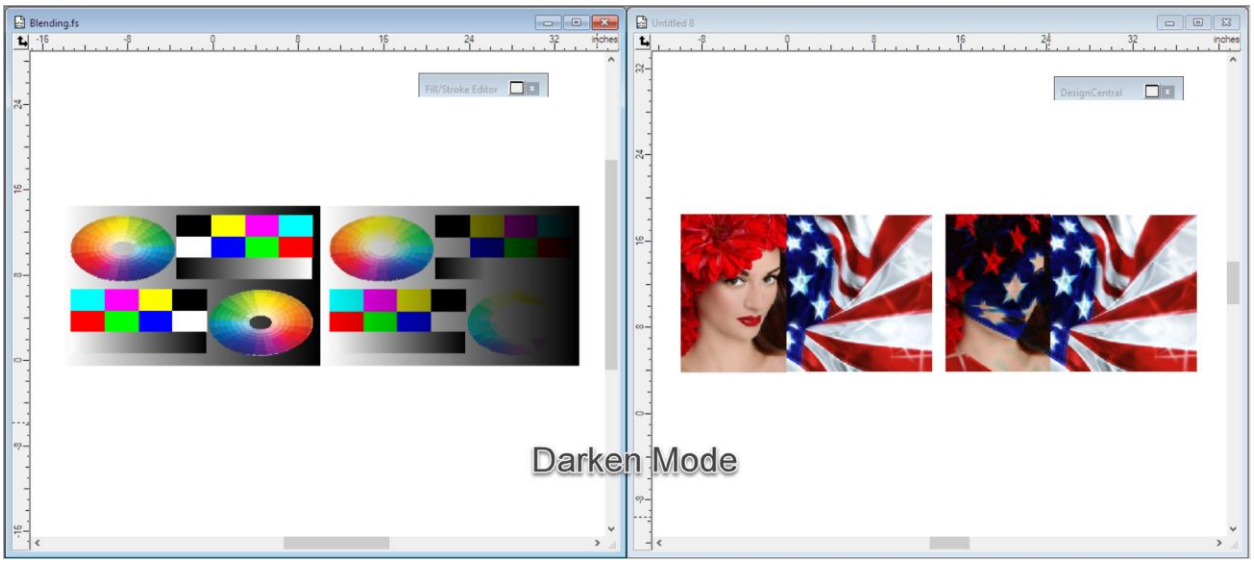
Think of blending as a mathematical formula. The lower image or layer, plus the blending mode equals the upper image or layer result.



As an example, here is one combination:

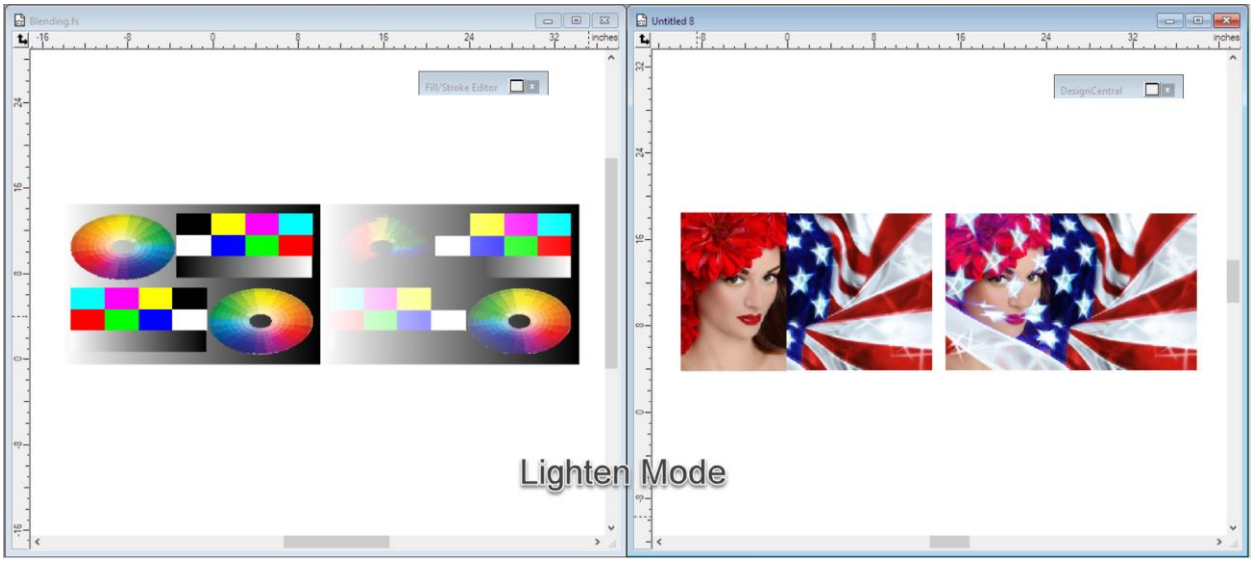
Darken

If the pixels of the selected upper layer are darker than the ones on the layers below, they are kept in the image. If the pixels in the upper layer are lighter, they are replaced with the tones on the layers below (they show through to the selected layer), so basically the darker tones of all layers are kept.



Lighten

If the pixels of the selected layer are lighter than the ones on the layers below, they are kept in the image (the opposite of the Darken blend mode). If the pixels in the upper layer are darker, they are replaced with the pixels on the layers below (they show through to the selected upper layer).

