

Lesson 10

Making Secondary Adjustments

Primary adjustments let you work on the entire image, whereas secondary adjustments let you isolate and work on specific parts of an image.

For example, you might want to change the color of a car from blue to red without affecting the rest of the shot, add warmth and saturation to an actor's skin, or lower the shine on someone's forehead. DaVinci Resolve features many powerful tools to make these adjustments.

In this lesson, you will use Power Windows, HSL Curves, and the qualifier to isolate elements based on their color and shape. You will then use the tracker to follow a moving face and eyes, so your color correction follows them through the shot.

Time

This lesson takes approximately 45 minutes to complete.

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COLOR

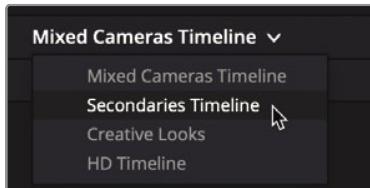
Masking Areas with Windows

The first part of making a secondary color correction is to isolate the adjustment on a node. This allows you to make very specific adjustments without modifying the primary grade you have already completed.

Using multiple nodes, each containing separate adjustments, you can exercise more precise control over the order of those adjustments and more easily track and modify them.

To begin this lesson, we will open a new timeline that has some of the balancing already done for us.

- 1 Open DaVinci Resolve 17, if necessary, and then open the Wyoming Cattle Ranch project you have been working on.
- 2 Go to the color page, and above the viewer, click the drop-down arrow to select the Secondaries Timeline.



- 3 Select thumbnail 18 in the timeline.



This is a panoramic Wyoming late afternoon scene, but it lacks the drama of an ending shot. By working on the sky separate from the ground, we can enhance this beautiful shot to bring out more colors.

Since this shot already has a balanced node, we'll add a second node to focus our corrections on the sky.

- 4 In the Node Editor, right-click over node 01 and choose Add Node > Add Serial to add a second node.
- 5 Right-click over node 02 and choose Node Label and then name this node **SKY**.
- 6 In the toolbar center palettes, click the Windows icon.



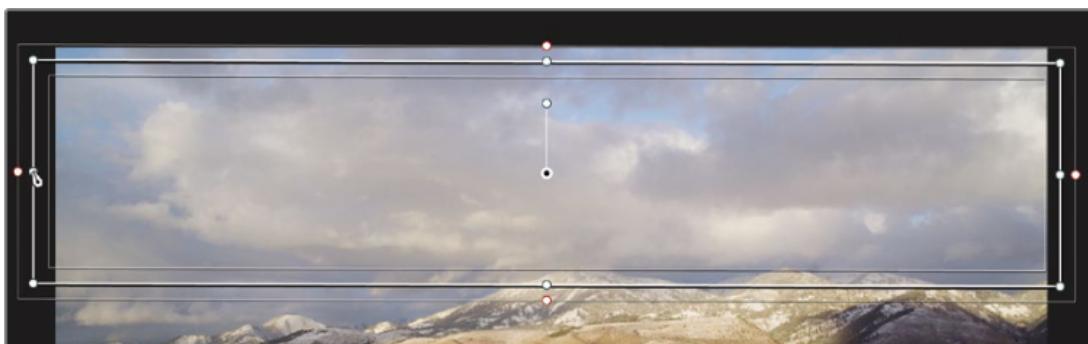
Power Windows, or windows for short, are probably the most heavily used features when trying to isolate an area for correction. They allow you to specify which area of the image you want to alter using a drawn shape. The shape can be standard ellipses, rectangles, polygons, or arbitrary Bézier shapes that you draw with a pen tool.

- 7 In the list of windows, click the Rectangle button to activate it.



A rectangular window shape appears in the viewer. You can resize and reposition it, so it is only over the sky in our picture.

