

Photoshop Blending Modes

Digital Image editing and manipulating are based on pixel modification.

Millions of pixels having one unique color each make an image.

In computer as well as other electronic display systems, RGB color scheme is used.

Red, Green and Blue are the primary colors in RGB.

Secondary colors are the colors obtained by blending the Primary Colors.

Tertiary colors are the colors obtained by blending the Primary Colors with Secondary Colors.

Using channels, 8 bits can produce 16,777,216 colors

Definition used in this presentation:

- **Hue:** Hue refers to the color...red, blue, etc.
- **Luminosity, or Lightness:** A measure of the amount of light reflected from a hue. Those hues with a high content of white have a higher luminance.
- **Saturation:** The degree of purity of a hue.
- **Opacity:** The amount of transparency an applied color a layer or have.
- **Base Colors:** The colors in an existing image or the base layer.
- **Blend Colors:** The colors applied to the base color by means of a tool or a layer.
- **Result Colors:** Are the colors resulting from the blend.

Blending Modes can be selected from active image screen or from layers palette. In CS blending mode are also available in Apply Image option.

All Blending modes are incorporated in Photoshop brushes, color replacement, filters and other adjustment features.

Using the Blending Modes outside of the preset functions opens up space for creativity.

Photoshop Blending modes summary

Normal mode is the default.

The base colors and the blend colors will not interact.




The resulting colors take the full value of the colors of the blend colors.

Dissolve blends base colors and the blend colors.

It randomly selects and mixes pixels of the base color or the blend color, depending on the opacity at any pixel location.

Behind Edits or paints only on the transparent part of a layer.

This mode works only in layers with Lock Transparency deselected and is analogous to painting on the back of transparent areas on a sheet of acetate.

Clear Edits or paints each pixel and makes it transparent. This mode is available for the Shape tools (when fill region is selected), Paint Bucket tool , Brush tool , Pencil tool , Fill

command, and Stroke command. You must be in a layer with Lock Transparency deselected to use this mode.

Darken applies the darkest value of the base and blend Colors.

Multiply multiplies the value of each channel of base colors by the value of the blend colors.

Multiplication over 255 (total of 65,025)

are divided by 255. Creating an overall darker image.

Multiplying by Black (0) results in Black

Multiplying by White (255) takes the color of the blend color.

Burn Color darkens the base colors to reflect the blend colors.

Blending with white produces no change.

Linear Burn works like multiply but the results are more intense.

Blending with white produces no change.

Lighten applies the lightest value of the Base and Blend Colors.

Therefore the lighter colors do not change while the dark pixels become lighter.

Screen in a way, is the opposite of Multiply. Overall, it brightens the Base Colors.

Screening with black leaves the color unchanged. Screening with white produces white.

Color Dodge brightens the base colors with the blend colors, resulting in a lower contrast image.

Black and white remain unmodified

Linear Dodge [Add] works like screen but with more intense results. It brightens the base color to reflect the blend color by increasing the brightness. Blending with black produces no change.

Overlay To create the result color, the Overlay Blend mode Multiplies the dark areas and screens the light areas. This increases the contrast and saturation.

However, areas where the blend color has a tonality of 50% gray are not affected by the Overlay Blend mode.

Soft Light Creates a soft lighting effect.

Lightens colors if the blend color (light source) is lighter than 50% grey.

Darkens colors if the blend color (light source) is darker than 50% grey.

Hard Light multiplies the dark colors and screens the light colors. It creates hard light effect.

Lightens colors if the blend color (light source) is lighter than 50% grey.

Darkens colors if the blend color (light source) is darker than 50% grey.

Vivid Light combines the effects of Color Dodge and Color Burn modes.

Burns or Dodges base colors by increasing or decreasing contrast depending on the blend colors.

Lightens colors if the blend color (light source) is lighter than 50% grey.

Darkens colors if the blend color (light source) is darker than 50% grey.

Linear Light is the same as Vivid light but it changes the brightness of the lower layer.

Pin Light Replaces the colors, depending on the blend colors.

If the blend color (light source) is lighter than 50% gray, pixels darker than the blend color are replaced, and pixels lighter than the blend color do not change.

If the blend color is darker than 50% gray, pixels lighter than the blend color are replaced, and pixels darker than the blend color do not change.

Hard Mix Adds the red, green and blue channel values of the blend colors to the RGB values of the base colors. Image colors are reduced to the primary and secondary colors.

If the resulting sum for a channel is 255 or greater, it receives a value of 255 (white color); if less than 255, a value of 0 (black color). Therefore, all blended pixels have red, green, and blue channel values of either 0 or 255. This changes all pixels to primary colors: red, green, blue, cyan, yellow, magenta, white, or black.

Difference subtracts either the blend color from the base color or the base color from the blend color, depending on which has the greater brightness value.

