

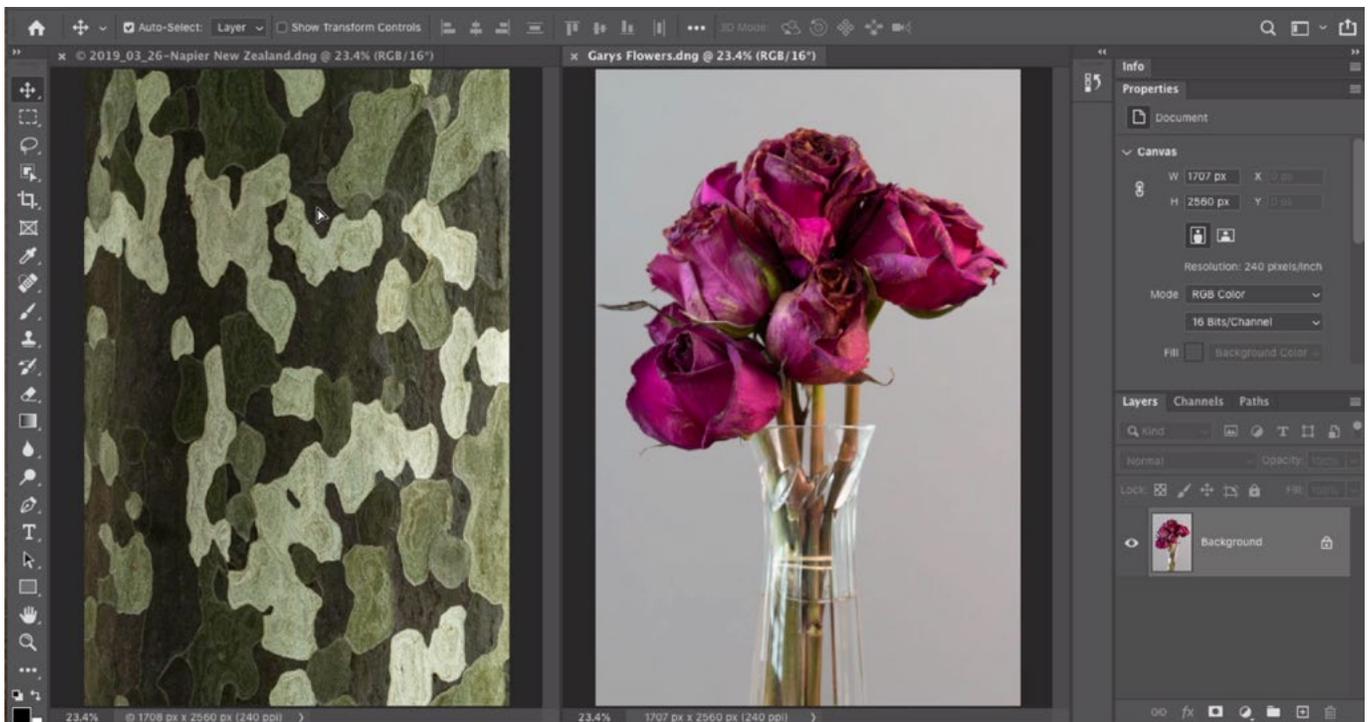


**Making Glass Transparent**

# Making Glass Transparent

In this lesson, we're going to work on a challenge image that was submitted by a Masters Academy member. In the process, we're going to learn how to make glass transparent in Photoshop. The image features a glass vase full of flowers set against a gray background. We're going to extract the vase and flowers, removing the background so that the subject can be placed onto a different background. The trick is going to be making the glass actually transparent so that the new background shows up when looking through the vase.

To begin, make sure that both images (the flowers and the new background) are open in Photoshop. It will be useful to view both of these documents side-by-side so click on the Window menu at the top of the screen and choose Arrange > Two-up Vertical. Now you will be able to see both images. Move the flowers image into the document containing the new background by clicking on the image and dragging it into the document window for that new background. Note that holding down the Shift key before releasing the mouse button will ensure that the image you are moving will be perfectly centered in the new document.

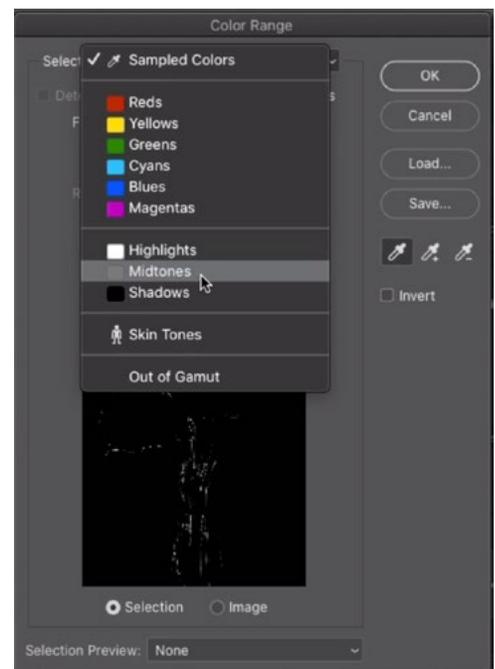


**The flowers and vase are going to be placed onto a new background, shown in the document at left. Both documents are visible at the same time because we chose the Two-Up Vertical arrangement.**

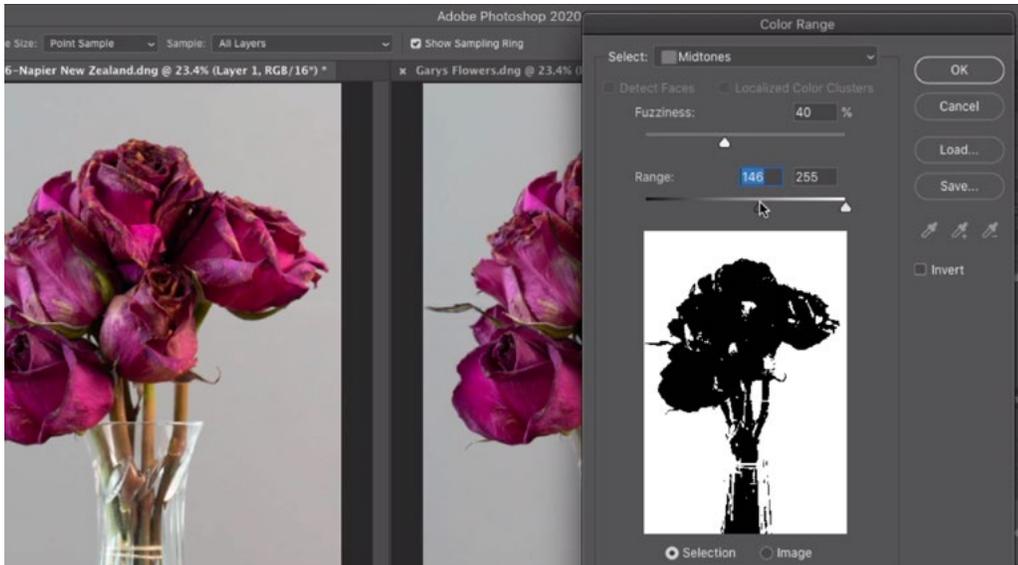
## Isolate the Flowers and Stems (1:52)

Make sure that the document containing both images is active. You will see both of the images appear as layers in the Layers Panel. The first step will be to isolate any areas that you can not see through to the background. To do this, you'll need to get the flowers and the flower stems onto their own layer. The first step will be to create a selection of the flowers and stems. There are many different ways of creating selections, but we'll use the Color Range command here. This will allow you to create a selection of the simple gray background and then you can invert that selection to isolate the flowers.

