

# Creative Camera Club

“where Art meets Science”

## 1 INTRODUCTION TO PHOTOSHOP LAYERS

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This is a brief introduction to layers in Photoshop. It will not cover all of the details of the operations that can be accomplished with layers. It will provide an introduction so that you can experiment and look for additional help.

I expect you will find Layers useful and I hope you enjoy this introduction.

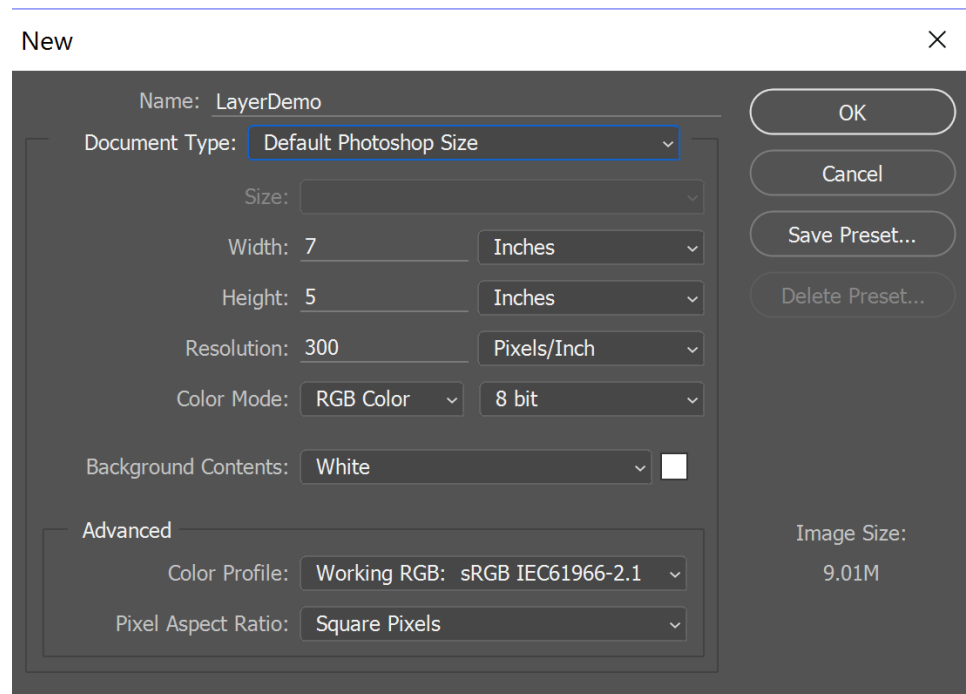
### 1.1 WHAT ARE LAYERS?

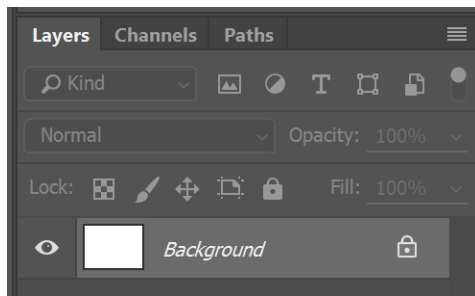
Think of layers as a stack of glass panes. Each pane (layer) has an image or Photoshop function. On the screen, you view a composite of the layers as if you were looking down through the stack of panes.

That is the basic concept. Now the fun begins because Photoshop has a lot of functions that can be placed on or applied to layers.

### 1.2 CREATE A BLANK LAYER

Open Photoshop and click “File-New” to see the “New” panel, shown below. Use the Document Type dropdown to select “Default Photoshop Size” and click [OK].



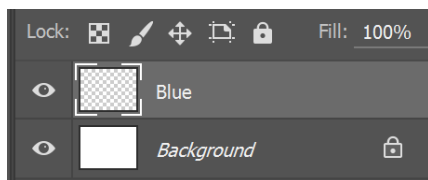


Notice that you now have a layer named “Background” in the layers tab. Also notice the lock symbol indicating that the layer cannot be moved in the layer stack.

### 1.3 ADD A LAYER

Now add a blank and transparent layer with “Layers – New – Layer.” There are many options to explore on the submenu and they are left to the interested student.

