



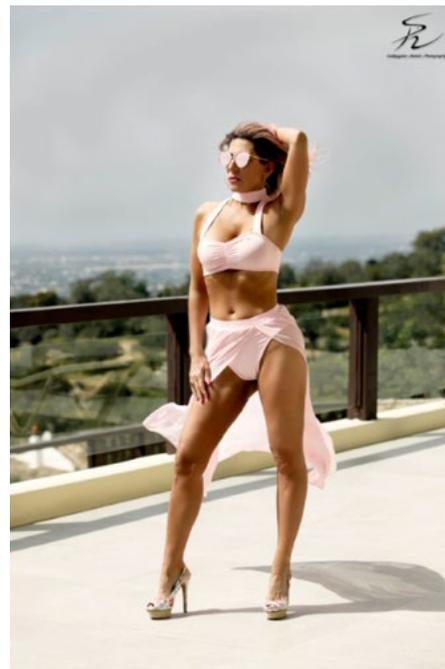
Challenge Image: Glass Panel

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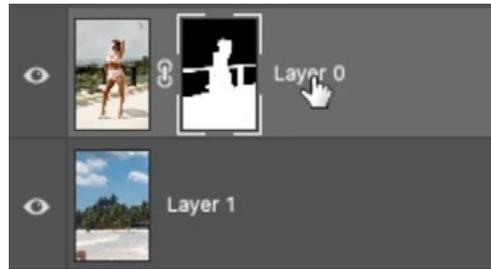
In this lesson, we're going to take a look at a challenge image that was sent in by a Masters Academy member. In the process of tackling this image, you will learn how to change the background in part of the image that is behind a pane of glass. This would not be so challenging if the part of the image that was behind glass was simple (like a solid color). That's not what we have here, however, so we will actually remove the glass and then recreate it from scratch.

Note that I have already prepared the replacement background and masked the subject of the photograph. The new background image and the layer mask will be included in the downloadable lesson file for you to use.

To make the selection, I clicked on the Select menu and chose Select Subject. This created a basic selection around the woman. Then, I used Quick Mask Mode to add the foreground and railing to the selection. That selection was then turned into a layer mask. I found an appropriate background image to use as a replacement, but the trees in the image were too sharp. This would make the background look unnatural, so I used Camera Raw to blur the trees as well as introduce some grain. This will make the new background appear more realistic. The reason we are not covering the above steps in this lesson is that it would make the video far too long, and we have many other videos that cover masking in detail. This lesson will focus on how to reproduce the glass that was originally in the image.



**Above, you can see the original image (top) as well as the result of this lesson.**



The layer mask and the new background image are included with the lesson file. The pre-masked foreground allows us to focus this lesson on re-creating the glass.

## Select the Glass (Timestamp 4:25)

It will require multiple layers to create the new glass panes and it will be useful to organize these layers into a group, or folder. We'll create a new group by clicking on the little folder icon at the bottom of the Layers Panel. We'll name the folder by double-clicking on the name and then typing in "Glass."

If we were to add a layer mask to this group, it will limit the areas in which any of the layers contained within the group can appear. We want the layers to only be visible in the area where the current glass is. Before actually adding the layer mask, we'll start by selecting the glass. The glass has straight edges, so we'll use the Polygonal Lasso Tool, which is grouped with the regular Lasso Tool in the Toolbar on the left side of the interface. With this tool active, you can click in different parts of the image and the tool will create perfectly straight selection lines between the points where you click. Click back where you started to close the selection.



**The Polygonal Lasso Tool is grouped with the regular Lasso Tool.**

We'll use the tool to make a single selection around the glass in the image. In order to create the cleanest selection, we're clicking either outside the frame of the image (on the left and right sides) or within an area that's not glass (like the woman's clothes). This will ensure that all of the glass-defining lines are perfectly straight. After we close the selection (by clicking back where we started), the "marching ants" selection will appear on the image. We'll convert this selection into a layer mask by clicking on the Layer Mask icon at the bottom of the Layers Panel. (Make sure the layer group/folder is active when you do this.)



**The Polygonal Lasso Tool is used to create a selection around the glass panels. That selection was then turned into a layer mask, attached to the layer group.**

Now, anything that we place inside this group will only be able to show up where the mask is white. We'll drag this layer group below the image layer (but above the background layer).

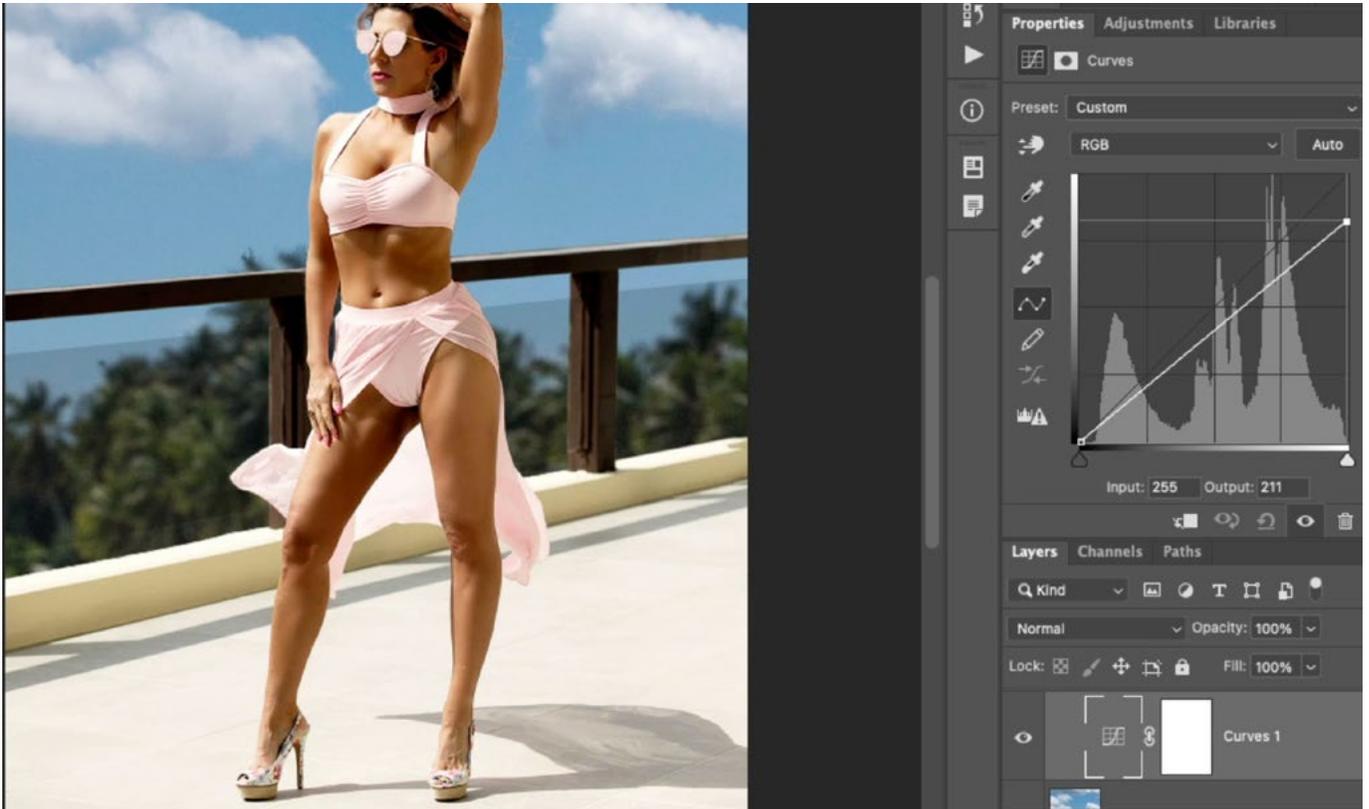
Tip: As we go through this process, it could be useful to be able to see the entire, unmasked image layer now and then. If you ever need to do that, hold down the Shift key and click on the mask to temporarily disable it. You'll see a red X appear on the mask thumbnail and the entire image will be revealed. Shift+click again to re-enable the mask.