Click on the Select menu and choose Color Range. The Color Range dialog will appear. Click on the Select menu at the top of the dialog and choose "Midtones." This will cause the "Range" sliders to appear, which allows you to choose the brightness range that you want to be selected. The white slider handle will determine the brightest tone that will be selected and the black slider will determine the darkest tone that can be selected. In this image, you can start by dragging the white slider all the way to the right. This will allow it to select everything up to pure white. Then, use the black slider to limit how much of the dark portion of the image that can be selected. The preview window within the Color Range dialog will show you what areas are being selected. The white parts of the preview represent areas that are selected. The black areas represent areas that are not selected. Drag the black slider just high enough so that the subjects (the flowers) turn black but the background does not. Click OK to exit the Color Range dialog.



**In the Select Color Range dialog, the Select menu is being set to Midtones.**



In the Color Range dialog, the Range sliders are being used to limit the tonal range that is being selected. Only the bright tones are being targeted.

Note: In the Color Range dialog, you will also find the Fuzziness slider and we have used this slider in previous lessons. Know that this setting will not do much when the Select menu is set to Midtones and you are working with the Range sliders. That's why we ignored it in this example.



After making a selection using the Color Range command, the “marching ants” selection can be seen on the image at left. To better preview the selection, we entered Quick Mask Mode (right).

The “marching ants” selection will become active in the image window. You can preview this selection in a more useful way by entering Quick Mask Mode. You can enter Quick Mask Mode by tapping the Q key. In this mode, everything that is selected will look normal and everything that is NOT selected will be covered in a red overlay. This will reveal any problems with the selection. In the video example, you can see that there are patches within the flowers that are not covered with red. We're just trying to isolate the background here, so those patches SHOULD be covered in red so that they won't be selected.

In Quick Mask Mode, you can add to or remove from the selection by using the Brush Tool. Painting with black will subtract from the selection (therefore adding the red overlay) and painting with white will add to the selection. In the video example, we used the Brush Tool to paint (with a soft brush) with black over those patches in the flowers that should not be selected.

There are a few instances where it will be more useful to have the Quick Mask appear as a different color. In this example, there is some red in the flowers so that can make it hard to see the Quick Mask in some areas. If you want to change the color of the Quick Mask, double-click on the Quick Mask icon in the Toolbar. It is directly beneath the foreground/background swatches at the bottom of the bar. This will call up a the Quick Mask Options dialog, which contains a setting for changing the color of the mask.



**Click on the Quick Mask Mode icon (circled) to call up the Quick Mask Options. Here, you can change the color of the mask.**

In the video example, we changed the mask to a vibrant green because that color contrasts with the rest of the image, therefore allowing us to better see the entire mask. Then, we refined the mask by painting with black in the areas of the subject that had openings in the mask.

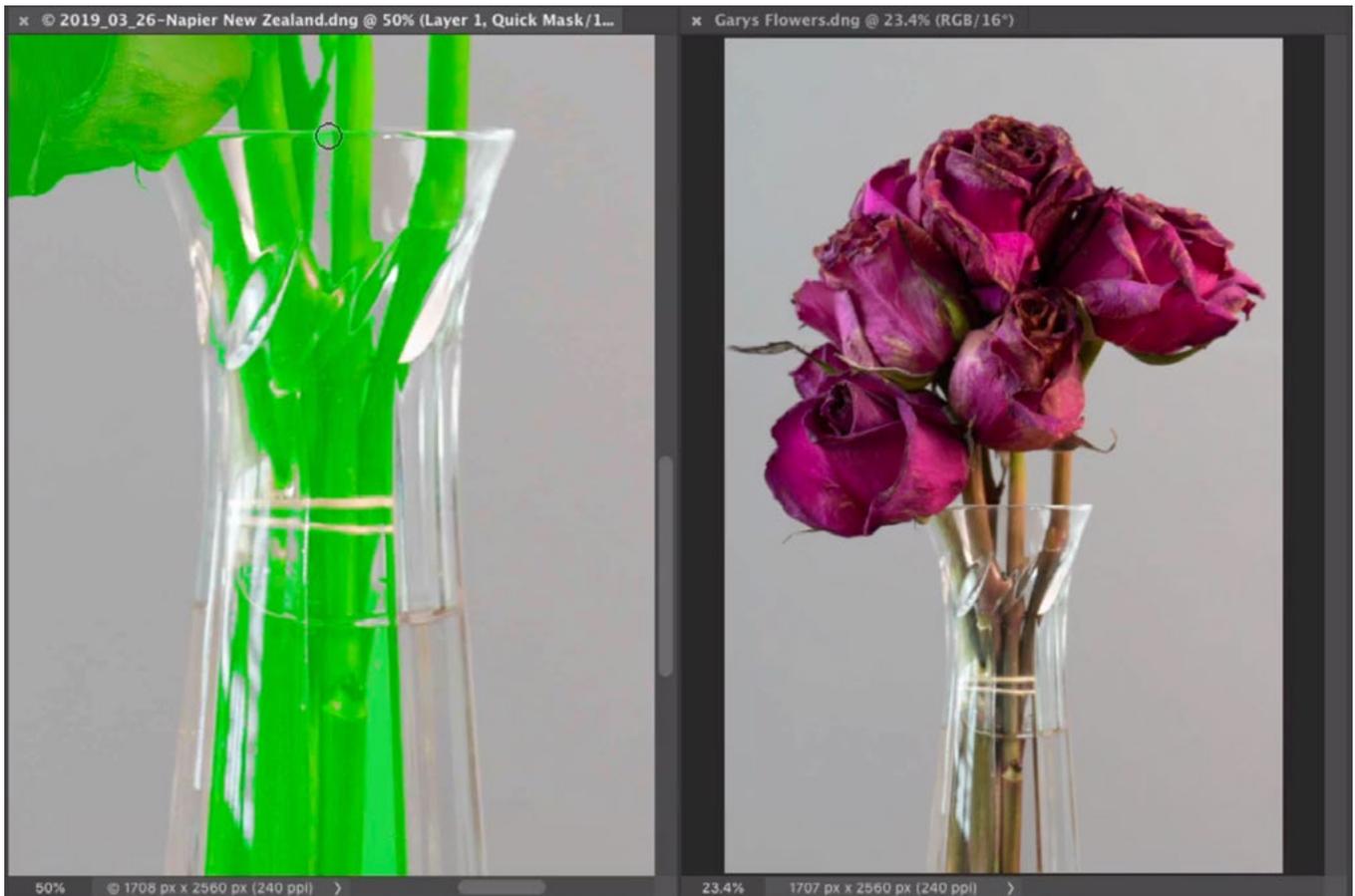
In the area where the stems and vase are, the stems should have the green overlay (indicating they're not selected) and the transparent glass should have no overlay. Use the Brush Tool to paint with white over areas where the transparent glass



**In Quick Mask Mode, we're painting with black over parts of the flowers that should be selected, therefore adding the colored overlay.**

