

An Introduction To Layer Blend Modes

Introduction

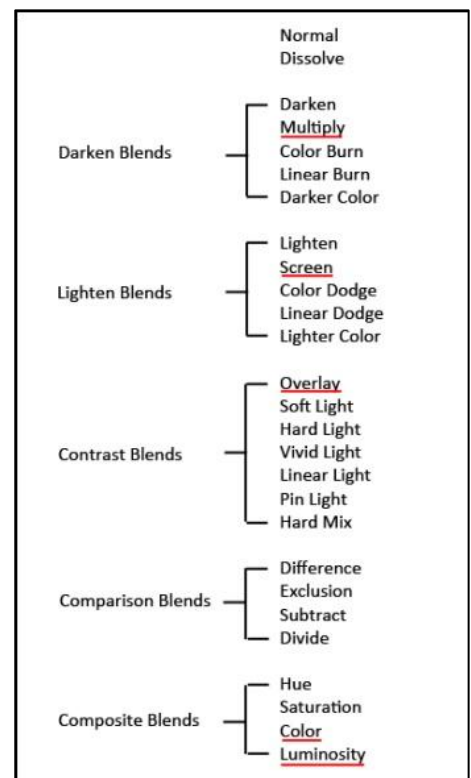
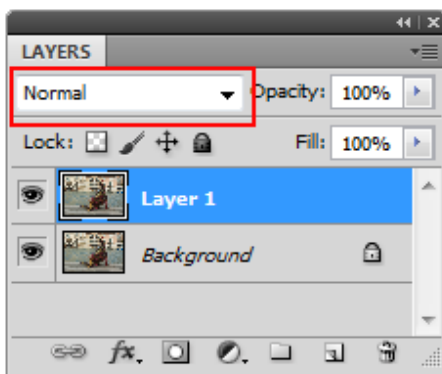
The use of layers in Photoshop is a core skill necessary to fully utilise the flexibility and power of the application. Further, an understanding beyond their basic use is important in order that they can be used to their full extent. Two main extensions beyond the basic use of layers knowledge are: layer masks and layer blend modes. The latter will be discussed here but layer masking will be touched on briefly.

The layer blend mode controls how pixels in one layer interact, or 'blend', with the underlying layer. Without blend modes the only way of blending layers together is by varying the opacity or fill of a layer, which is quite limiting in capability and creativity. Blend modes unlock a huge range of creative possibilities, especially when combined with layer masks. The painting tools can also be applied using different blend modes which can be selected from the Options bar.

Photoshop is a huge program and, as photographers, most of us probably only scratch the surface of its features in our daily work and the same is true for the layer blend modes. In Photoshop CS5 there are 27 blend modes available in the Layers panel. There is an additional one, Pass Through, which becomes available when a layer group is created. Although we have this huge collection of blend modes, very few are of any use to photographers. The main blend modes used in day-to-day photo editing are: Multiply, Screen, Overlay, Color and Luminosity. Hard Light and Soft Light are variations of Overlay, producing more or less contrast. An understanding of how these few blend modes work will greatly enhance your Photoshop editing skills. There may well be occasions when other blend modes may be utilised but these 5 are most useful.

The Useful Blend Modes

The layer blend mode is found at the top of the Layers panel as shown below and outlined in red. Clicking the drop down arrow on the right reveals the full range of blend modes, listed right. The 'useful' blends are underlined in red.



When you first look at the blend mode list it might look as though there is no structure to the list but, as you can see, they are all grouped according to their blend type; except for the top two: Normal and Dissolve. They have absolutely nothing to do with each other and are the only two modes that do not blend pixels from different layers.

Normal is, well, normal and the upper layer completely covers up the underlying layer. Normal is the default mode.