- 8 Drag within the center of the rectangle to move it over the sky.
- 9 Using the white control points on either side of the rectangle, drag to the edges of the frame until the rectangle covers the entire width of the picture

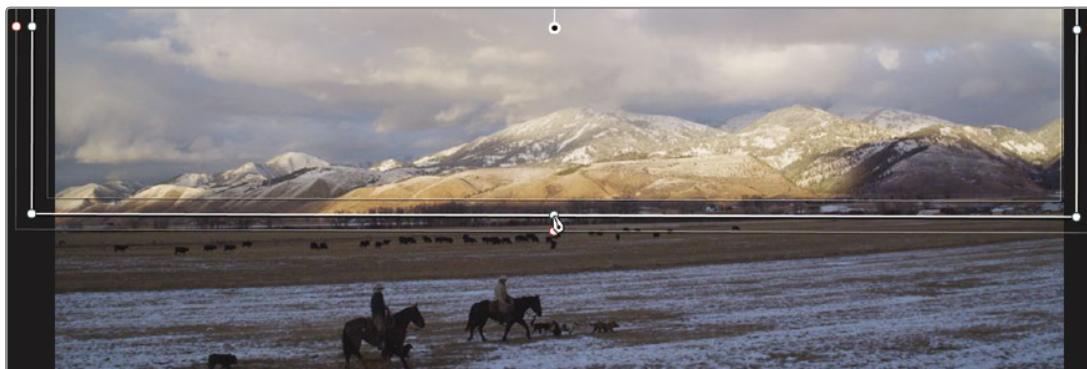


TIP Use the middle mouse wheel to zoom out in the viewer so that you can expand the rectangle outside the frame boundary.

- 10 Using the white control point on the top of the rectangle, drag up until the rectangle is outside the frame boundary.

The bottom of the rectangle needs to be positioned with more care, and you may tweak throughout the lesson as you see fit. For now, we'll position the bottom edge, so it aligns with the sun on the mountains.

- 11 Using the white control point on the bottom of the rectangle, drag down until the rectangle is aligned with the sun on the mountains.



The center handle inside the rectangle is used for rotation, but there are also transform controls for the window in the center palette. Sometimes, using the controls in the center palette is easier than dragging in the viewer.

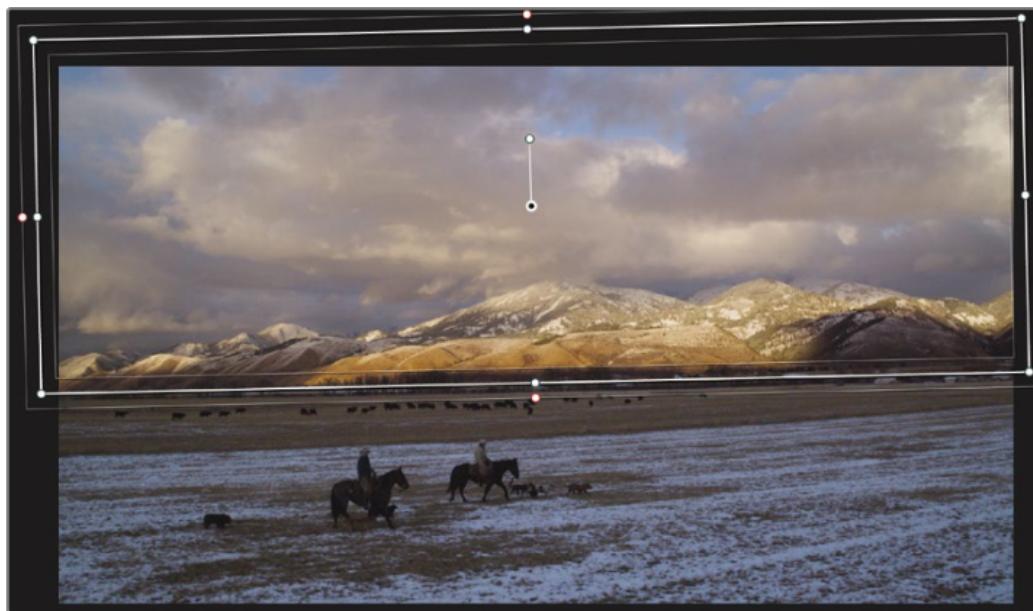
- 12 On the right side of the windows palette, drag the Rotate number field slightly to the left, so the bottom of the window in the viewer is better aligned with the bottom of the mountain range.



TIP If you need to expand the rectangle after rotating it, use the Size number field to expand all sides of the rectangle.