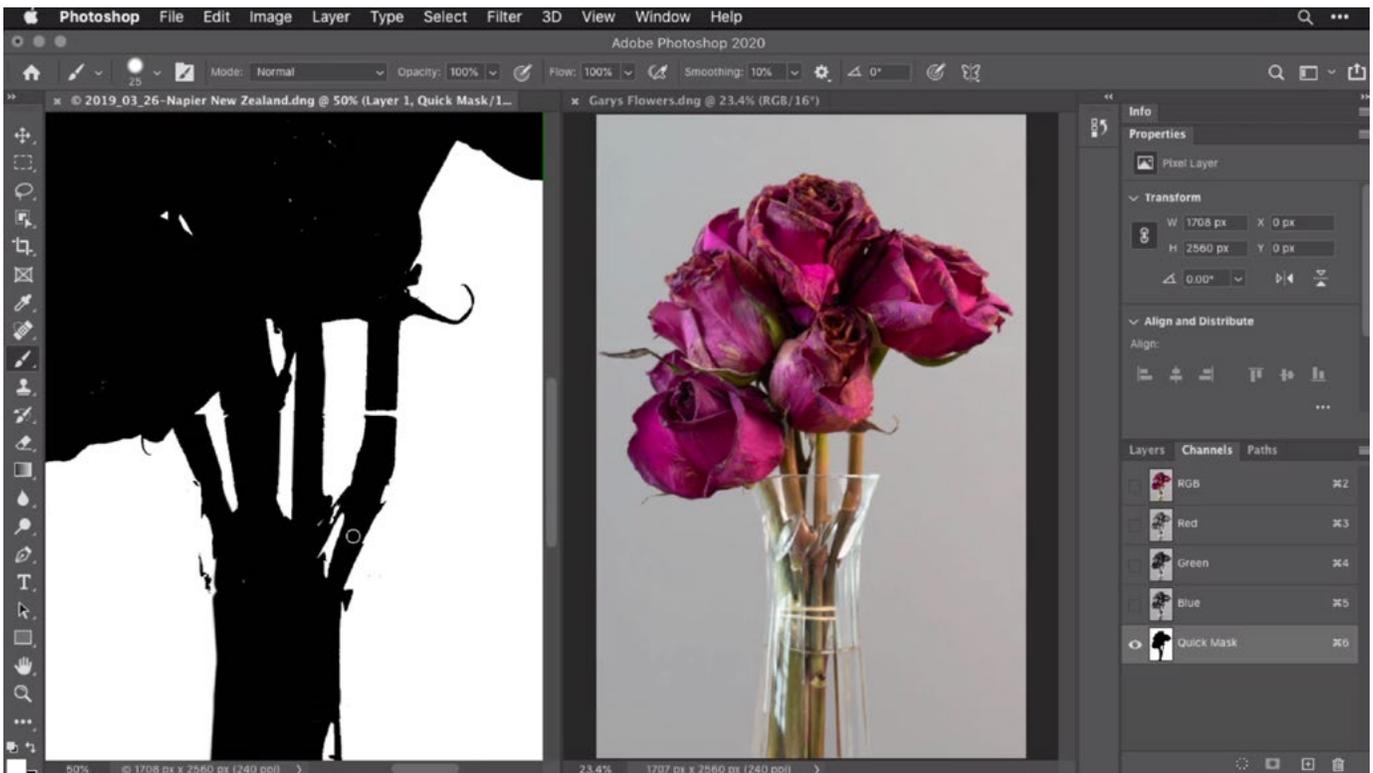
has the overlay. This will remove the overlay and ensure that the glass is selected. Paint with black over areas where the stems still need the overlay. Note that you can quickly swap the foreground and background colors by tapping the X key. (Think eXchange) This will allow you to quickly switch from painting with black to white (and back again).

Use the reference photo in the other Photoshop document to better determine what areas will allow you to see through to the background. This is why the two documents are tiled vertically in the interface.



**In Quick Mask Mode, we're painting with white over the parts of the vase that should be transparent. This is removing the overlay, therefore ensuring that the areas are not selected. The document on the right is being used as a reference, to better see where the openings in the stems are.**

If you'd like to check your work, you can do so by viewing the mask directly in the image window. Open the Channels Panel (It's usually grouped with the Layers Panel) and you will see the active Quick Mask at the bottom of the channel list. You can turn off the visibility of all the other channels by clicking the eyeball icon to the left of the RGB channel. This will leave only the Quick Mask channel visible, showing you a black and white view of the channel in the main image window. Again, you can use the Brush Tool to paint with black and white to refine the mask while working in this channel.



**The mask is being viewed as a channel and we're painting directly in the channel to refine the mask.**

When you're done, turn on the visibility of the other channels by again clicking on the eyeball icon next to the RGB channel. Then, you can return to viewing the Layers Panel. Tap the Q key to exit Quick Mask Mode and the selection will go back to looking like marching ants.

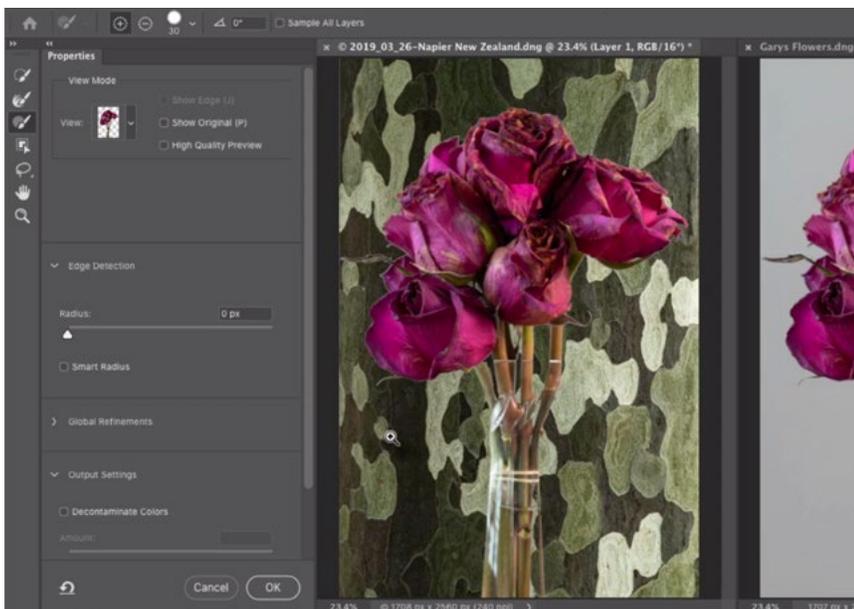
We selected the background because it was a simple gray, but we REALLY want the opposite selected: the flowers and stems. You can get the opposite of a selection by clicking on the Select menu and choosing Inverse. Now, the flowers and stems are selected and the background is NOT selected.

## Refine the Mask Edges with Select & Mask (12:31)

At this point, you could use a layer mask to hide the background, but there will likely be some problems with the edge of the mask/selection. You can preview what those issues might look like by using the Select & Mask feature. Click on the Select menu and choose Select & Mask. The Select & Mask window will take over the screen and the settings panel will appear on the side.

At the top of the settings panel is the View menu. This will determine how the selection will be previewed. In the lesson video, this menu is set to “On Layers,” which means that the selected content is being shown on top of the underlying layer. This underlying layer is the new background that we’re using to replace the gray background.

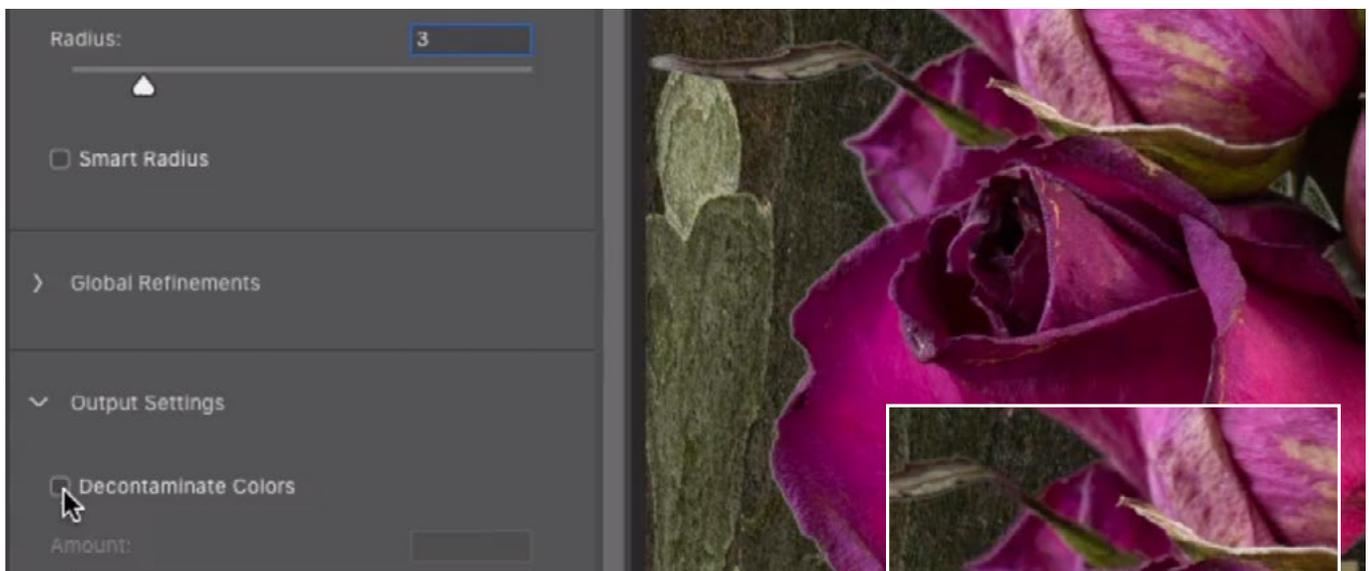
After zooming in on the flowers, it’s very obvious that there are problems with the edge of the selection. There’s a bit of a gray halo around the edge of the flowers and this is a remnant of the original background.



