

White Balance

White Balance is an aspect of photography that many digital camera owners don't understand or use - but it's something well worth learning about as it can have a real impact upon the shots you take.

So for those of you who have been avoiding White Balance - let's take a look:

At its simplest - the reason we adjust white balance is to get the colours in your images as accurate as possible.

Why would you need to get the colour right in your shots?

You might have noticed when examining shots after taking them that images can come out with an orange, blue, yellow etc look to them - despite the fact that to the naked eye the scene looked quite normal. The reason for this is that the image's different sources of light have a different 'colour' (or temperature) to them. Fluorescent lighting adds a bluish cast to photos whereas tungsten (incandescent/bulbs) lights add a yellowish tinge to photos.



The range in different temperatures ranges from the very cool light of blue sky through to the very warm light of a candle.

We don't generally notice this difference in temperature because our eyes adjust automatically for it. So, unless the temperature of the light is very extreme, a white sheet of paper will generally look white to us. However a digital camera is not clever enough to make these adjustments automatically and sometimes will need us to tell it how to treat different light.

So for cooler (blue or green) light you'll tell the camera to warm things up and in warm light you'll tell it to cool down. In film cameras you normally had just a choice of two - Daylight and Tungsten (and, of course, using one film for both situations would be impossible).

Adjusting White Balance

Different digital cameras have different ways of adjusting white balance so ultimately you'll need to get out your camera's manual out to work out the specifics of how to make changes. Having said this - almost all digital cameras have automatic and semi-automatic modes to help you make the adjustments.

Preset White Balance Settings

Here are some of the basic White Balance settings you'll find on cameras:

- **Auto** - this is where the camera makes a best guess on a shot by shot basis. You'll find it works in most situations but it's worth venturing out of it for trickier lighting.
- **Tungsten** - this mode is usually symbolized with a little bulb and is for shooting indoors, especially under tungsten (incandescent) lighting (such as bulb lighting). It generally cools down the colours in photos, adding some blue.
- **Fluorescent** - this compensates for the 'cool' (and slightly green) of fluorescent light and will warm up your shots. This may have two options - normal and Halogen.
- **Daylight/Sunny** - not all cameras have this setting because it sets things as fairly 'normal' white balance settings. It 'warms up' a shot, adding yellow/orange.
- **Cloudy** - this setting generally warms things up a touch more than 'daylight' mode.
- **Flash** - the flash of a camera can be quite a cool light so in Flash WB mode you'll find it warms up your shots a touch.
- **Shade** - the light in shade is generally cooler (bluer) than shooting in direct sunlight so this mode will warm things up a little.

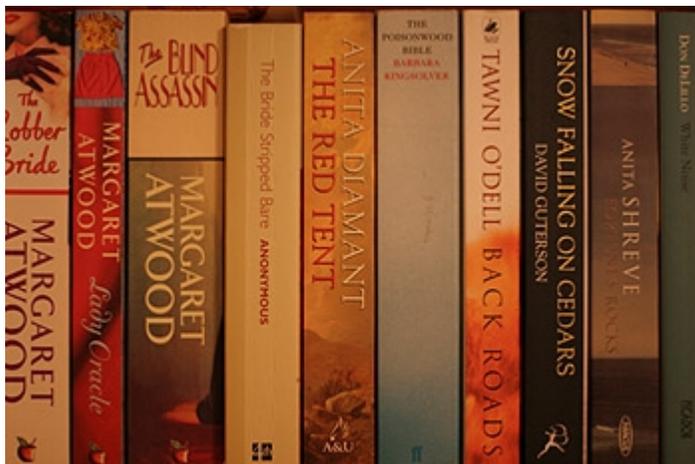
Manual White Balance Adjustments

In most cases you can get a pretty accurate result using the above preset white balance modes - but some digital cameras (most DSLRs and higher end point and shoots) allow for manual white balance adjustments also.

