



Splash Challenge

# Splash Challenge

In this lesson, we're going to work on a challenge image that was sent in by a Masters Academy member, and we're going to learn how to replace the background on a complex image. We'll need to use some masking techniques in order to keep the fun splash in the scene while replacing what's behind it.



**In this challenge image, we're going to replace the background while maintaining all of the water droplets created by the splash.**

We're going to replace the background with more water so that it looks like the

water is just continuing on behind the synchronized swimmers. To do this, we'll copy the water that's in the foreground and use it to replace the background.

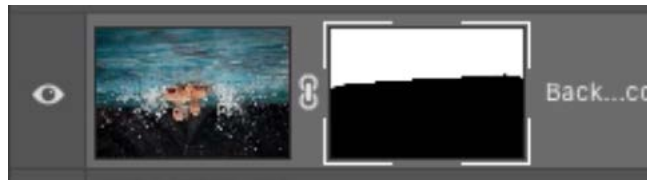
## **Duplicate image & position new background (Timestamp: 1:35)**

To start, we're going to duplicate the image layer by dragging the layer down to the New Layer icon at the bottom of the Layers panel. Alternatively, we could use the keyboard shortcut Command+J (Ctrl+J on Win) to duplicate the active layer. Then, we'll click on the Edit menu and choose Transform > Flip Vertical.

I want to make a selection of the area that will be useful to us in this layer. We'll activate the Lasso Tool and use it to make a selection of the clean water that is now at the top part of the layer. I only want to keep the part of the layer that is selected, so I'll create a layer mask by clicking on the Layer Mask icon at the bottom of the Layers panel. When you create a layer mask while there is an active

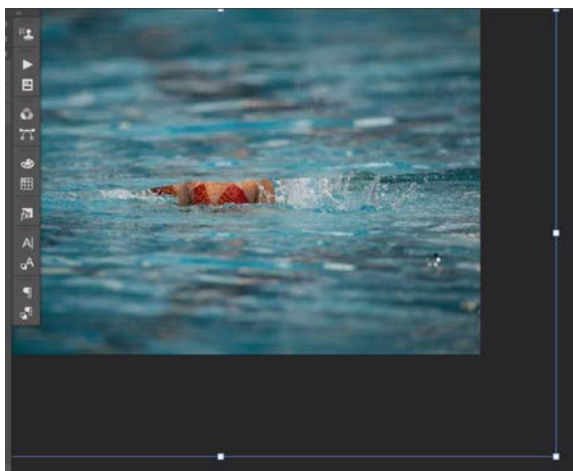


**ABOVE:** After the image duplicate was flipped, we made a selection around the water part of the layer. **ABOVE RIGHT:** We created a layer mask, where the selection was converted into the mask. **RIGHT:** The masked layer reveals only the water that we had selected.



selection, that selection will be converted into the mask, where the selected area remains visible and the non-selected areas become hidden. This makes it so the water that we selected is the only part of the layer that remains visible.

Looking at the two layers, we can see that the water in the top layer doesn't completely cover the dark background in the original image layer. We'll need



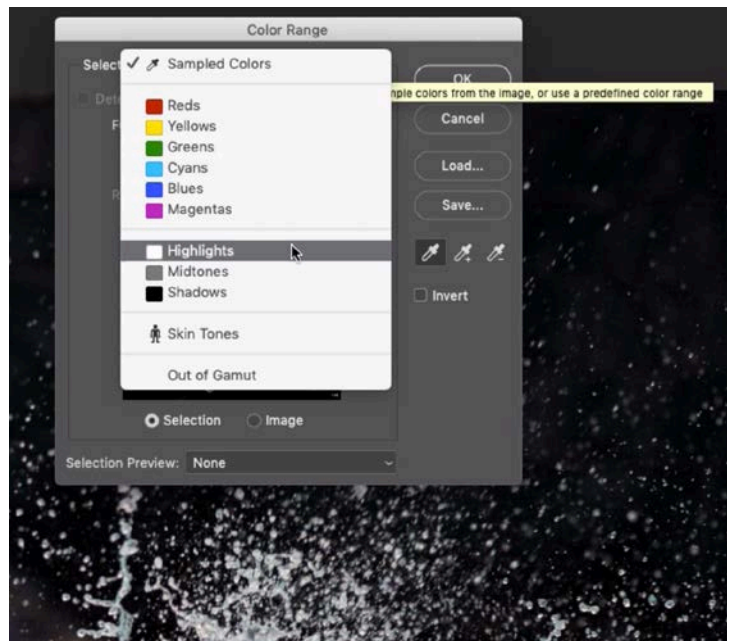
**We are scaling up the new water layer so that it completely covers the dark background.**