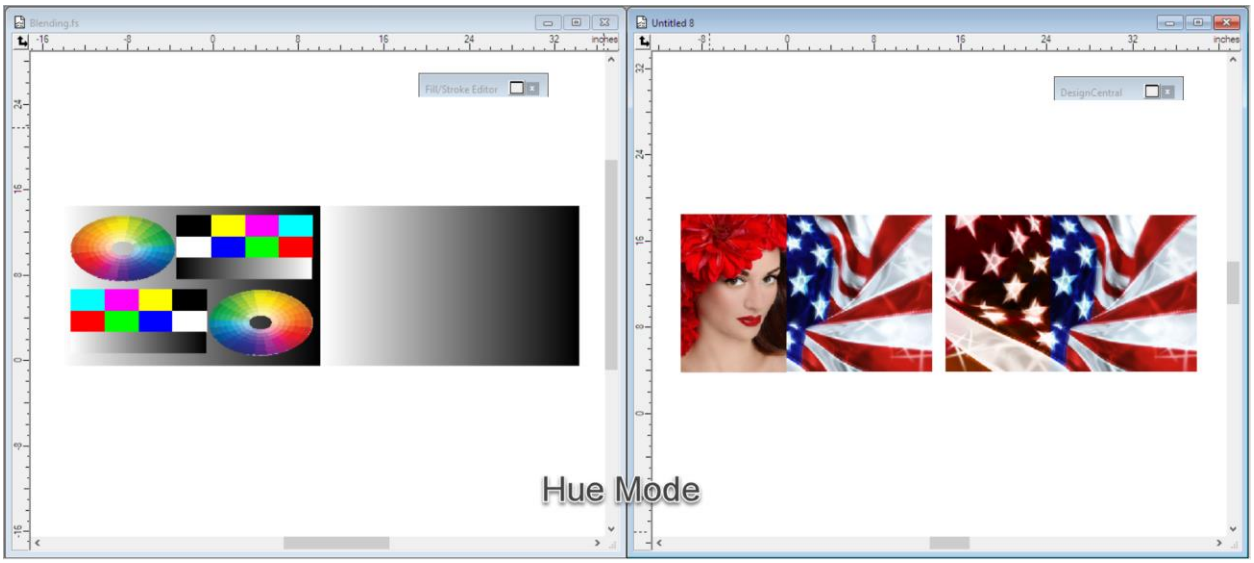


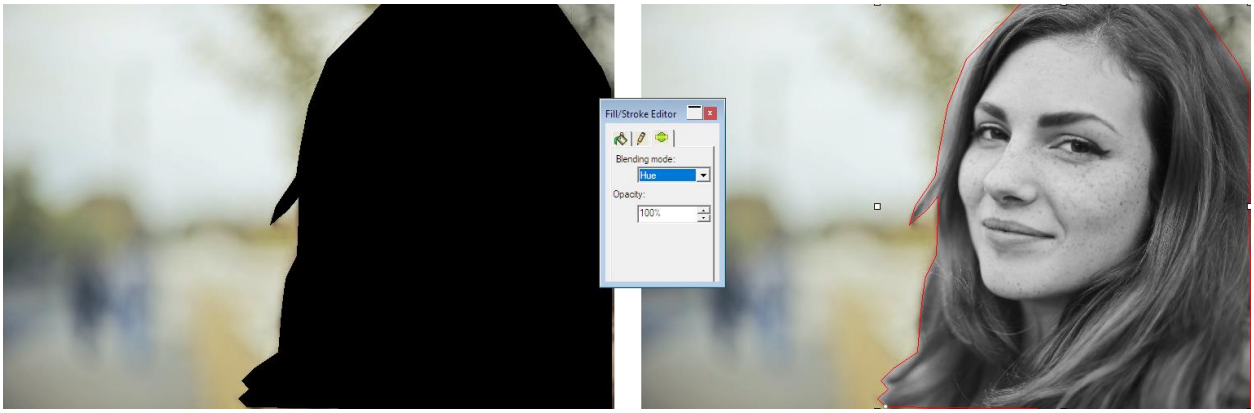
When combining two bitmaps, you can see that Darken allows the lower image to show through WHITE while Lighten allows the lower image to show through black.

Remember, the blending modes in FlexiSIGN can be applied to ANY type object, vectors, bitmaps or any combination of those!

Hue

Keeps the Hue of the active or upper layer and blends the luminance and saturation of the underlying or lower layers (you basically get the image from the lower layer with the colors of the top layer).

