

BIPC DIGITAL IMAGING STUDY GROUP  
ASSIGNMENT 2002-07  
SUBJECT: HUE, SATURATION, BRIGHTNESS

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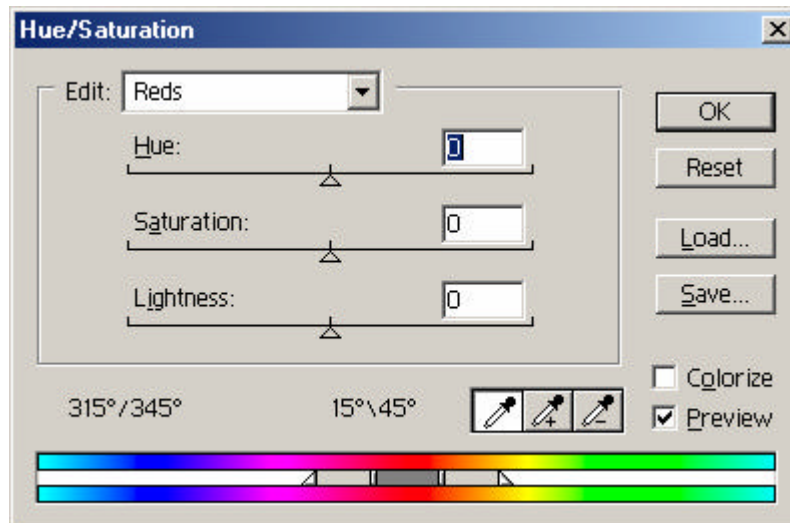
Although you can adjust or control color in levels, curves, variation. HSB (ctrl+U) is sensitive to variations in hue. Variations focus your attention on brightness levels in an image using midtones, shadows and highlights. Although you can adjust hue in curves it is a little more difficult.

The HSB (ctrl+U) model is based on the human perception of color, the HSB model describes three fundamentals characteristics of color.

HUE is the color reflected from or transmitted through an object. It is measured as a location on the standard color wheel, expressed as a degree between 0 deg. and 360 deg. In common use, hue is identified by the name of the color such as red, orange, or green.

SATURATION, sometimes called chroma, is the strength or purity of the color. Saturation represents the amount of gray in proportion to the hue, measured as a percentage from 0% to 100% (fully saturated). On the standard color wheel, saturation increases from the center to the edge.

BRIGHTNESS is the relative lightness or darkness of the color, usually measured as a percentage from 0% (black) to 100% (white).



Hue- The hue values are based on a 360-degree spectrum. Red is positioned in the middle at 0 degrees. All other colors are assigned numeric values in relation to this, so cyan (the complementary of red) can be found at either 180 or + 180 degrees. Adjusting the hue slider only will alter the way color in the image will be mapped to a new color value. As the hue slider is moved you will notice the color mapping outcome is represented by the position of the color spectrum on the lower color ramp. By default, the hue/saturation command modifies all color in the selection or layer. However, you can isolate a specific

range of color by choosing an option from the Edit pop up menu. Each of the six options represents a 60-degree wedge from the full color wheel.

#### Saturation

Use the Saturation slider to make colors more or less vivid. A value of +100% saturates colors to their absolute maximum; -100% leeches away the color, leaving the selection or layer gray.

#### Lightness

The slider changes the brightness of colors in an image relative to their current brightness levels. A positive value lightens the darkest colors in the image without affecting white. A negative value darkens the lightest colors without affecting black. Because the lightness slider is prevented from blowing away highlights and shadows.

#### Colorize

Select this check box to colorize a selection or layer. This locks all pixels into a single hue and saturation value. A hue of 0% is red, 30% is orange, and so on. See the addendum for further information on this concept.

#### Preview

Turn on the preview check box to have Photoshop apply your changes dynamically inside the image window.

