

Photoshop 7 Blend Modes

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Blend mode basics

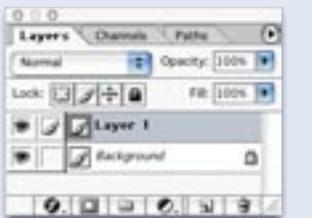
Blend modes compare the color values of two pixels: a **base** (existing) pixel, and a pixel **applied** from a layer, painting tool, or image. What makes each mode different is the method it uses to process the two pixels' color values.

Use blend modes to go beyond simple opacity (transparency). Opacity affects all applied pixels uniformly, while a blend mode can change pixels in different amounts depending on color and brightness. Blend modes and opacity can work together—the mode is applied first, then the opacity.

Modes are a fun way to create a visual style, but they also have practical uses. For example, painting with **Color** mode is a tried-and-true way to colorize grayscale images (convert the image to RGB first). Some blend modes have special uses when applied to a duplicate layer stacked on its original. For example, **Screen** helps bring out shadow detail, while **Multiply** can increase density in highlights. **Soft Light** and **Hard Light** are used for some sharpening techniques because they enhance local contrast. **Difference** will show you if two images are identical (if they are, you see black).

Where you can use blend modes

Any time you see a Mode pop-up menu, you've got blend modes. You'll usually see the Mode pop-up menu in the Layers palette, but it also appears in the options bar for tools that alter existing pixels, or in features that combine images such as the Apply Image command.



Mode pop-up menu in the brush options bar (top) and Layers palette (bottom)

Blend mode shortcuts

To set mode: Press Shift+Alt/Option+

Normal	N
Dissolve	I
Behind*	Q
Clear*	R
Darken	K
Multiply	M
Color Burn	B
Linear Burn	A
Lighten	G
Color Dodge	D
Linear Dodge	W
Overlay	O
Soft Light	F
Hard Light	H
Vivid Light	V
Linear Light	J
Pin Light	Z
Difference	E
Exclusion	X
Hue	U
Saturation	T
Color	C
Luminosity	Y

Where to find blend modes

Tools	Features
Blur	Adjustment layers
Brush	Apply Image command
Clone Stamp	Calculations command
Eraser	Fade command
Gradient	Filters
Healing Brush	Layer Effects dialog box
History Brush	Layers palette
Pencil	
Sharpen	
Smudge	

*Available only for painting tools

Afraid of color math? Here's all you need to know

Instead of hurting your brain trying to predict how your image will be affected by each blend mode, why not cycle through each blend mode quickly, easily, and visually? Simply use the keyboard shortcuts for Next Blend Mode (Shift +) and Previous Blend Mode (Shift -). Just press them repeatedly until you like what you see. Note that if a painting tool is active, a shortcut will change the mode of the painting tool, not the current layer.

Changes to modes in Photoshop 7

If the Mode menu looks a little longer in Photoshop 7 and ImageReady 7, that's because it is. The **Clear**, **Linear Burn**, **Linear Dodge**, **Pin Light**, and **Vivid Light** modes are new in Photoshop 7. Also, modes have been rearranged in version 7's Mode pop-up menu so that darken modes and lighten modes are grouped separately in the menu.

Refining a blend mode

Sometimes the mode that looks best is too strong or affects too much of the tonal range. You can always tune the effect of a layer mode by reducing opacity or changing other Blending Options in the Layer Style dialog box, which you can open by double-clicking a layer icon in the Layers palette.

Opacity

Reducing layer or brush opacity shows more of the underlying pixels and less of the effect of the mode.

Advanced Blending options

While all of the Advanced Blending options apply to layer effects in general, the ones covered below are specifically useful with blend modes.

Fill Opacity affects the opacity of layer pixels but not of any layer effects you've applied. The **Channels** boxes let you control which color channels are affected.

The blend sliders let you confine layer effects to a specific range of brightness. The **Blend If** pop-up menu lets you control which color channels are affected on both layers. The top slider controls what range of the upper layer drives the effect, and the bottom slider controls what range of the underlying layer is affected. To set the range, drag the left and right triangles on each slider.

Notice that each triangle has a vertical line down the middle. This means you can split the triangle to feather, or soften, the blend transitions if they seem too abrupt. To split a triangle, hold down Alt (Windows) or Option (Mac OS) as you drag the left or right half of a slider triangle.