You can also add a new layer by clicking the  icon on the bottom right. The new layer will be named “Layer 1.” Double click the layer name to select it and rename the layer “Blue.”

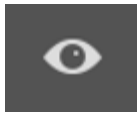


Notice that the new layer is highlighted in gray, indicating that it is the active layer.

All editing is done on the active layer. To edit a different layer, click on it to select the layer (it will now be the highlighted layer.)

#### 1.3.1 Hide/Show a Layer



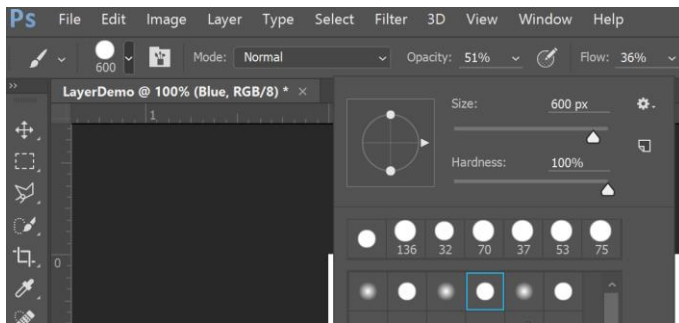
Click the Eye icon  on the Background layer to hide that layer. This will hide the Background layer and display a checkerboard pattern indicating that the Blue layer is transparent and does not have any image on it.

Notice a dim square where the eye icon was displayed on the Background layer. Click the square to make the Background layer visible again. The Background layer was not selected by these operations, just made invisible or visible.

### 1.4 EDIT A LAYER

Check that the Blue layer is active. Click the brush tool and select a large diameter, 20 to 25% of the image height. I used 600.

Check that the Blue layer is selected.



Set Opacity and Flow to 100%. In the image I had Opacity=51% and Flow =36%. We will use these values later.



Use the Color picker in the tool bar to select a bright blue. Paint with blue in one corner of the image.

Click the Eye icon for the Blue layer to turn it invisible, then visible again.

## 1.5 ADD ADDITIONAL LAYERS

Follow the steps above to add a third layer. The new layer is inserted above the selected layer.

Change the layer name to Yellow. When you change the layer name, it is de-selected, leaving no layer selected. Move the mouse over the image and you will see the not icon indicating that the tools are not available.


Use the color picker tool to select a yellow. Check that the Yellow layer is selected, then paint a yellow blob that does not overlap the blue.

Experiment with the eye icons to show and hide each layer.

Follow the steps above to add another layer above the Yellow layer and name the new layer "Red." Select a Red for the paint brush and paint a red blob that does not overlap the other colors.

## 1.6 MOVING LAYERS ON THE IMAGE

Layers can be moved relative to the background. With the Red layer selected, click the Move

tool  at the top of the tool bar. Check that the Red layer is selected, then click and drag the red layer so that it overlaps some of the Yellow and Blue. Notice that the overlapped areas are hidden by the Red Layer.

## 1.7 MOVING LAYERS IN THE LAYER STACK

Layers can also be moved up and down in the layer stack displayed in the Layers tab.

Click on the red layer in the layer stack and drag down until you see a gray bar between the Yellow and Blue layers. Release the mouse to move the layer to the indicated location in the stack.

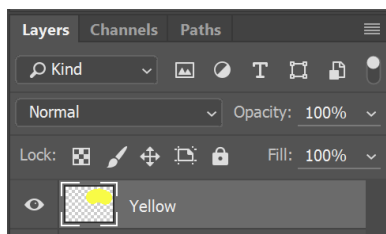
Notice that with the Yellow layer now on top of the stack, it is hiding some of the Red layer. Also notice that the Red layer is still hiding part of the blue layer since it is still above the Blue layer in the layer stack.



Click and drag the Red layer below the Blue layer so that the Blue layer now hides part of the Red layer.

Your image should look something like this.

## 1.8 OPACITY



Look over the 3 lines of tools at the top of the Layers panel. We will try out two of them -Opacity and Blend Mode.