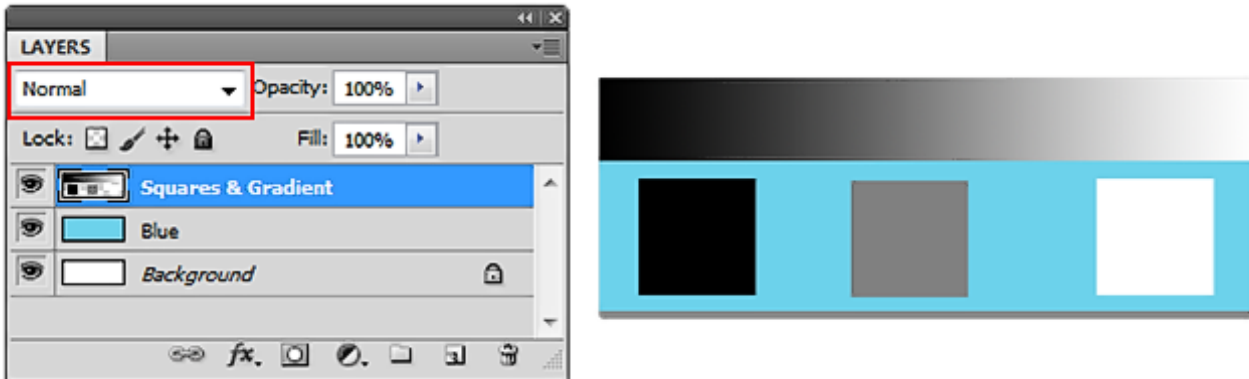
Dissolve (according to the Adobe definition) edits or paints each pixel to make it the result colour. However, the result colour is a random replacement of the pixels with the base colour or blend colour depending on the opacity at any pixel location. It couldn't be any clearer! You could probably go your whole Photoshop life and never use Dissolve. I have used it occasionally to paint the edge of an image with white to make it scattered to give a dissolved edge effect.

Let's look at each of the 5 main blend modes to see how they interact with and blend layers together. We'll take the groups from top to bottom starting with the Darken group.

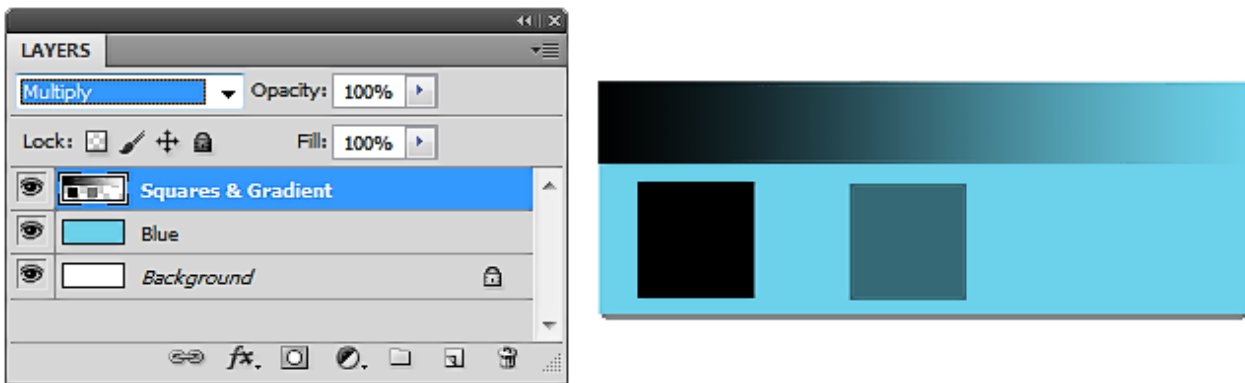
Multiply. This is the most useful blend mode within the darken group and is the most widely used. However, I will suggest a use for the Darken blend mode later on. The way Multiply works is to take the colours from the blend layer and multiply them with the colours from the underlying layer then divide them by 255 to give a result.

In order to demonstrate the blend I have created a 2 layer document. One layer is filled with a solid colour and the other layer has 4 squares and a grey scale gradient on it. The squares are filled with black, 50% grey and white respectively.

