JPEG and RAW Photo Formats

In this lesson, we'll be taking a look at
JPEG and RAW Photo Formats.

If you see a magnifying glass at the bottom right corner of a photo, click on that photo to make it full screen.

JPEG and RAW Photo Formats

Phone cameras can store images in one of two formats - JPG (JPEG), or RAW.

The default setting is always JPEG. It gives great results for most images, and is compatible with most any photo editor or other software that imports images.

Advanced phone cameras also have the ability to save images in RAW format. This format contains much more information - it is completely unprocessed - and takes up a lot more room. Up to five times as much room to store.

JPEG and RAW Photo Formats

JPEG format is one of the most widely used formats for photographs in the world. Almost every photo you see on the web is stored in JPEG format.

JPEG files almost always have an extension of **.jpg,** or sometimes **.jpeg.**

All cameras store photographs in JPEG format

JPEG and RAW Photo Formats

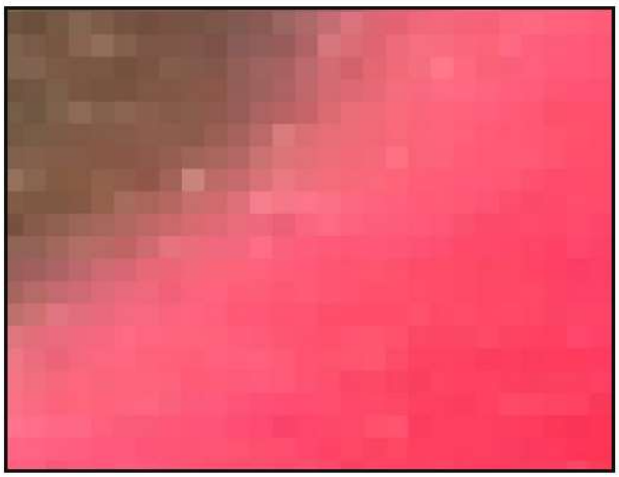
JPEG is a compressed format. This means that when the images are stored in JPEG format, the image data is compressed to ensure it takes up as little space as possible. Not only does this mean you can fit many photos on your memory card, but on the web, it also means that images download and display much more quickly.

JPEG is a common format on the web

JPEG and RAW Photo Formats

JPEG is a 24 bit format. This means it contain 16,777,216 colors. Quite a lot! As a result, JPEG can store images with wonderful color depth and clarity.

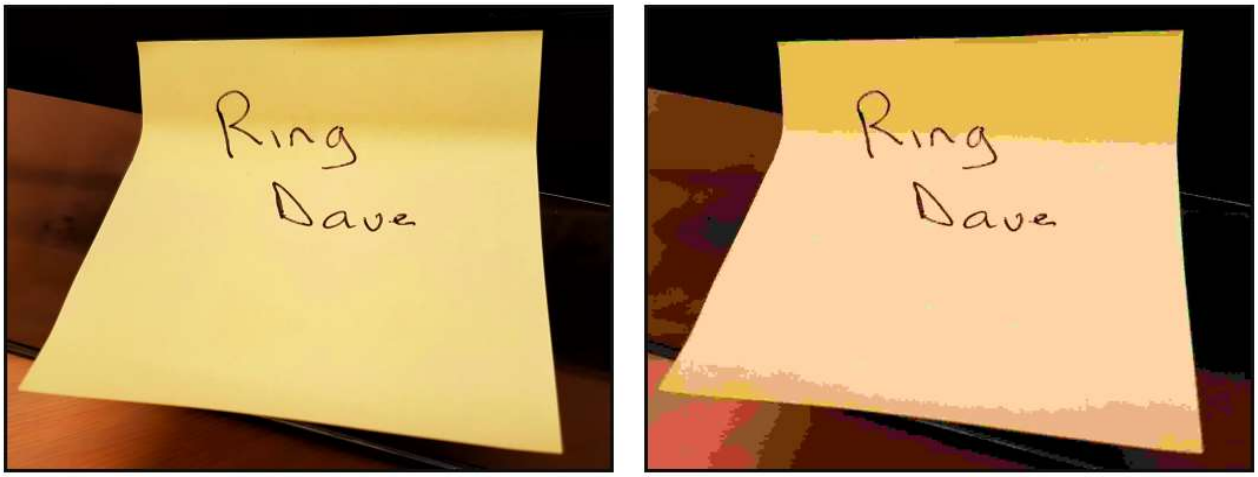
An image is made up of pixels. Each pixel is made up of a red, a green and a blue channel. 24 bit images allow 8 bits per channel, which means any single pixel can be made up of a combination of 256 variations of red, 256 variations of green, and 256 variations of blue.