## Create Base for Glass (9:28)

We have defined where the glass should appear and we now need to make it actually look like glass. In the original image, the background appears slightly darker in the area where it's behind glass, so the first thing we're going to do is make it so the glass darkens the background. We'll also shift the color a bit because glass usually creates a green or greenish-blue look.

We'll make sure that the layer group is active and we'll create a new Curves Adjustment Layer. You can do this by clicking on the Adjustment Layer icon at the bottom of the Layers Panel and choosing Curves from the pop-up menu. Because the group was active at the time we created the adjustment layer, the new layer will appear inside the group. The curve chart will appear in the Curves Properties Panel. The gradient beneath the curve will tell us what tones we're working on in the image. We want to adjust the bright areas, so we'll click and drag down on the curve point that appears on the top, right corner of the chart. This will take everything that is white and darken it. We'll drag down until we can see a clearly defined area that is darker.

This made the area darker simply by adding gray. We want to give the glass a greenish tint as well, so we'll use the color curves to do this. The color menu appears above the curve chart and we can use this to work on the individual red, green and blue curves.



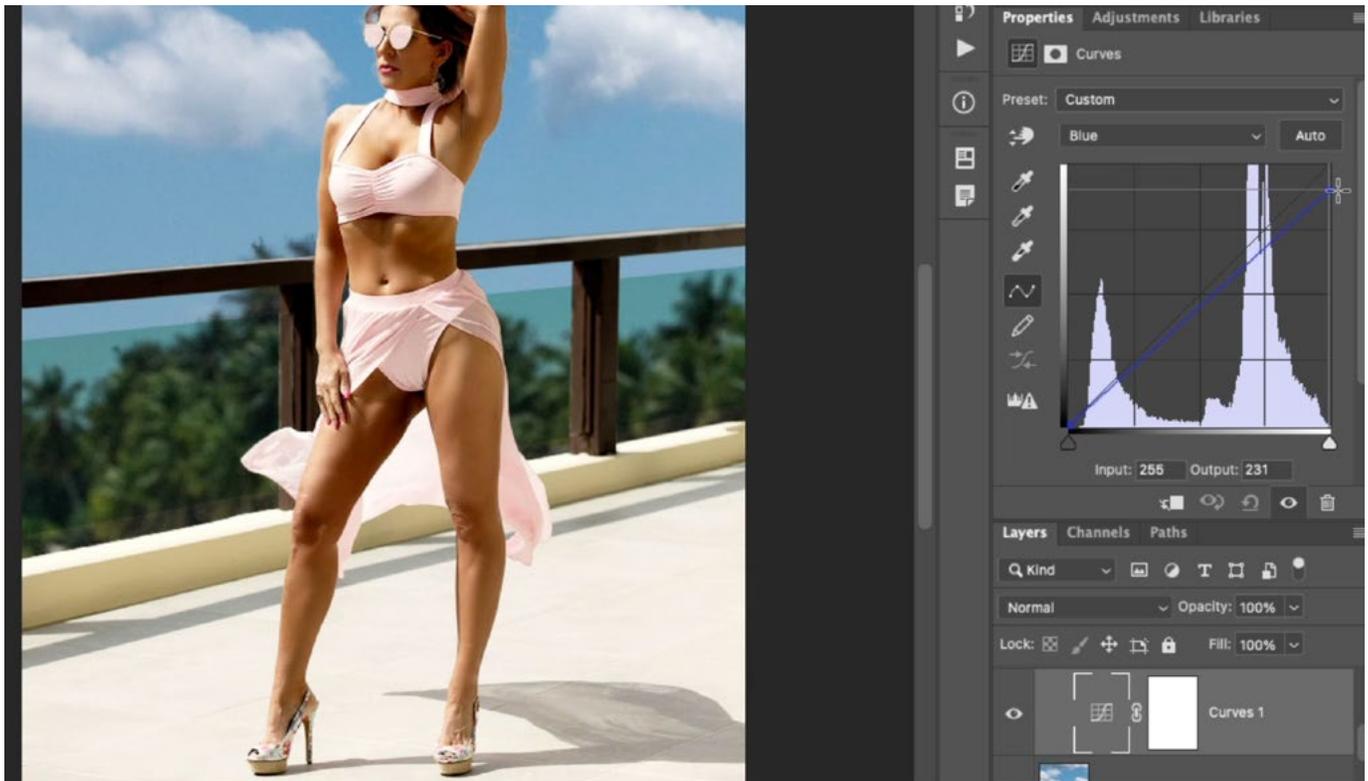
**A Curves Adjustment Layer was created inside the glass layer group. The top right curve point is being moved down, darkening the brightest areas.**

It might seem natural to choose the green curve, since we want to add a green tint to the glass. That, however, is not going to be the ideal choice. When we use Curves, we're working with light. If we were to move any of the curves up, we would be adding light to the area, and that's not what we want. We want to darken the area and we can only do that by moving the curves down. So instead of moving the green curve up (to add green light), we will move the other two curves down. When we remove red and blue light, the green light will be more prominent.

We'll choose the red curve from the menu and we'll click and drag downward on the right, upper point on the curve. This removes red light from the brightest parts of the picture. After dragging it down a bit, we'll make a note of the number that appears in the Output field (below the curve chart). In the video example, that number was 231.

We'll then use the color menu to switch to the blue curve. We'll click and drag down on the upper right point until the Output number matches the one we noted for the red curve (231).

Note: In order to see the changes, the mask for the image layer must not be deactivated. The mask needs to be applying to the layer.



The blue and red color curves were adjusted, moving the upper right curve points down. This removes blue and red from the brightest areas, making the green more prominent.

## Create Edge Highlights on Glass (13:16)

Next, we're going to add the highlight that is created by the thickness of the glass. We'll temporarily disable the mask that's attached to the image layer (by Shift+clicking on the mask thumbnail). This will allow us to see the glass in that original image so that we know how thick it should be. We'll use this info to create a selection that defines the glass edge so that we can brighten the appropriate area.

We'll use Quick Mask Mode to generate the selection. We'll tap the Q key to enter Quick Mask Mode. Because there is not already an active selection, nothing will visually happen to the picture. If there had been an active selection, the selected areas would look normal and the unselected areas would have a red overlay. We can tell that we're in Quick Mask Mode because the words "Quick Mask" will appear in the image tab that contains the document name.

We'll activate the Brush Tool and make sure that we're using a relatively hard brush (~75% hardness) and that we're painting with black. We'll set the brush size to about twice as wide as we actually need. We can do this because there is already a mask that is limiting where the glass appears. If we paint along the edge of the glass, that mask will prevent the paint stroke from appearing too wide. In order to paint a straight line, we'll click on the top edge of the glass on the far left, we'll hold down the Shift key and then click on the top right edge of that first pane of glass. A straight line will be created between the two points where we click. Because we're in Quick Mask Mode, this will create a red overlay in the area where we paint.

