



Understanding Hue & Saturation

# Understanding Hue & Saturation

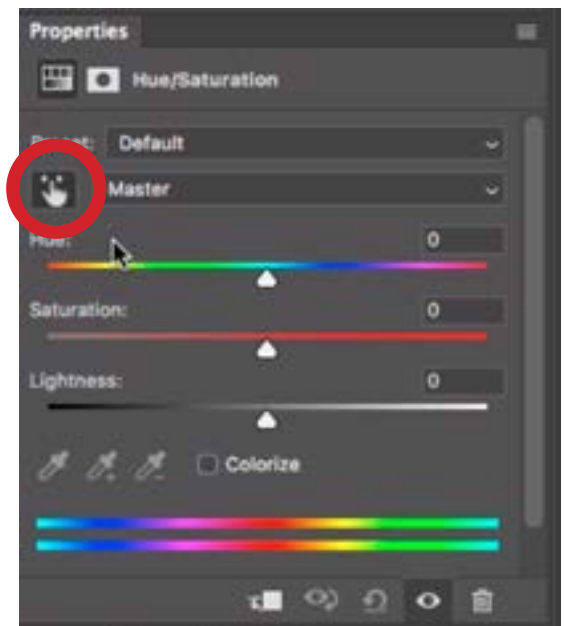
Hue/Saturation is one of the adjustments I use the most, and in this lesson, we're going to explore it in depth. The Hue & Saturation adjustment is going to allow you to control three things: Hue, Saturation and Brightness.

- **Hue:** The basic color of something
- **Saturation:** How colorful it is
- **Lightness:** How bright the color is

(Note that the terms lightness, brightness and luminosity can sometimes be seen as interchangeable and I'm going to use them as if they mean the same thing.)

In this lesson, we're going to use the Hue/Saturation adjustment as an adjustment layer. This will allow us to paint on the mask for the layer to hide the effect in certain areas, or it will allow us to completely throw away the adjustment later if we decide we don't like the effect.

With an image open in Photoshop, we'll click on the Adjustment Layer icon at the bottom of the Layers panel and choose Hue/Saturation from the pop-up menu. The Properties panel for the adjustment will appear on the screen. Within the Properties panel, there is a tool that I will be using constantly, so I like to change a setting so that it is active by default. I'm talking about the targeted adjustment tool, which looks like a little hand icon in the upper left corner of the panel. To make this tool active by default, click on the little menu in the upper right corner of the panel and choose "Auto-Select Targeted Adjustment Tool" from the pop-up menu.



**The Properties panel for the Hue/Saturation adjustment layer is shown, with the targeted adjustment tool/hand tool (circled) above.**

## The Hue/Saturation Properties panel:

**Lightness:** Moving this slider left and right will make the image darker and brighter as a whole, but you'll see that it's not really useful unless we've isolated an area.

**Saturation:** When we move the Saturation slider to the right, the image will become more and more colorful. Note that we'll eventually reach the point where we'll get saturation clipping, which is a loss of detail in the really colorful areas. (There is a separate Masters Academy lesson that covers saturation clipping in more detail.) Moving the Saturation slider to the left will make the image less and less colorful, until it eventually becomes black and white.

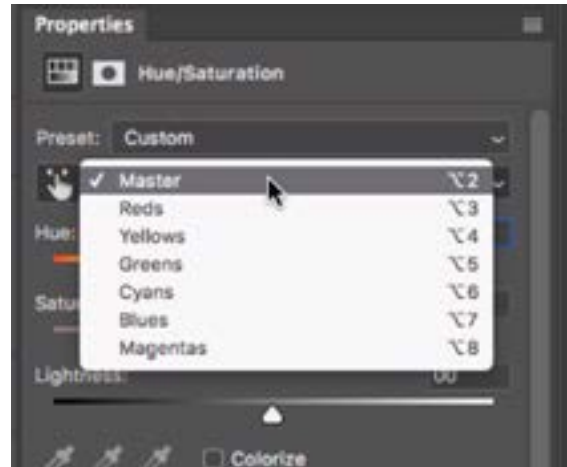
**Hue:** Moving the Hue slider will change the basic color of everything in the picture. To really understand how this slider is working, we'll need to pay attention to the two color bars at the bottom of the panel. The top bar represents all of the hues, or basic colors, you could possibly have in a picture. The bottom bar shows how the colors have changed after moving the Hue slider. For example, if you look at the red hue on the top bar, and then look immediately beneath that color to the bottom bar and see a blue color, it means that all red areas in the image have changed to blue.