The way this is used varies a little between models but in essence what you do is to tell your camera what white looks like in a shot so that it has something as a reference point for deciding how other colours should look. You can do this by buying yourself a white (or grey) card which is specifically designed for this task - or you can find some other appropriately coloured object around you to do the job - even a sheet of white paper.

Look at the following two shots.

The first shot is one of some books taken in Auto White Balance mode. The light in my room is from three standard light bulbs and as a result the image is quite warm or yellow. (so the Automatic setting hasn't been perfect).



After taking this picture, hold up a piece of white paper to the camera to tell it what colour white is. Then take a second shot with this setting - which you'll see is a much truer colour cast than the first image.



This manual adjustment is not difficult to do once you find where to do it in the menu on your camera and it's well worth learning how to do it.

More Creative Uses for White Balance

There are times when photographers do not want accurate colours in their photography. A warm up filter on a film SLR was great when photographing sunsets and the results may be quite spectacular. 'Fairly' warm tones in photos became even warmer.

Of course you could go out and buy yourself coloured filters for your digital cameras (many allow you to attach them, especially DSLRs) however using White Balance controls on your camera can also impact the colours in your images - not only to correct them but to enhance the look and feel of your shots.

The first shot below was taken with Automatic White Balance mode (AWB) selected. The camera took a guess at what the colours were and it got it pretty much spot on.



The following shot was taken with exactly the same settings as the first except that the White Balance mode was changed so that the Colour Temperature was 2800k (2800 Kelvin). This cooled the colours down to the maximum that the camera would allow and the result was a much bluer (or cooler) shot than the first.



This last shot was shot at the same settings as the first two except that the colours are 'warmed up' to the maximum by changing the temperature to 10000k. The result is an image with an orange cast over it - much warmer tones.



The first shot is probably the best but if we were photographing a sunset on a beach at the end of a hot summers day the warmer tones of the last shot might add something to the mood and feel of the image. On the other hand if shooting on a cold misty winters day out in the countryside and you want to enhance that feeling we could use the cooler tones of the second shot.

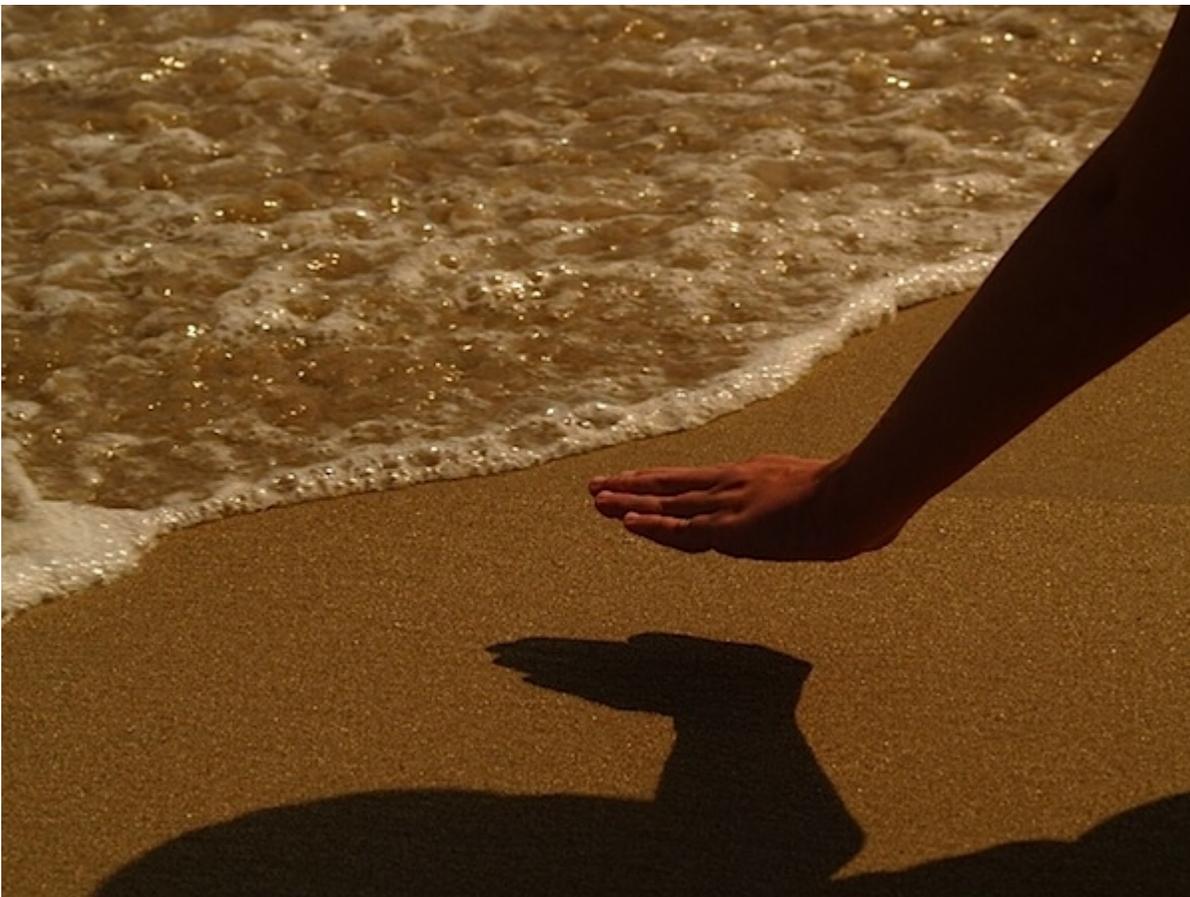
Most cameras allow you to shoot at any Kelvin rating between 4000k - 8000k (in increments of 100)..... check your camera's manual WB settings to see what the range is, and practice with manual white balance.... you'll find the details in your manual. Some more advanced digital cameras also have White Balance Bracketing which allows you to take a series of shots at slightly different temperatures automatically so that you can choose which one you like the best.