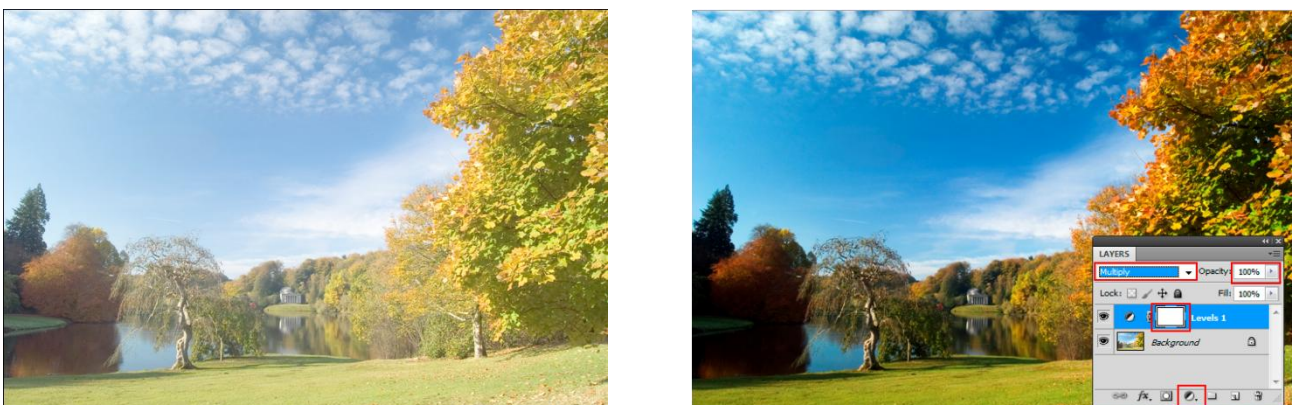
The diagram below shows the document as it would appear on screen and on the left of that is the Layers panel. The blend mode is set to normal which means that everything on the top layer is fully in view and the underlying layer only shows those areas that are transparent in the upper layer.



However, if the blend mode is changed from Normal to Multiply, as shown below, the result is different. The white square has disappeared as well as the light end of the gradient – everything above 50% grey, in fact. The 50% grey square has blended with the solid blue and the black square has remained unaffected. In essence, everything above 50% grey has been made darker. The highlight areas of the upper layer have been affected.



Let's have a look at a real world example of the Multiply blend mode. Below left is a picture that is a bit lacking in contrast and, overall, very light in tone. A Levels adjustment layer has been applied and left unadjusted but has been Multiply blended with the image layer, shown below right.

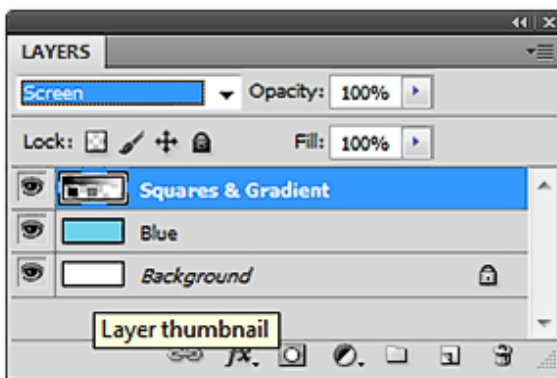


If the resulting effect is too intense for your requirements, remember that the layer opacity can be reduced and/or a layer mask can be applied and painted with black to reduce or remove selected areas. This is a useful method of darkening an overexposed image. Multiply is also frequently used in Layer Styles.

