Through The Lens

A guide to digital photography for computer enthusiasts.
*After the click of your camera, you're only half done!*

How to use photographic histograms
by Lynda Buske

A photographic histogram is a graphical representation of the distribution of the various levels of brightness in your photo. If you think of a black and white photo, the histogram displays the frequency of pixels that are pure black (no brightness) those within the grey spectrum (mid-tones) and those that are pure whites (brightest sections).

In the histogram below, the far-left side represents the amount of pure black and the far-right side is the amount of pure white. In the example, you can see there is a lot of pure black (high on the Y axis) indicating that perhaps the photo needs to be lightened.
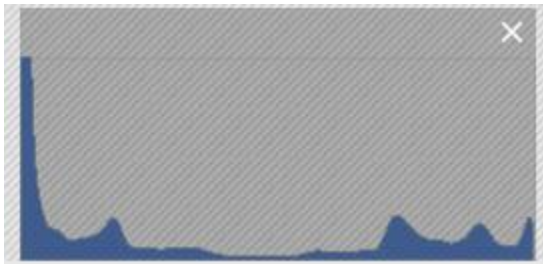
Histogram of dark photo

Some cameras provide a histogram view while taking a photo (or while reviewing the photo in-camera) so necessary adjustments can be made on site. If your camera doesn't have this feature, the exposure can be adjusted (to a certain extent) with photo editing software during post processing on your computer.

A lot of pure black and pure white in a histogram usually indicates a photo of high contrast. If you wish a more even distribution, you can lighten shadows and darken highlights causing some pure black and white areas to shift to grey. If you prefer instead to add contrast, you can do the opposite or set black and white points if your software allows.   See examples with accompanying histograms below:

Dark   Even   Light

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High contrast   Low contrast
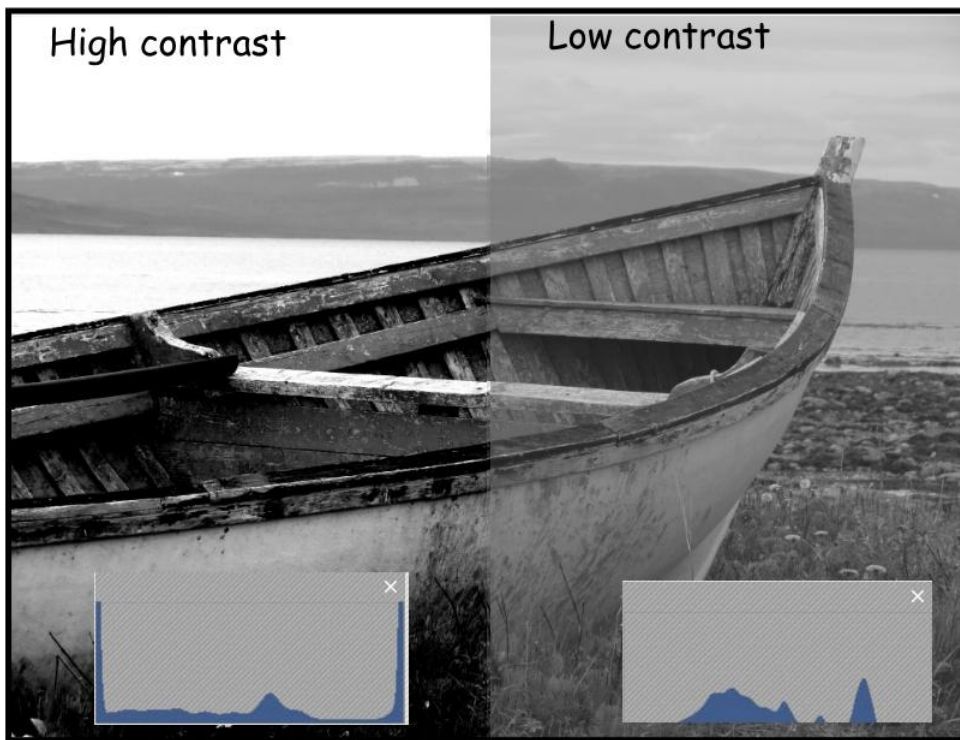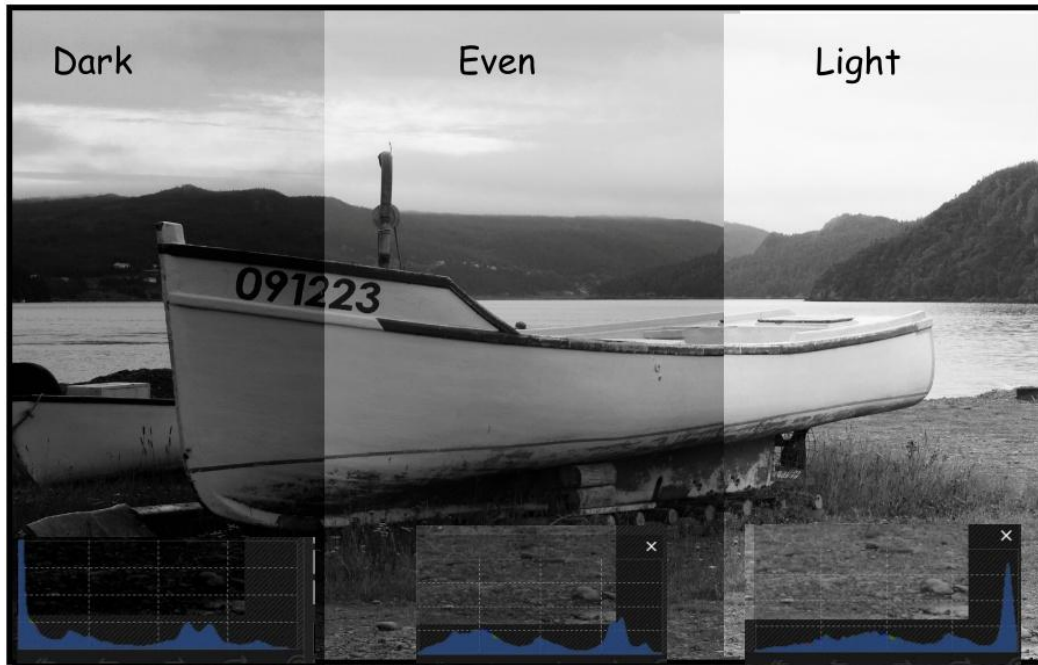
There is no right or wrong when adjusting light; it simply needs to reflect what you want the image to look like.

In some circumstances the areas of pure black and white may not be adjustable in post processing. This is called clipping. In this instance, your camera sensor is saturated (if clipping occurred in the highlights) or the sensor was unable to capture any information (if clipped in the shadows). Even if you don't have a histogram on your camera, it may indicate overexposure by blinking areas in the playback mode, however there will be no indication of underexposure. In some cases, it is unavoidable (e.g., having the sun in your photo) but it is usually best to limit areas of extreme darkness or brightness to small areas of your image.

Histograms usually display information for three primary colors – red, green and blue – and are known as RGB histograms. Coloured histograms can show if clipping is happening in only one of the colour channels.