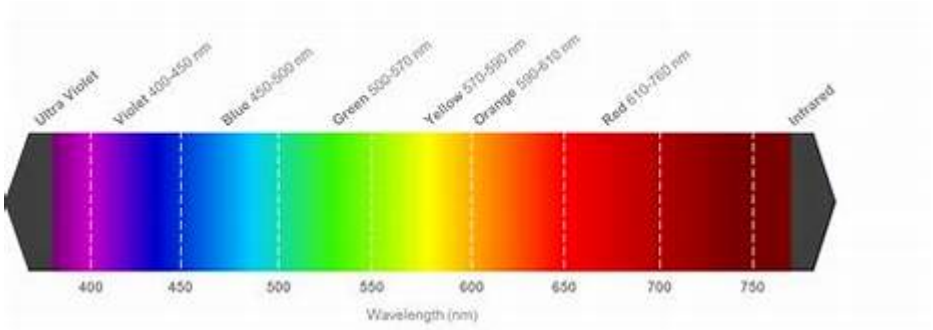
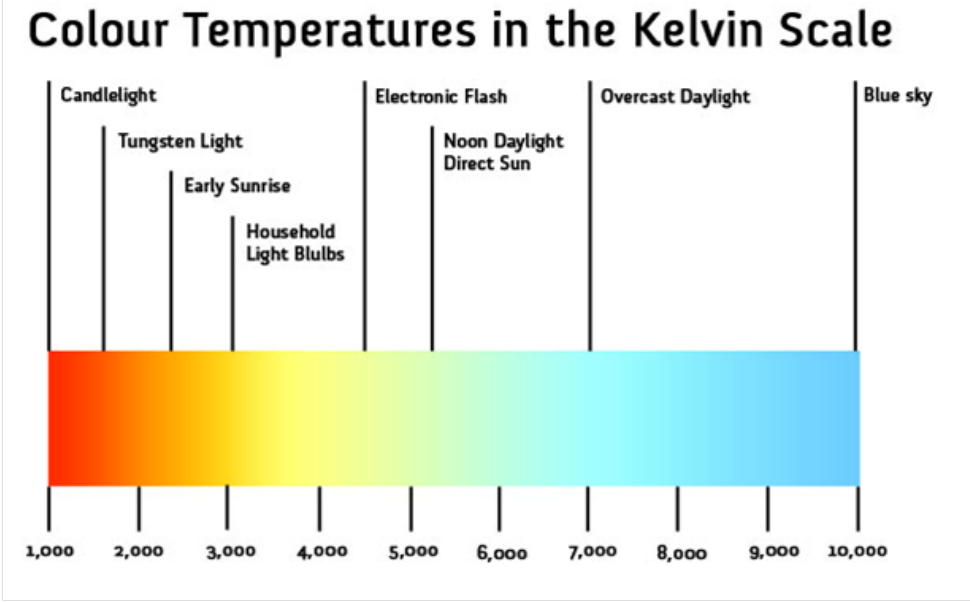
Better Query Saul – White Balance

The white balance function tells your camera how to register color temperatures. What do color temperatures have to do with color? To answer that question I would have to recall my college physics course that relates wavelengths (frequencies) to color.



For example, a red painted surface will absorb all wavelengths of light except the color red, red light is reflected, and our eyes detect the light as red. Since white light contains all colors, a white surface will reflects the full spectrum of wavelengths of any light falling on it equally.

Since frequencies represent energy and energy can bee translated into temperatures, the color spectrum can also be represented by Kelvin temperatures:



What does this have to do with my photographs? Your camera can be adjusted to register color temperatures in a particular manner. For example, tungsten light is yellow. If you take a photo indoors with tungsten light, your photo will have a yellow cast. If you 'tell' your camera you are shooting indoors with tungsten light, your camera will adjust for the yellow cast and increase the level of blue in the photo.

Most DSLRs, Mirrrorless and point and shoot cameras have multiple settings for White Balance. If you go to your camera's menu, under White Balance you will typically find the following options:

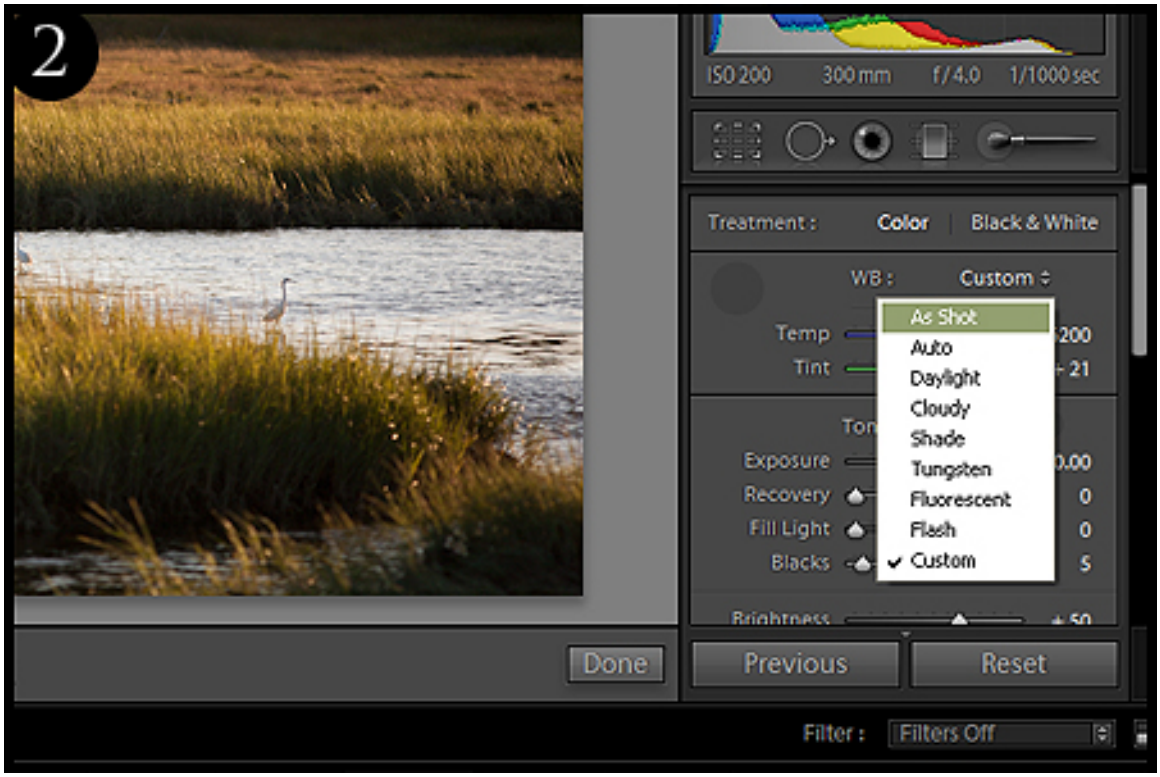
Automatic – selects what it thinks is the most appropriate color balance to match the available light
Daylight – used outdoors with the sun shining directly on the object being photographed
Cloudy -uses more reds, oranges and yellow while decreasing the amount of blues and greens.
Shade – warmer than cloudy. Uses more oranges.
Incandescent – adds blue to photos.
Florescent – my camera (Sony) has 4 different fluorescent settings depending upon the temperature of the fluorescent bulb
Flash – close to daylight setting with a slight blue tint. Photographers sometimes cover their flash with gels to 'correct' the color temperature
Underwater – adds reds and oranges
Kelvin (Color temperature) – lets you manually change the color value by adjusting the Kelvin temperature
Custom – lets you manually change the color value by a custom procedure.

Basically, doing a custom white balance involves taking a picture of a gray card, navigating through your white balance menu and selecting that photo as your white balance. There are also gray filters that screw on to your lens in place of a gray card.

The above describe ways of adjusting white balance prior to taking the picture. If you shoot in raw, adjusting the white balance as a part of post-processing can be easily done. A photographer could adjust white balance to more faithfully reproduce the colors that were in the scene that was photographed or to enhance his/her vision of what the photograph should be. For example, increasing the temperature of a sunset to almost 10,000 Kelvin

to enhance the reds, oranges and yellows would make the sunset much more vibrant.

To change the white balance in Lightroom for example, you could adjust the temperature setting, the tint. Next to WB in the Develop module is a drop-down menu that allows you to change the white balance to a one of 6 settings.



In that same module there is an eyedropper (difficult to see in the above photo) if you place that eyedropper on a point that is close to middle gray in your photo, the white balance will be customized to that point.

A worthwhile strategy for a portrait would be to have the subject hold up a gray card and take a photo. You would then use the eyedropper in Lightroom and fix the white balance by pointing to the gray card.

Here's an exercise to get you familiar with using white balance. Take a photo either indoors or outdoors of a simple subject. Adjust the white balance to each of the presets (Cloudy, Shade, Flash, etc.) and observe what happens to the color of your photos.