Above: The original image.  
Top right: We moved the Saturation slider far to the right.  
Below right: We moved the Hue slider, changing all of the colors in the image.

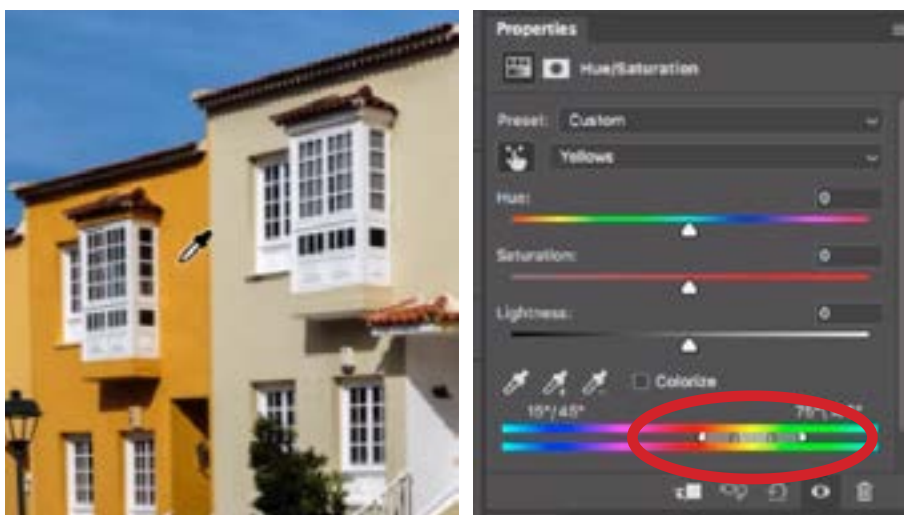


**The color menu:** The menu directly above the HSL sliders will determine what part of the image we're working on. By default, this menu is set to Master, which means that the sliders will affect the entire image as a whole. I find that this setting is not overly useful in general. When we choose one of the individual colors, however, we will be isolating a particular range of hues in the image, and we can see that reflected in the color bars at the bottom of the panel. When we make a change using the sliders, it can only affect the hues that appear above those bars.



**The color menu will determine what hue is being affected by the sliders.**

**The targeted adjustment tool/hand tool** This tool is going to give us even more precise control over what hue[s] we are targeting with our adjustment. It will allow us to adjust a specific color by clicking and dragging on the image. With the color menu set to Master, we will click on an area in the image. When we do, it's going to measure the exact hue that's beneath the cursor and target that hue within the color bars at the bottom of the panel. This gives us a far better way of targeting a color. With the color menu, we only have six options. By using the targeted adjustment tool, we can target any specific hue in the image.



**With the targeted adjustment tool active and the color menu set to Master, we are clicking and dragging on an area in the image. You can see that the specific color we clicked on is targeted in the color bars at the bottom of the panel.**

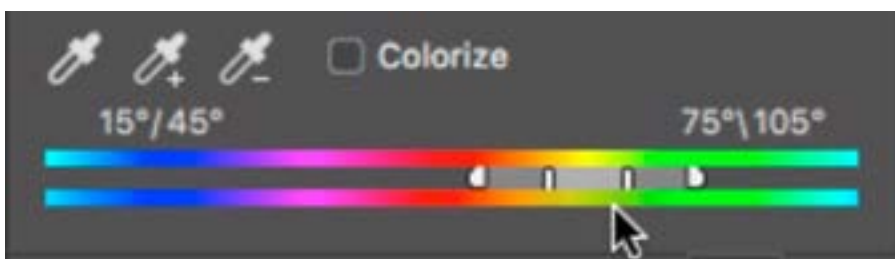
We can now click and drag left or right in the image. When we do, the Saturation slider is going to move, making the targeted hue more or less colorful. We can click and drag on one color after another, tweaking any and all areas we want.