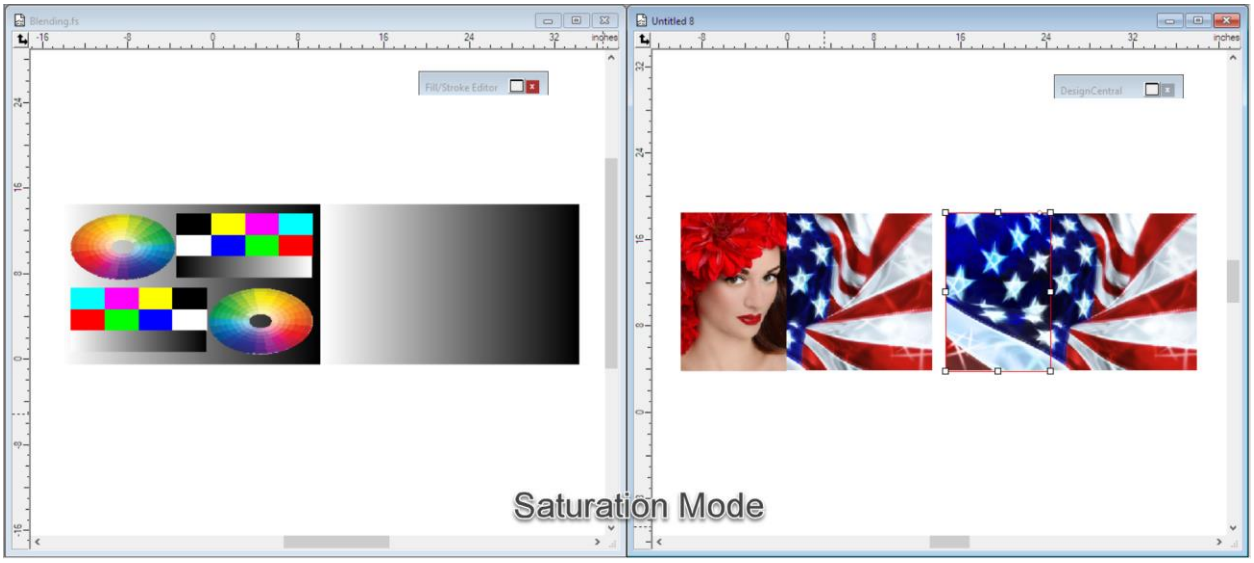


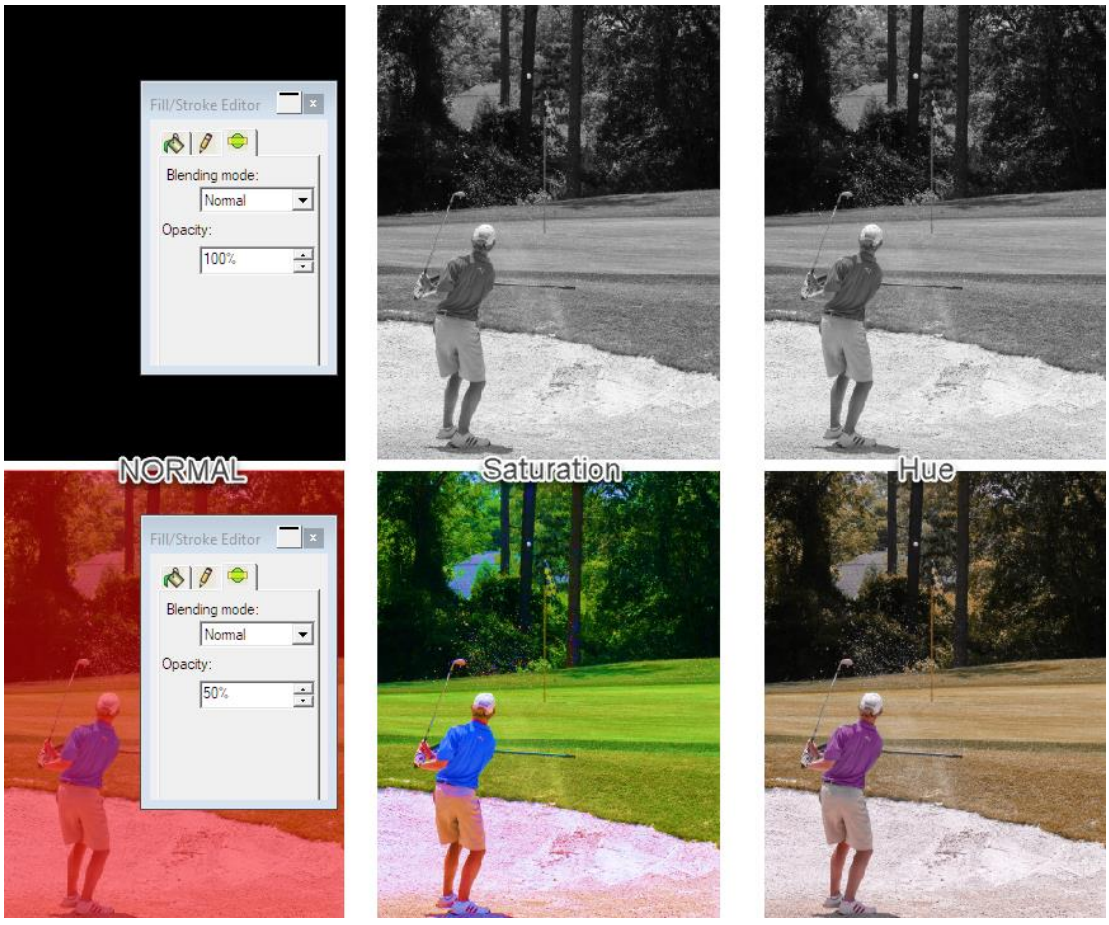


Want part of an image to be grayscale? Try placing a vector over the area you want to alter, then apply the HUE blending mode or Saturation blending mode.

Saturation

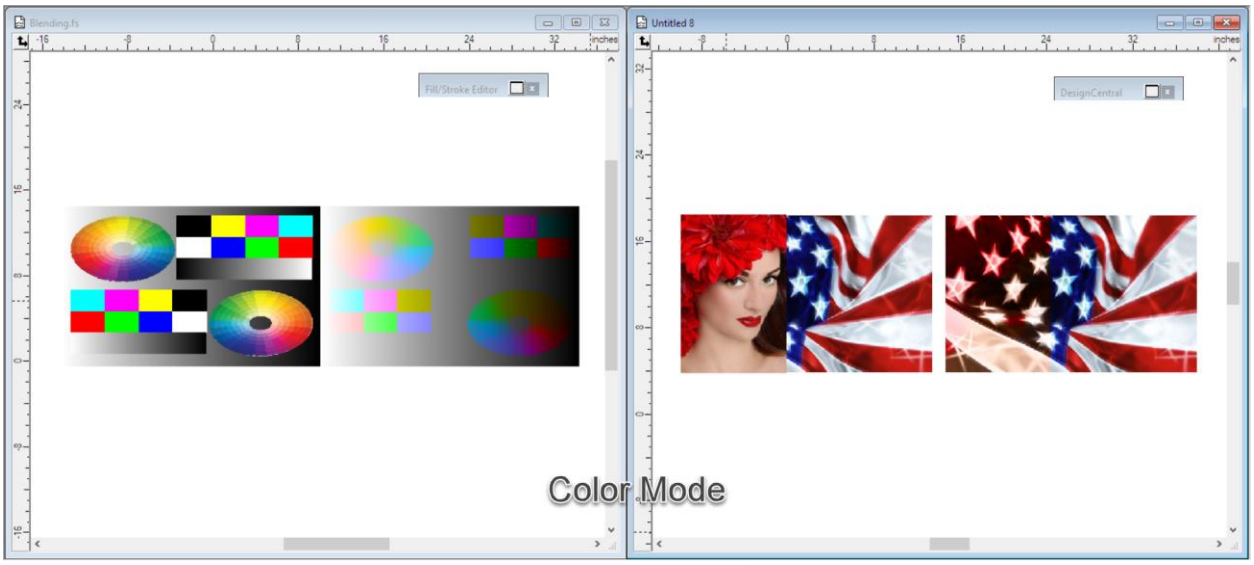
Keeps the saturation of the active upper layer and blends the luminosity and hue from the underlying layers—where colors from the active layer are saturated, they will appear using the luminosity and hue from the underlying layers.





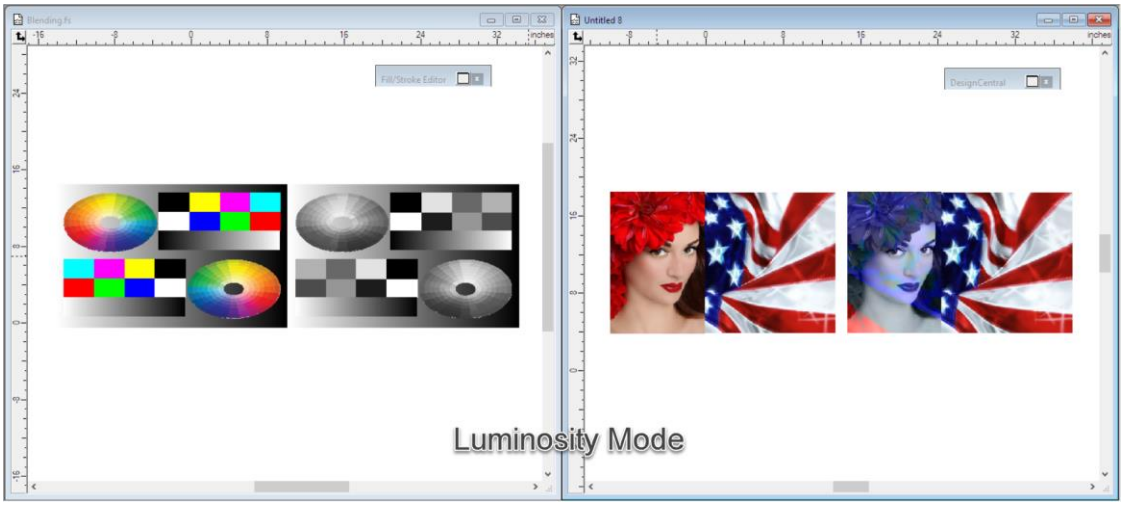
Color

Keeps the color of the active, upper layer, and blends the hue and saturation (the color) of the active layer with the luminance of the lower layers (a handy way to change the color of an image). Another thing to note about the Color blend mode, is that it and the Luminosity blend mode are commuted versions of each other. This means that if you apply the Color blend mode to the active layer, you will get the same effect if you apply the Luminosity blend mode to the layer below, and then switch the order of the layers.