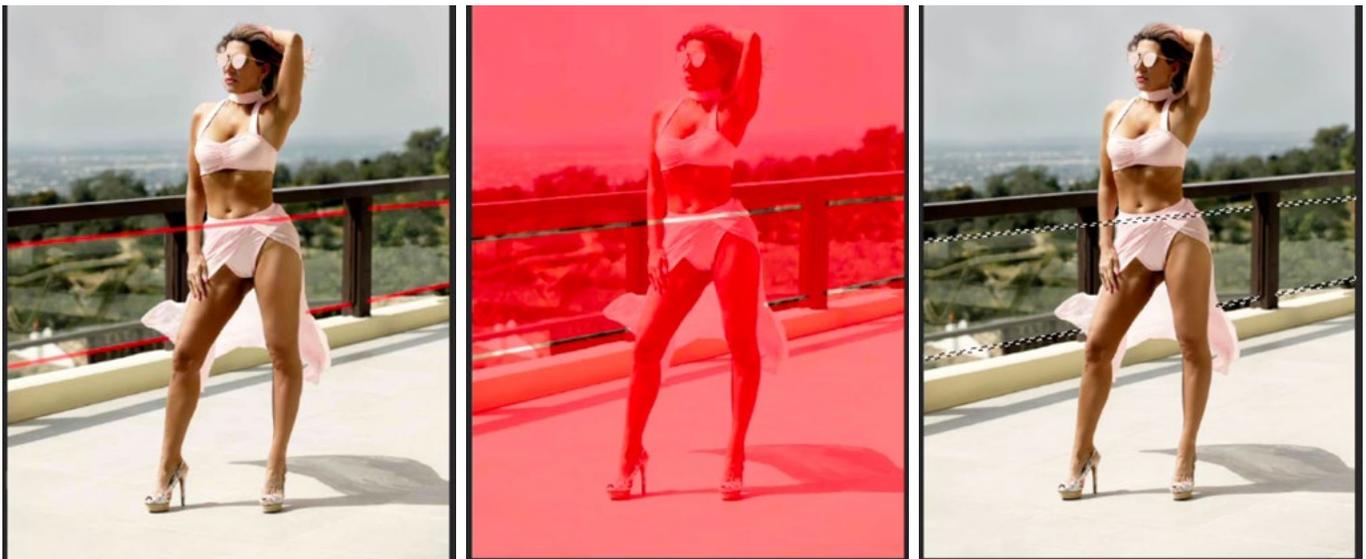


**LEFT: We temporarily disabled the layer mask that hides the original image background. This allows us to see the original glass. RIGHT: In Quick Mask Mode, we are painting over the top edge of the glass that should receive the highlight.**

We'll do the same thing for the bottom highlighted edge of that first pane of glass. Then we'll continue on, isolating the top and bottom highlights in all of the glass panes.

In Quick Mask Mode, the red overlay represents the area that WONT be selected. The red strokes that we currently have are covering the areas that SHOULD be selected, so we need to invert the mask. We can do that by clicking on the Image menu and choosing Adjustments > Invert.

We can now exit Quick Mask Mode by again tapping the Q key. We'll be left with the "marching ants" selection on the image. We no longer need to see the original background, so we can re-enable the layer mask attached to that layer. Do this by Shift+clicking on the mask thumbnail.

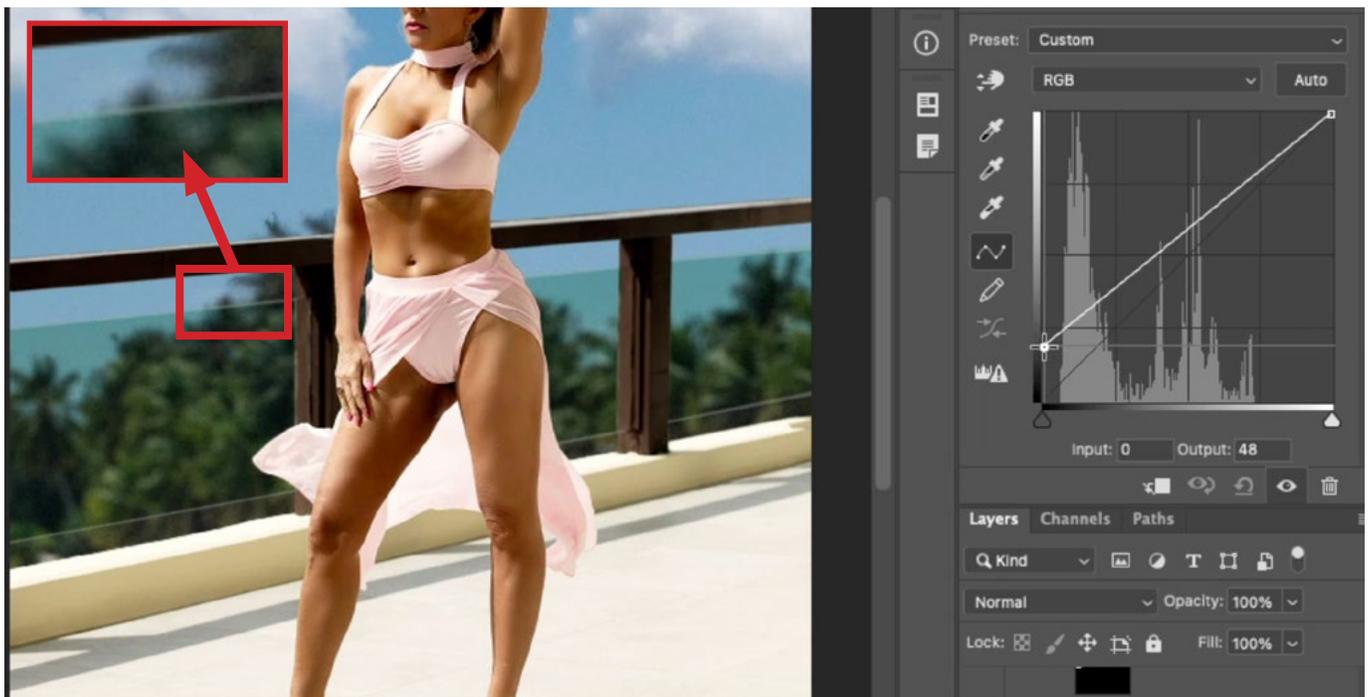


**LEFT:** In Quick Mask Mode, the Brush Tool was used isolate the edges of the glass, where the highlight will appear. **CENTER:** The Quick Mask was inverted so that only the glass edges are selected. **RIGHT:** We exited Quick Mask Mode and are left with the marching ants selection.

Now we're going to create a new adjustment layer. Whenever you create a new adjustment layer, it always appears above the layer you're currently working on, so we'll click on that first Curves adjustment layer to make it active. This way, the new one will appear just above it within the layer group that's creating the glass. We'll create a new Curves Adjustment Layer and the active selection will automatically be applied to the mask. The areas that were selected (the glass highlights) will be the white part of the mask, which is the area where the adjustment will be visible.

The last Curves adjustment was used to darken the glass area. This one will be used to do the opposite. We'll click and drag up on the bottom left curve point. This lightens the darkest areas. You can see that the edges of the glass become more defined.

In the video example, the edge effect was a little too extreme in the pane of glass that is farthest from the camera. To make this look more natural, we used the Brush Tool to paint with black, using a very soft-edged brush, over the back glass edges. This lessens the effect.