With the technique above, we were changing the saturation of a particular, targeted color. Note that we have the option to change the hue instead. If you hold down the Command key (Ctrl on Win) and then click and drag on an area, you will be changing the hue instead of the saturation.

Sometimes, when you click and drag on a specific object with the targeted adjustment tool, you'll notice that more areas are changing than the one area you intended to change. This can happen when other areas are the same color as the one you want to change. It can also happen when those other areas are a similar color to the area you want to change. After targeting a specific area, look at the color bars at the bottom of the Properties panel. You'll see that there are two bars that surround a particular color and then there are two sliders on the outside of those bars. Everything within the two bars is receiving the full change. The adjustment will then start fading, being applied less and less, until you get to the two sliders, where the adjustment is not being applied at all.

What's nice is that we can click and drag on the bars and sliders to move them, changing the color range being affected. If you click and drag between the two bars, you will move the unit around as a whole. You can also click and drag the bars and sliders to fine tune which hue is being affected. This will help us to be much more effective in targeting an area.

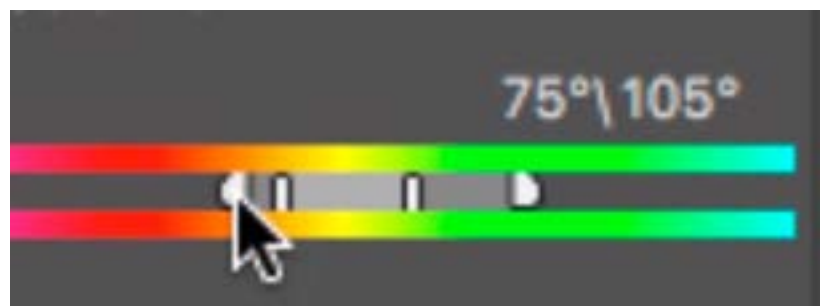
Note that it's a good idea to leave a little bit of space between the bars and the sliders. If they ever come to touch, we'll have more of an immediate, abrupt change in colors that might not blend well into the surroundings.



**The sliders on the color bar represent the range of hues that are being targeted. We can change the range by moving the sliders.**



In the video example image, we have a wall with colored vines all over it. Some of the vines are red, some are yellow and some are green. Let's say that we want to make all of the leaves look red. We'll start by shifting the yellows to red and we'll do this by clicking on an area of yellow leaves with the targeted adjustment tool. Looking at the colored bars, the yellows were targeted, but the outside sliders extend into the reds. This means that the reds will get some of the adjustment and we don't want that. We'll drag the slider in toward the bars so that we are limiting the color range that can be affected. We'll also pull the other slider in to further isolate the yellows.



**Left: The targeted adjustment tool is being used to select the yellow hues. Top: After clicking on the yellow leaves, you can see the range targeted within the color bar. Directly above: We are moving the left slider in to limit the color range being targeted.**

Now, we have the yellow leaves targeted and we want to change them to red, so we will need to change the hue.

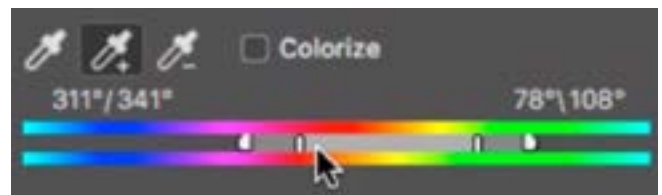
The Hue slider can be confusing because it always starts in the middle, pointing at cyan. Here's how you can think about it. Look at the color gradient and find the color you're targeting. Then look for the color you want that targeted area to

become. Determine what direction you'd need to travel in order to go from the color you're starting with to the color you desire. In our case, we're starting with yellow and we want red, so we'd need to move a little bit to the left on the gradient bar. Knowing this, we'll move the slider a little to the left, watching to see how the image is being changed. All of the yellow leaves are indeed shifting to a reddish color.

After adjusting the hue, we'll look at the lightness and saturation. I think that the leaves should also be a little darker, so I'll move the Lightness slider down a bit. I also think they should be more colorful, so I will move the Saturation slider a bit to the right.

Now I can see that the adjustments ended up affecting some of the green leaves, and I didn't want that. To fix this, we'll paint with black on the layer mask that is attached to the adjustment layer. Painting with black will hide the effect, so we'll paint over any areas where we do not want the effect to be visible.

**The Eyedroppers** In the Properties panel for the Hue/Saturation adjustment layer, there are three eyedroppers and these allow us to have very precise control. We're going to start over using the same example image that contains the different colored vines. This time, we want to make all of the vines yellow so that it looks like

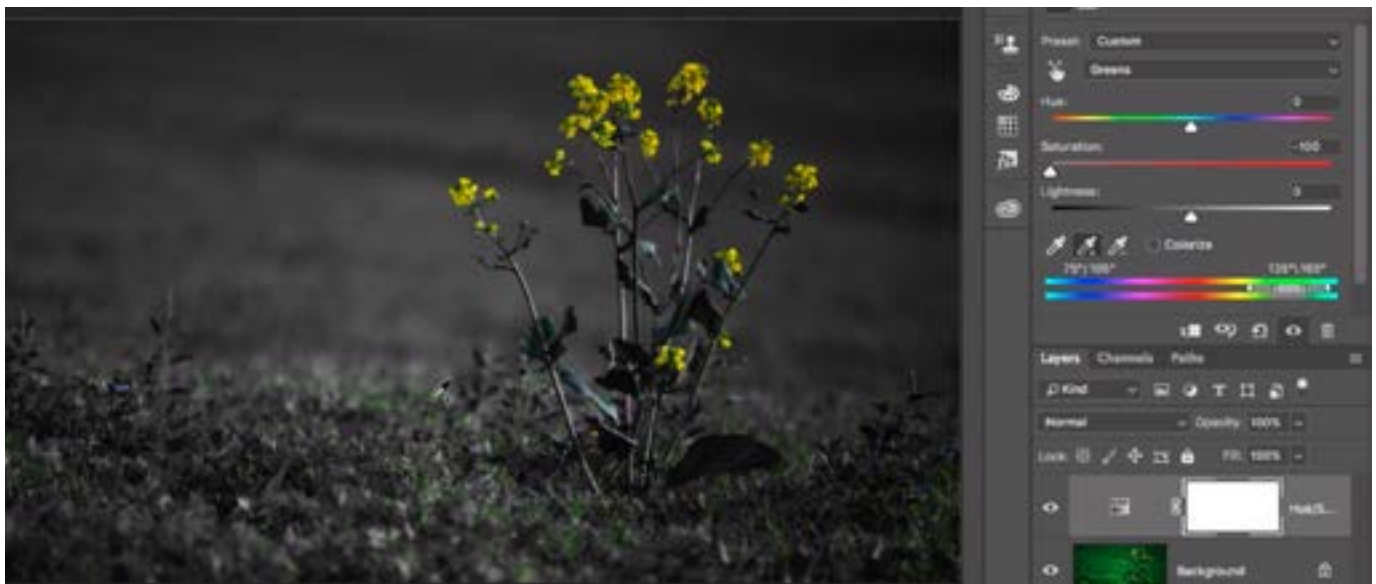


**The eyedropper tools give us even more precise control over the color range being targeted.**

autumn. We used the same techniques as above to target the reds, because that's the color we want to change. This did an OK job but the targeted color range is still not quite right. Instead of dragging the sliders, we're going to use the eyedroppers. The eyedropper with the plus sign next to it will add hues to the selected range. It will expand the targeted area to include any color[s] you click on. We'll activate this eyedropper and click within the image on areas that we want to change but were not initially targeted. When we do this, you can see the targeted

area within the color bars expand. The Eyedropper with the minus sign next to it will do the opposite. When you activate this one and click within the image, the hue you click on will be removed from the targeted range.

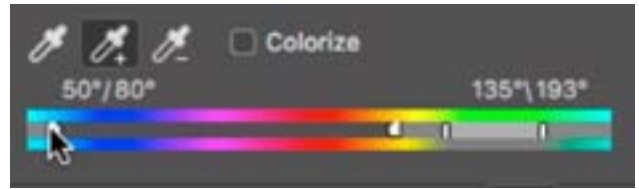
In the next example image, we have some green grass and yellow flowers. We want to make it so the entire image is black and white except for the flowers. We'll start by using the targeted adjustment tool to click within the green area and drag all the way to the left. This will desaturate almost all of the greens. There are some remaining green areas that are still in color, so we will activate the eyedropper with the plus sign and click on those green areas. This will expand the targeted range to include those areas so that they become desaturated as well.



**Above: After targeting the greens and dragging the Saturation slider to the left, you can see that there were some areas left over. We are using the plus eyedropper to click on those areas, adding those hues to the range being targeted. Left: As a result, we were able to totally desaturate the greenery.**



**The Color bar is a color wheel** The color bar at the bottom of the Properties panel is essentially a color wheel flattened out. This means that the sliders can move past one end and onto the other side. You can drag the bars/sliders manually beyond one end and they will appear on the other side so that you can continue moving them in the same direction. This may also happen automatically when you use the eyedropper tools. Note that you can move the gradient around by holding down the Command key (Ctrl on Win) and dragging on the gradient. This can be useful if you want to center the color range you're trying to target.



**Because the color bar is essentially a color wheel, we can move the sliders past one side and they will appear on the other side, allowing us to continue expanding the color range.**

**Getting more precise control over the targeted range** When you need to be incredibly precise with targeting a color, don't use the targeted adjustment tool at all. Instead, use the color bar settings in conjunction with the eyedropper tools. We'll work on the example image of a car in a museum. To start, we'll choose a color



**Before targeting a color, we smashed the sliders all the way together so that they cover the smallest range possible.**

from the color menu at the top of the Properties panel. It doesn't matter which color we choose. The only reason we're choosing one is to get the slider settings to appear over the color bar at the bottom of the panel. Then, we will drag the sliders all the way together so that they are targeting the smallest range possible, with the smallest amount of fadeout possible (See screen shot). Now, we will work with the eyedroppers to isolate the color we want. We'll first activate the eyedropper on the left and use it to click on the car. You'll see that the sliders become centered on the exact hue of the car. We'll move the Hue slider to attempt and change the hue of the car, but the results are not

that good and that's because the car varies in color. We only targeted one specific color. We'll need to expand the color range that we've isolated and we'll do this by activating the eyedropper with the plus sign. We'll use it to click in different areas of the car, expanding the range of color that the hue adjustment is affecting. We'll continue clicking on colors until the entire car looks as if the adjustment has been applied to it. We ended up with areas of the floor changing as well, and that's OK. We'll simply paint on the layer mask in order to hide the adjustment in those areas. After the car is targeted, we can move the Hue and Saturation sliders around to make the car the exact color that we want.



The eyedropper on the left was used to click on the car and then the Hue slider was moved. You can see that we need to target a wider color range.



The plus eyedropper was used to expand the color range so the entire car was selected.

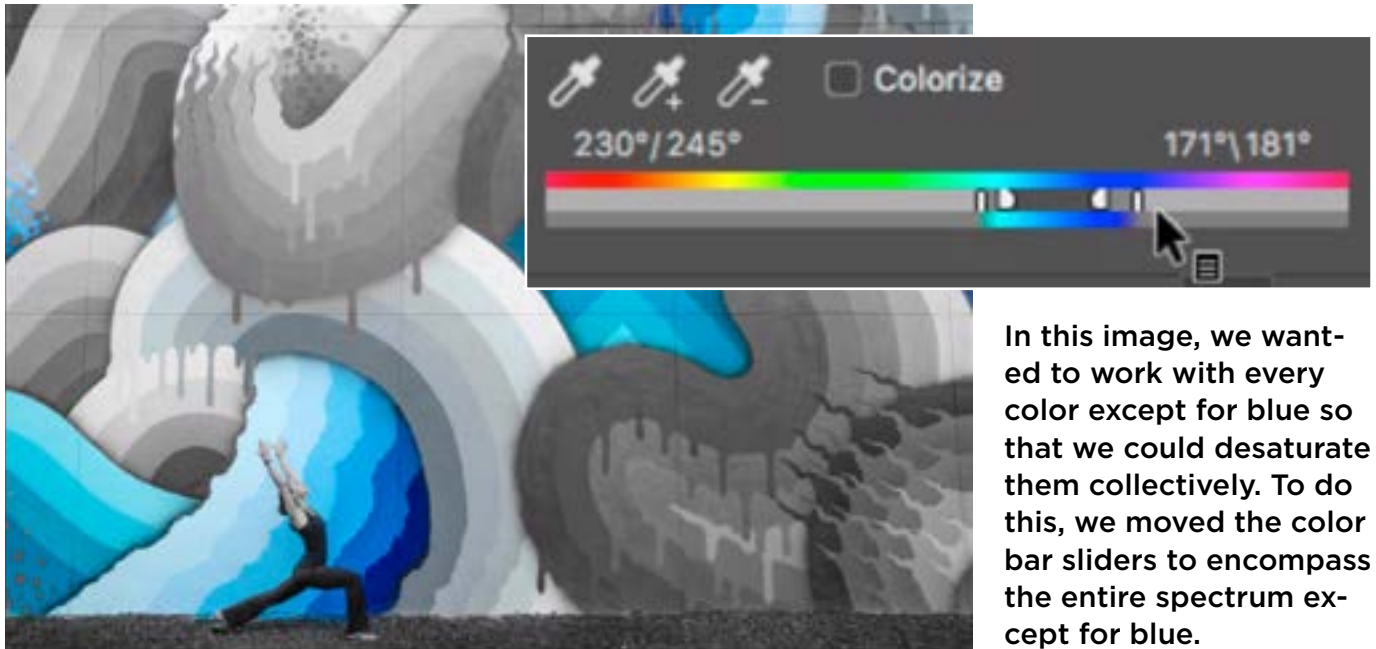
After making extreme changes to an image, you might end up with a few oddities, or areas that didn't exactly change in the way that you wanted them to. In the example image with the canoes, we have some blotchy patches left over. In a case like this, we'll create a new, empty layer and activate the Brush Tool. With the Brush Tool active, we can hold down the Option key (Alt on Win) to temporarily activate the Eyedropper Tool. We'll use the eyedropper to click on the color we want to use and it will set this color as the foreground color. When we release the Option key, we'll get the Brush Tool back and we can use it to paint over the blotchy area. Then, we'll change the blending mode of this new layer to Color, which will make it so the paint blends better with the underlying image. When you change the blending mode to Color, it will only change the color of the underlying image while leaving the brightness alone.



**The eyedropper is being used to set this red as the foreground color. Then, we'll paint over the blotchy area.**

**Working on a wide range of colors** Let's say we have an image with many colors and we only want to keep one of those colors saturated while making the rest black and white. We could use the hand tool and individually click and drag on each color to desaturate it. That would work, but it requires working with each color separately, and if we wanted to go back and change those colors, we'd have to do them one by one. Let's look at another method.

First, we need to get the sliders on the color bars to show up and we can do that simply by clicking once anywhere in the image using the targeted adjustment tool. Then, we'll look at the color bar and find the color that we want to keep. In the video example image, it's a blue color. We're going to move the sliders on the color bar so that they include the entire spectrum EXCEPT for blue. This is the opposite of how we've been using them up until now.



In this image, we wanted to work with every color except for blue so that we could desaturate them collectively. To do this, we moved the color bar sliders to encompass the entire spectrum except for blue.

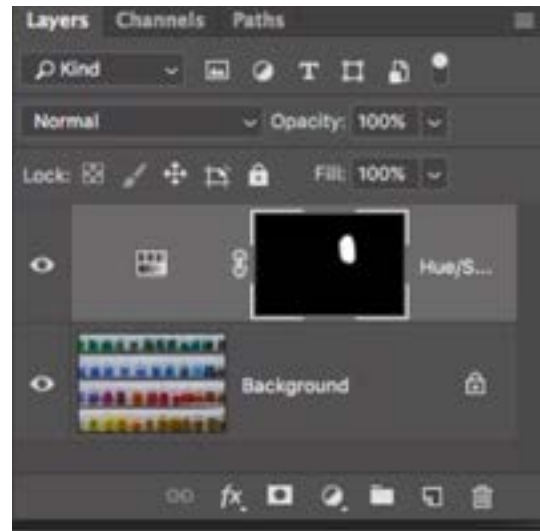
Now that we have almost the entire color range targeted, we'll drag the Saturation slider all the way to the left. Looking at the image, we may need to tweak the sliders to ensure that the exact color we want to keep is targeted.

**Tip: Reduce saturation to see what's being affected** When we're working with the settings to affect a specific color, it can be difficult to tell what color is being targeted just by looking at the image. I like to move the Saturation slider all the way to the left while working with the settings on the color bar. This will make the targeted area completely black and white so that it's easy to tell what area is being affected. After the desired color has been honed in on, I'll move the Saturation slider back to its original position.

**Changing an effect at a later time** If you ever want to go back into the adjustment layer and change the settings for a particular color range, you will first need to get the slider/settings to show up on the color bar for that particular color. To do this, use the color menu and choose the general color that you want to work with. With the correct color selected, the settings will reappear on the color bar.



**Use the layer mask to isolate tricky areas** Sometimes, there are many objects of a similar color and you only want to isolate one of them. If the objects are close enough in color, changing that particular color is likely going to have an effect on all of those objects. To get around this, you can use the layer mask attached to the Hue/Saturation adjustment layer to isolate that single object. If the object only takes up a small area, paint on that area with black and then invert the layer mask by going to the Image menu and choosing Adjustments > Invert. This will reverse the mask so that the area you painted is white (revealing the effect) and the rest of the mask is black (hiding the effect).



**In this image, we used the layer mask attached to the Hue/Saturation adjustment layer to hide the effect in all but one small area.**

**Fixing odd colors** Sometimes, you may end up with an odd-looking color and that's just because some colors don't look great when they are shifted to another color. This may happen because there are different hues in the shadows of an object than there are in the mid-tones. To fix the areas that don't look right, we can create a new, empty layer and then activate the Brush Tool.



**Here, we're painting over the problem areas with the color that should be there. We'll then set the layer's blending mode to Color so that it blends correctly.**

With the Brush Tool active we'll hold down the Option key (Alt on Win) to temporarily access the Eyedropper and we'll click on the color that the area SHOULD be. This will set that color as the foreground color. Then, we'll release the Option key and paint over the area that looks bad. We'll just be adding blatant paint over the area and this will initially look bad. To make it blend better, we'll change the blending mode of this new layer to Color.



**Fixing redness in skin** The techniques above can be used to reduce redness in someone's skin. To do this, we'll create a Hue/Saturation adjustment layer and then click once on the image with the targeted adjustment tool. This is just so we get the slider settings to show up on the color bar. We'll drag the sliders all the way together so that they're targeting the smallest range possible. Then, we'll activate the left-most eyedropper and click on the reddest part of the skin. We'll also drag the Saturation slider all the way to the left just so that we can see what areas are being targeted. (It will be obvious because they'll be completely gray.) We'll then use the plus eyedropper to click in additional red areas until we have targeted the entire area we want to fix. To get the targeted area to blend better, we'll drag the right slider out into the yellows a bit (the color we want it to blend into) until the transition looks smooth. Now, we'll move the Saturation slider back to its default position since we don't actually want that area to be black and white. We'll then shift the color of this targeted area more toward the yellows. We can also fine-tune the Lightness and Saturation sliders to make the area look as natural as possible.



The red areas of the skin were targeted using the eyedropper tools. We're now moving the right slider out into the yellows to create a smooth transition.

**Color matching with precision** In order to get one area to precisely match the color of another area, we can work by the numbers. We'll use the previous skin tone image for this, further adjusting the Hue/Saturation adjustment that was already created.

We'll need the Info panel open for this, and we'll activate the Color Sampler Tool, which is hidden behind the Eyedropper Tool in the Toolbar. We'll first use this tool to click on the area we want to change. In the example image, it's the red area of the skin. This will place a sample point on the image. Then, we'll click again on the color we want it to look like. In our case, it's an area of the skin that looks normal/good. After doing this, you will see two sets of numbers appearing within the Info panel. In order to make these numbers useful for this purpose, we need them to display the HSB numbers and we can specify this by clicking on the little down pointing arrows (to the left of the sets of values) and choosing HSB from the pop-up menus.