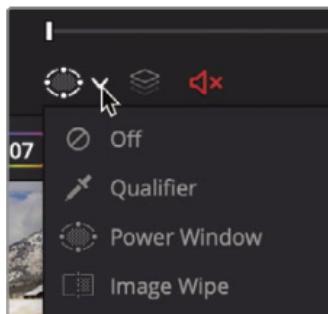
Now that you have your window in place, any color adjustment you make with node 02 selected will only be made within the area covered by the window.

- 13 In the primary controls, lower the Gamma master wheel to bring out more detail in the clouds.
- 14 Drag the Gamma's color balance indicator toward yellow/orange to add more color to the sunset.



The outline of the window can obscure the edges of the correction, so it can be helpful to hide them from time to time.

- 15 In the viewer's lower-left corner, click the onscreen Overlay button and choose Off from the drop-down menu that appears.



The bottom edge does appear too sharp, although the shadows on the mountain hide some of it. You can soften the edges of the rectangle to blend the color correction better with the original picture.

- 16 Click the onscreen Overlay button and choose Power Window from the drop-down menu.

- 17** On the right side of the windows palette, drag the Soft 4 number field slightly to the right to expand the soft edge along the rectangle's bottom.



- 18** In the toolbar center palettes, click the Curves icon as another way to hide the window outline.
- 19** To compare the change you made on node 02, press Command-D (macOS) or Ctrl-D (Windows) to disable the node's adjustments, and then press the keyboard shortcut again to enable it.



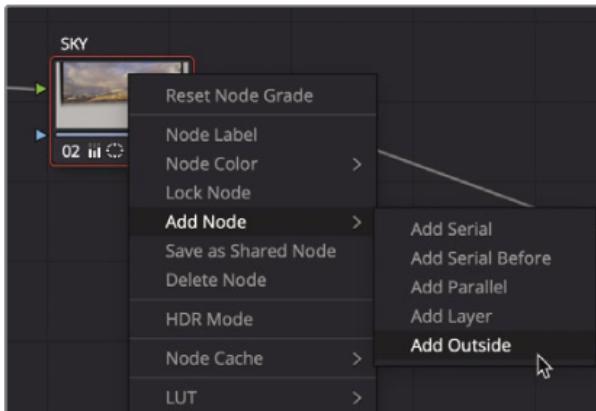
Before window correction (left) and after window correction (right).

Windows are the perfect solution when you have a clearly defined area you want to work within. This simple color adjustment has made a big impact by using a window to limit it to the picture's top half.

Reversing Selections with Outside Nodes

Often, you will want to switch your attention to the area outside of your window. For example, now that the sky looks dramatic in this shot, you might want to adjust the grass area. For this purpose, you can use an outside node, which takes the mask created by the window and inverts the selection.

- With node 02 selected in the Node Editor, right-click it and choose Add Node > Add Outside or press Option-O (macOS) or Alt-O (Windows).

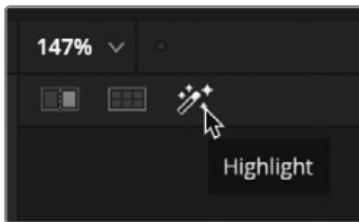


A third node is now present in the Node Editor. As with previous nodes you've created, it will connect with the preceding node via the green RGB input/output circles. However, this time you'll see a new connection: the key input/output blue triangles. The key is the portion of the image that you isolated using the window tool. When you create an outside node, it receives the key from the previous node and automatically inverts it.

- With node 03 selected, right-click and choose Node Label, and then name the node **GRASS**.

To more clearly visualize the area you are adjusting, you can briefly enable the viewer's Highlight mode.

- In the viewer's upper-left corner, click the Highlight button.



The Highlight button shows the area you will be changing and shows gray pixels over the area that will be protected from your adjustments.

- Using the primary controls, lower the gamma on the ground to make the sky appear even more vibrant.
- Drag the color indicator to add a bit of blue to the snow on the ground.
- Click the Highlight button again to disable the Highlight mode.

The ability to reuse key data is a beneficial component of node-based workflows. It speeds up the grading process by requiring you to create a single mask and reuse it multiple times.



Making Secondary Adjustments with HSL Curves

Windows come in handy when you have well defined simple areas that you want to adjust. However, in cases where the area is less defined, the shape is too complicated, or a particular color is what you are trying to select, HSL (Hue, Saturation, Luminance) curves may be a more appropriate tool to use.