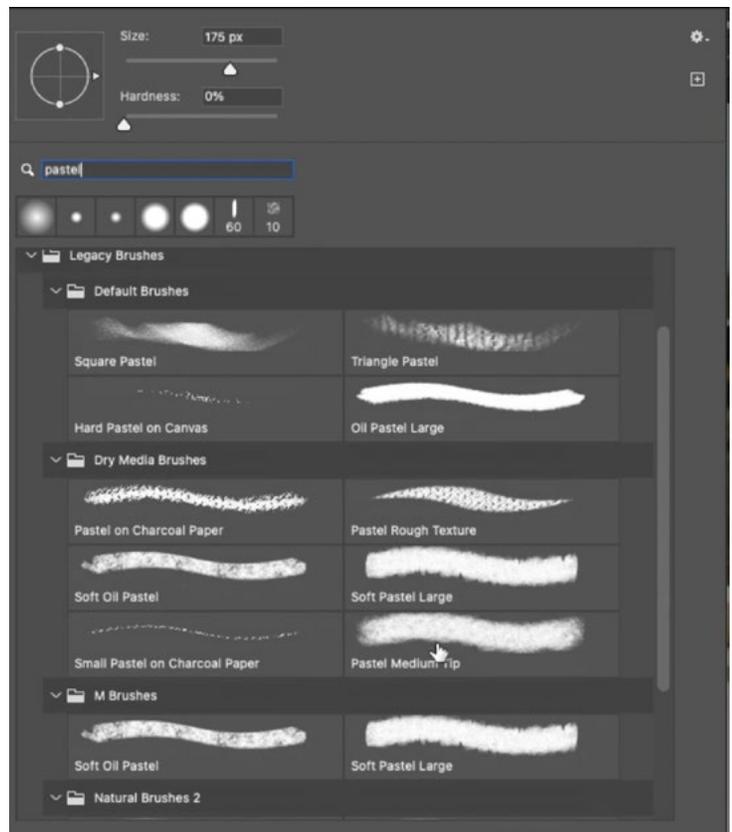


We isolated the edges of the glass and a Curves adjustment is being made. The bottom left curve point is being moved up. This is lightening the darkest areas, and you can see the highlights appear on the upper and bottom edges of the glass.

## Add Reflections (20:53)

We'll once again deactivate the layer mask that's attached to the original image layer. Looking at the original background, the glass has some reflections on it. Let's see how we can add those.

We'll enter Quick Mask Mode and make sure that we're painting with black. Black is what creates the red overlay in that mode. Now we're not going to use a standard soft or hard-edged brush to create that reflection. We'll instead choose a brush that creates a more random edge. If you click on the brush tip in the Options Bar (above the image window), the brush menu will appear and you will find a search field. If you type in "pastel," one of the search results is the "Pastel Medium Tip" brush. That's what we'll use in the video example. It's not imperative that you use this specific brush. Just make sure that you choose one with an inconsistent edge.



**We're choosing the Pasted Medium Tip from the brush menu in the Options Bar.**

Note: If you do not see this brush in your menu, it's because it was included in Photoshop's Legacy Brushes and you may not have your interface set up to include them. If that's the case, click on the little gear icon in the top right corner of the brush panel and choose "Legacy Brushes" from the pop-up menu.

Now, while we're still viewing the original background (and we're in Quick Mask Mode), we'll try to recreate the shape of the reflection by painting with black. Don't worry about the paint strokes extending beyond the bottom edge of the glass. The layer mask that's attached to the "glass" layer group will limit where they show up.



In Quick Mask Mode, we're painting over the part of the glass where the reflection should appear.

In Quick Mask Mode, the red overlay represents the part of the image that is NOT selected, so we'll want the opposite of what we have. The reflection area should be the only area that IS selected. We'll invert the mask by clicking on the Image menu and choosing Adjustments < Invert. Now the red overlay covers everything EXCEPT the reflection area. We can exit Quick Mask Mode by tapping the Q key and we'll end up viewing the selection as marching ants on the image.



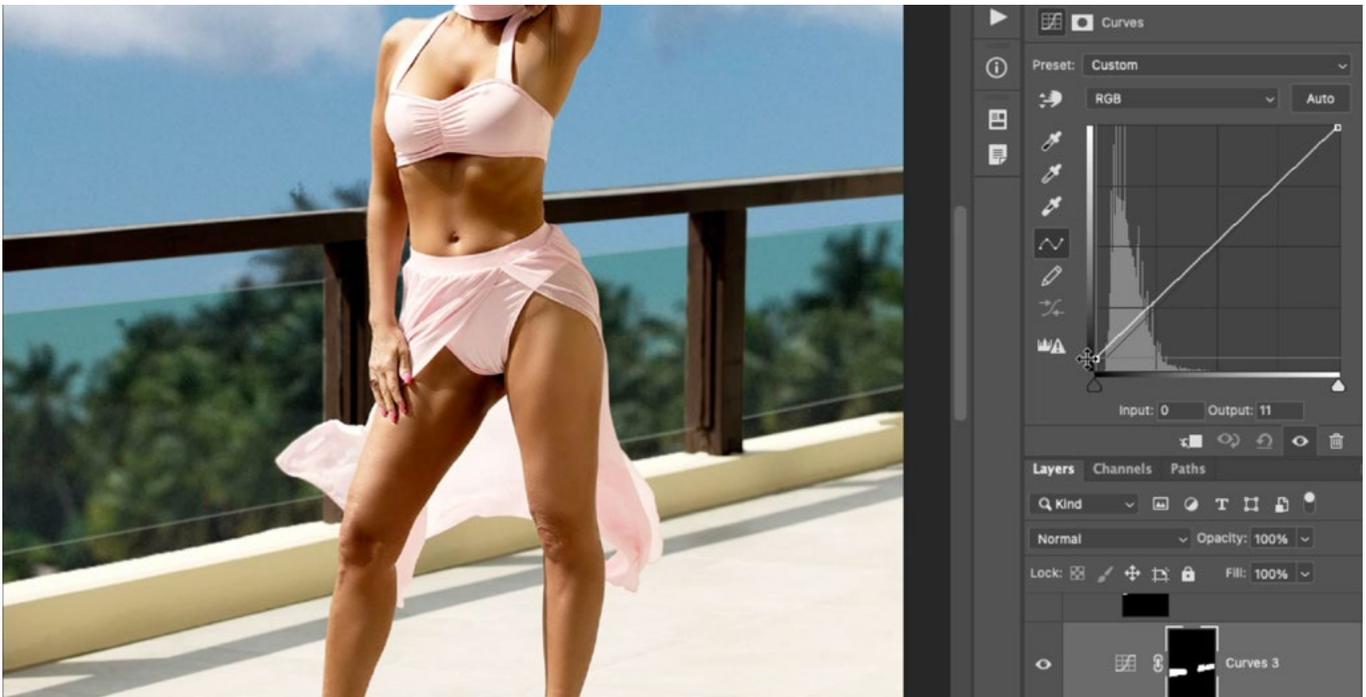
A selection was created, defining where the reflections should appear in the glass.

We no longer need to refer to the original image background, so we can re-enable the layer mask that's attached to that layer (Shift+click on the thumbnail).

We need to create a new adjustment layer inside the layer group we created for the glass. We'll click on the Adjustment Layer icon at the bottom of the Layers Panel and choose Curves from the pop-up menu.