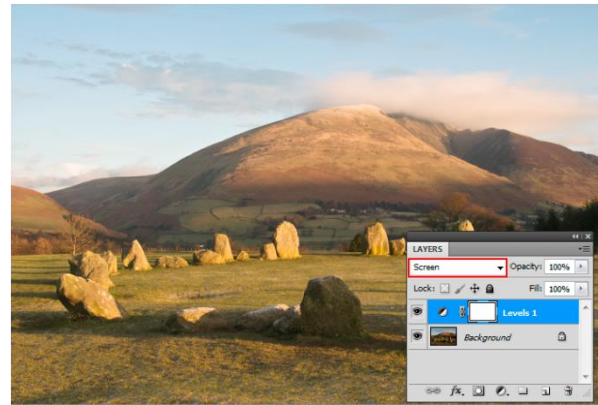
Notes:

1. Adjustment Layers. When applying adjustments to an image it is recommended that adjustment layers are used rather than the menu option (Image > Adjustments). An adjustment layer does not alter the pixels on the image layer, unless the image is flattened, and adjustment layers can be re-edited at any time, by double-clicking the icon on the left of the layer panel, to refine or amend the adjustment. Once an adjustment is made, using the menu (Image > Adjustments) option, it cannot be undone once you get beyond the limit of your history state. Adjustment layers can be applied by clicking the black and white circular icon at the bottom of the Layers panel and selecting an adjustment from the menu. The icon is outlined in red on the adjusted image at the bottom of the previous page. Adjustment layers can, of course, be deleted by just dragging them to the trash can at the bottom right of the layer panel. Adjustment layers affect all the layers below them, unless they are 'clipped' to the immediate underlying layer.
2. Layer Masks. Notice that the adjustment layer has a white square to the right of it (outlined in red on the adjusted image on the bottom right of the previous page). This is a layer mask; white indicates that the adjustment is revealed. The layer mask can be painted on, with black, to conceal the adjustment. White reveals; black conceals. So if the adjustment is not wanted or needs to be reduced in any part of the layer just ensure the layer mask is active by clicking on the white square then paint with black (on the image) to conceal the adjustment. Reducing the opacity of the brush will reduce the opacity of the concealment. Layer masks can be applied to any layer, not just adjustment layers. To apply a layer mask to any layer, click the icon on the left of the adjustment layer icon (it looks like a front-loading washing machine) and a layer mask will be applied to the active layer. This can then be painted on just like the layer mask on an adjustment layer.
3. Layer Opacity. To reduce the intensity of the adjustment, reduce the opacity of the adjustment layer. Layer opacity is shown at the top left of the Layers panel (outlined in red on the adjusted image on the bottom right of the previous page).

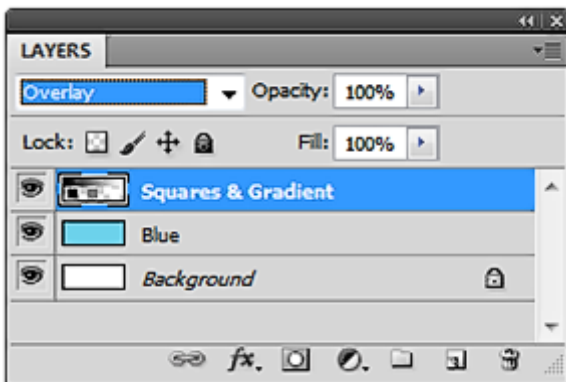
Screen. Screen is the most useful of the Lighten blend modes. It works in the opposite way to Multiply. Where Multiply darkens the lighter shades of an image, Screen lightens the darker shades of an image. Using the same image as in Multiply above but this time with the blend mode set to Screen the black square has been screened (inversely multiplied) with the blue layer, the 50% grey square has been blended and the white square has remained unaffected. Notice also that the gradient is blended from 50% grey to black.