- 1 On the color page, select clip 12.



This clip has a big green tractor loader, but the bright green is taking too much attention away from the scenery. Using the HSL curves, we can isolate the loader's green color and blend it better into the shot.

- 2 Select the Color balance node (node 02) in the Node Editor, right-click it, and choose Add Node > Add Serial or press Option-S (macOS) or Alt-S (Windows).

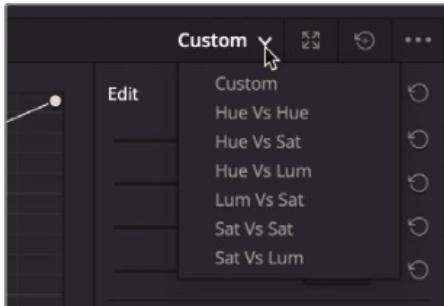
This third node in the Node Editor will be used to make the green tractor loader yellow.

- 3 Right-click over node 03 and label it **GREEN LOADER**.

The easiest technique to use when you have a simple secondary color adjustment is to use the HSL curves. HSL curves are located in the custom curves palette.

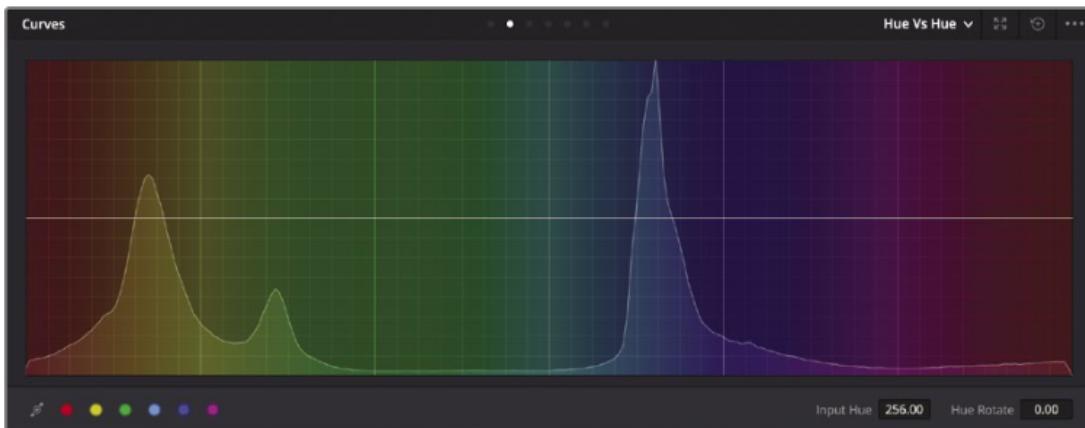
- 4 In the toolbar, click the curves palette.

- 5 In the upper-right corner of the curves palette, click the Custom drop-down arrow.



This menu shows the six HSL curves that can be used to make simple secondary adjustments. Each HSL curve's name displays the property that will be selected versus how that property will be adjusted. For instance, Hue vs Sat will select a hue from the image and adjust that hue's saturation. Let's try it out on our green tractor loader. Since we want to make the green loader yellow, we will first select the Hue vs. Hue curve.

- 6 Select Hue vs Hue from the curves palette drop-down menu.



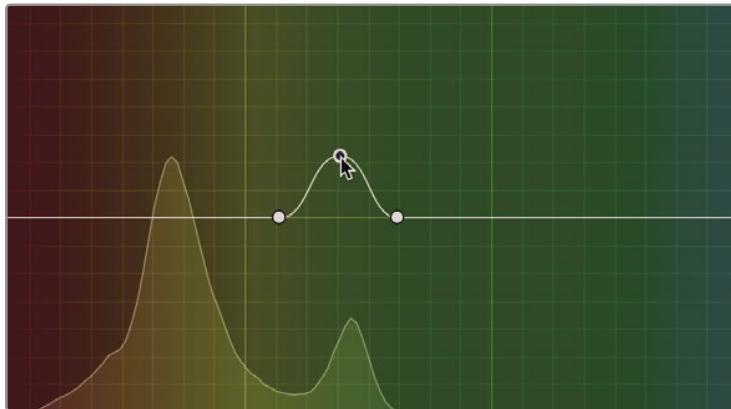
The graph displays a hue color spectrum with a line running through the middle. The next step is to select the hue you want to adjust.