#### Spectrum Bars

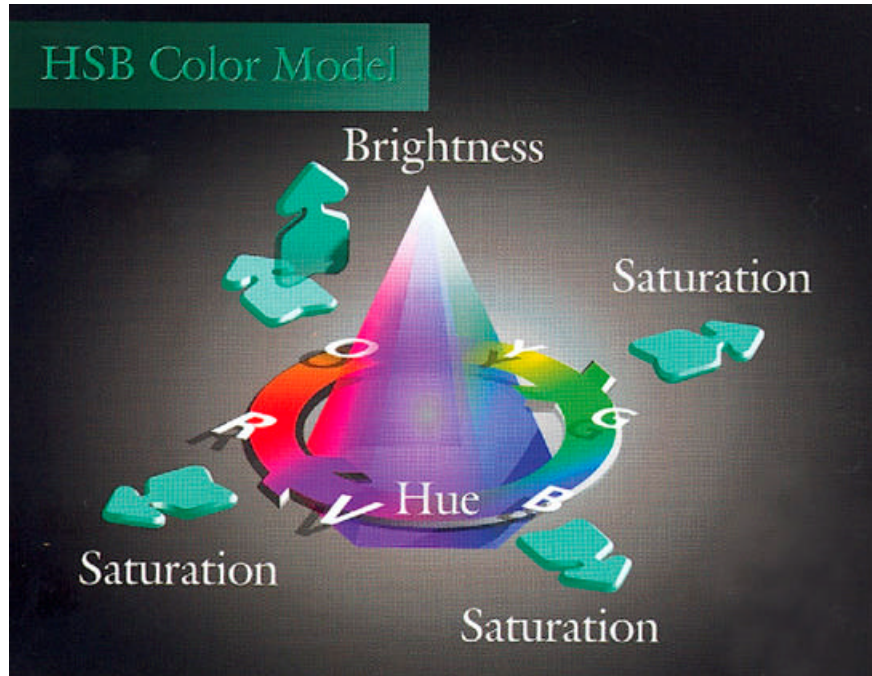
The top color bar shows the entire visible spectrum, starting and ending with cyan, the color located at both -180 and 180 degrees on the color wheel. The bottom bar previews what happens to these colors when the current hue, saturation, and lightness values are applied.

#### Range Control

The range controls identify the portion of the color spectrum that's open to modification. Drag the triangles and/or the vertical bars, to manually expand or contract the range. Drag the gray area to change the Hue.

The Hue/Saturation command is best suited to recoloring specific elements in an image. It's a favorite for changing the color of clothing in mail-order catalogs. Take a picture of one sweater and then print the sweater in all five of the season's designer colors. Meanwhile, other colors-like the skin tones of the guy who's wearing the sweater- remain unharmed. No masking required. This is done by using the HSB command called colorize. Instead of shifting the original hues in the image independently of one another, colorize defines a base hue for the entire image, and then assigns shades of the same hue throughout the image, based on original brightness strengths. The effect is similar to looking at an image through colored cellophane, and colorize is particularly well suited to change the color of an image area that is largely monochromatic. Hard candy, brushed steel, and many types of flowers display strong monochromatic color properties; colorize

enables you to completely change the color of such objects without losing photographic realism.



References:

Look & Learn Photoshop 6 by Deke McClland

Inside Adobe Photoshop 4 by Gary Bouton & Barbara Bouton

Real World Adobe Photoshop 6 by David Blatner & Bruce Fraser

Adobe Photoshop 6.0 for Photographers by Martin Evening

Adobe Photoshop 6.0 Classroom in a book By Adobe Staff

## **ADDENDUM**

### **Colorizing An Image With Adjustment Layers**

1. Open Photo
2. Show Layers/Channel/ Paths palette
3. Choose HSB adjustment layer click okay
4. In the HSB layer dialog box, click the colorize box. Drag the hue slider-saturation and lightness to get the desired color, click OK
5. With fore ground black (default color) press Ctrl + A to select entire adjustment layer, then Alt + Delete filling the adj mask with black. Ctrl + D to deselect.
6. Press X fore ground color to white
7. Select paintbrush and check over options.
8. Stroke over area desired.

### **Different Adjustments for Different Effects**

1. Drag the adj. Layer on the palette on to the create new adj layer icon at the bottom of the palette. The HSB copy appears at the top of the layer list and is the current editing layer.
2. Double click on the HSB thumbnail to display the dialog box.
3. Drag Hue –saturation-lightness sliders to change colors. Click OK
4. With back ground color still black, Press Ctrl + A and then press delete to change mask to black-erasing the content of the mask. Ctrl + D to deselect.
5. Stroke over new area with new color.
6. I might add that you go to layer properties to properly label each layer

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