**The Select & Mask interface is shown at left. When we zoom in (above), you can see the gray halo remnant from the original background.**

**The Radius Slider** The Select & Mask feature allows you to give Photoshop control over that edge so that it can decide what should be kept and what should be discarded. You can control this with the Radius slider. As you move the Radius slider higher and higher, you are giving Photoshop control over a larger and larger area. If the Radius is set to two pixels, Photoshop will have control of a two-pixel radius around the edge of the selection. Zoom in on the image so that you can easily see the selection edge and then slowly move the slider up, pixel by pixel. You'll want to find the lowest possible setting that still eliminates the halo around the edge of the subject. In the video example, we set the Radius slider to a setting of 3 pixels.

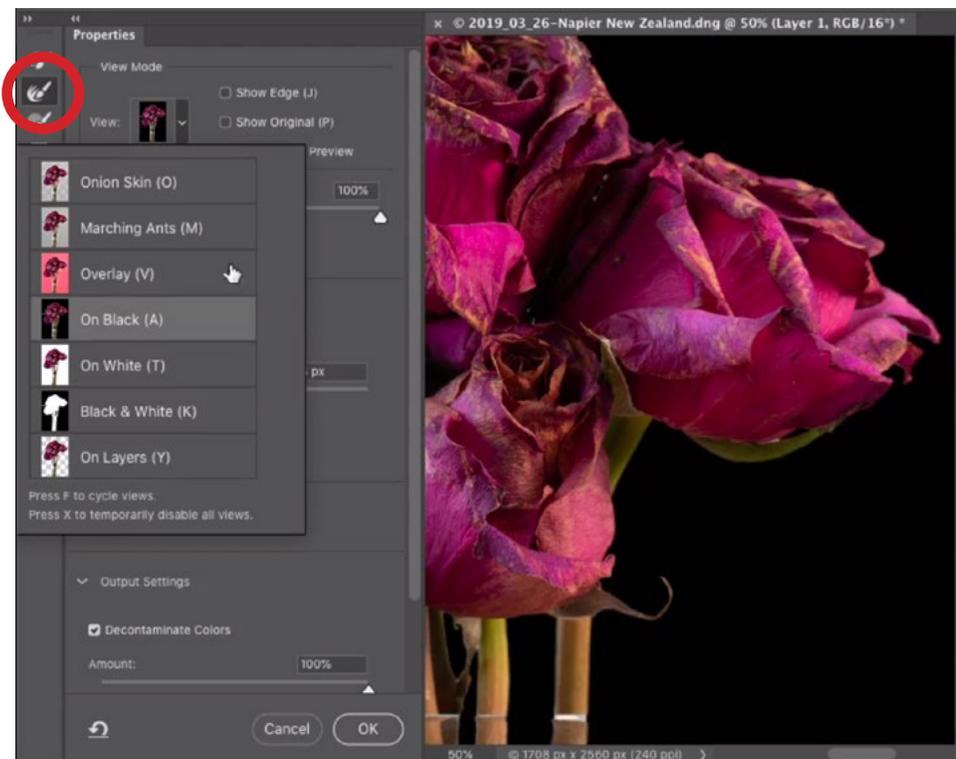
**Decontaminate Colors** If the Radius slider does not completely fix the edge of the selection, there is another setting that could help. The “Decontaminate Colors” check box is located under the Output Settings category in the Select & Mask window and it can often help when the issue is due to color. When you turn on the “Decontaminate Colors” check box, it will look at the zone in which you've given Photoshop control over the selection and it will attempt to eliminate any colored halo that is residual from the original image. It works by looking at the color that is just inside that edge area and it pushes that color out into the edges of the selection.



**The Decontaminate Colors check box can be found under the Output Settings. At right, you can see the edge improvement after the check box was turned on.**

**The Refine Edge Brush Tool** There is another tool within Select & Mask that you can use to correct the selection edges in specific areas. It's called the Refine Edge Brush Tool and it allows you to manually paint on the image to give Photoshop control over an area. It's the second tool down in the Toolbar on the left side of the interface. With the Refine Edge Brush Tool active, you can paint over the edges where you can still see residue from the original background. The size of the brush can be changed by using the brush menu at the top of the interface or by using the left or right bracket keys ( [ ] ) on your keyboard.

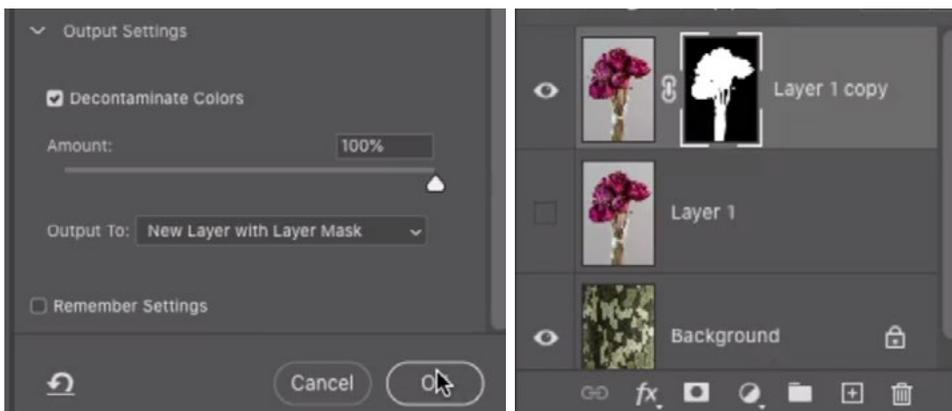
If it's hard to accurately see the selection edges, you can use the View menu to change the appearance of the preview. There are many different options here. You can view the selection as a red overlay, like you'd see in Quick Mask Mode. You can view the subject against a black background or a white background, or a transparent background. In the video example, we set the View menu to "On Black," which shows the selection against a black background. This allowed us to better see bits of leftover background in between the flowers. We used the Refine Edge Brush to paint in those areas (using a very small brush).



The View menu is set to "On Black" and you can see that this shows the selection against a black background. In this view, we will use the Refine Edge Brush (circled) to manually paint over areas where the edges still have problems.

You can still see part of the transparent vase that overlaps the stems and that's ok. That's going to be dealt with using a separate technique.

After you're satisfied with the selection, there is one setting you'll need to pay attention to before exiting the Select & Mask window. Any time you have the Decontaminate Colors setting turned on, make sure that the "Output To" menu is set to "New Layer with Layer Mask." This menu is located beneath the "Decontaminate Colors" check box. With this setting, it's going to duplicate the layer you're working on and use a layer mask to remove the background on the duplicate layer. Click OK to exit the Select & Mask window and you will see that the original image layer has its visibility turned off in the Layers Panel and there is a new, duplicate layer with a layer mask that is hiding the gray background.