Select the Background layer, select a green color and use the paint bucket tool to fill the background with green.

Next, select the Red layer. Place the mouse pointer over the word "Opacity" on the right side of the middle line of tools and notice the pointer changes to a hand. Click and drag to the left to lower the Opacity percent.

Notice that the Red layer becomes partly transparent, allowing the green Background to show through. The red area becomes brown as the Opacity is reduced.

## 1.9 BLEND MODES

We need an actual image to see the effects of the various blend modes. Open the test image. Add a layer and fill the layer with a color using the paint bucket tool. I used a bright green, Red, Green, Blue = (18,249,7).

Click the drop down list to the left of "Opacity." The list shows the available Blend Modes, with the default "Normal" at the top. Blend mode is applied to the selected layer and defines how the layer is "blended" with the layers below.

Normal simply paints the layer over the layers below. With the paint bucket fill all you see is the solid color used for the fill.

The other blend modes use various functions to blend the selected layer with the layers below.

Try some of the blend modes. Many produce interesting results. I like the colors on the stone with the “Saturation” blend mode.

For more on blend Modes, see [http://www.photographyuncovered.net/photoshop-blend-modes-explained-part-1/?tl\\_inbound=1&tl\\_target\\_all=1&tl\\_period\\_type=1](http://www.photographyuncovered.net/photoshop-blend-modes-explained-part-1/?tl_inbound=1&tl_target_all=1&tl_period_type=1). Many other resources are available.

From the Reference:

“To make things as simple as possible, there are 3 different types of colours we’re going to talk about.

**Base pixels** are the pixels on the next layer below the current one when you’re blending layers, or the pixels that are being painted over when using a brush tool.

**Blend pixels** are the pixels that you’re painting, or the pixels that exist on the blended layer.

**Result pixels** are what you wind up seeing after Photoshop has computed how the various blend layers will interact – your final result.


Got it? Don’t worry if you have to refer back to this later, it can be a bit confusing at first.”


## 1.10 MASKS

Masks are used to hide part of a layer. A common example is adding a person from a source image to a second image.

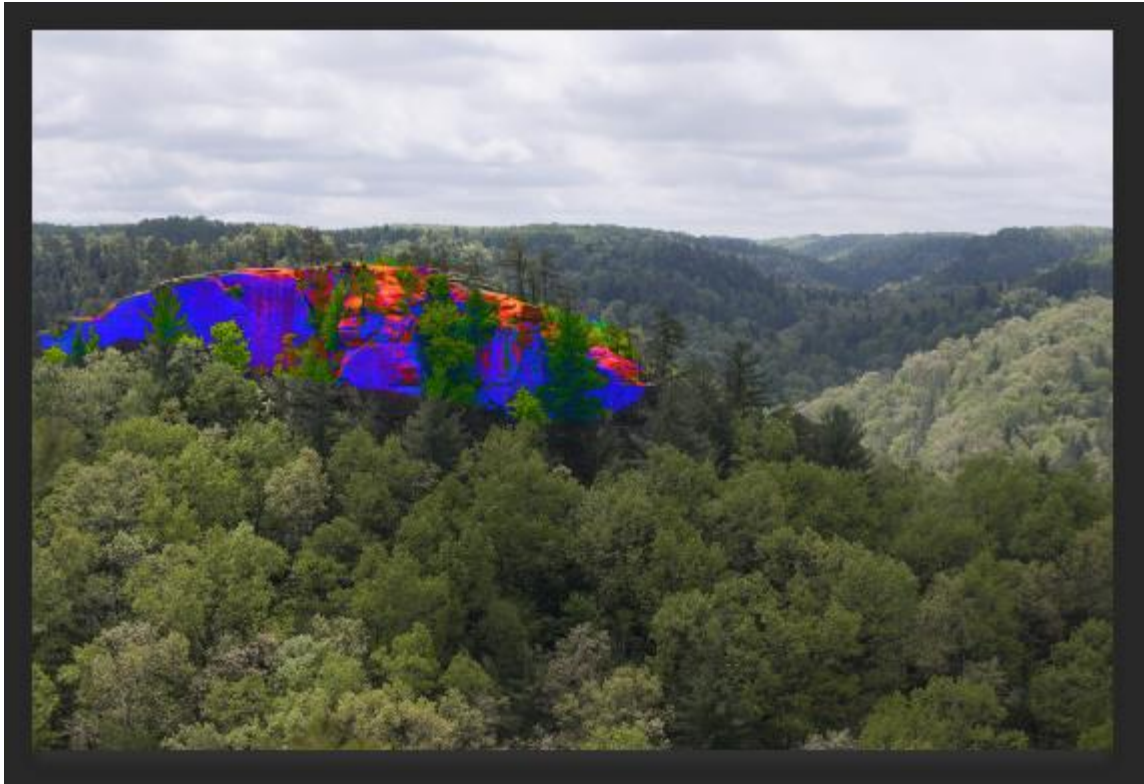
Masks are black and white images overlaid on the layer. Black blocks the layer, white shows the layer, and shades of gray have mixed effects.