it to completely cover that background, so we'll expand the layer a bit so that it extends a little lower. We'll click on the Edit menu and choose Transform > Scale. This will place transform handles around the layer and we can use them to scale the layer up until the water completely covers the dark background. We'll hit the Return/Enter key to confirm that we're done transforming the layer and the transform handles will go away. We'll turn off the visibility of this layer while we move on to isolate the water splash.

## Isolate splashes with a selection (3:22)

We need to get the splashes onto their own separate layer so that we can place them in front of the new water layer that was just created. We'll activate the original image layer, which is the layer that contains the splashes.

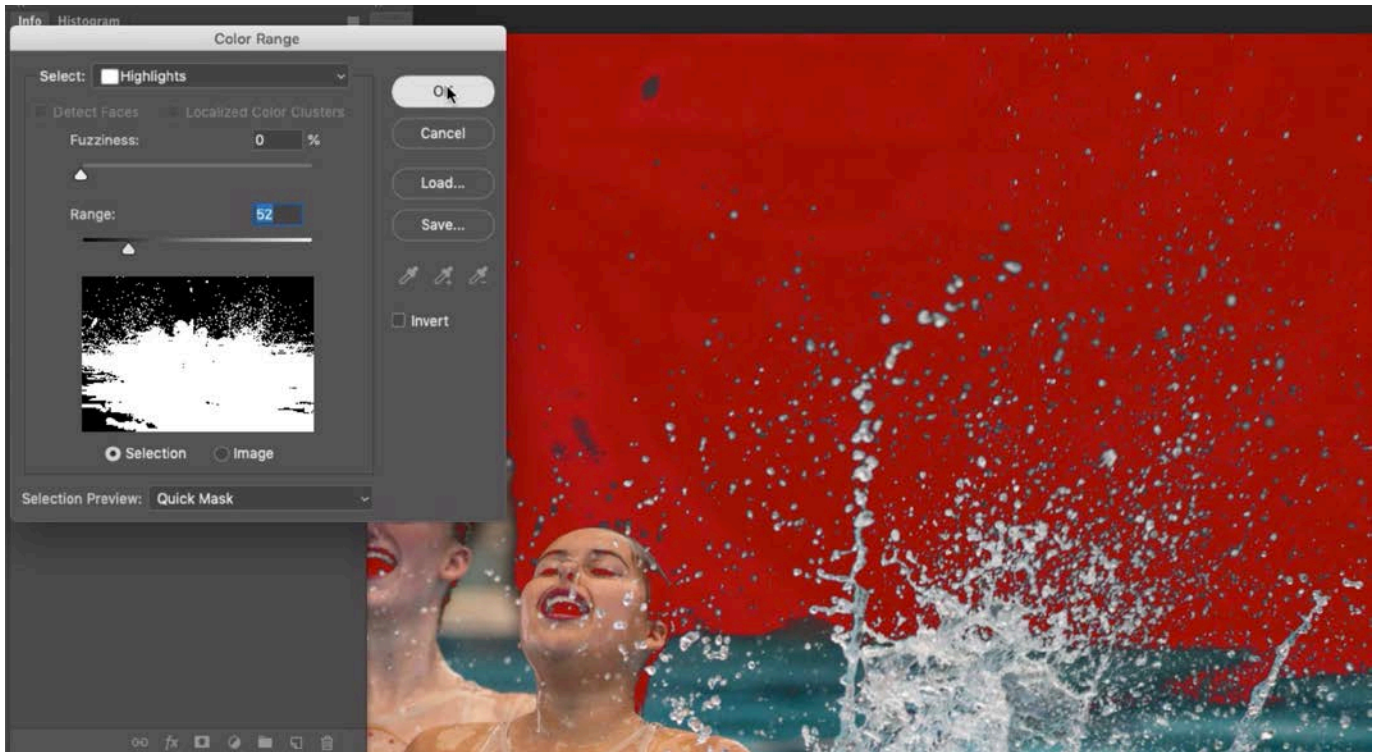
The splashes are much lighter than the background so we'll try to isolate them by selecting the highlights in the image. We can do that by clicking on the Select menu at the top of the interface and choosing Color Range. The Color Range dialog will appear and we'll set the Select menu (at the top of the dialog) to target the Highlights. When we set this menu to Highlights, the options below will change to include two sliders: Fuzziness and Range. The Range slider determines what brightness level is considered to be a highlight. The Fuzziness slider determines how much it can deviate from



**The Color Range selection feature is being used to isolate the bright areas. At the top of the dialog, we're setting the Select menu to Highlights.**

We'll bring the Fuzziness slider all the way down and then we'll start by adjusting the Range slider. As we move the slider, the preview window will update to show what's being selected. Everything that's white is being selected and everything that's black is not selected.

