

## PHOTOSHOP BLEND MODES

Photoshop offers the ability to “blend” colors from one layer (or from paint applied by a paint tool) with the layers below it. In fact, blending modes apply to a wide range of tools, including most of the brush tools. They can be found in the Layers palette, the Layer Style dialog box, the Fill command, and the options bars of the brush tool, among other places (wherever you see a “Mode:” or “Blend Mode:” pop-up menu). There are 25 modes for the brush tool and 23 for layers; other tools usually have far fewer modes or slightly different modes.

The *blend* or *active layer* is the layer to which the blend mode is being applied. The *base layer(s)* is(are) the layer(s) under the blend layer where the *resulting color* changes occur. Similarly, the *blend* color is that color being applied by the paint tool, while the *base* color is the color being painted over, resulting in the *result* color.

To select a blending mode for a tool or for a layer choose from the Mode pop-up menu in the tool options bar or in the Layers palette.

When you apply a blend mode to a brush, it affects only the underlying pixels the brush stroke passes over. When you apply a blend mode to a layer, all of the pixels in the layer are affected. In the example provided of the green jewel beetle, all of the strokes are 100% opacity except dissolve. If you lower the opacity of the brush (or layer) you will get different effects as you will by choosing a color other than red. The application of blend modes can get quite complex!

For a more complete explanation of these modes see pages 262-270, 701-724 in the *Photoshop CS Bible* by Deke McClelland, 2004, Wiley Publishing, Inc.

[The following explanations, displayed in Arial 10 pt font, were copied from Photoshop’s on-line help guide. Additional explanations, in Times font, are from various sources. Refer to the Photoshop file of the green jewel beetle to see the effect of these blend modes and experiment with your own examples].

### The independent modes:

#### **Normal**

Edits or paints each pixel to make it the result color. This is the default mode. (Normal mode is called Threshold when you’re working with a bitmapped or indexed-color image.) All pixels, regardless of their characteristics, are replaced by the blend color. This is like painting over patterned wall paper with a solid colored paint.

#### **Dissolve**

Edits or paints each pixel to make it the result color. However, the result color is a random replacement of the pixels with the base color or the blend color, depending on the opacity at any pixel location.

At 100% opacity and/or hard edges, dissolve has no effect. It only works on brushes and layers with feathered, softened, or lower opacity edges or areas.

**Behind (a brush mode only)**

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 in a sheet of acetate.

This mode only applies to brushes, not layers.

**Clear (a brush mode only)**

Edits or paints each pixel and makes it transparent. This mode is available for the Line tool (when fill region is selected), the Paint Bucket tool, the Brush tool, the Pencil tool, the Fill command, and the Stroke command. You must be in a layer with Lock Transparency deselected to use this mode.

Also, only applies to brushes. Essentially works just like the Eraser tool.

The darkening modes:**Darken**

Looks at the color information in each channel and selects the base or blend color – whichever is darker – as the result color. Pixels lighter than the blend color are replaced, and pixels darker than the blend color do not change.

**Multiply**

Looks at the color information in each channel and multiplies the base color by the blend color. The result color is always a darker color. Multiplying any color with black produces black. Multiplying any color with white leaves the color unchanged. When you're painting with a color other than black or white, successive strokes with a painting tool produce progressively darker colors. The effect is similar to drawing on the image with multiple magic markers.

**Color Burn**

Looks at the color information in each channel and darkens the base color to reflect the blend color by increasing the contrast. Blending with white produces no change.

**Linear Burn**

Looks at the color information in each channel and darkens the base color to reflect the blend color by decreasing the brightness. Blending with white produces no change.

The lightening modes:**Lighten**

Looks at the color information in each channel and selects the base or blend color – whichever is lighter – as the result color. Pixels darker than the blend color are replaced, and pixels lighter than the blend color do not change.

**Screen**

Looks at each channel's color information and multiplies the inverse of the blend and base colors. The result color is always a lighter color. Screening with black leaves the color unchanged. Screening with white produces white. The effect is similar to projecting multiple photographic slides on top of each other.

**Color Dodge**

Looks at the color information in each channel and brightens the base color to reflect the blend color by decreasing the contrast. Blending with black produces no change.

**Linear Dodge**

Looks at the color information in each channel and brightens the base color to reflect the blend color by increasing the brightness. Blending with black produces no change.

The Light or contrast modes:**Overlay**

Multiplies or screens the colors, depending on the base color. Patterns or colors overlay the existing pixels while preserving the highlights and shadows of the base color. The base color is not replaced but is mixed with the blend color to reflect the lightness or darkness of the original color.

**Soft Light**

Darkens or lightens the colors, depending on the blend color. The effect is similar to shining a diffused spotlight on the image.

If the blend color (light source) is lighter than 50% gray, the image is lightened as if it were dodged. If the blend color is darker than 50% gray, the image is darkened as if it were burned in. Painting with pure black or white produces a distinctly darker or lighter area but does not result in pure black or white.

**Hard Light**

Multiplies or screens the colors, depending on the blend color. The effect is similar to shining a harsh spotlight on the image.

If the blend color (light source) is lighter than 50% gray, the image is lightened, as if it were screened. This is useful for adding highlights to an image. If the blend color is darker than 50% gray, the image is darkened, as if it were multiplied. This is useful for adding shadows to an image. Painting with pure black or white results in pure black or white.

**Vivid Light**

Burns or dodges the colors by increasing or decreasing the contrast, depending on the blend color. If the blend color (light source) is lighter than 50% gray, the image is lightened by decreasing the contrast. If the blend color is darker than 50% gray, the image is darkened by increasing the contrast.

**Linear Light**

Burns or dodges the colors by decreasing or increasing the brightness, depending on the blend color. If the blend color (light source) is lighter than 50% gray, the image is lightened by increasing the brightness. If the blend color is darker than 50% gray, the image is darkened by decreasing the brightness.

**Pin Light**

Replaces the colors, depending on the blend color. 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. This is useful for adding special effects to an image.

**Hard Mix**

Uses vivid light mode and applies a threshold. Result consists of only the 6 primary colors (RGBCMY), white, and black.  
New to Photoshop CS.

The invert or comparative modes:**Difference**

Looks at the color information in each channel and 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. Blending with white inverts the base color values; blending with black produces no change.

**Exclusion**

Creates an effect similar to but lower in contrast than the Difference mode. Blending with white inverts the base color values. Blending with black produces no change.

**The HSL modes:****Hue**

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

**Saturation**

Creates a result color with the luminance and hue of the base color and the saturation of the blend color. Painting with this mode in an area with no (0) saturation (gray) causes no change.

**Color**

Creates a result color with the luminance of the base color and the hue and saturation of the blend color. This preserves the gray levels in the image and is useful for coloring monochrome images and for tinting color images.

**Luminosity**

Creates a result color with the hue and saturation of the base color and the luminance of the blend color. This mode creates an inverse effect from that of the Color mode.