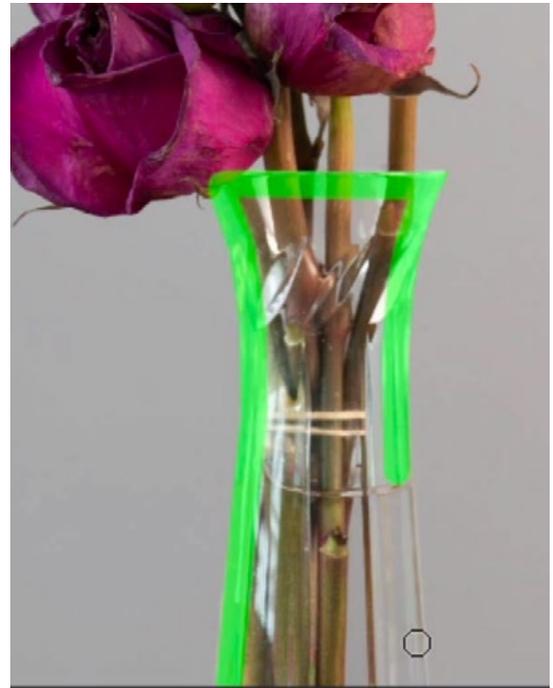


**Before exiting the Select & Mask window, the "Output To" menu is set to "New Layer with Layer Mask." As a result, you can see that the original image layer was duplicated and the mask was applied to that duplicate.**

## Construct the Transparent Parts of the Vase (20:50)

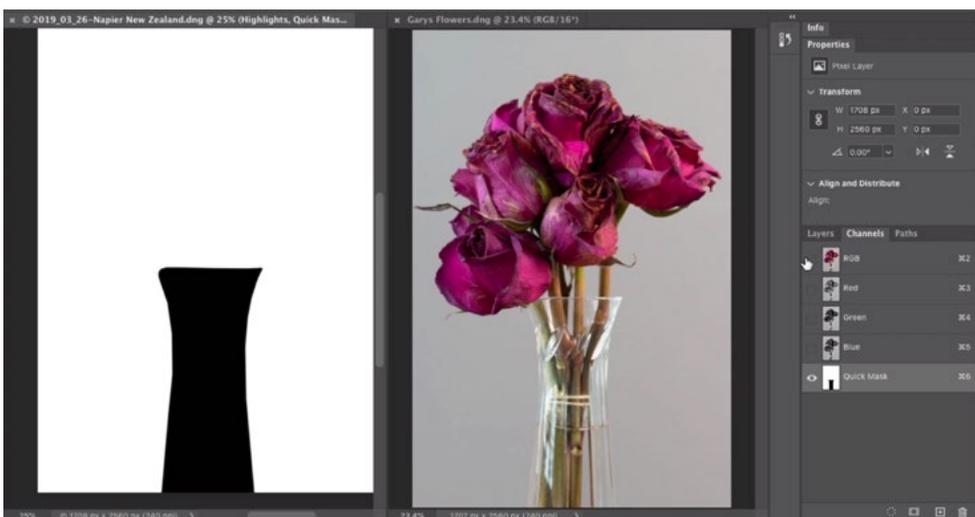
The next step will be to construct the transparent vase. The parts of the vase that we can see are the highlights and the shadows. The highlights will be placed on one layer and the shadows will be placed on another layer. Start by duplicating the original image layer (the one with its visibility turned off) twice. You can duplicate the layer by dragging it to the New Layer icon at the bottom of the Layers Panel or by using the keyboard shortcut Command+J (Ctrl+J on Win). Make sure these two duplicates are just underneath the layer for which you created the layer mask. Rename one of these new layers to "Highlights" and rename the other to "Shadows" so that you later know their purpose.

Now, make a selection of the vase. There are many ways to make a selection, but in the lesson video, we used Quick Mask Mode. (That's because the vase is such a simple shape.) To do it this way, tap the Q key to enter Quick Mask Mode. Then, use the Brush Tool to paint with black over the vase. Because the vase has straight edges, you can use a trick for painting in a straight line. Click once with the Brush Tool, hold down the Shift key and then click again. By holding down the Shift key, you'll be creating a straight line between the two points in which you clicked. Do this repeatedly to paint over the straight edges of the vase. If you get any over-spill, remember that you can tap the X key to exchange the foreground/background colors so that you can paint with white in the area that was accidentally selected.



**In Quick Mask Mode, we are painting with black over the vase to add the overlay.**

If you would like to better inspect the mask, open the Channels Panel and turn off the visibility of the RGB channel. This will leave only the Quick Mask channel visible so that you can view it as a black and white image. Turn the visibility of the RGB channel back on before returning to the Layers Panel.



**Here, we are viewing the Quick Mask as a channel, which displays the mask as a black and white image. Here, we could use the Brush Tool to paint with black and white to refine the mask.**

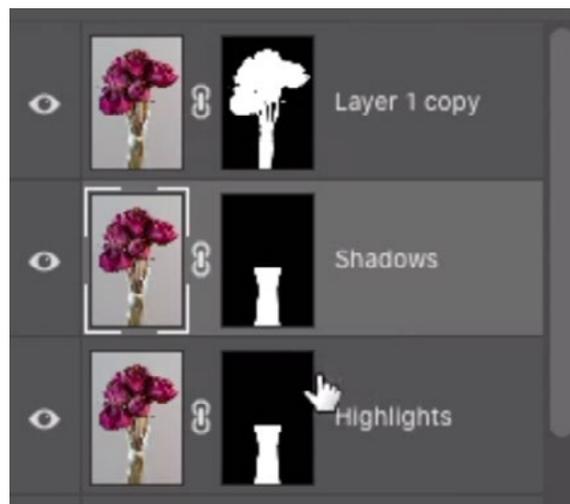
Back in the Layers Panel, tap the Q key again to exit Quick Mask Mode. The “marching ants” selection will appear. In Quick Mask Mode, we defined the selection by painting with black on the vase. The problem is that black indicates areas that are NOT selected, so everything EXCEPT the vase is currently selected. Simply flip the selection to get the opposite by clicking on the Select menu and choosing Inverse. Now the vase will be the only thing selected.

You will use this selection to create a layer mask for both the Shadows and Highlights layers. With one of those layers selected, click on the Layer Mask icon at the bottom of the Layers Panel. The active selection will be converted into the mask, where the area that was selected (the vase) will be the only visible part of the layer.

Now you’ll need to copy that layer mask to the other layer. (Both the Shadows and Highlights layers should have the same mask.) You can copy a mask from one layer to another by holding down the Option key (Alt on Win) and dragging the layer mask from one layer to the other. It’s important that you hold down the Option key when doing this. If you simply dragged the layer (with no key held down), it would move the mask, removing it from one layer and placing it on another.