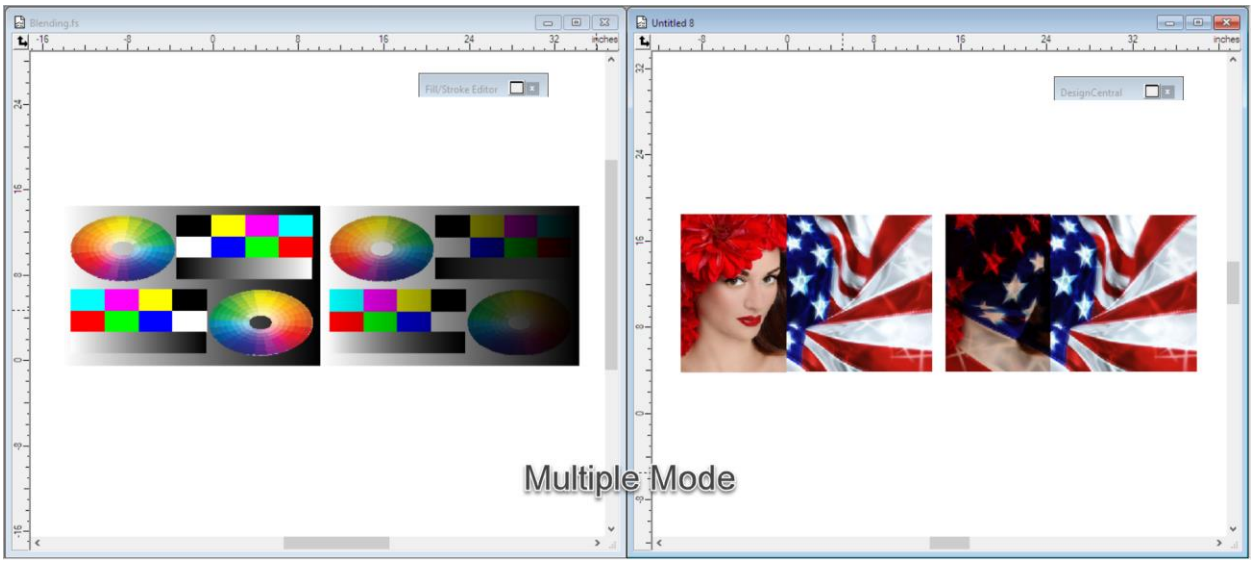
Luminosity

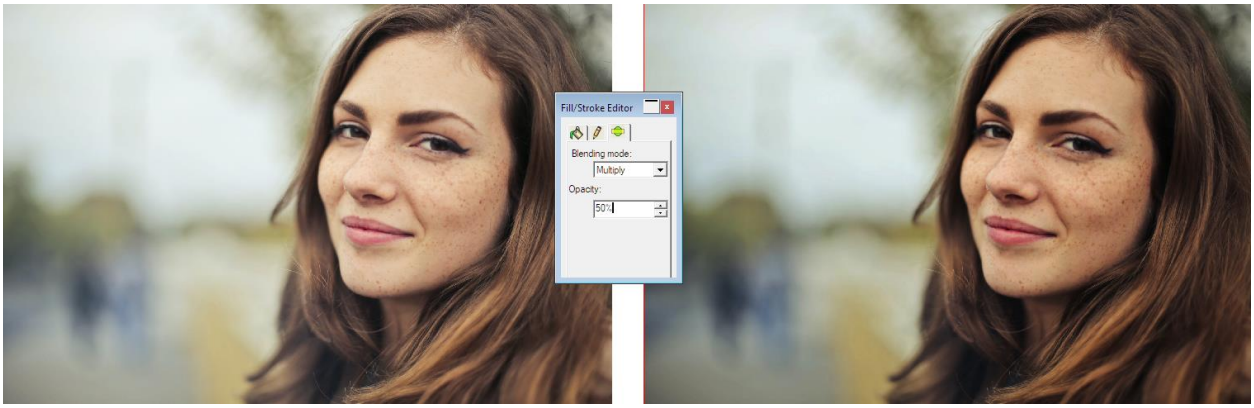
Keeps the luminance of the active upper layer and blends it with hue and saturation (the color) of the composite view of the layers below. This results in the colors of the underlying layers being blended with the active upper layer and replacing them. Another thing to note about the Luminosity blend mode, is that it and the Color blend mode are commuted versions of each other. This means that if you apply the Color blend mode to the active layer, you will get the same effect if you apply the Luminosity blend mode to the layer below, and then switch the order of the layers.



Multiply

The best mode for darkening. Works by multiplying the luminance levels of the current layer's pixels with the pixels in the layers below. Great for creating shadows and removing whites and other light colors (while keeping the darker colors). As an analogy, think of the selected layer and all the layers below as individual transparencies, and that they are stacked on top of each other, and then placed on an overhead projector. Using this analogy, the light passing through the lighter areas will have trouble getting through the darker areas, but the lighter areas will shine through other lighter areas with relative ease. If the Multiply blend mode isn't dark enough for what you're working on, try the Linear Burn or Color Burn modes. **Math: A×B** *(Active Layer multiplied by Background Layer)*.