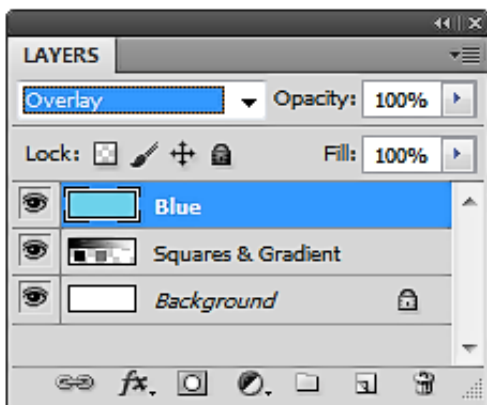
A real world example of the use of the Screen blend mode is shown below. The image below left is the original, which is overall too dark. Below right, a Levels adjustment layer has been added, left unadjusted and the blend mode changed to Screen.



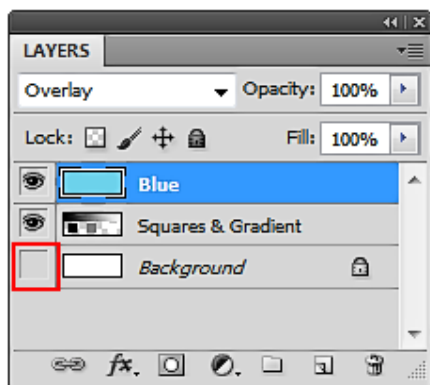
Overlay. The Overlay blend mode, in the Contrast grouping, multiplies (darkens) dark areas, screens (lightens) light areas and completely disregards neutral grey. Hard Light and Soft Light work in a similar manner but will result in a slightly harder or softer result. Think of them as hard and soft Overlay blends. Using the same image again below but with the blend mode set to Overlay, it can be seen that a different effect is the result. The 50% square disappears but, unlike the Multiply blend, the black square has not remained black and, unlike the Screen blend, the white square has not remained white. They have both taken on a blue hue. The black square seems to have lightened a little and taken on a dark blue hue while the white square has darkened a little and taken on a pale blue hue. The reason for this is because Overlay mode favours the underlying layer rather than the upper layer (the layer being blended with rather than the blending layer) so, in this example, blue is dominant.



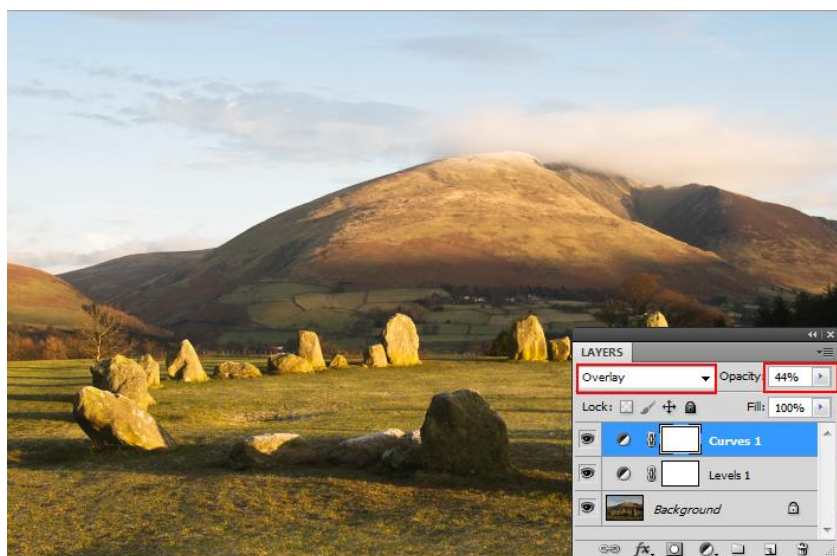
If the blue layer and the gradient and squares layers are reversed and an Overlay blend applied, a different result will be obtained, as shown below. The lower layer is dominant. The areas on the lower layer which are transparent are showing the white of the background layer. The white square can't be seen as it is the same colour as the background.



If the background is disabled then the transparent areas in the lower layer would show as blue (from the upper layer) and the white square would show up.