Open the test image in Photoshop. Add a layer and fill it with the bright green (18,249,7). Change the layer name to “Green.” Select the “Saturation” blend mode to show the colored stone.

Use the Polygonal Lasso Tool  to make a rough selection of the rocks.

Select the Green layer. At the bottom of the Layer tab, click the “Add Vector Mask” icon  to add a mask to the Green layer. The mask will be black except for the selection that is white. This limits the effect of the layer to the selection of the rocks.

Your image should look something like this.



## 1.11 NOTES ON BLEND MODES BY TIM GRAY SEPT 27, 2016

### 1.11.1 Question

On several occasions you have provided guidance on specific uses for blend modes in Photoshop. But could you explain exactly what a blend mode is to being with?

### 1.11.2 Tim's Quick Answer:

Blend modes are a feature of Photoshop that enable you to combine two or more layers, with specific math being applied to the pixel values of those layers. The blend modes are divided into categories based on their effect, such as lightening, darkening, and adding contrast.

### 1.11.3 More Detail:

I think a couple of examples could be helpful to better understand how blend modes work in Photoshop. Let's assume a simple scenario where there are two grayscale (black and white) image layers in a Photoshop document, and the top layer is set to a given blend mode. I'll also present the details here using luminance values for a grayscale image based on a bit depth of 8 bits per channel. In other words, my numbers will be based on a range from 0 for black to 255 for white.

One of the simpler blend modes is Multiply. As the name implies, with the Multiply blend mode each pixel value in the "top" layer is multiplied with the corresponding pixel in the "bottom" layer. The product of that multiplication is then divided by 256 to determine the final value. So,

for example, a pixel value of 81 on the top layer and 128 on the bottom layer would produce a product of 10,368, which divided by 256 gives a final result of 41. As a result of this math, using the Multiply blend mode will always result in a darker pixel value, except in the case of white and black, which would remain unchanged.

The Screen blend mode is essentially the opposite of the Multiply blend mode in terms of the net effect. The math involves multiplying the inverse value for each pixel. That means subtracting each value from 256 to produce the inverse values, multiplying the result, dividing by 256, and inverting again (subtracting from 256). So, with the same values as above (81 and 128), the inverse values would be 175 and 128. The product of those would be 22,400, which divided by 256 yields 87.5. Subtracting that value from 256 produces a final result of 168 (based on the closest whole number). The result is that pixel values will become brighter when the Screen blend mode is applied.

Of course, as a photographer working in Photoshop there is generally not much benefit to understanding the math behind each of the blend modes. My point in sharing this info was more to demonstrate that blend modes are relatively simple in concept, applying math equations between pixel values on two (or more) layers. In some cases that math can certainly get quite complicated, so I think in general it is more helpful to understand the basic concepts behind the blend modes.

The first set of blend modes includes the "normal" blend modes. Then come

- the darkening blend modes,
- the lightening blend modes,
- the contrast blend modes,
- the inversion and cancelation blend modes,
- the color component blend modes.

For a little more info on blend modes, you might be interested in the article "6 Favorite Blend Modes" from the March 2013 issue of Pixology magazine.