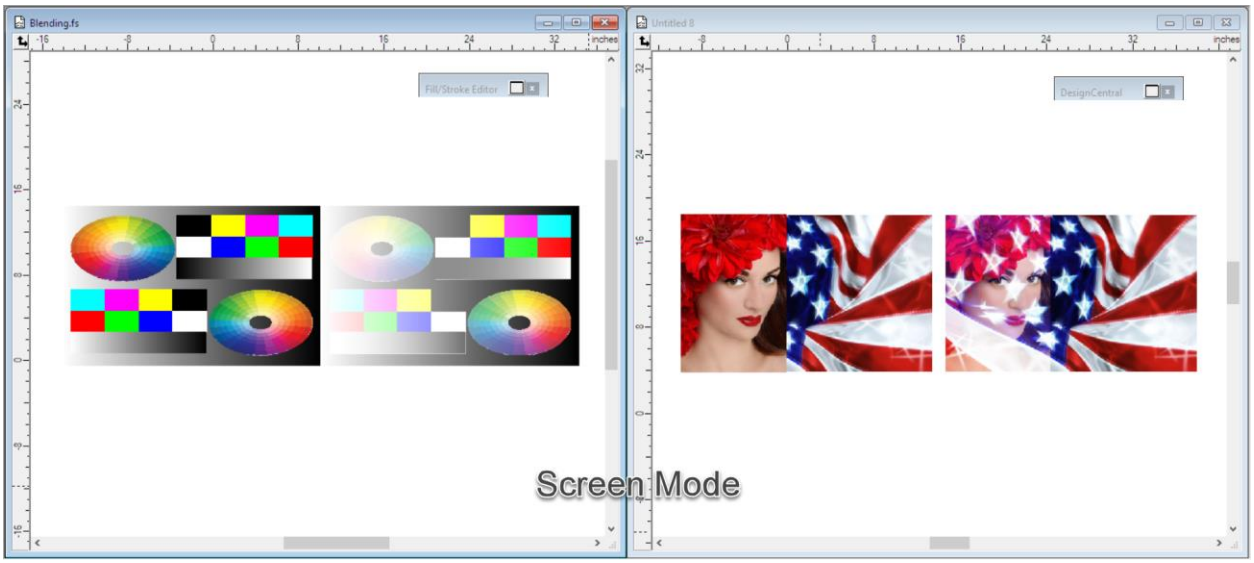


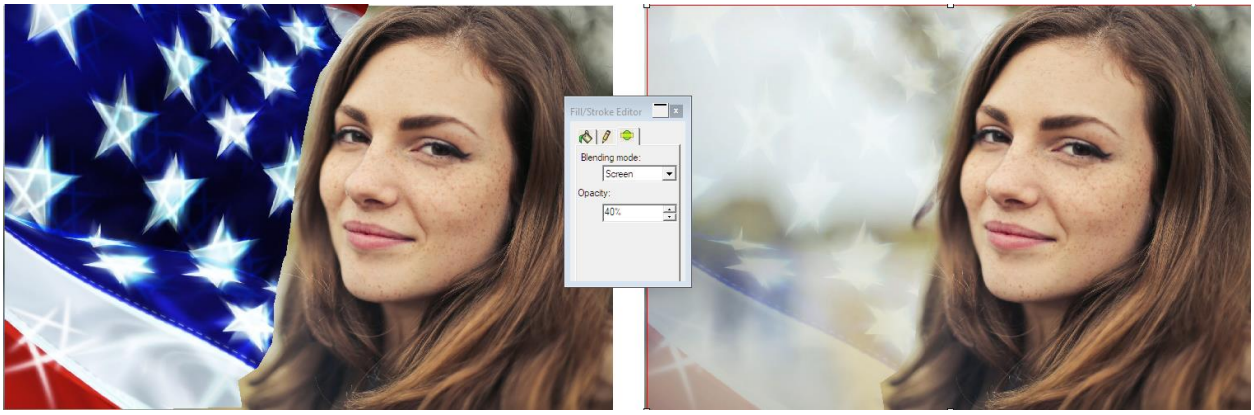


In the image above, I just copies the same image and placed it over the original, then using the multiply blend and about a 50% opacity, I could enhance the colors and darken the image a bit.

Screen

Like the Lighten blend mode, but brighter and removes more of the dark pixels, and results in smoother transitions. Works somewhat like the Multiply blend mode, in that it multiplies the light pixels (instead of the dark pixels like the Multiply blend mode does). As an analogy, imagine the selected layer and each of the underlying layers as being 35mm slides, and each slide being placed in a separate projector (one slide for each projector), then all of the projectors are turned on and pointed at the same projector screen…this is the effect of the Screen blend mode. This is a great mode for making blacks disappear while keeping the whites, and for making glow effects. **Math: 1–(1–A)×(1–B)** (A inverted multiplied by B inverted, and the product is inverted).



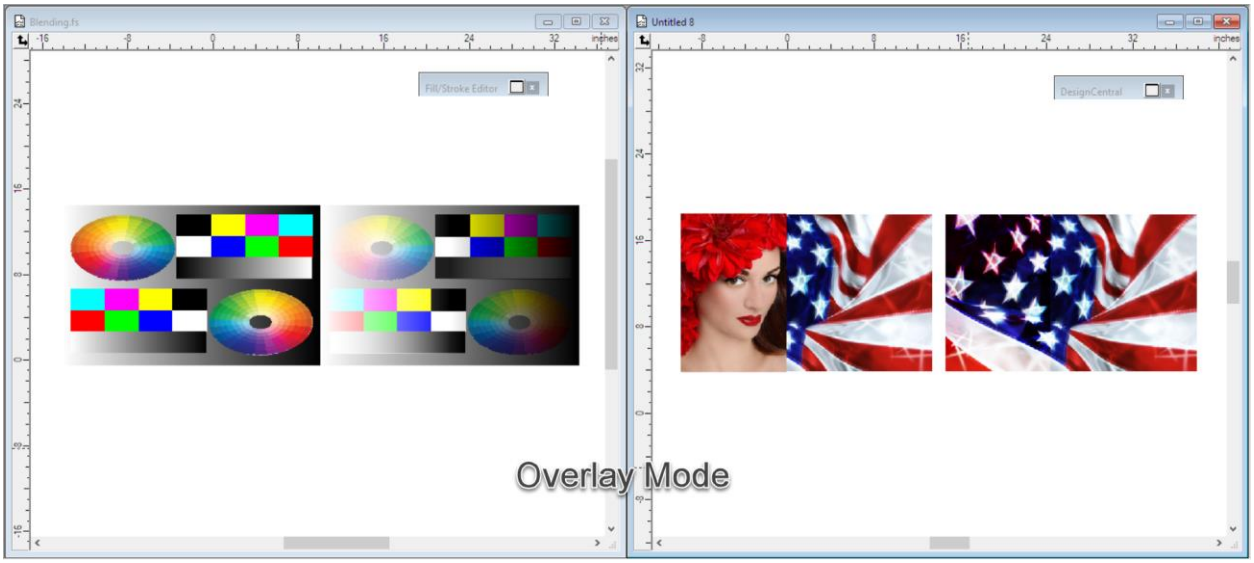


In the image above, I took a flag, and masked it to the left of the woman's face, then using selectwithin tool I selects the masked bitmap and choose the screen blend and changes opacity to 40% to make the flag appear as part of the background but not overwhelm the focus on the woman's face.

This is another example of combining bitmaps and using opacity to create an effect.