Large differences lighten the color, and small differences darken the color.

Blending with white inverts the base color values.

Blending with black produces no change.

Exclusion blending mode works very much like *Difference* but the contrast is lower.

When white is the blend color, the base image is inverted.

When black is the blend color, there is no change.

Hue Creates a result color with the luminance and saturation of the base color and the hue of the blend color.

Hue changes the hue of the base color to the hue of the applied color but leaves brightness and saturation alone.

Saturation Creates a result color with the luminance and hue of the base color and the saturation of the blend color.

Color changes the hue and saturation of the base color to the hue and saturation of the applied color but leaves luminosity alone.

Luminosity changes the luminosity of the base color to the luminosity of the applied color while leaving hue and saturation the same.

Add Adds the pixel values in two channels. This is a good way to combine non-overlapping images in two channels.

Subtract Subtracts the pixel values in the source channel from the corresponding pixels in the target channel. As with *Add* mode, the result is then divided by the *Scale* factor and added to the *Offset* value.

Lighter Color Compares the total of all channel values for the blend and base color and displays the higher value color. *Lighter Color* does not produce a third color, which can result from the *Lighten* blend, because it chooses the highest channel values from both the base and blend color to create the result color.

Darker Color Compares the total of all channel values for the blend and base color and displays the lower value color. *Darker Color* does not produce a third color, which can result from the *Darken* blend, because it chooses the lowest channel values from both the base and the blend color to create the result color.

Examples:

1. Poor Photographer's HDR (Normal Blending Mode)
 - Load over and underexposed images
 - Using the Move Tool drag on onto the other
 - Use the Layer Opacity to the desired level
 - Repeat the same with other exposures, if any

2. Multiply Blending Mode - Orton effect
 - Duplicate the original image twice
 - Saturate one copy
 - Brighten and Gaussian blur the second
 - Move one copy onto the other using the move tool
 - Select Multiply Blending Mode
 - Adjust Layer opacity for best result

3. Color Burn Mode Application - Enhance Color Using a brush
 - Load image - Masking portions may be helpful
 - Use eye dropper to pickup the area that need color enhancement (sample size 3 by 3)
 - Change foreground color to desired color
 - Select brush tool - hardness 0
 - set opacity to 7-10%
 - Select Color Burn Blending Mode
 - Paint over the area that need enhancement
 - Repeat with other colors

4. Screen Blending Mode - Fireworks
 - Load night scene
 - Duplicate Layer
 - Load fireworks - use Level to make all the dark area into pure black
 - Move fireworks onto main using the Move Tool
 - Reduce opacity for placement than return to 100%
 - Change Blending Mode to Screen
 - Duplicate layer
 - Use Free Transform to mirror it and drag it into the water to create a reflection
 - Change Opacity as desired

5. Overlay Blending Mode - Increase saturation and contrast
 - Load image
 - Duplicate layer
 - Create a mask layer
 - Select the mask layer and use the gradient tool to select the area that needs an increase in contrast and saturation

 - Change layer Blending Mode to Overlay
 - Change Opacity as necessary

6. Hard Light/Soft Light Mode Demonstration
 - Load image
 - Duplicate layer
 - Create an adjustment layer (levels or curves) and select OK without any change
 - Select Hard Light Blending Mode or Soft Light Blending Mode

7. Difference and Exclusion Mode Demonstration - Invert image

- Load image
- Create a new layer
- Fill new layer with white
- Select either Difference or Exclusion Mode

8. Blending Mode Saturation - Selective black and white

- Load image
- Duplicate Image
- Select foreground color to Black
- Select Bucket Tool
- Change Bucket Tool Blending Mode to Saturation
- Click on image avoiding red and yellow (this step may be needed more than once)
- Select Brush Tool with Luminosity Blending Mode
- Low Opacity - 0% Hardness
- Paint over the Image to control lighting and contrast

9. Color Blending Mode - Eye color

- Load Image
- Enlarge eye area
- Eye drop tool - set Sample Size 3by 3
- Sample eye color
- Change to desired color
- Select Brush Tool - 50% hardness
- Set brush size to half the Iris size
- Create a new layer
- Change layer blending mode to Color
- Paint the Iris
- Change Opacity as desired

Brighten Whites

- Create a new layer
- Use lasso tool to select eye white
- From Select pull down choose
Modify>Feather
- Set feather to 2-3 pixels
- Select Hue/Saturation adjustment layer
- Reduce RGB and Red Saturation as needed
- Select Layer Blending mode to Screen
- Adjust layer opacity for natural look

10. Luminosity Blending Mode application

- Load image
- Change foreground color to black, white or any other color that need change in luminosity
- Select Brush Tool
- Set brush hardness to 0%
- Select Luminosity Blending Mode
- Set Opacity as needed
- Paint over areas the need change in luminosity