This little preview window is small and it's hard to see what's going on, so there's a better way to preview the selection we're creating. We'll set the Selection Preview menu (at the bottom of the dialog) to Quick Mask, which will change the look of the actual image window to display a red overlay in all areas that are not selected. The selected areas will contain no overlay, so they will look normal.



The Color Range selection preview is set to Quick Mask, which gives us this red overlay, showing us what parts of the image are being selected. We're adjusting the Range slider to include as much of the splash as possible without including the background.

With this view, we'll drag the Range slider until the selection includes as much of the water splash as possible, without including any of the tarp in the background. We'll click OK to exit the Color Range dialog.

## Fine-tune the selection in Quick Mask Mode (7:09)

We now have an active selection of the water splashes, and we want to fine-tune this selection to make sure that none of the background is selected. We'll do this in Quick Mask Mode because it gives us a better view of what is being selected. We'll tap the Q key to enter Quick Mask Mode and all the areas that are selected will appear normal, while the unselected areas will be covered with a red overlay. In this mode, we can use the Brush Tool to make changes to the selection. If we paint with black, we'll add the red overlay, therefore removing areas from the selection. When we paint with white, we'll be removing the red overlay, adding

areas to the selection. We'll paint with black over the parts of the background that are selected but shouldn't be. Part of the area that we need to deselect is right up against the swimmers' faces, so I will need to use a relatively hard-edged brush in this area to be sure that the selection is precise. We'll switch to using a soft-edged brush in the areas where we want the selection to fade in. Note that the larger the brush, the softer the edge will be.

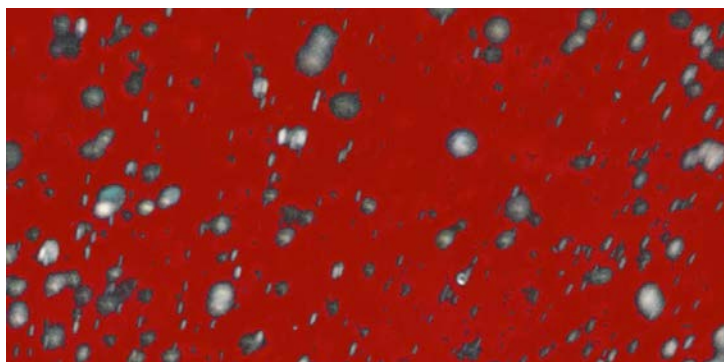


We are fine-tuning the selection in Quick Mask Mode by painting with black over areas that should not be selected. In the areas that bump up against the swimmers' faces, we're using a hard-edged brush so that the selection is precise.



Here, you can see our initial selection in Quick Mask Mode. Everything without the red overlay is part of the selection.

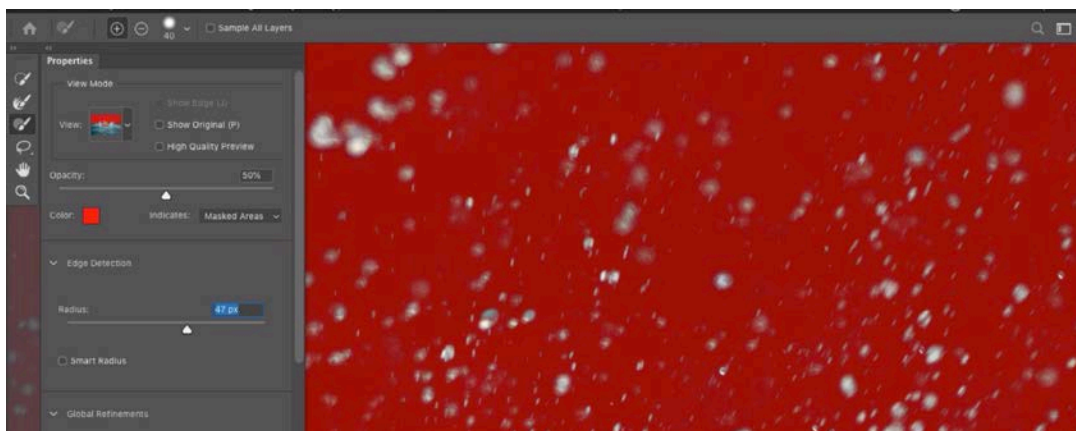
Zooming in on the droplets, we can see that the red overlay, which represents the selection, does not perfectly match the edge quality of the droplets. The selection has a relatively hard edge, while the droplets have a soft edge because they are slightly out of focus due to motion. We'll use another feature to fix this.