**Since we're working with the Hue/Saturation adjustment, we need the Info panel numbers to display the hue, saturation and brightness values.**

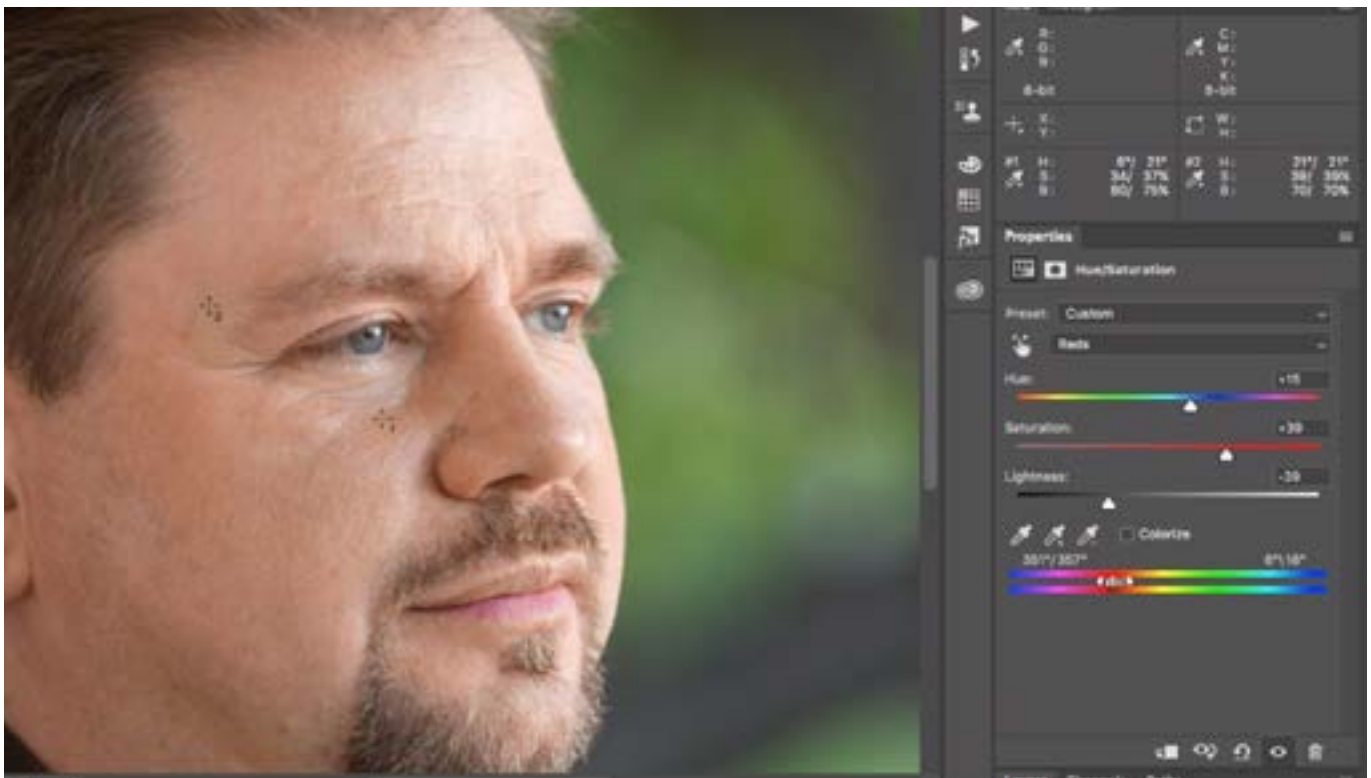


**The numbers for point #1 represent the area we want to change and the numbers for point #2 represent the area we want to match. The number to the left of the “ / “ is the value we started with and the number to the right is the value after the adjustment.**

Whenever we have an adjustment active, the info panel is going to list two sets of numbers. The number on the left represents what we started with. In our case, it's the hue, saturation and lightness. The numbers on the right represent what we end up with after the adjustment.

In our example, the numbers for point #1 represent the red area (the area we want to change). The numbers for point #2 represent the area that's ideal (the area we want to match). Within the Properties panel, we'll move the Hue, Saturation and Lightness sliders until the right-hand number for point #1 matches the number for point #2. Finally, we'll fine-tune the sliders to make sure the area is visually ideal to us.

After working with the Color Sampler Tool, you can clear the points from the screen by clicking the Clear All button in the Options Bar above the main image window. (The Color Sampler Tool must be active in order to have access to this button.)



**We're moving the Hue, Saturation and Lightness sliders until the values for point #1 match those for point #2.**