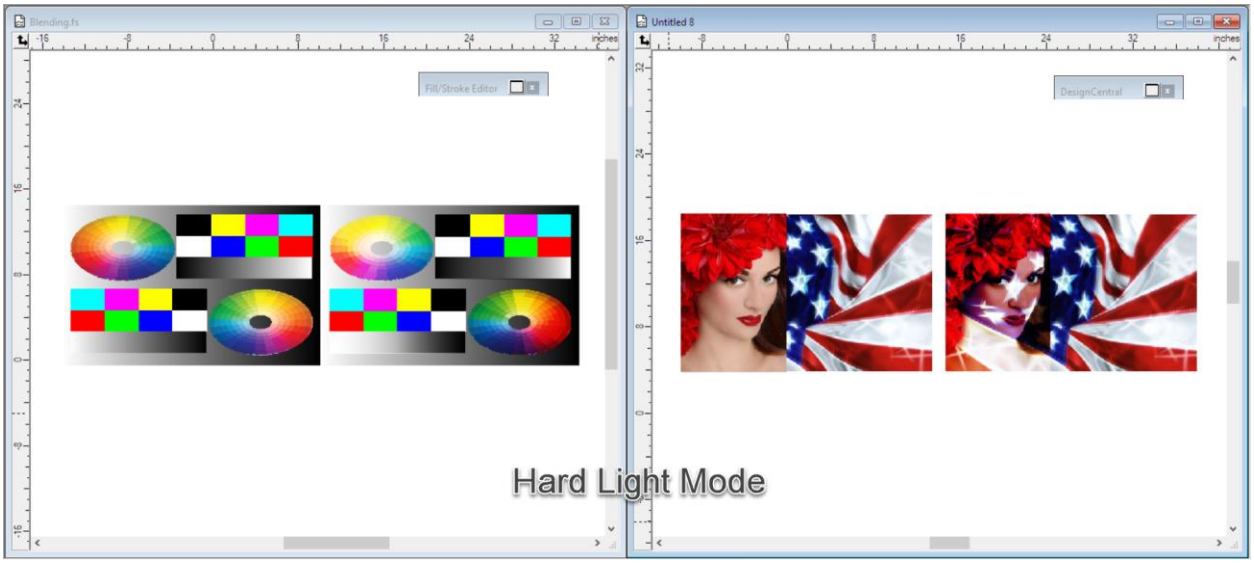
Overlay

Uses a combination of the Screen blend mode on the lighter pixels, and the Multiply blend mode on the darker pixels. It uses a half-strength application of these modes, and the mid-tones (50% gray) becomes transparent. One difference between the Overlay blend mode and the other Contrast blend modes, is that it makes its calculations based on the brightness of the layers below the active layer—all of the other Contrast modes make their calculations based on the brightness of the active layer. To get results like the Overlay mode, but where the blend mode favors the active layer, use the Hard Light blend mode (it uses similar logic, but favors the active layer). Another thing to note about the Overlay blend mode, is that it and the Hard Light blend mode are commuted versions of each other. This means that if you apply the Overlay blend mode to the active layer, you will get the same effect if you apply the Hard Light blend mode to the layer below, and then switch the order of the layers.



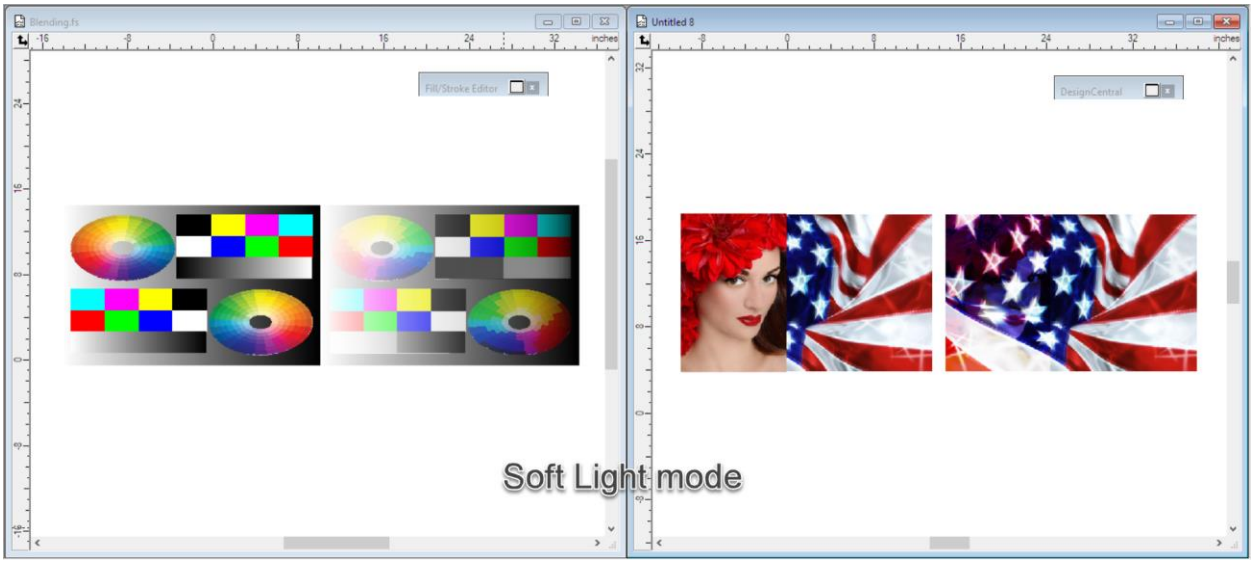
Hard Light

Uses a combination of the Linear Dodge blend mode on the lighter pixels, and the Linear Burn blend mode on the darker pixels. It uses a half-strength application of these modes, and logic like the Overlay blend mode, but favors the active layer, as opposed to the underlying layers. The effect is more intense than the Overlay blend mode, and results in harsher light. Another thing to note about the Hard Light blend mode, is that it and the Overlay blend mode are commuted versions of each other. This means that if you apply the Hard Light blend mode to the active layer, you will get the same effect if you apply the Overlay blend mode to the layer below, and then switch the order of the layers.



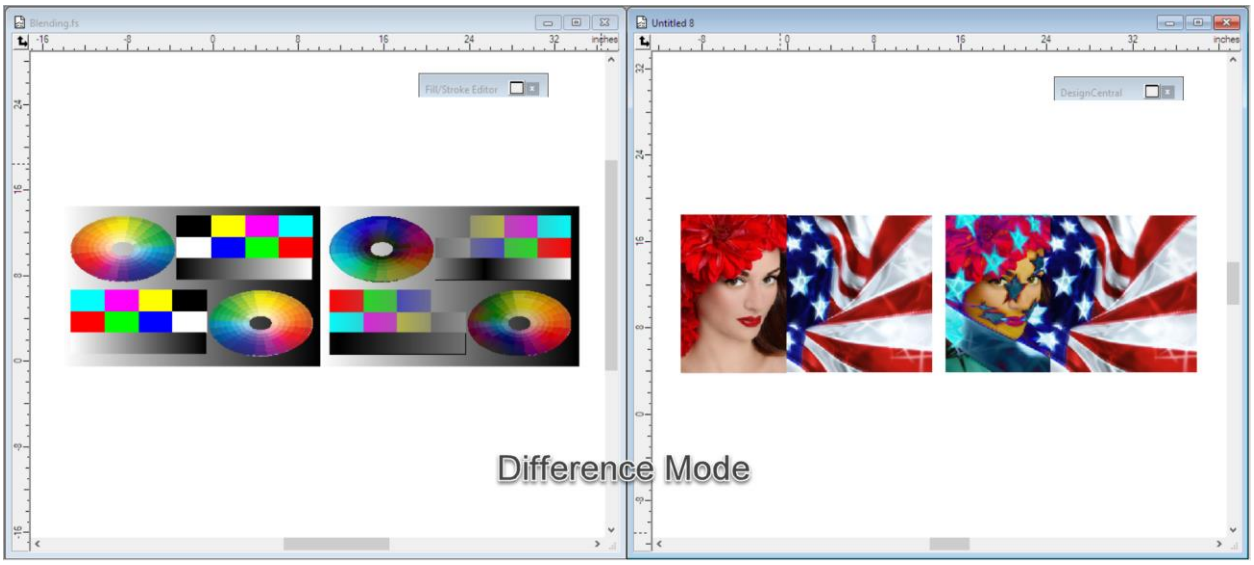
Soft Light

Uses a combination of the Screen blend mode on the lighter pixels, and the Multiply blend mode on the darker pixels (a half-strength application of both modes). Like the Overlay blend mode but results in a more organic effect that is softer results in somewhat transparent highlights and shadows.



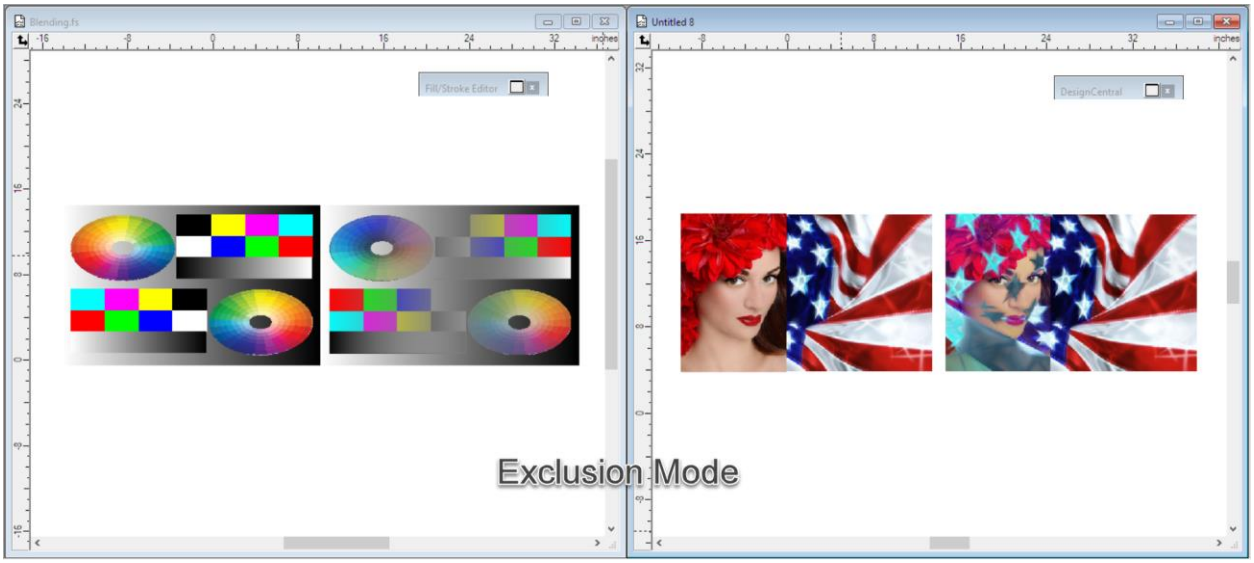
Difference

Subtracts a pixel on the active layer, from an equivalent pixel in the composite view of the underlying layers (B-A), and results in only absolute numbers (the subtraction never produces a negative number—if it turns out to be a negative number, it's converted into a positive number). It does a selective inversion where black never gets inverted, white inverts absolutely, and all the other luminance levels invert based on their brightness on a channel-by-channel basis. With this blend mode, similar colors cancel each other, and the resulting color is black.



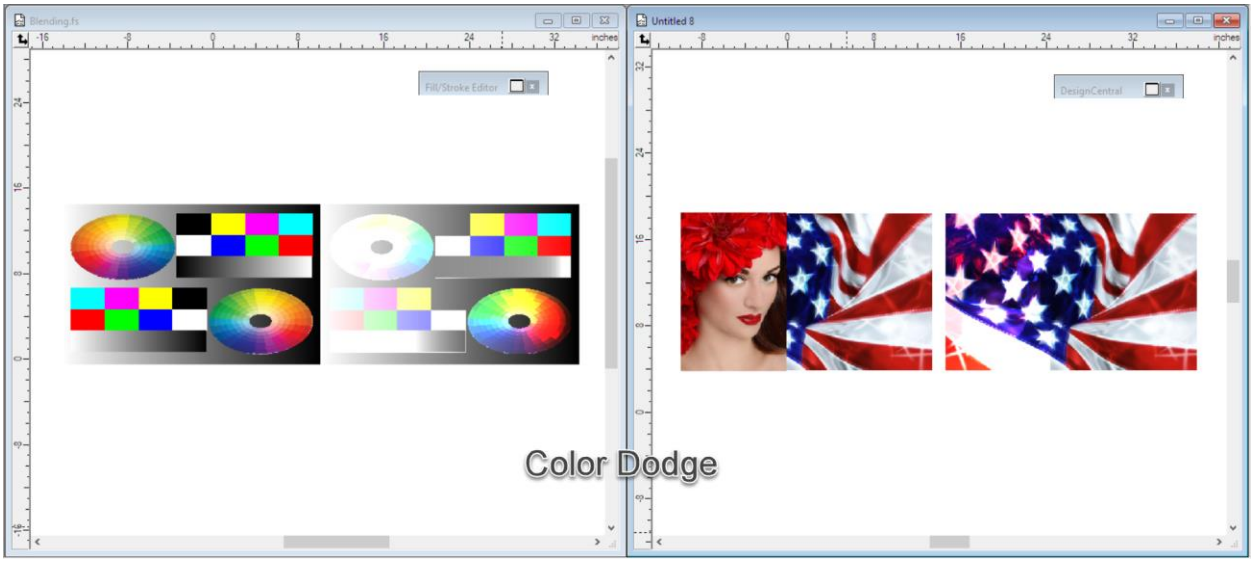
Exclusion

Subtracts a pixel on the active layer, from an equivalent pixel in the composite view of the underlying layers (B-A), and results in only absolute numbers (the subtraction never produces a negative number). It does a selective inversion where black never gets inverted, white inverts absolutely, and all the other luminance levels invert based on their brightness on a channel-by-channel basis. With this blend mode, similar colors cancel each other, and the resulting color is gray. This mode is basically the same as the Difference blend mode, except when similar colors cancel each other, the resulting color is gray instead of black.