**We can see that the edge of the selection doesn't match the quality of the edges of the droplets.**

## Refine the selection with Select & Mask (12:52)

We'll tap the Q key to exit Quick Mask Mode, and this will leave us with the "marching ants" selection. We'll click on the Select menu and choose Select & Mask. The Select & Mask feature is great for selecting areas that are fuzzy, furry, hairy, complex or blurry. In the Select & Mask window, the View menu is located in the upper left and it will remember the setting that was previously used. We'll set this menu to Overlay, which will give us a view that is similar to Quick Mask Mode. Now, we'll use the Radius slider, which determines how much of the selection edge Photoshop can have control over. When moving this slider, know that the preview can sometimes take a few moments to update. We'll adjust this slider until the edge of the selection matches the softness of the edges of the droplets. Once satisfied, we'll click the OK button to exit the Select & Mask window.



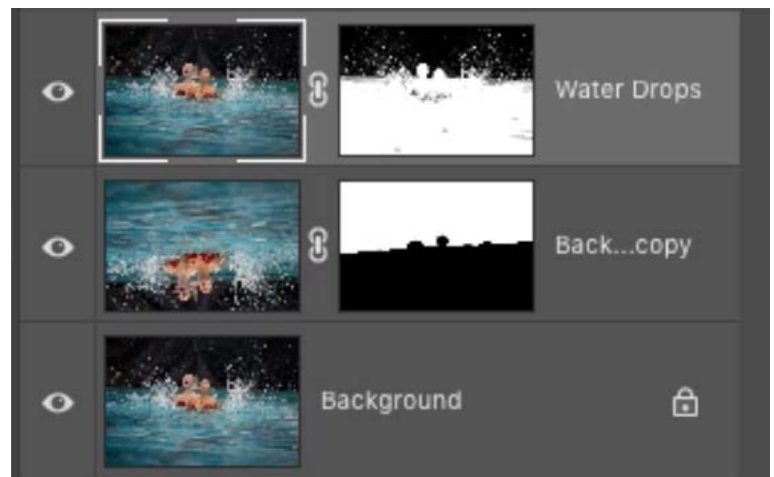
**In the Select & Mask window, the View menu is set to Overlay and we are adjusting the Radius slider until the softness of the selection matches the softness of the droplets.**

## Copy selection to its own layer (14:09)

Now that we have an accurate selection of the water droplets, we need to copy this selection to its own layer. With the selection active, we'll duplicate the layer by dragging the image layer to the New Layer icon at the bottom of the Layers panel. With the new layer active, we want to convert the selection into a layer mask, so we'll click on the Layer Mask icon at the bottom of the Layers panel. Whenever you create a layer mask while there is an active selection, it converts the selection into the mask so that only the areas that are selected will be visible. Now we have the original image layer, the layer containing the water splash on top of that, and the layer containing the clean water that we copied from the foreground at the top of the layer stack.

## Position layers and fine-tune water layer (15:15)

At this point, we'll reposition the layers so that the water splash layer is on top. The original image layer should stay on the bottom, and the layer containing the clean expanse of water should be in the middle. We'll also make sure that the visibility is turned on for all of the layers. The image is starting to look good, but we can see that there is some blue water in places where it shouldn't be, like in the girls' outfits. To fix this, we'll make sure that the layer mask is active



**The layers are positioned so that the original image layer is on the bottom, the water layer is in the middle and the splash layer is on top. The visibility is turned on for all layers.**

for the middle, water layer. We'll activate the Brush Tool and use a soft brush and paint with black over the areas where there is unwanted water.