- 7 In the viewer, click anywhere on the bright green tractor loader.

Clicking in the viewer adds three points to the line in the graph. The middle point is the precise hue shade you selected in the viewer. The outer two points limit the range of green hue that will be adjusted.

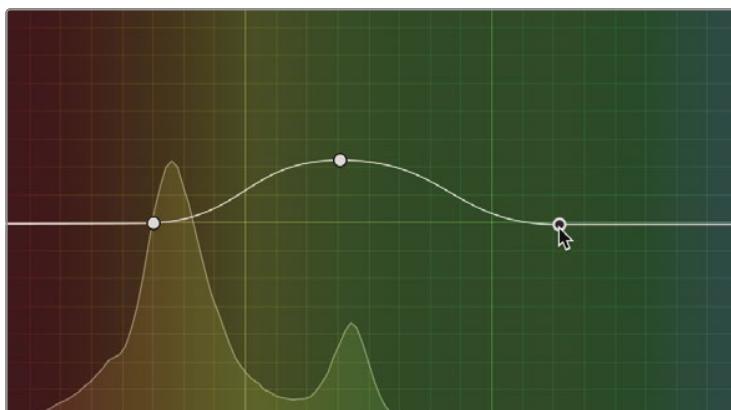


- 8 Drag the middle point in the graph up to shift the green hue toward yellow.



Since there is a wide range of green hues, the entire loader doesn't turn yellow because half of the loader is in the shadows. You can use the outer two control points in the HSL graph to expand the hue range, including more shades of green.

- 9 Drag the outer two control points to include more of the yellow hue on one side and more of the green hue on the other.



- 10 To see the change in saturation, press Command-D (macOS) or Ctrl-D (Windows) to disable the HLS curve adjustment, and then press the keyboard shortcut again to enable it.



Before the hue shift (left) and after the hue shift (right).

The computer mathematics behind the HSL curves create very smooth and natural results that are much trickier to get using other methods. However, the hue selection process is also limited in its control. Let's look at a more advanced method of selection but also one that takes a bit more time to master.

Selecting Areas with the Qualifier

The qualifier palette is another method of isolating a color for secondary color corrections. Compared to the HSL curves, the qualifier is a more sophisticated palette that includes several ways to select that color using hue, luminance, and saturation. This detailed level of control enables you to get a clean isolation, or matte, of objects even when other elements in the shot are of a similar color.

TIP Qualifiers are used only as a method of creating a matte. They are not color-grading tools themselves, and you only start to see their effects when you begin adjustments in the color-grading palettes.

- 1 Select thumbnail 15 in the timeline.



This close-up of the woman rancher is a key hero shot. The basic natural light is a good starting point, but we can make it more dramatic by simulating a low-key lighting setup and highlighting her face and eyes. Let's start by brightening her face.

- 2 In the Node Editor, right-click over node 01 and choose Add Node > Add Serial.
- 3 Right-click over node 02 and label the node **SKIN**.



- 4 In the central palettes, click the Qualifier icon.



The qualifier is extremely useful for isolating skin tones since there are so many controls to narrow down the hue, saturation, and luminance. You begin using the qualifier, much like you would a chroma keyer. Using an Eyedropper, you click over an area of interest. Unlike a keyer, the area you are selecting is not what you want to be removed, but what you want to select for color correction.

- 5 In the viewer, click on the woman's chin, since this is a good sample area of skin tone.



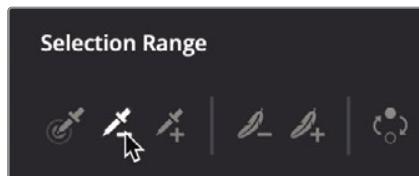
The viewer will not change, but you should see some activity in the qualifiers palette. The bars for hue, saturation, and luminance now reflect the ranges you have selected by clicking the image. Your next step will be to refine and clean up your selection. To do so, you first must change the viewer's output to show your selection.

- 6 In the upper-left corner of the viewer, click the Highlight Wand icon or press Shift-H.