A real world example of the use of the Overlay blend mode is shown right. Previously this image had been successfully lightened using the Screen blend mode but it is lacking in contrast. To correct this, a Curves adjustment layer has been added, left unadjusted and the blend mode changed to Overlay. This adjustment resulted in too much contrast, so the layer opacity has been reduced to produce a more pleasing result.



Note.

The Overlay blend mode is particularly useful for dodging and burning and is the subject of another tutorial.

Other Useful Blend Modes. Each of the blend modes looked at so far have all been about either darkening or lightening the image; or both. The Multiply blend mode ignores white and light areas (above mid grey); the Screen blend mode does the opposite, ignores black areas and makes everything else lighter. The Overlay blend mode ignores areas that are 50% grey but darkens the dark areas and lightens the light areas, increasing image contrast. The final two useful blend modes, Color and Luminosity, only deal with colour.

Color. The Color blend mode is a frequently used option when painting. When used in this manner it is possible to paint colour onto a monochrome image and retain the detail and texture of the image. If an image is painted on with the blend mode set to Normal the paint will just obliterate everything underneath it. However, change the blend mode of the paint brush to Color, select a painting tool and paint with the Foreground colour. A suggested method would be to create a new layer above the layer to be painted on, select a suitable foreground colour, select the paintbrush then, on the Options bar (just below the Menu bar), set the blend mode to Color, reduce the Opacity of the brush (try around 30%) and paint. The benefit of painting on a blank layer is that it can easily be discarded, if necessary. Reducing the opacity of the brush is recommended as, each time you paint over the same area, the intensity increases. It is safer to start with a low opacity and then increase it, if required. This is a useful method of changing eye or hair colour. Another useful technique with the Color blend mode is in applying a tint. Make the image monochrome, create a new layer above that, fill it with the colour of your tint then change the blend mode to Color. Reduce the layer opacity to taste, if necessary.

Luminosity. This blend mode works in a way exactly opposite to Color. Whereas the Color mode blends the colours of a layer (hue and saturation), the Luminosity mode blends the lightness values and ignores the colour information. For example, a common photo-editing technique is to apply a Levels and/or Curves adjustment layer to improve image contrast. Occasionally, problems can occur because Levels and Curves adjustments affect the colour of an image as well as the lightness values. By increasing image contrast, an increase in colour saturation is possible. Too much colour saturation in an image can spoil it, particularly with the yellow elements in green grass and leaves. By changing the Levels/Curves adjustment layer blend mode to Luminosity, the problem is avoided as Luminosity only affects the lightness elements of the image. Colour is completely ignored and colour contrast remains constant.

Darken. I mentioned, when discussing the Multiply blend, that the Darken blend could be useful. One such useful application is with the Unsharp Mask filter. Just occasionally, when an image needs that extra bit of sharpening it can result in white 'Mackie' lines appearing around high contrast edges. This can be very distracting in an image. If that situation is likely to occur, before applying the Unsharp Mask filter, duplicate the layer, sharpen the upper layer and then change the blend mode to Darken. The Darken blend mode works by comparing pixels in the upper layer with those in the underlying layer and whichever is the darker is applied. Where the lighter pixels in the white lines interact with the darker pixels underneath they will be overwritten by the darker ones. The image will still be sharper but the white lines will not show.

Darken could also be an option worthy of consideration when replacing a pale grey or white sky; a frequent occurrence around the UK. Select a suitable replacement sky. Drag, or copy and paste it into the image and place it on a layer underneath the offending sky. Change the blend mode to Darken. Vary the opacity, if necessary and, if there is any interaction with elements of the image other than the sky, just apply a layer mask and paint with black to remove the effect.

Conclusion

It is said that there are many ways to skin a cat and that is certainly true in Photoshop, as there is usually more than one way of achieving a particular result. The real world examples shown above for darkening and lightening images could quite easily be achieved by other methods. However, the aim of this tutorial is to introduce the flexibility of layer blend modes. The layer blend mode can be considered a large adjustable spanner in the Photoshop toolkit.