## Fix the water splash layer (16:32)

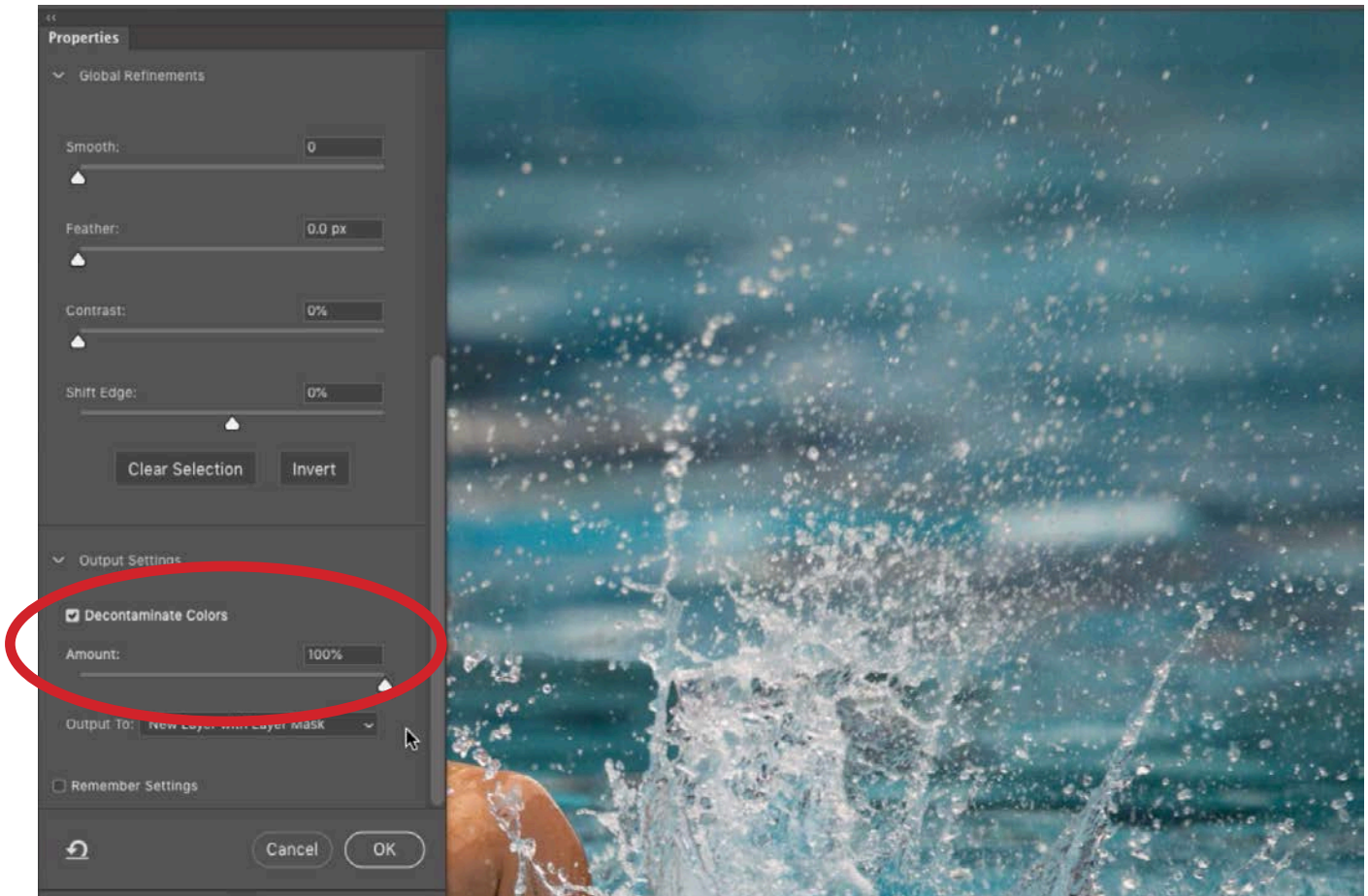
If we zoom in on the water splash area, we can see that the droplets have dark halos around them. That's because the original background was black and we're seeing that original background in the edges of the water drops. There are two ways that we could fix this. One of them would be to change the blending mode of the water splash layer to Lighten mode. When a layer is set to the Lighten blending mode, it will only be visible in areas where the content is lighter than the layer[s]



**Looking closely at the water droplets, we can see that there is a dark halo around them. This is from the original background showing through.**

beneath it. This solution will, however, create problems in other areas of the image. For example, the swimmers are darker than the underlying layer, so they will start to appear wrong as a result of the blending mode change. We would need to mask that area in order to make it look right again. For this reason, we'll turn to another solution for fixing the dark halos around the water drops. We'll make sure that the layer mask attached to the water splash layer is active, we'll click on the Select menu and choose Select & Mask. We'll set the View menu to "On Layers" so that we're viewing the layer as it appears in the document.

