Set the Camera

notes

Get Whiter Whites

White balance is the third important camera setting when photographing your art. It determines the accuracy of the colors captured by the camera—and you get whiter whites!

About Color Temperature

The best place to start understanding white balance is with an explanation of color temperature.

All light has a color hue. Scientists measure this color in degrees Kelvin ("K"), which is an absolute temperature scale—it has no negative numbers.

The color temperature of light depends on its source. In other words, different types of light sources emit light at different color temperatures.

For example, the light from a tungsten bulb has a lower color temperature (2500-3000K) and is reddish-yellow. Direct sunlight has a higher temperature (5500-6500K) and is bluish. This is not unlike the change in the color of metal as it is heated from "red hot" to "white hot".

White Balance

Light Source	Color Temperature
Incandescent	2500–3000K
Tungsten	3000–3500K
Dawn/dusk	3000–4000K
Fluorescent	3000–5000K
Electronic flash	5500–6000K
Direct sunlight	5500–6500K
Overcast sky	6500–7500K
Shade	8000–9000K
Blue sky/snow	9000–12000K

Importantly, we are generally unaware of the differences in color between light sources because our brains automatically adjust for the color temperature. As a result, we see a white sheet of paper as "white" under most lighting conditions.

What is White Balance?

The problem comes when taking a photograph. Unlike people, the camera "sees" the actual color of the light. The solution is to adjust the white balance.

It turns out that we can compensate for the color temperature by balancing it with more yellow or blue—to offset the predominate color of the light and create "white". Hence the term "white balance".

With film, you do this by using the correct type of film (tungsten or daylight) or by adding a blue or yellow filter.

With a digital camera, you make a similar adjustment electronically by setting the white balance.

Set the Camera

notes

And the correct white balance is the one that matches the color temperature of the light source.

Why White Balance Matters

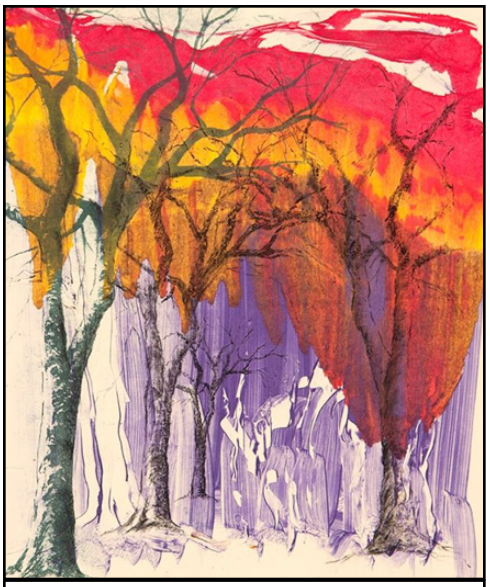
OK…so how do you know if the white balance is right or wrong?

You know by looking at the image. An incorrect white balance setting will result in a color shift toward yellow or blue, which throws off all of the colors in your art.

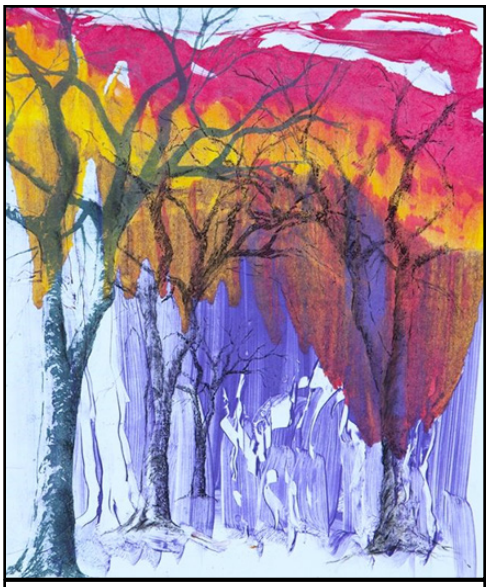
With the correct white balance set, the image will have accurate color and neutral whites and gray tones.

Getting it Right

Getting the white balance right requires that you pay attention to the type of light source you're using and set the white balance on the camera to match. These following examples will help illustrate.



Light: Tungsten
+ Camera: Sunlight
= Too Yellow



Light: Sunlight
+ Camera: Tungsten
= Too Blue

If you're using tungsten light, but the camera is set for sunlight, then the image will be too yellow. This happens because the camera thinks the light is more blue than it really is and doesn't correct for the yellow in the light. Oops, the wrong setting!