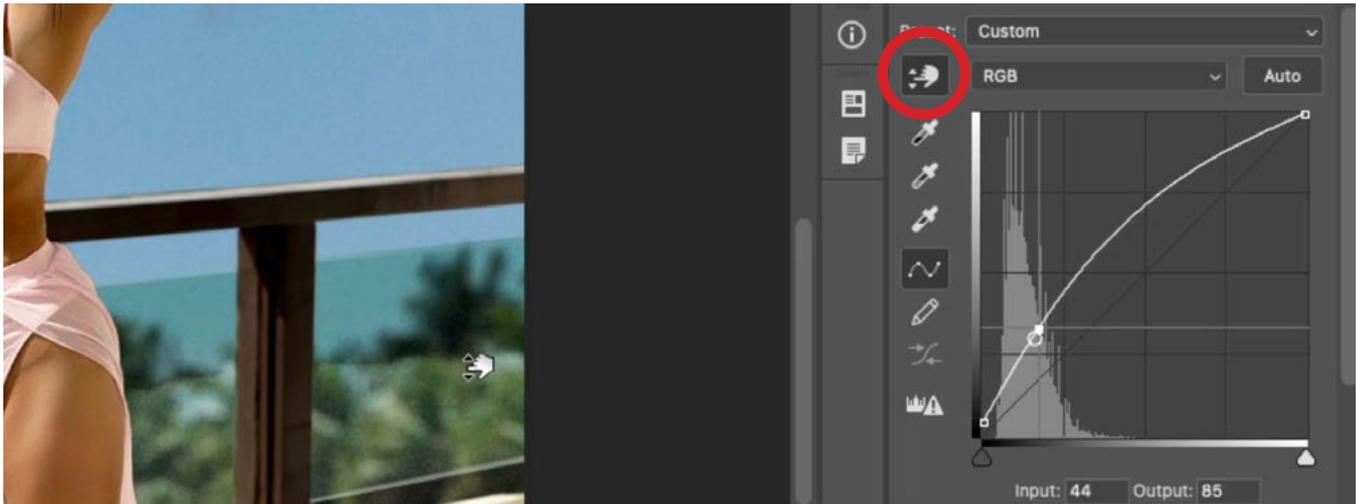
NOTE: If your adjustment layer ends up outside of the layer group, be sure to drag it inside the group.

The selection will automatically be applied to the layer mask that's attached to the adjustment layer, where the selected areas are now the white part of the mask. This is the area where the adjustment will be visible. The Curves Properties Panel will appear, with the Curves chart inside. We'll click and drag up on the bottom left point on the curve chart. This lightens the darkest parts of the image, but we're only going to move it up a small amount (so that the effect is really subtle).



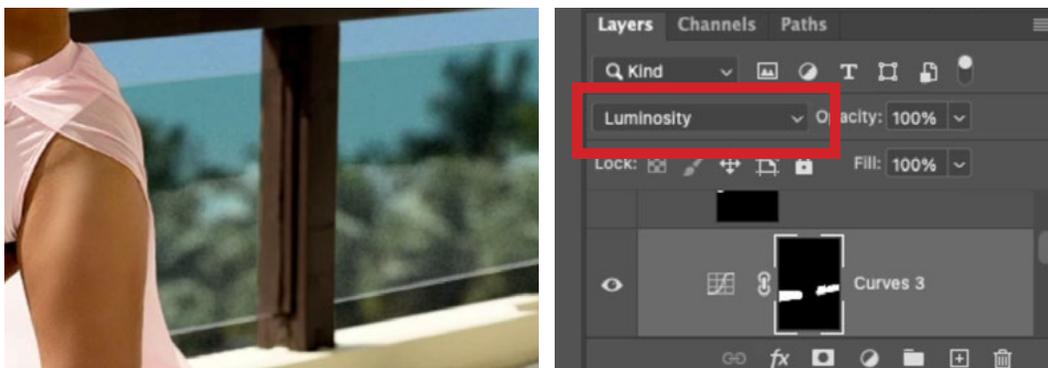
**A Curves adjustment is being applied and the mask is limiting the effect to the part of the glass that should have the reflection. The bottom left curve point is being moved up slightly. This is lightening the very darkest areas.**

We'll then activate the Targeted Adjustment Tool, which looks like a little hand icon on the left side of the Properties Panel. With this tool active, we'll click on the image background, where the reflection should appear, and we'll drag up. This will place a point on the curve (representing the brightness of the area where we click) and move that point up, lightening the targeted area.



The Targeted Adjustment Tool (circled) is being used to click and drag up on the part of the glass that should have the reflection.

Whenever you brighten or darken an area, the colors can end up shifting a little. If you don't want that to happen, you can change the blending mode of the layer to Luminosity. This mode will allow the layer to affect the brightness of the image, but not the color. We changed the blending mode of this Curves adjustment layer to Luminosity. (The Blending Mode menu can be found at the top of the Layers Panel.)

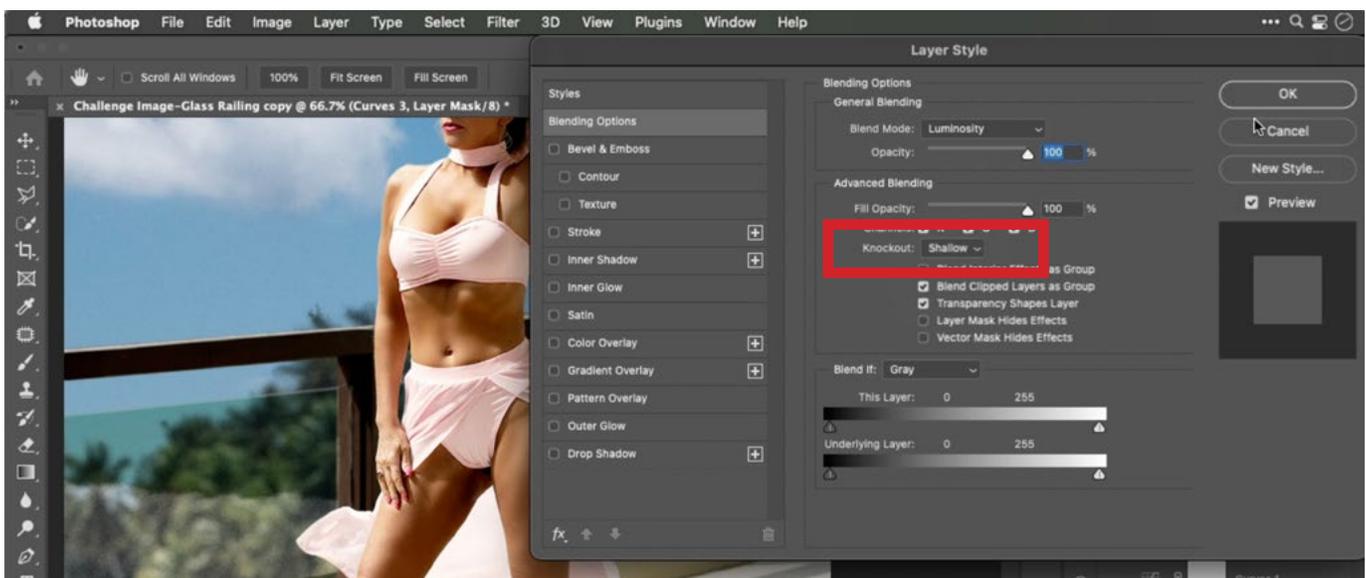


The blending mode of the reflection layer is set to Luminosity, which prevents the layer from shifting the color.

