

Theory: Colors

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Color draws attention, sets the right mood and even helps manage the behavior of visitors to the web page. It's a vivid and especially important part of the web design, so we can't just go past this topic.

In CSS, colors can be written in several different ways. Each is convenient in its own way. In this topic, we'll take a look at the most common ones.

§1. Color Names

The easiest and most intuitive way to set the colors is literally calling them by their names: there is [a list](#) of special keywords that can be used to identify colors. The most common ones are:

black		green	
silver		lime	
gray		olive	
white		yellow	
maroon		navy	
red		blue	
purple		teal	
fuchsia		aqua	

Setting the color with its name will look like this:

```
1 | color: red;
```

We've tried this way in previous lessons. Do you remember? Color names are not case-sensitive. Frequently used color names are easy to remember, but the choice is limited, so it is not always possible to find the right combination of shades. For bright colors and subtle tones, other ways of specifying the color will work better. Let's talk about it.

§2. RGB color model

Another way to specify the color in CSS is by using **decimal RGB values** (Red, Green, Blue). An **RGB value** is a color code that is set using the `rgb()` property. This property takes on three values: one for red, one for green and one for blue. The value can be an integer number from `0` to `255` or a percentage.

Below is an example that shows several colors using RGB values:

white		rgb(255, 255, 255)
black		rgb(0, 0, 0)
red		rgb(255, 0, 0)
lime		rgb(0, 255, 0)
blue		rgb(0, 0, 255)
yellow		rgb(255, 255, 0)
brown		rgb(150, 70, 0)

Setting the color using the RGB color model will look as follows:

```
1 | color: rgb(255, 255, 255);
```

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The RGB value of the desired color can be easily calculated with the help of [external resources](#) or taken directly from Photoshop. This method is especially handy if we need to make a web page using a ready-made layout with a beautiful design.

§3. RGBA

The RGBA (Red Green Blue Alpha) colour scheme complements RGB with another number responsible for colour transparency. Its value can be specified from `0` to `1`. `0` means complete transparency, and `1` means complete opacity.

Let's try to make the color from the previous example semi-transparent.

```
1 | color: rgb(255, 255, 255, 0.5);
```

§4. HEX

Another form of recording color values that is easy to take from Photoshop is HEX. HEX is essentially the same as RGB, but it is recorded in the hexadecimal notation. Each pair of characters means the same sequence of colors: red, green and blue in the range from `00` to `FF`. The resulting color is a combination of these three colors:

white		#FFFFFF
black		#000000
red		#FF0000
lime		#00FF00
blue		#0000FF
yellow		#FFFF00
brown		#964600

If you're not a Photoshop type, you can also refer to a [HEX color code generator](#).

Setting the color with HEX will look like this:

```
1 | color: #FFFF00;
```

Hex-values of colors are not case-sensitive. You can use both capital and small letters according to your own preference.

Some hexadecimal color values can be written in an abbreviated form. To do this, turn the `#RRGGBB` record into `#RGB`. This can be done when there are three pairs of the same characters in the hex-number.

Abbreviating is a common practice, so we will give you some examples:

HEX code	Abbreviated record	Color
#FFDD77	#FD7	
#6633FF	#63F	
#000000	#000	
#FFFFFF	#FFF	

The shortened record looks much better, doesn't it?

§5. HSL

HSL is a color model in which color is defined by three parameters: **Hue**, **Saturation** and **Lightness**. Let's take a look at what these parameters are.

Hue is an angle on a color circle:

Each color corresponds to certain quantity of degrees, but it is not necessary to specify units of measurement of a shade.

The second value of the color model determines the **saturation** of the selected shade and is indicated as a percentage in the range from `0%` to `100%`. The closer this value is to `100%`, the more saturated the color looks.

And finally the last parameter means **lightness**. Lightness, like saturation, is measured as a percentage. The closer the value is to `100%`, the lighter it is.

Setting the background color for an element using HSL looks like this:

```
1 | background-color: hsl(0, 100%, 50%);
```

§6. HSLA

HSLA is an extension of the HSL color values. "A" stands for **alpha** channel, which determines opacity for color. The opacity is defined by numbers from `0` to `1`:

```
1 | background-color: hsl(0, 100%, 50%, 0.5);
```

Hopefully, that puts an end to confusion in the face of strange color designations: it's really not that hard. Now you'll be able to make your web page even more stylish and attractive. Keep up the good work!

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