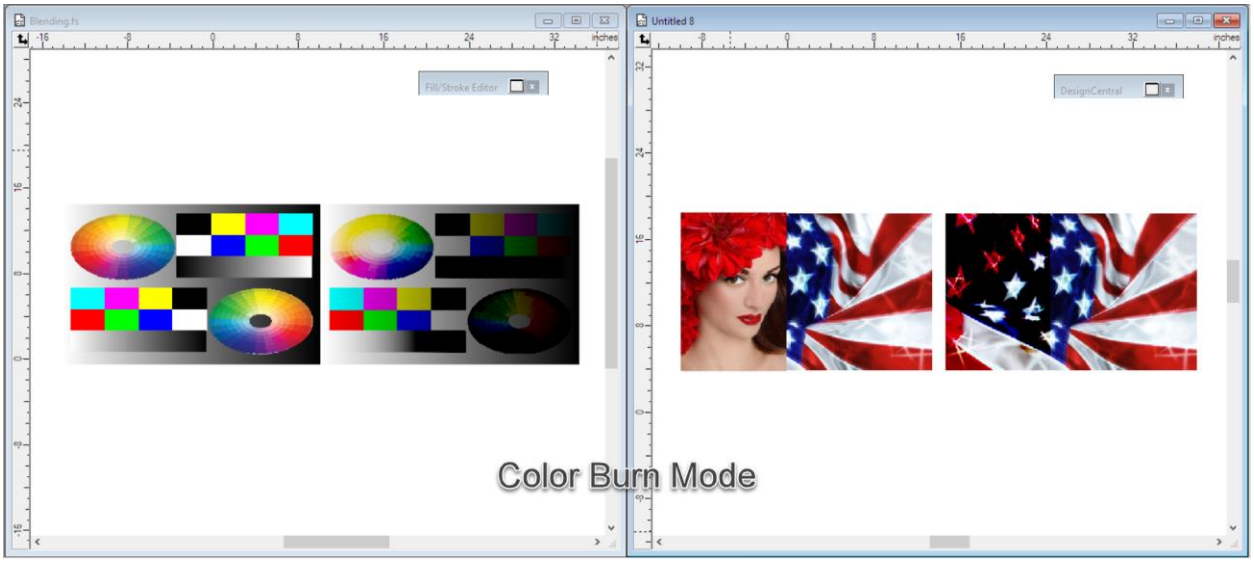
Color Dodge

Brighter than the Screen blend mode. Results in an intense, contrasty color-typically results in saturated mid-tones and blown highlights. **Math: B÷(1–A)** (B divided by A inverted).



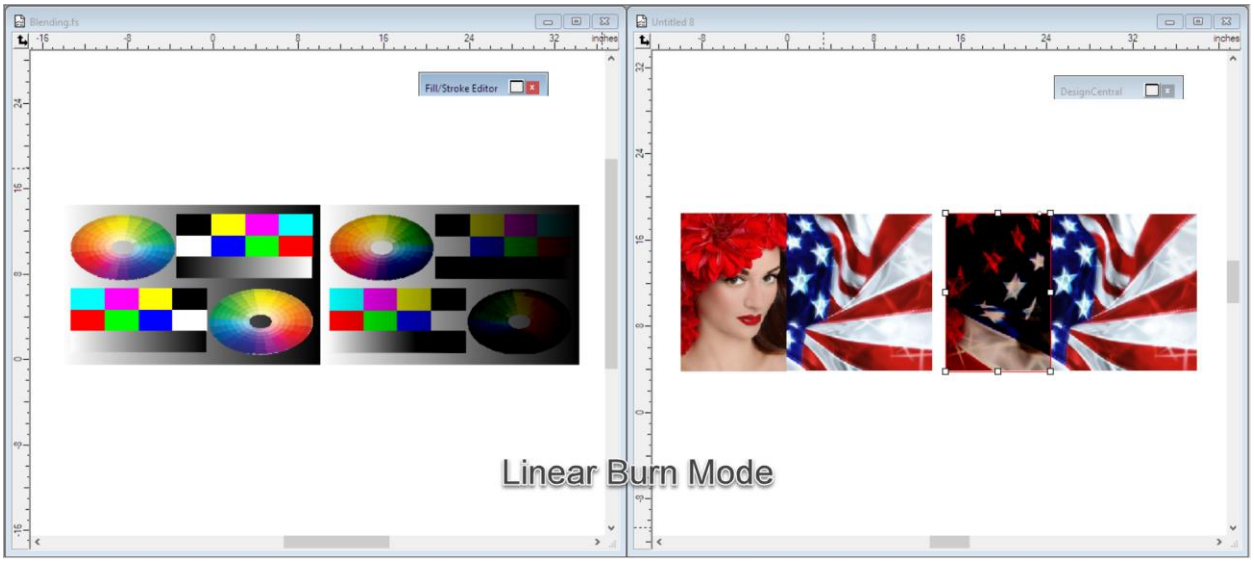
Color Burn

Darker than Multiply, with more highly saturated mid-tones and reduced highlights. This is one of the "Special 8" that I mentioned earlier, where Fill and Opacity behave differently. **Math: 1−(1−B)÷A** (Background Layer inverted, divided by Active Layer, and the quotient is then inverted).



Linear Burn

Darker than Multiply, but less saturated than Color Burn. This is one of the "Special 8" that I mentioned earlier, where Fill and Opacity behave differently. **Math: A+B−1** (Active Layer plus Background Layer, then white is subtracted from the sum (an inversion).



Play Around!

It's important that you play around with these tools. In fact, its not a bad idea if you want some ideas, to look at google and search for Photoshop blending mode examples. You will find plenty of them and maybe get some idea of creating the effect you want!

Learn More!

To learn even more you can do with FlexiSIGN & Print, visit www.thinkmutoh.com or attend one of our many webinars where Flexi expert mark Rugen will amaze you with how to use the software for design and printing on wide format printers.

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