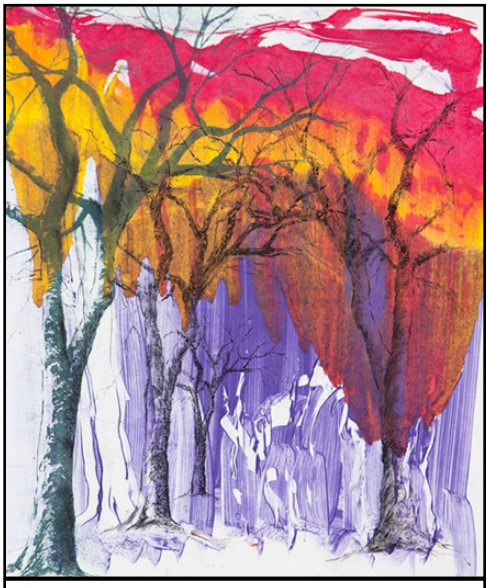
Conversely, shooting in sunlight with the camera set for tungsten will result in an image that is too blue. In this case, the camera thinks the light is more yellow than it actually is and doesn't correct for the blue.

Set the Camera

notes

Oops, wrong again!

But in sunlight with the camera set for sunlight, the white balance is set right and the colors in the image are correct. Now you've nailed it!



Light: Sunlight
+ Camera: Sunlight
= Correct Color!

Setting the White Balance

Now, let's see how to set the white balance on your camera so the colors are accurate.

On this compact camera, I first press the Function button—which opens the function or settings menu.

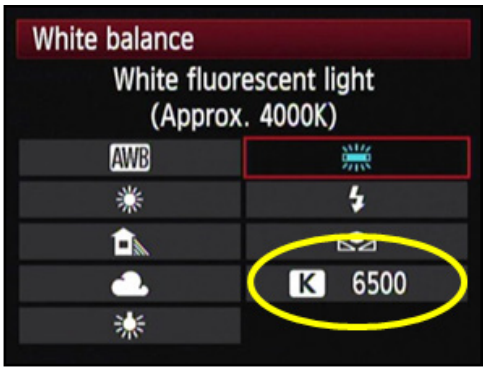
Then I use the dial to find the white balance settings and select the setting that most closely matches my light source—in this case, fluorescent light. Most cameras have settings for tungsten and fluorescent light, as well as sunlight and shade.

Avoid using the "Auto" or "AWB" setting. It does not correctly adjust the white balance for most artwork because of the way the camera determines the white balance in "Auto".

Finally, I press the function button again to set the white balance.

With this DSLR, the white balance setting is accessed from the menu.

I first press the Menu button, and from the menu access the white balance settings. I then use the dial to find the setting that matches my light source. A number of choices are provided, including one that can set the white balance to a specific color temperature. Pressing the Set button again will complete my selection.



With mobile devices, many camera

Set the Camera

notes

apps will let you adjust the white balance setting.

Now you're all set—the white balance setting on your camera matches the light source you're using, and you'll have accurate colors and whiter "whites".

Setting the White Balance on Your Camera

1. Locate the instruction manual or user guide for your camera. Look in the Index for "White Balance" or in the Table of Contents for a reference to image color. Write the page number where the instructions are found here: _____.

2. In the list below, check the box next to the type of light source you usually use when photographing your artwork:

   - ☐ "Old style" household incandescent bulbs
   - ☐ High-wattage tungsten photo bulbs
   - ☐ Halogen work lights
   - ☐ Compact flourescent bulbs
   - ☐ Flourescent work lights
   - ☐ LED bulbs
   - ☐ Daylight (blue) photoflood bulbs
   - ☐ Direct sunlight
   - ☐ Overcast daylight
   - ☐ Shade

3. If you are using light bulbs, refer to the packaging and find the color temperature (in Kelvin). Write it here: _____.

4. Turn on your camera and follow the steps listed in the instructions to adjust the camera to the white balance setting that matches your light source. If the source is not listed, find the closest match by comparing its color temperature against the chart (above). Write the name of the setting here: _____.

5. More information about the available white balance settings usually can be found in the Specifications section at the back of the manual.

6. Make any other notes about setting the white balance here: