



# COLOR

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# COLOR TELLS A STORY

In the 2002 movie Hero color is used thematically:

- <https://www.youtube.com/watch?v=p9keMBIyPnA>
- <https://www.youtube.com/watch?v=Ym2NhEHt0t0>

# DIFFERENT COLOR FORMATS

- The basic color model for computers is the RGB model, which is based on the technology used to generate color on computer monitors, specifically combinations of red, green and blue pixels set at different intensities
- The basic color model for printing is the CMYK (cyan/magenta/yellow/black) model.
- The RGB system is considered an additive system, because it starts at black (0) and adds colors. Black represents an absence of color, while white represents the maximum intensity of all colors.
- In contrast, in a chemical color based system, like paints, white represents an absence of color.

# ASSIGNING COLORS IN HTML

- Colors are assigned to elements in HTML / CSS in one of four ways, as a hexadecimal number, an RGB value, an HSI value and / or a color name.

# HEXADECIMAL COLORS

- Hexadecimal colors are notated as three hexadecimal numbers preceded by a #
- The three numbers represent hex numbers between 0 and 255 (#RRGGBB) with #00 being zero and #FF being 255.
- Example: `header{background-color: #FFFFFF; color:#000000}`

Please refer to the following page for an excellent explanation of hexadecimal color:

<http://www.codeconquest.com/hex-color-codes/>

# QUESTION

- How many colors can be represented in the #RGB system? Please refer to this site for guidance:<https://www.mathsisfun.com/hexadecimal-decimal-colors.html>

# ANSWER

- $256 * 256 * 256 = 16,777,216$

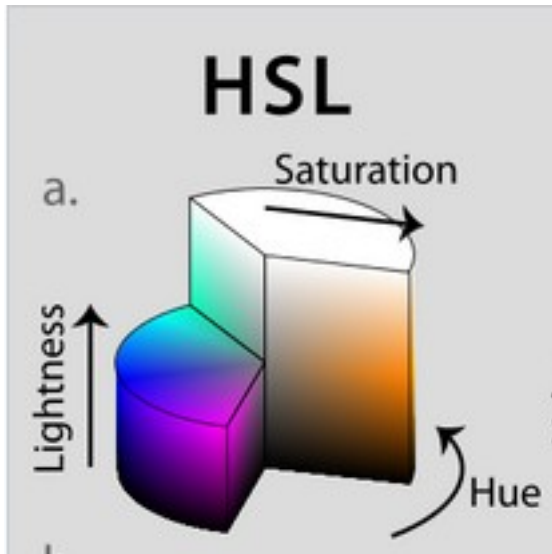
# DECIMAL RGB

- In HTML colors can also be represented in a decimal fashion, once again using an RGB color palette and a range of values between 0 and 255.
- Example: `header{background-color: RGB(0,0,0); color:RGB(255,255,255);}`



# HSL (HUE, SATURATION AND LIGHTNESS)

- HSL is “cylindrical-coordinate models for representing RGB colors.



# HSL DEFINITIONS

- Hue: the actual color
- Brightness: the amount of white (or black)
- Saturation: the amount of grey (0% = grey, 100% = white)

# TECH MUSEUM EXPLANATION OF HSL

*We might use hue to tell the difference between ripe bananas and ones that aren't so ripe. Or, we might use saturation to help us tell the difference between your glass of chocolate milk and the chocolate milk for your friend. Brightness can help us tell the difference between bread and toast, especially burnt toast.*