Scrolling down the settings on the left side of the Select & Mask window, there is a "Decontaminate Colors" check box. Turning this on will take the areas that are semi transparent and look to see if they're contaminated with the old background colors. If they are, it will attempt to remove this residual color. We'll turn on this check box and then adjust the Amount slider to the point where it removes all of the old background color. We'll click OK to exit the Select & Mask window.



**In the Select & Mask window, the Decontaminate Colors setting is being used to remove the dark halos from the water droplets.**

Note that whenever you use the Decontaminate Colors setting, Photoshop will create a new layer in the Layers panel because it doesn't want to make any changes that are undoable in the document. This new layer, with the Decontaminate Colors setting turned on, will have its visibility turned on. The original layer, that does not have the Decontaminate Colors setting applied, will have its visibility turned off. It's just there in case you need to retrieve any parts of it at a later time.

Next, we'll zoom in on the image to inspect the layer. Doing this, we can see some problems in the swimmers' faces. This is due to the layer mask. There are parts of the mask that are black, where they should be white. We'll make sure that the layer mask is active and we'll tap the Backslash key ( \ ) to get a different view of the mask that looks similar to Quick Mask Mode.

There will be a red overlay in all areas where the mask is black, and this gives us a better view while we paint on the mask. We'll activate the Brush Tool and paint with white to remove the red overlay from the area where the swimmers are. Now we have completely replaced the background while maintaining the water splash.



**With the layer mask active, we're painting with white to unmask the areas where the faces are.**

## Insert a different background (23:13)

Now that we have the water splash isolated, we can change the background as we see fit. Let's say that we want to insert a background that looks dark like the original background, but doesn't look like a tarp. To start, we'll turn off the visibility of the layer containing the water background. This should be the second layer from the bottom in the Layers panel.



**The Eyedropper Tool was used to sample two dark colors from the original background.**

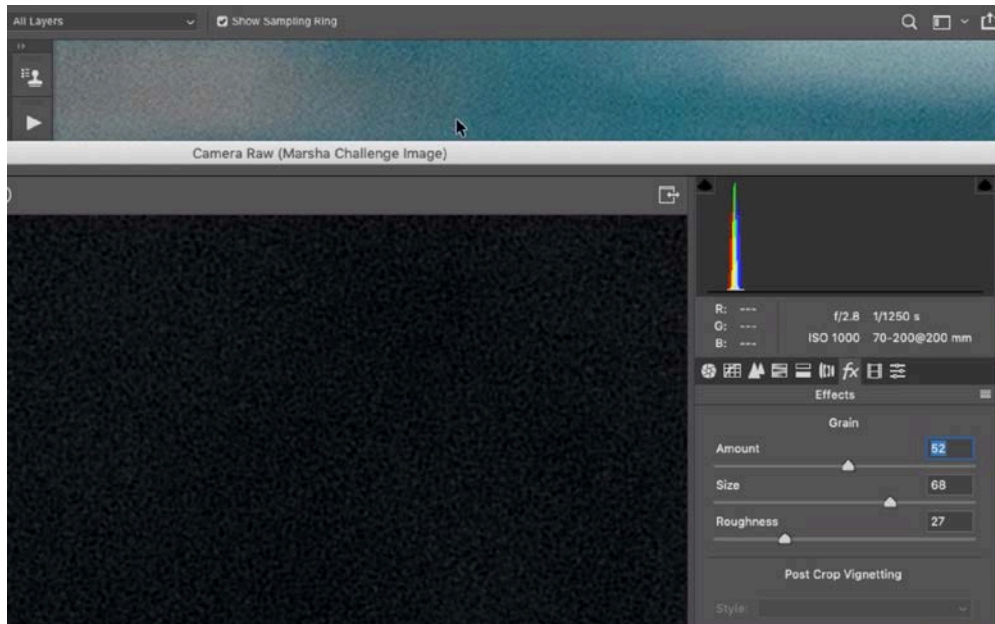
We'll zoom in on the image and sample some colors from the original background. We'll use these to create a new background that deviates in color just enough to look natural. We'll activate the Eyedropper Tool. When you click on something with the Eyedropper, it will change the foreground color to the exact color you click on. We'll use this to click on a very dark part of the background. To change the background color, we'll hold down the Option key (Alt on Win) and click on another, slightly lighter area in the original background. Now we have both the foreground and background colors set to very dark shades of gray.