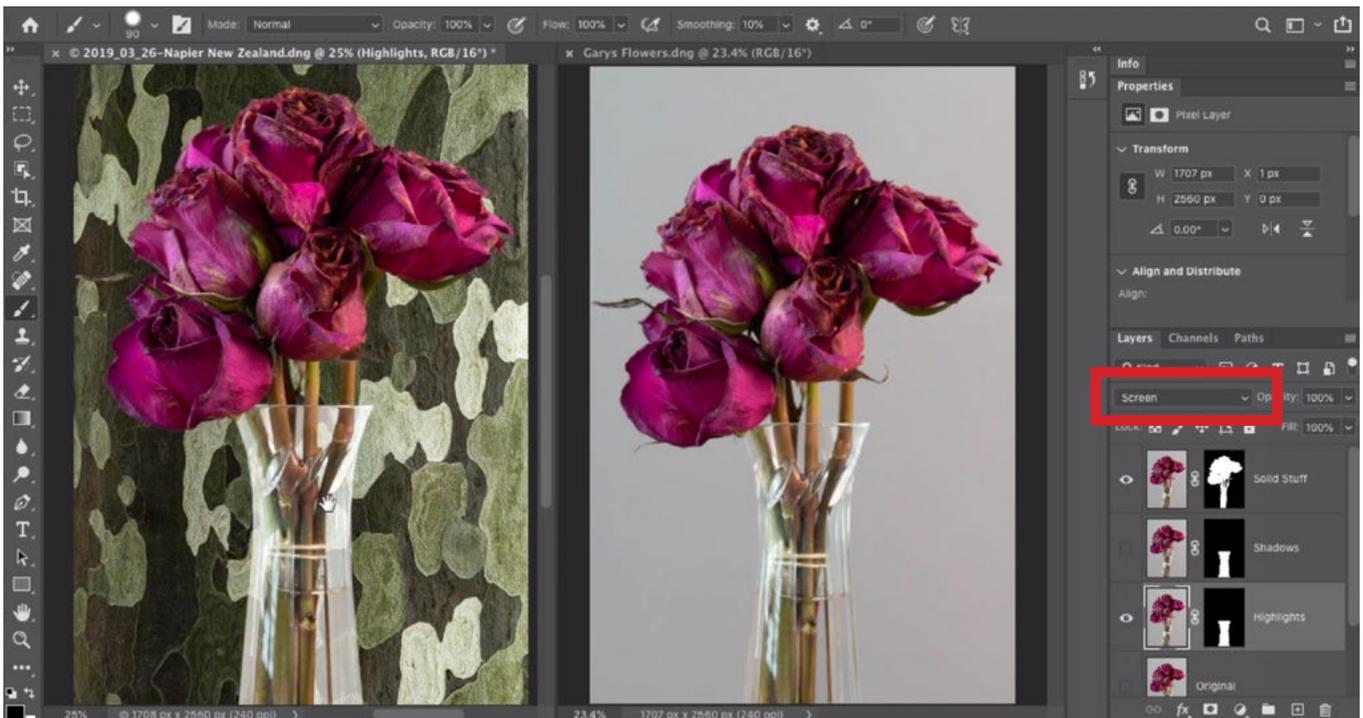
**We have an accurate selection of the vase and this selection will be used to create the layer mask.**



**We have three masked layers. The top is masked to reveal the flowers and stems. The Highlights and Shadows layers are masked to reveal only the glass vase.**

Now you will have three masked layers. The top layer contains all of the solid stuff: The flowers and the stems, minus the glass. The two underlying layers (Shadows and Highlights) are masked to only reveal the glass vase. Right now, you can see the new background behind the flowers, but you can not see through the glass of the vase. You'll need to now manipulate those highlight and shadow layers so that they only display the highlights and shadows, respectively. This will make the vase look transparent so that you can see the background behind it.

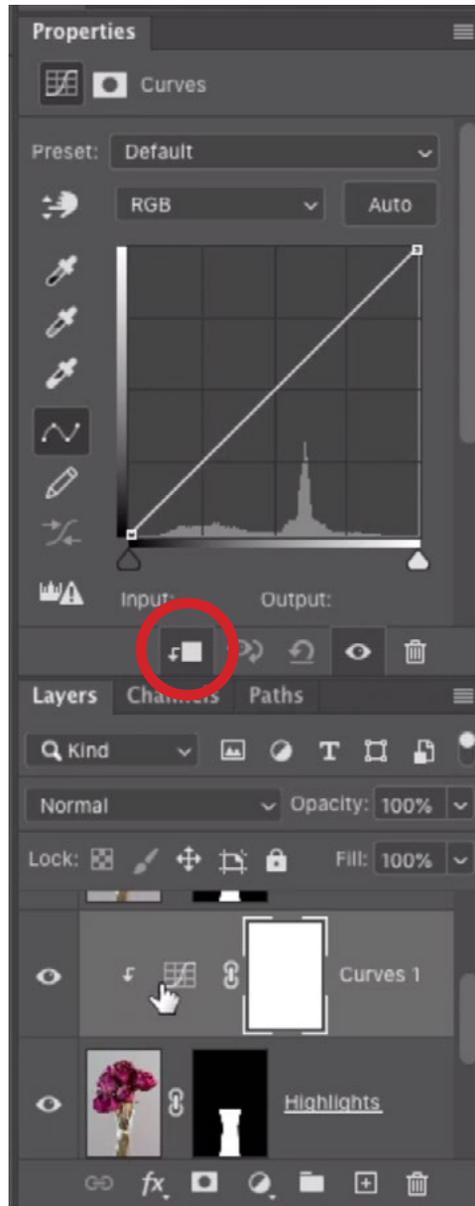
Start with the Highlights layer. Turn off the visibility of the Shadows layer (for now) and make sure that the Highlights layer is active. You'll need to make it so this layer is only able to brighten what is underneath. You can do this by using the Blending Mode menu at the top of the Layers Panel to change the mode to Screen. The Screen blending mode acts like light. It takes however much light was contained in the layer and uses it to brighten what's beneath it. After changing the blending mode, you will start to see some of the pattern from the background showing through.



**The blending mode of the Highlights layer is set to Screen, which makes it so the layer is only capable of lightening the image.**

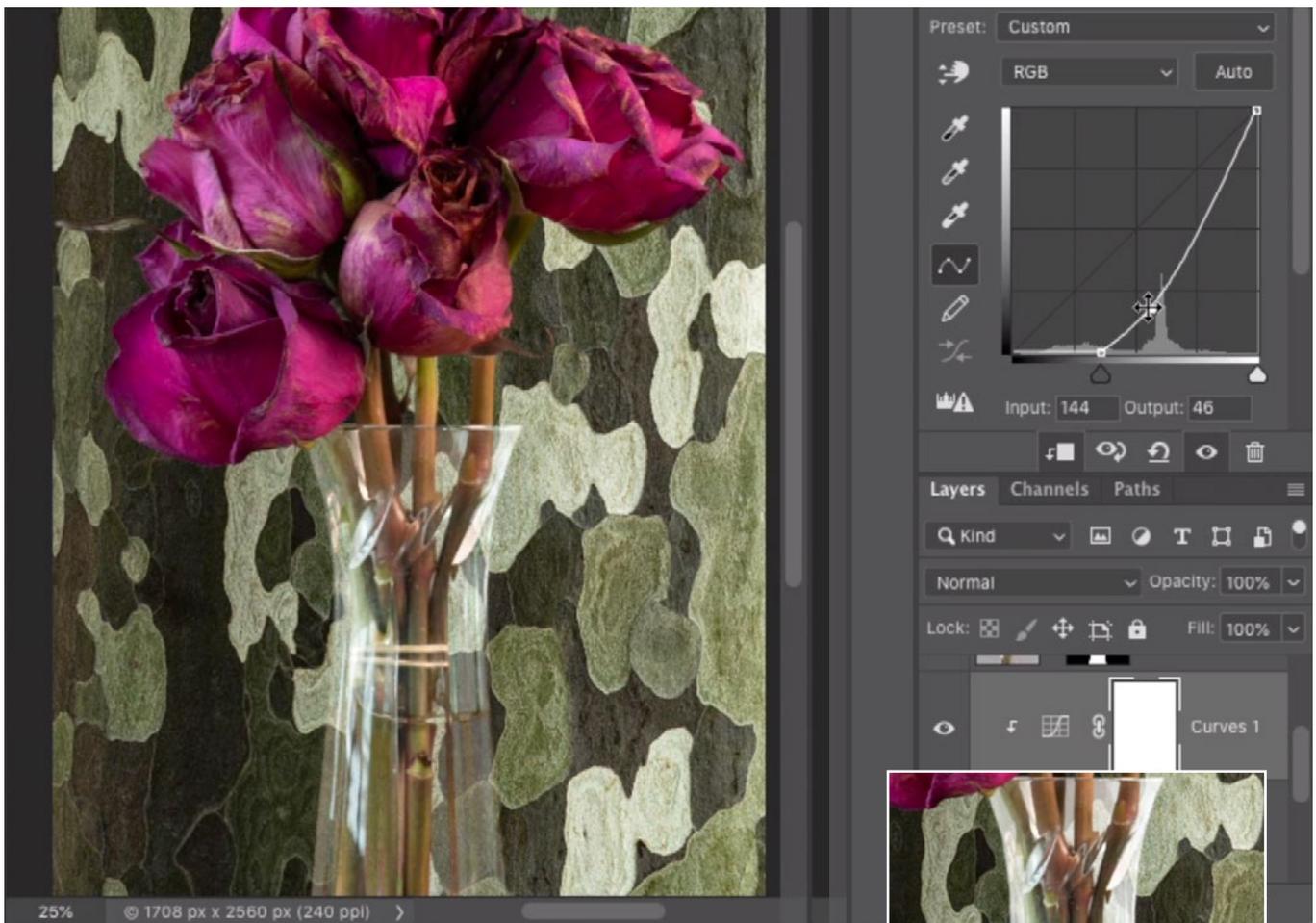
Now compare the vase in the document you're working on to the original image document next to it. In the lesson video, the highlights in the vase became much brighter than the highlights in the original image. If you want to tone down those highlights, you can do so by using a Curves adjustment layer. Click on the Adjustment Layer icon at the bottom of the Layers Panel and choose Curves from the pop-up menu. A new Curves Adjustment Layer will be added and the Properties Panel, containing the Curves settings, will become visible.

This Curves adjustment should ONLY affect the Highlights layer. You don't want it to affect the background. In order to make it so an adjustment layer only affects the layer underneath it, you will need to "clip it" to that underlying layer. You can do this by clicking on the clipping mask icon at the bottom of Properties Panel for the adjustment layer. The icon looks like a little square with a down-pointing arrow next to it. When you click this, the adjustment layer will become indented in the Layers Panel and it will have a little down-pointing arrow next to it.



**A Curves Adjustment Layer was created and we clicked on the Clipping Mask icon (circled) to clip the layer to the underlying Highlights Layer. This makes it so the adjustment layer can only affect the layer directly beneath it.**

Now you can work on the Curves Adjustment Layer. Beneath the curves chart, the black slider can be used to force areas to become black. The farther you drag this slider to the right, the more areas that will be forced to become black. Because the Highlights layer is set to Screen Mode (which can only lighten), the areas that are forced to black will simply disappear. Drag this black slider to the right while watching the vase in the image. It will start to look more and more transparent as more areas start to disappear. Position this slider to a location that looks good and then fine tune the result by clicking and dragging up and down on the curve line. This will place an additional point on the curve.



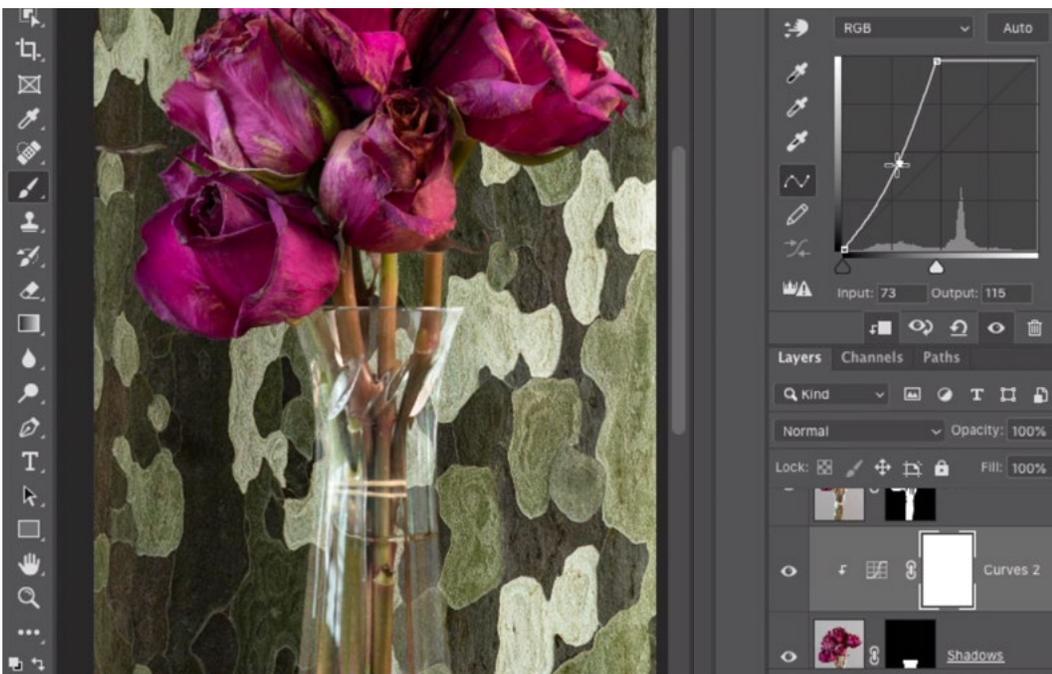
The black slider beneath the curve was moved to the right, forcing more areas to black. Because the Highlights layer is set to Screen mode, these black areas simply disappear. You can see the vase before the adjustment (right) vs. after (above).



Now that you have defined the highlights of the vase, it's time to add in the shadows. Click on the Shadows layer to make it active in the Layers Panel and turn on the layer's visibility. While the Highlights layer can only brighten what's underneath, the Shadows layer should only be able to darken what's underneath. You can accomplish this by changing the layer's blending mode to Multiply. The Multiply blending mode causes the layer to act like ink.

Just like you adjusted the Highlights layer, you can also use a Curves Adjustment Layer to adjust this shadows layer. Click on the Adjustment Layer icon at the bottom of the Layers Panel and choose Curves from the pop-up menu. A new Curves adjustment layer will appear and the Properties Panel will be visible. Again, you only want this adjustment layer to affect the underlying Shadows layer, so you'll need to clip it to that layer. Click on the Clipping Mask icon at the bottom of the Properties Panel to clip the curves layer to the Shadows layer.

Under the Curves chart, the little white slider will force areas to become white. The farther you drag this slider to the left, the more areas that will become white. Since the Shadows layer is set to Multiply mode, it can only darken what's underneath. Therefore, the areas being forced to white will simply disappear. Drag this slider to the left until you can see through to more of the background. Again, you can click and drag on the curve line to fine tune the result.



**The white slider beneath the curve was moved to the left, forcing more areas to white. Because the Shadows layer is set to Multiply mode, these white areas simply disappear.**

## Adjust Water in the Vase (30:30)

The vase is looking pretty good now, but you could even take things a few steps further. There is water in the vase and the background should look different in the areas where you're looking through the water.

First make a selection of the area where the water would be. The layer masks that you already have can help in making this selection. Start by taking one of the layer masks that isolates the vase and loading that as a selection. Load a mask as a selection by holding down the Command key (Ctrl on Win) and clicking on the layer mask thumbnail. The marching ants selection will appear.

