

Merge Blend Modes

Probably the most commonly used Node in compositing is the [Merge](#) node. The way that it lays the background over the foreground is determined by a set of mathematics called blend modes which are labeled **operations** in the top of the Merge node properties panel. The default blend mode is **over** in which the **A** feed is laid over the **B** feed according to the values in its alpha. There are, however, a whole bunch of other blend modes. Some of these are very useful, some are less so. Uses of Merge node blend modes

Broadly: blend modes serve two purposes:

To combine mattes

It is often the case that in the process of pulling mattes from an image a single pull is not sufficient and several mattes needs to be combined into one. For example, a soft matte that preserves hair detail but has a noisy centre needs to be combined with a hard-edge matte that has a solid centre. Many of the blend modes serve this need very well (**max** and **min** I have found most useful in this regard). See [Combining Alphas](#) for details of how this is done.

To augment picture values

If an image needs 'improving' then most of the time color nodes such a [Multiply](#), [Grade](#) and [ColorLookUp](#) will be used. However, sometimes blend modes are more effective, particularly in the passing of RGB information from one image to another. An example is when a random, color-noisy image is used to 'sweeten-up' a background using the **overlay** mode. This way of using blend modes is more often used in Photoshop practice but is perfectly viable in motion compositing. However, in Nuke the **Video colorspace** parameter option will sometimes need selecting (see below).

Merge blend modes related parameters

video colorspace

Nuke respects color values that extend below black (i.e. less than zero) and above white (i.e. more than one). However, in Photoshop these values are ignored (or 'clipped'). Sometimes the results from a Nuke picture augmenting operation do not behave as expected unless this value is changed in the parameters.

alpha masking

Some blend modes respect alphas (e.g. **over**), some dont. Sometimes this parameter value needs changing, sometimes it doesn't. Helpful much?

Merge blend modes (highly biased) list

The following is a selection of blend modes. I have only listed the modes for which I have found uses and have tried to give an indication of how useful they are.

Blend name: atop

Short description: 'Cookie-cuts' the BG by the FG.

Real-world use: Sometimes useful for combining mattes.

Use rating: *

color-dodge

Lightens the BG according to FG colors. Does not affect BG black.

A soft, light-colored radial placed over the background will add a vivid highlight. Beautiful for landscape effects. An example of this is the second set of images on [this](#) page.

color-burn

Darkens the BG according to FG colors. Does not affect BG white. Kinda the opposite of color-dodge

Good for making things appear burned.

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conjoin-over

A bit like over, but ignores the transparency of the FG.

Good for 'thickening up' fire.

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difference

Shows the difference between the BG and FG.
Good for comparing frames and also can be used as a difference matte.
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disjoin-over

If both the FG and BG have mattes and the two mattes are 'opposite' of each other (like jigsaw puzzle pieces) then the edges of the mattes are not fringed.
Good for compositing CG output where each element has a different hold-out matte.
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hypot

Lightens the BG according to the values of the FG.
Good for adding reflections.
*

in

'Cookie-cuts' FG by BG.
Good for combining mattes.
*

mask

The opposite of in.
Good for combining mattes.
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max

Compares FG with BG and shows the brightest.
Very good for [combining mattes](#).

min

Compares FG with BG and shows the darkest.
Very good for [combining mattes](#).

multiply

Multiplies FG and BG together.
The classic shadow blend mode. Good for combining the CG shadow pass with a background.

over

The default merge operation.
Lays FG over BG according to matte of FG. Can't live without it.

overlay

Darkens and lightens the BG according to the values of the FG.
Good for adding texture and general ambient contrast.
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plus

Lightens BG according to the values of the FG.
Good for adding light-sabre lights.
**

screen

Lightens BG according to the values of the FG.
Good for adding light-sabre lights.
**

under

Places the FG under the BG.
Good for straightforward compositing in instances where the [primacy of the B feed](#) needs preserving.