We're going to create a new background from scratch, so we'll create a new, empty layer by clicking on the New Layer icon at the bottom of the Layers panel. With this new layer active, we'll click on the Filter menu at the top of the interface and choose Render > Clouds. This is going to create content that is designed to look like clouds and it's going to use the foreground and background colors to do this. Our foreground and background colors are set to dark shades of gray, so the layer is just going to look like a dark, mottled canvas. It's not necessarily soft, as the background should be, so we'll apply a blur filter to the layer. We'll click on the Filter menu and choose Blur > Gaussian Blur. The Gaussian Blur dialog will appear and we'll adjust the Radius slider to a moderate setting that makes the background look naturally soft and then click OK.



**The Render > Clouds filter was used to create this mottled look, using the foreground and background colors.**

If we zoom in on the image, we can see that the original image has some noise, or a slightly grainy texture. In order to make the new background look natural and appropriate, we need to add some noise so that it matches the rest of the image. With the new background layer active, we'll click on the Filter menu and choose the Camera Raw Filter. The Camera Raw window will open, and we'll click on the FX tab on the right side of the interface. This is where we'll find the Grain settings. We'll use the Amount slider, in conjunction with the Size and Roughness sliders, to create a grainy effect that matches the level of graininess contained in the original image. When we're satisfied, we'll click OK to exit the Camera Raw window.



The Camera Raw Filter is being used to add grain to the new background layer. Under the FX tab, the Grain sliders are being adjusted until the grain matches that of the original image.

We had already created a layer mask for the first background layer that we created, so we can copy that mask to this new layer so that we don't need to create one from scratch. To copy a mask from one layer to another, hold down the Option key (Alt on Win) while dragging the mask thumbnail to the new layer. If we don't hold down the Option key while dragging the mask, we'll simply be moving the mask instead of copying it.

## A note about "Decontaminate Colors" (28:50)

We mentioned earlier that when using the Decontaminate Colors setting within the Select & Mask feature, Photoshop will create a new layer for this adjustment. That's because it doesn't want to make any permanent changes, in case the adjustment negatively affects the image in some areas. This image is a good example of where that extra layer is useful. When zooming in on the image, we can see that the swimmers' outfits look blotchy and wrong. This is a result of the Decontaminate Colors setting. This setting helped to make the water drops look better but it affected the outfits in a negative way.

To correct this, we'll look for the water splash layer in the Layers panel and we can see that this layer has a duplicate. The original water splash layer has its visibility turned off and the version that uses the Decontaminate Colors setting has its visibility turned on. We'll turn on the visibility of the original splash layer and we'll drag it above the duplicate layer. Now we'll adjust the layer mask



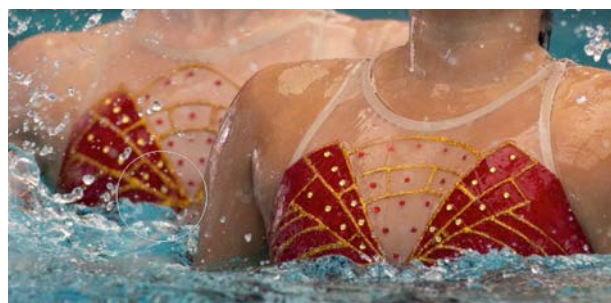
**Here, you can see that the Decontaminate Colors setting made the outfits look blotchy.**

We'll fill the mask for this top layer with white, which will make the layer visible in all areas. This isn't ultimately what we want, because it's going to make the layer visible in the area where the water drops look bad. With this top layer active, we'll click on the Layer menu and choose Create Clipping Mask. This will "clip" the top layer to the layer underneath it, making it only visible in the areas where the underlying layer is visible. When a layer is clipped to the layer beneath it, it will become indented in the Layers panel and a downward-pointing arrow will appear to the left of the layer thumbnail. Now we'll invert the mask so that it's completely black, hiding the layer across the entire image. To invert the mask, we'll click on the Image menu and choose Adjustments > Invert.