You are now seeing the pixels you selected against gray pixels that are not selected. The goal is to make as much of the image gray while her face remains its natural color.

Since the skin tone is similar to the background in color and saturation, the selection you made is very broad and not very clean, but there are several ways to improve it. The first will be to remove some areas currently included in the qualification.

- 7 Click the Subtract Color Range button located in the selection range of the palette.



The Subtract Color Range button allows you to exclude additional colors from the currently selected range.

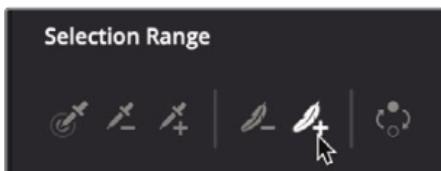
- 8 In the viewer, click the dark pink scarf directly under her chin.



TIP You can press Command-Z (macOS) or Ctrl-Z (Windows) to undo an incorrect selection.

You should now see a fuller selection that still has imperfections.

- 9 In the selection range, click the Add Softness button on the right.



- 10 Start over her left cheek and drag into the gray area to soften the edges.



Feathering the edges as you have done here will better blend the corrected face with the uncorrected areas.

- 11** In the selection range, return to the default Eyedropper picker on the left.

You can now fine-tune your selection by adjusting the Hue, Saturation, and Luminance values in the qualifier palette. The qualifier's controls are very sophisticated and powerful. It can take some time to master them as you figure out how different shots react to different parameters. The best way to learn is just to start making changes.

TIP It can be helpful as you experiment to turn the hue, sat, or luminance selections off one by one, using the red switch to the left of the name. Doing so allows you to check whether that change would improve the selection.

- 12** Under the Hue bar in the qualifier palette, adjust the hue width and hue center to see if you can improve the selection of her face.



- 13** Then adjust the low and high values under each saturation and luminance control bar to help solidify the gray areas directly surrounding her face.



TIP The saturation and luminance ranges will be very narrow slices in this image since her skin tone and the background are low-saturated reddish selections. You will have the best luck keeping the low saturation down and the luminance range starting somewhere around 55.

A common set of controls that every qualification benefits from are the matte finesse controls. These controls do not rely on color selection as much as they manipulate the selection you have already made. When you start using the matte finesse controls, it's easier to see a more typical black and white matte representation in the viewer.

You can change how your selection is displayed using the three icons in the viewer's upper-right corner. Next to the standard Grayscale Highlight icon, you also have the Highlight B/W icon that outputs your image as a black and white matte. This might be familiar to users who have previously used compositing programs and have experience with keying.

- 14 In the viewer's upper-right corner, click the Highlight B/W icon.



- 15 To the right of the qualifier, adjust the matte finesse controls Clean Black and Clean White to remove smaller, unwanted white and black specks that appear in the matte.



When adjusting the matte finesse controls, the goal is to produce a clean black and white image directly around the area of interest. You can solve problem areas away from her face more efficiently using a window. Focus on her face and the areas that surround it for now.

- 16 Increase the Denoise value to fill in more of the holes with a softer edge.



17 Finally, slightly increase the blur and then drag the In/Out Ratio to the left to blur the matte's edges inward. This will expand the black areas of the matte, removing any lingering white holes.

18 Turn off the Highlight view by clicking the Highlight Wand icon.

You can test to see whether your selection is good just by increasing the Gamma's master wheel slightly to brighten her face.

19 In the primary controls, drag the Gamma's master wheel to the right to brighten her face.



Her face becomes brighter but so do large areas outside of her face. Instead of endlessly tweaking the qualifier, you can solve these issues more quickly by combining the qualifier with a window.

Combining Qualifiers and Power Windows

You can refine an area of the image you want to modify even more precisely by using the qualifier and Power Windows together. Often, an image will have several instances of a hue that you are trying to manipulate. Instead of focusing your efforts on cleaning up the selection in the qualifier palette (and likely compromising the quality of the key), sometimes the best option is to use a Power Window to limit which part of the frame the qualifier operates on. For instance, in our shot, the background is too close in color to separate it from her face completely. Instead of fiddling with the qualifier, which would affect the selection, you'll use a window to mask everything except her face.

1 In the central palettes, click the Windows icon.

We'll use a circle window to isolate her face further.