Manipulating White Balance for Artistic Effect

The ability to control white balance, even changing it from one shot to the next, is one of the greatest advantages of digital over film. With film you could shoot negatives and let some machine or lab technician do color corrections for you (at a considerably extra cost). If using slide film however, once you loaded a roll, you were stuck with that film's colour balance until you finished it and loaded the next roll.

It's not hard to find advice online for understanding the various white balance settings found on most digital cameras. For the most part, these settings are pretty self-explanatory and most moderately experienced photographers can work them out quite easily.

Most people approach white balance with the mindset of getting true colour representation. That makes sense. You want your whites to be white and all your other colours to be true representations of the original scene as you shot it.



We could deliberately set the “*wrong*” white balance to achieve artistic effects. For example, when at the beach on a perfectly sunny day, you might set your white balance for cloudy or even shade. This tells the camera that the ambient light has a slightly blue cast to it. The camera will compensate by adding some bronze (red/orange) tone to offset this supposed cast. The result is that your subjects get an instant suntan!

Be warned that this may not work for scenes in which the sky is visible as the colour manipulation may be quite obvious in your final images.

When photographing an icy scene, perhaps you should try setting your white balance to something 'warmer', like Daylight, or Shade. A 'normal' or standard exposure will usually make snow and ice a little blue anyway, so using those setting should whiten the snow a little, reducing the blue cast. On the other hand, perhaps you want the blue, making it all look even colder, so a Tungsten setting will make the blue stronger. This tells the camera that the light is slightly orange so it will introduce more blue to offset that. The result is an image that simply looks "cold".



For even finer control, it pays to develop a bit of understanding of the Kelvin scale. Many cameras will allow you to directly set a Kelvin temperature for the ambient light. Tricking the camera by claiming that the light is warmer or cooler than it actually is can allow you to very finely tune the adjustment, thus giving you the ability to make the effect more subtle. (Or more garish, if that's what you're after.)

Shooting Raw

Most of the above *could* be ignored if you shoot raw files.... modification of colour temperature/white balance can be made in your editing software, like Adobe Camera Raw. However it's better to get the colour right in-camera.