## Prevent Counter-Acting Brightening/Darkening Effects (27:04)

At this point, things are still not looking completely natural. That's because we have two adjustment layers that are brightening and one that is darkening. We need to prevent the brightening layers from being darkened by the darkening layers. The darkening layer should be the bottom-most of the glass layers. The two brightening layers should be above that.

We want the effects of the brightening layers to prevent the darkening layer from showing up. To achieve this, we're going to use a little-known feature in Photoshop. With the first brightening layer active, we'll click on the FX icon at the bottom of the Layers Panel and choose Blending Options from the pop-up menu. The Layer Style dialog will appear, with the Blending Options settings visible. Near the middle of this dialog, you will see a Knockout menu. The Knockout setting tells Photoshop that wherever the current layer is visible, the layers beneath it should NOT be visible. We have the options of Shallow or Deep. The Shallow setting will only knock through things that are in the same layer group. The Deep setting will knock through every underlying layer in the Layers Panel. We'll set the menu to Shallow and the glass area will visibly change in appearance. We'll click OK to exit the Layer Style dialog and then we'll repeat that step with the other brightening layer.



In the Blending Options section of the Layer Style dialog, the Knockout menu is being set to Shallow.

This works because all of the glass layers are contained within a group and the darkening layer (the one we want to prevent from showing up in some areas) is at the bottom of the group.

Now that the brightness of the glass has changed a bit, we can fine-tune the adjustment layers to make everything look more ideal. Double-click on the adjustment layer thumbnail in order to access the settings. In our example, it will open the Properties Panel to reveal the Curves chart. We'll tweak the curve points to fine tune the brightness of all the effects.



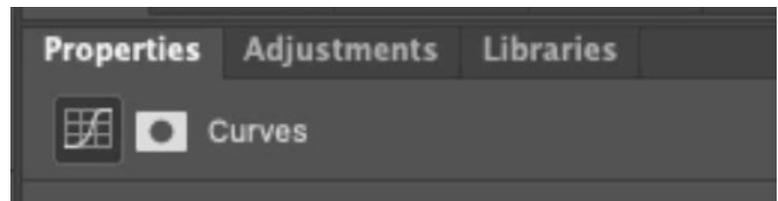
**The layer group contains all the adjustment layers used to create the glass. It is masked so that the layers only appear where the glass should be.**

**This Curves Adjustment Layer creates the lighter reflections in the glass and is set to Knockout Shallow.**

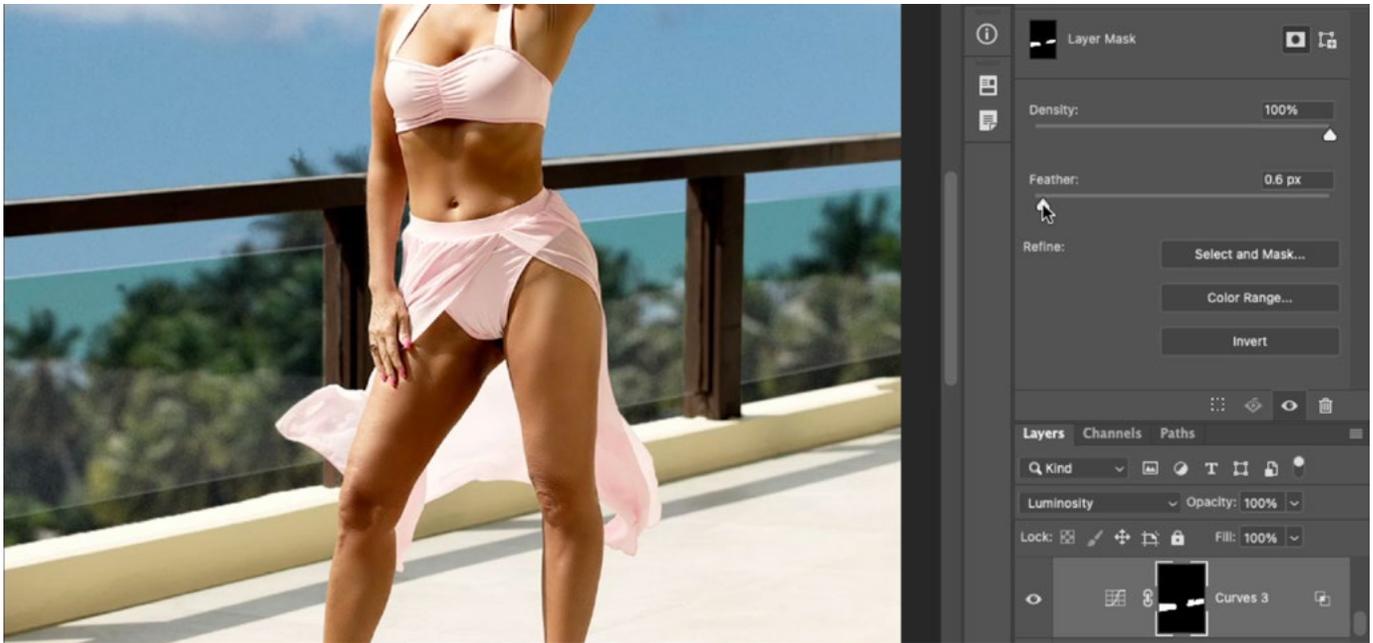
**This Curves Adjustment Layer creates highlights on the top and bottom edges. It's also set to Knockout Shallow.**

**This Curves Adjustment Layer is used to darken the glass and make it appear more blue/green.**

Looking at the glass, I think that the reflection layer has too hard of an edge. The transition just feels a bit abrupt. We can fix this within the Curves Properties Panel. We'll click on that reflection layer to make it active and to open the Curves settings for it. There are two icons at the top of the Properties Panel and they let us switch between the Curves settings and the Mask settings. We'll click on the second icon to access the Mask settings. Here, the Density slider allows us to soften the mask in a non-permanent way. We'll drag this slider to the right a bit, just until the edge of the reflection becomes a little softer.



**At the top of the Properties Panel, the left icon will present the adjustment layer settings (Curves in this case). The right icon will present the mask settings.**

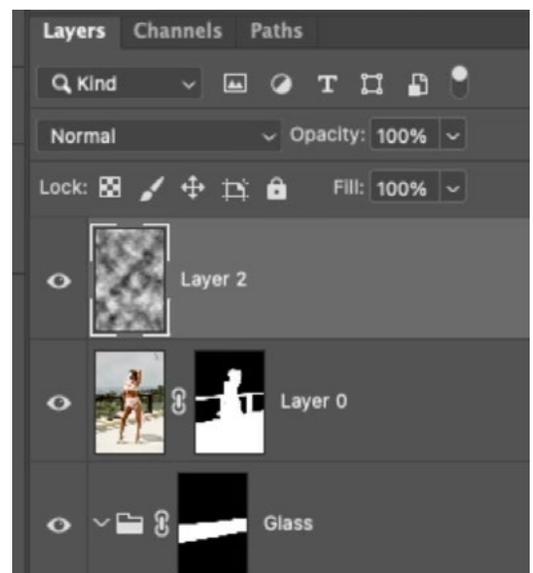


We're adjusting the adjustment layers' mask settings and the Feather slider being increased slightly. This is softening the edge of the layer mask attached to the reflections layer.