Blending options in the Layer Styles dialog box. Double-click a layer icon to open it.

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Blend modes compare base and applied colors



Base color layer



Applied colors on transparent layer

The blend mode examples in this tipsheet use the colors in the base and applied images shown on the left, with the applied image stacked on top of the base image. The only change throughout the examples is the mode used by the applied colors. In the examples, watch what happens to black, white, and color combinations.

Basic modes



Normal



Dissolve at 50% opacity

Normal mode simply displays applied colors, unchanged, over the base image. Layers behind the applied colors show through transparent pixels on that layer. **Dissolve** is similar, but where reducing Normal opacity makes pixels increasingly but equally transparent, reducing Dissolve opacity randomly makes more pixels completely transparent.

Modes that darken



Darken



Multiply

These modes darken image areas. No part of the base image becomes lighter, and white is the neutral color for these modes—applying white has no effect.

Darken compares the applied and base pixels and keeps the darker pixel. **Multiply** produces a more intense version of Darken because it multiplies the two pixels' color values. **Color Burn** colorizes darker base pixels with the applied color; lighter base pixels don't change as much. If Color Burn is too extreme, try **Linear Burn**, which is a lower-contrast version of Color Burn.



Color Burn



Linear Burn

Light source modes



Overlay



Soft Light

In these modes, the final color depends on whether the applied or base pixels are lighter or darker than 50% gray—the neutral color for these modes.

The main differences among these modes have to do with the amount of contrast they produce and how they produce it. **Overlay** tries to preserve the base pixels' highlight and shadow values. **Soft Light** uses applied pixels to dodge and burn base pixels, while **Hard Light** screens and multiplies them. **Vivid Light** lightens and darkens base pixels using contrast, while **Linear Light** uses brightness. **Pin Light** doesn't combine applied and base pixel colors—instead, the applied pixel completely replaces the base pixel if it's lighter than 50% gray and lighter than the base pixel, or darker than 50% gray and darker than the base pixel.



Hard Light



Vivid Light



Linear Light



Pin Light

Painting modes



Behind



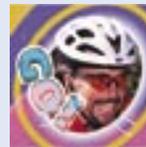
Clear

These two modes are only available when you use painting tools. In both examples on the left, the brush tool is painting the same green color on the upper graphic layer.

Behind creates the appearance of the applied color being painted behind the base color. It does this by painting only the transparent pixels on a layer. **Clear** let you "paint transparency." Any pixels it touches become clear, revealing any layers behind. For these modes to work, Lock Transparency must be turned off in the Layers palette.

Replace mode is used only by the new healing brush, to help preserve details like texture and grain at stroke edges.

Modes that lighten



Lighten



Screen

These modes lighten image areas. No part of the base image becomes darker, and black is the neutral color for these modes—applying black has no effect.

Lighten compares the applied and base pixels and keeps the lighter pixel. **Screen** produces a more intense version of Lighten because it multiplies the inverse of the two pixels' color values. **Color Dodge** colorizes lighter base pixels with the applied color; darker base pixels don't change as much. If Color Dodge is too extreme, try **Linear Dodge**, which is a lower-contrast version of Color Dodge.

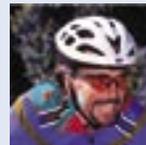


Color Dodge



Linear Dodge

Color component modes



Hue



Saturation

These modes transfer specific color components of the applied pixel to the base pixel. **Hue** replaces the base color's hue with the applied color's hue, but preserves the base color's lightness and saturation. **Saturation** replaces the base color's saturation without affecting its hue and lightness. **Color** replaces the base color's hue and saturation without affecting its lightness. **Luminosity** replaces the base color's lightness without affecting its hue and saturation.

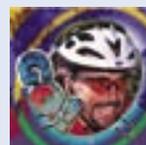


Color

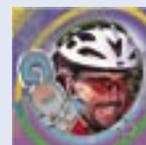


Luminosity

Difference modes



Difference



Exclusion

Difference and **Exclusion** accentuate the differences between the applied and base color values. The bigger the difference, the more intense the color. **Exclusion** is a lower-contrast version. You get a neutral result (black) if the applied and base pixels are identical.