(quoted at

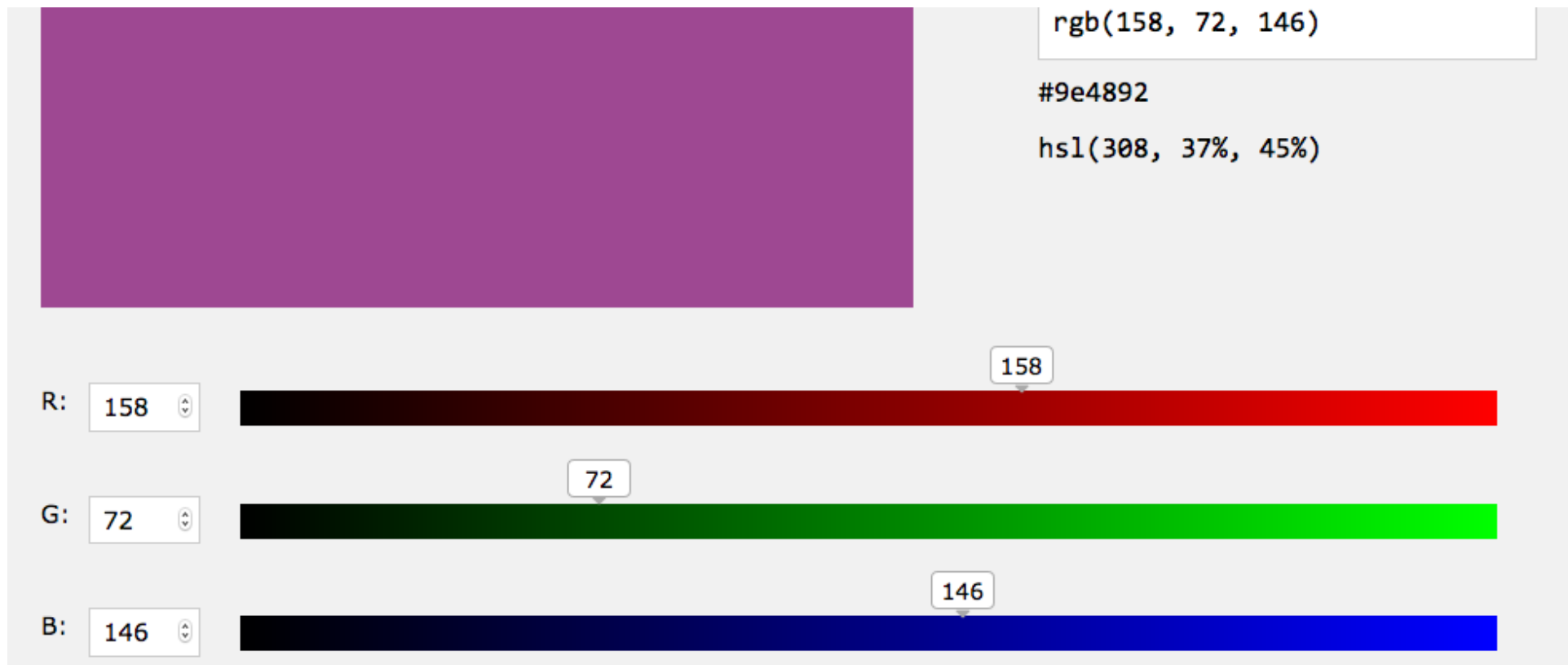
<https://www.labnol.org/home/hue-saturation-luminosity/20104/>)

## WHY USE HSL?

- Colors with a similar saturation level and different hue harmonize. Discovering such colors is simple when using an HSL interface, and difficult using a straight RGB interface. The video at the following URL explains this concept very clearly.

<https://www.labnol.org/home/hue-saturation-luminosity/20104/>

# HSL AND RGB COLORS CAN BE MAPPED ON TO EACH OTHER



Source:  
[https://www.w3schools.com/colors/colors\\_rgb.asp](https://www.w3schools.com/colors/colors_rgb.asp)

# CHOOSING A COLOR

The following slideshow, designed for interior decorators, contains many useful insights for web developers.

- <http://www.hgtv.com/design/decorating/color/how-to-choose-a-color-scheme-pictures>

# COLOR SCHEME TOOLS

There are dozens of tools that assist developers in creating color palettes. Here are three very useful ones:

- Creating a color palette based on a picture <http://www.pictaculous.com/>
- Creating a color palette: <https://color.adobe.com/create/color-wheel>
- Creating a color palette: <http://paletton.com/#uid=1000u0klIIlaFw0g0qFqFg0w0aF>
- Choosing a color palette for a list of choices: [www.color-hex.com/color-palettes/](http://www.color-hex.com/color-palettes/)



## EXERCISE: CREATE A COLOR PALETTE FOR YOUR SITE



## OUTTAKE: COLOR COMBINATIONS ...

Colors always need to be considered in context. Why do the strawberries in the picture below look red even though they are grey?