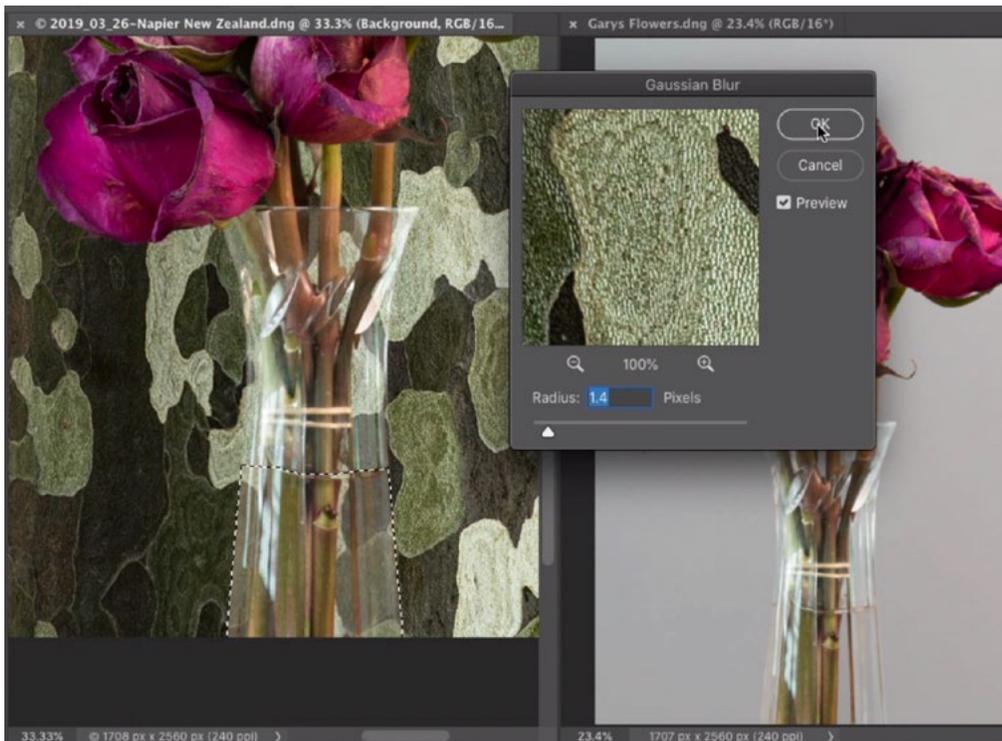
With this active selection, enter Quick Mask Mode by tapping the Q key. The selected area (the vase) will look normal here and the rest of the image will have a colored overlay. You only want the water to be selected, so activate the Brush Tool and paint with black over the top part of the vase, leaving only the water area selected. Tap the Q key again to exit Quick Mask Mode. You will be left with a marching ants selection around the water.



**FAR LEFT:**  
A selection was made around the vase and we entered Quick Mask Mode.

**DIRECTLY LEFT:**  
We are painting with black over all areas except the part of the vase that contains water.

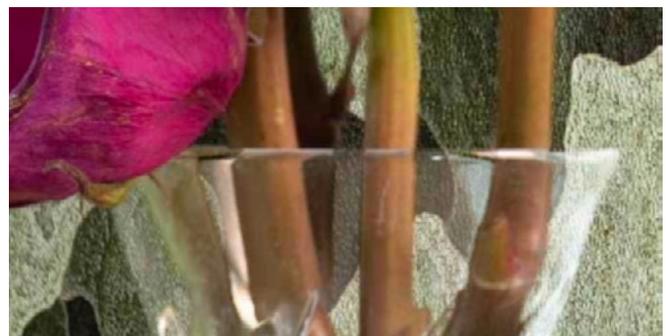
Next, activate background layer, click on Filter menu at the top of the interface and choose Blur > Gaussian Blur. The Gaussian Blur dialog will appear. Here, you can drag the Radius slider up a bit to blur the background in the area where you're looking through the water in the vase.



**With the background layer active, we are using the Gaussian Blur filter to blur the area inside the selection (the water area).**

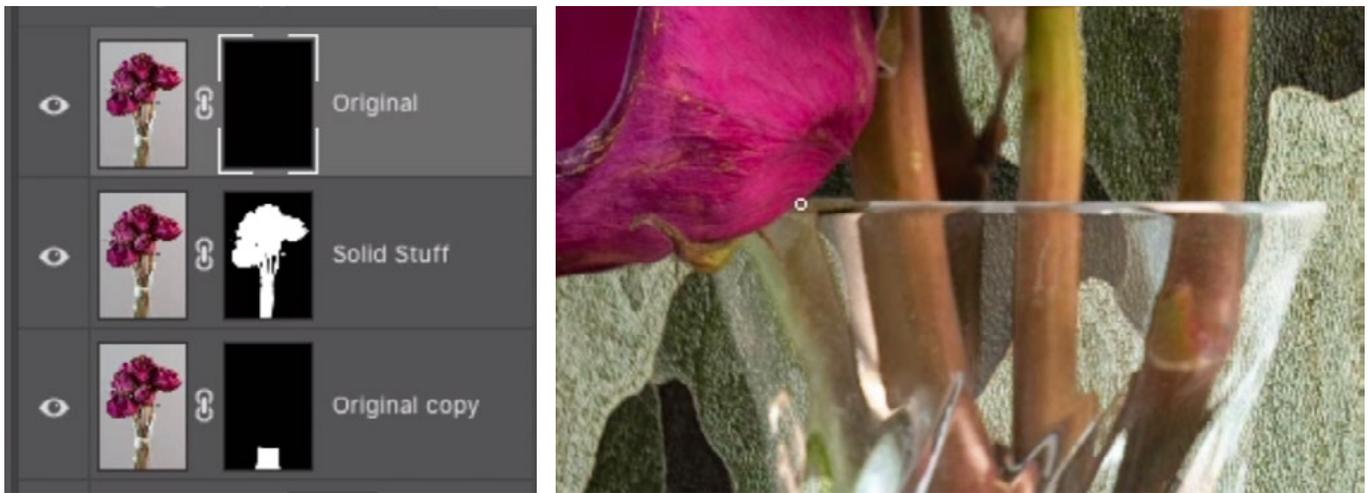
## Bring Back Original Highlights from Rim of Vase (33:41)

Looking at the rim of the vase, you can see that the highlights have become broken up a bit. Here is how you can bring some of the original colors back into that area. The original image is still located near the bottom of the layer stack. Its visibility is currently turned off. Drag this layer to the top of the layer stack and turn on its visibility.

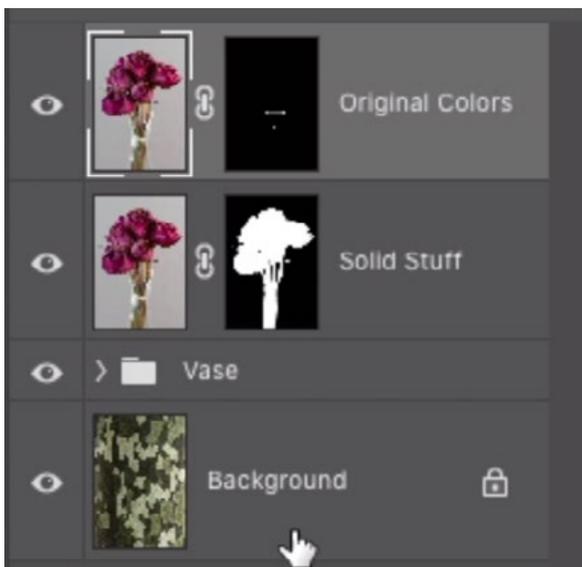


**You can see that the highlights in the rim of the vase have been broken up a bit.**

Next, create a layer mask that hides the entirety of the layer. Click on the Layer Mask icon at the bottom of the Layers Panel to add a white layer mask. Then, click on the Image menu at the top of the screen and choose Adjustments > Invert. This will make the mask completely black. Black hides things, which means that it's hiding the entire layer. Now you can use an extremely small brush to paint with white over the rim of the vase. This will reveal the original colors from the rim.



**LEFT:** The original image layer was moved to the top of the layer stack and a layer mask was added to hide the entire layer. **RIGHT:** We are painting with white on the layer mask to reveal the original rim of the vase.



**All of the layers that make up the vase were placed in a layer group in order to clean up the Layers Panel.**

Finally, it's a good idea to clean up the Layers Panel. Make sure that all of the layers are named and then place all of the layers that make up the vase in a layer group, or folder. This will make it easier to understand what's going on in the document when you open it up again in the future.