**The layer without the Decontaminate Colors setting is clipped to the underlying layer.**

Now we can paint on the mask with white over the parts of the layer we want to be visible, and that's the areas where the Decontaminate Colors setting created problems (in the swimmers outfits, hair, etc.).



**We're painting on the mask with white to being back the original outfits.**

## Bring back lost droplets (33:42)

When we removed the original background on this image, we lost some of the water droplets in the areas where the background was lighter. Let's look at how we can try to bring some of those drops back.

We'll create a new, empty layer at the top of the layer stack and we'll name this layer "Retouched Back Drops." We'll activate the Healing Brush tool and we'll change some settings relating to this tool. In the Options Bar (above the main image window), we'll make sure the Aligned check box is turned on and we'll set the Sample menu to Current & Below. (If the Sample menu is set to Current Layer, then the Healing Brush won't work on an empty layer.)

The Healing Brush is special because it tries to match both the brightness and colors of the area immediately outside of the area you're retouching. This means that we can use this tool to sample from an area that's one color and paste the sampled content onto an area that's a different color. The results will still look correct because it's only pasting the detail and not the color or brightness. This doesn't work with the Clone Stamp Tool because the Clone Stamp Tool just creates a blatant copy of the sample area.

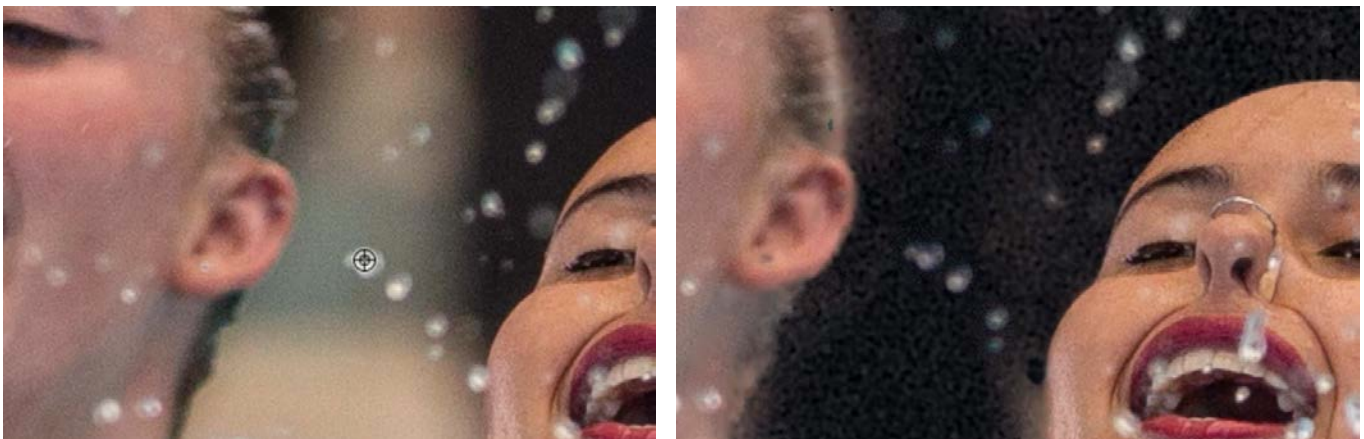
To use the Healing Brush, hold down the Option key (Alt on Win) and click in the area where you want to sample. Then, release the Option key and paint in the area you want to retouch.

We're going to use a special technique that allows us to copy the droplets that were in the original image, located in the lighter areas, and paste them back into our final result.

We'll duplicate the background (original image) layer and temporarily drag the duplicate to the top of the layer stack. This is the layer we're going to copy from. We'll activate the Healing Brush, hold down the Option key (Alt on Win) and click on one of the droplets contained in the light area. Then, we'll release the Option key and, without moving the mouse AT ALL, we'll click again. This is telling the Healing Brush to copy from the exact same location we want to apply the

retouching to. This would obviously do nothing if we copy from the same layer we're going to paste to, but that's not what we're going to do. We sampled from the image layer, but we're going to now activate the empty retouching layer and paint in the sampled droplets. This will copy from one layer and paste the content from the same exact location into another layer. Because we're using the Healing Brush, it will match the color and brightness of the surroundings.

When we're done re-inserting the droplets, we can discard that top layer because we no longer need it.



**LEFT:** We're using the Healing Brush to sample one of the drops from the light area in the original image. **RIGHT:** We painted the sampled content onto the new retouching layer.