## Add More Variation in the Blacks (33:17)

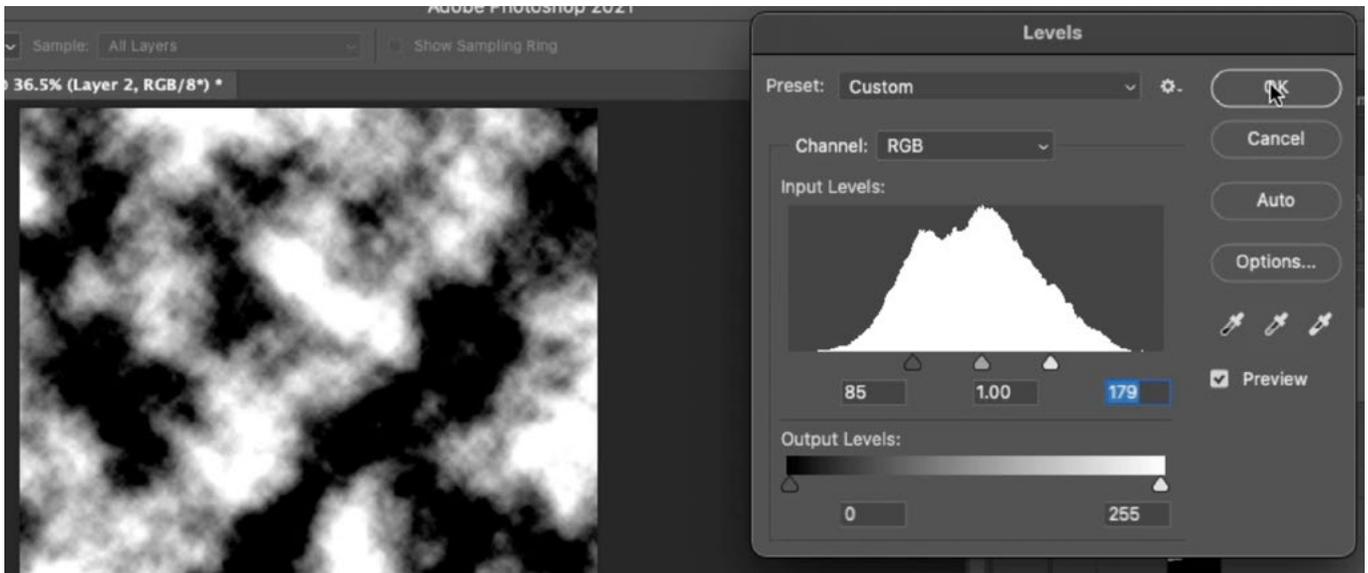
We could use some more realism in the effect, so we will add more variation in the blacks of the glass. Looking at the original image layer, that's what the original background had, and we currently lack that variation.

We'll create a brand new, empty layer at the very top of the layer stack, above the original image layer. We're going to run a filter on this layer. We need to make sure that our foreground and background colors are black and white. Then, we'll click on the Filter menu and choose Render > Clouds. The image will be filled with a cloud effect.



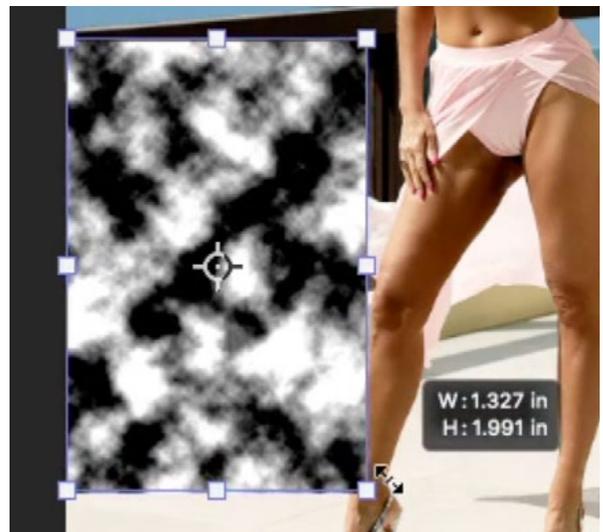
The Render > Clouds filter was applied to a layer at the top of the layer stack.

We want to adjust the clouds so that there are some very bright areas and some very dark areas, and we can do that with Levels. We'll click on the Image menu and choose Adjustments > Levels. The Levels dialog will appear and we'll use the black and white sliders below the levels chart. We'll drag the black slider to the right, creating more areas of solid black. We'll drag the white slider to the left until we have more areas of solid white. We'll click OK to exit the Levels dialog.



**A Levels adjustment is being used to create more areas that are perfectly black and white.**

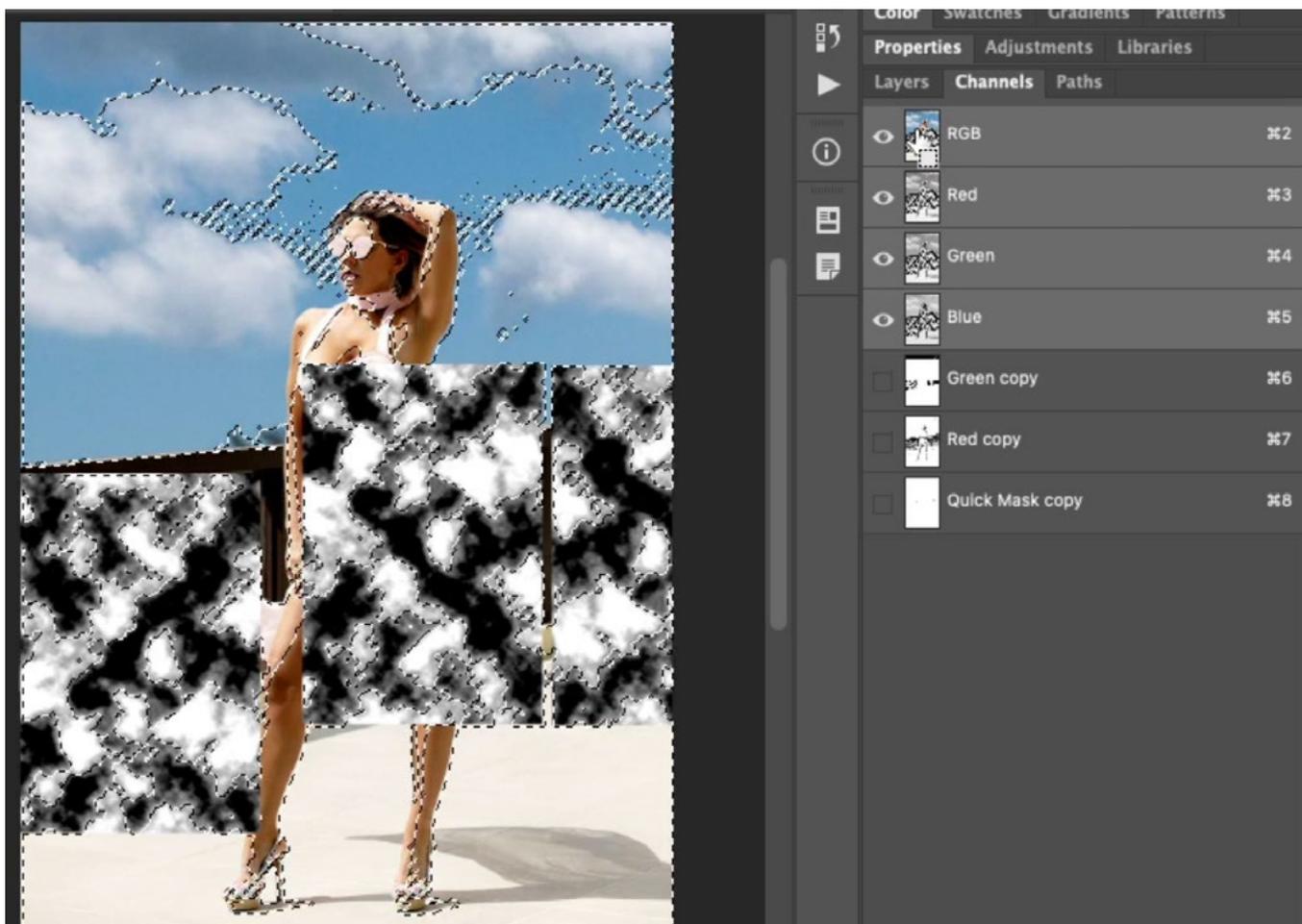
The effect should only cover the glass, and it would be more ideal if the variation in brightness was smaller, so we'll scale the layer. We'll click on the Edit menu and choose Free Transform. The transform handles will appear on the layer and we'll use them to scale the layer down and position it so that it covers one of the glass panes. We'll click the Enter/Return key to lock in the transformation.



**The Free Transform command is being used to position the cloud layer on the first pane of glass.**

Next, we'll duplicate the layer (Command/Ctrl+J) and then position the duplicate on the next pane of glass. We don't want it to be identical to the first, so we'll click on the Edit menu and choose Transform > Flip Vertical. We'll create another duplicate and position it over the third and final pane of glass. This time, we'll change it up by flipping it horizontally.

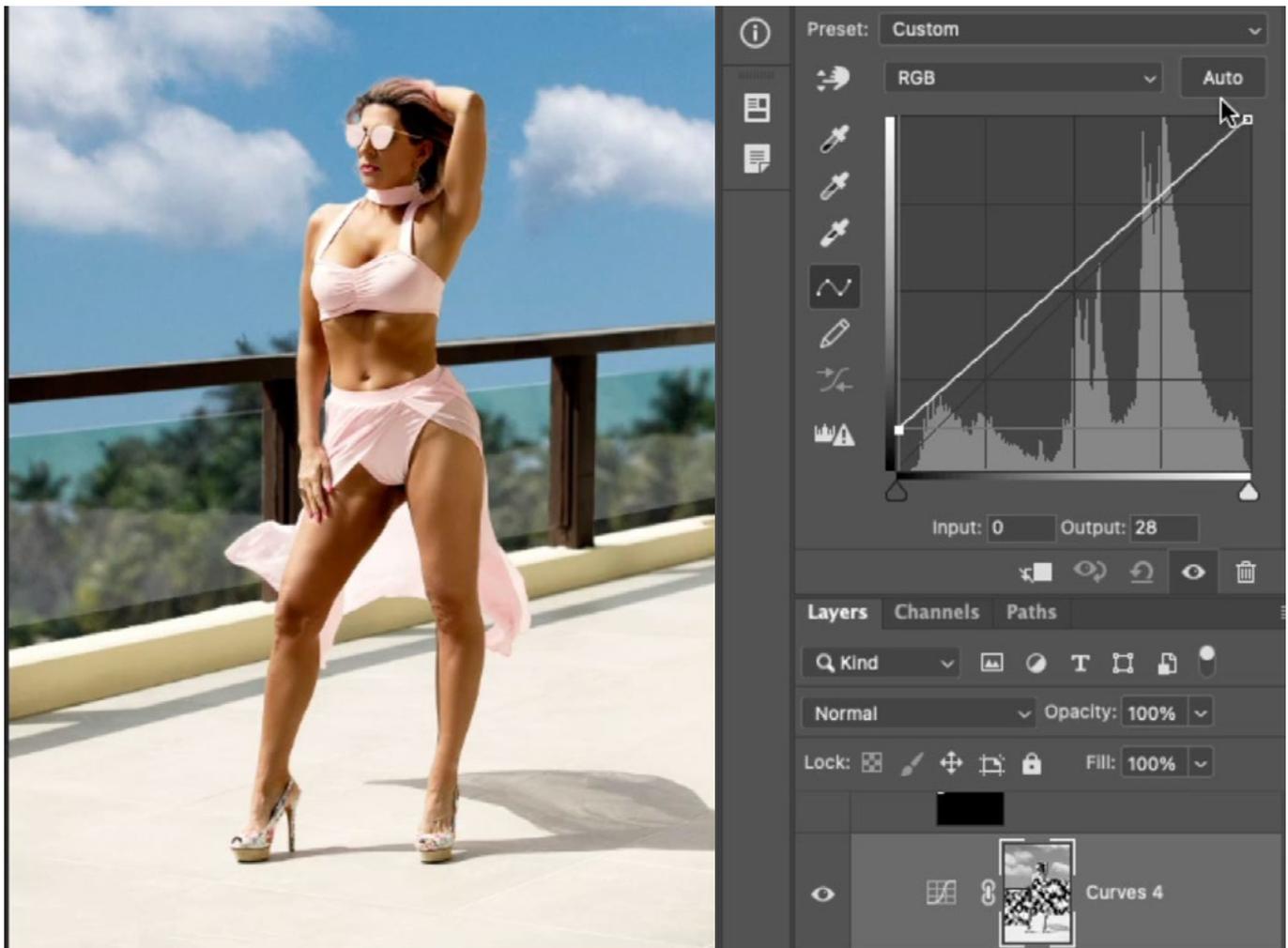
We're going to turn this cloud rendering into a selection, where the white areas will be selected and the black areas will not be selected. The areas that are shades of gray will be partially selected. There is a trick for doing this. We'll open the Channels Panel, which is usually grouped with the Layers Panel. We'll hold down the Command key (Ctrl on Win) and click on the top-most thumbnail (for the RGB channel). This will make a selection based on brightness.



The clouds were positioned over all three glass panes. Here, we are Command+clicking on the RGB channel (in the Channels Panel) to create a selection based on brightness.

With the selection active, we can now return to the Layers Panel and discard the three cloud layers. We only needed them to create this selection. We'll now use this selection to add a little variation in the glass.

We'll create a new Curves adjustment layer above the other layers INSIDE the layer group. Again, the selection will automatically be applied to the layer mask that's attached to the adjustment layer. The Curve chart will appear and we'll click and drag up (just slightly) on the bottom left curve point. This lightens the darkest tones. We want this to be barely perceivable.



The clouds selection was used to isolate varied parts of the glass. A Curves adjustment is being made to lighten the selected areas, creating more variation in brightness.

Then, we can use the same selection to break up the lighter, reflection area along the bottom of the glass. We'll click on the Select menu and choose Reselect. The marching ants selection will appear again. We'll click on the mask for the reflection layer to make it active. We'll activate the Brush Tool and we'll paint with black, using a large, soft-edged brush, over the glass. The strokes will only be applied to the selected area, which is varied, so it creates more variation in the glass brightness.

Tip: If the marching ants are distracting, you can hide them by clicking on the View menu and toggling the Extras setting. The selection will still be active. You just won't see those marching ants.

If you do this all in one paint stroke, then you can adjust the strength of the effect by using the Fade command (Edit > Fade). This command takes the very last thing you did and allows you to lessen the effect of it.

## **Add a little Variation in the Highlights (39:38)**

Another thing we could do is add a little more highlights. We can do this by working on the layer mask attached to the reflection layer. With the clouds selection still active, we'll paint with white (using a low brush opacity) over different parts of the glass, just enough to add a little more highlight variation. Remember, if you need, you can re-access that last selection by clicking on the Select menu and choosing Reselect.