Here you can the individual pixels in an image

JPEG and RAW Photo Formats

We mentioned that JPEG is a compressed format. When a JPEG image is saved, it can be saved using a scale of compression ratios. The less compression, the larger the image, but the better quality it retains. It's all a tradeoff.



On the left - the photo is stored using a low JPEG compression setting. The quality remains high. On the right, we've selected a very high compression setting. The image will take up much less space, and download very much more quickly, but, well, look at it.

JPEG and RAW Photo Formats

You will possibly find on your camera, or in an editing program a setting related to image quality. Generally, you'll find probably three settings - fine, medium, and basic. They may be phrased differently, but they mean the same thing.

Fine, or ***high*** means low compression, and better quality image. ***Basic,*** or ***low,*** means high compression, with smaller images, but quality will suffer.

The difference between high and low quality settings on your camera may sometimes be subtle - but it is still important to retain as much quality as possible.

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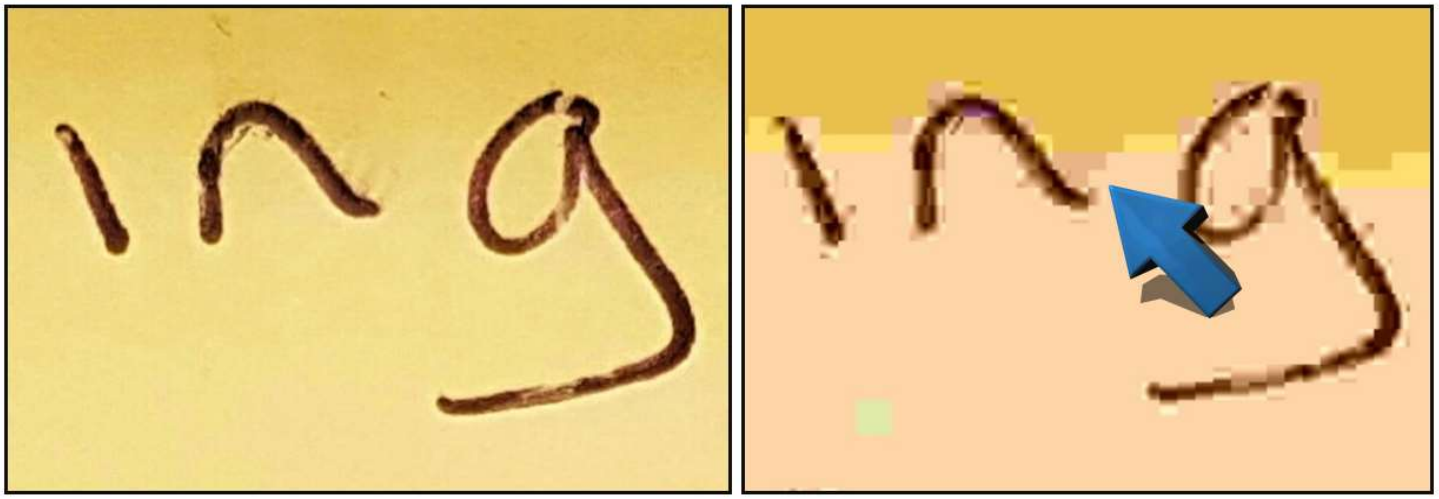
A common term you may here is relation to photos, or in particular, JPEG files, is ***Artefacting.*** Artefacting is one of the methods JPEG uses to compress images - and sometimes, if you look close, or the JPEG file is heavily compressed, these will be visible.



On the left, we've zoomed in on a well compressed JPEG. On the right, we've zoomed in on an image that has been too heavily compressed.

JPEG and RAW Photo Formats

RAW files are not stored like JPEG images. So much color information is saved with a RAW file (16 bits per channel), that this is more than a JPEG file can store (maximum 8 bits per channel). In fact, this is more color information than can be displayed on most monitors.

RAW files will have a file extension of RAW, or DNG.

RAW images take up a lot more space on your memory card. They will also take longer to process, and copy to your computer. Modes such as burst mode are unlikely to work with RAW files.

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Even though the RAW format ensures photos are stored at the highest possible quality, note that RAW files are not designed for the web. They are simply too big.

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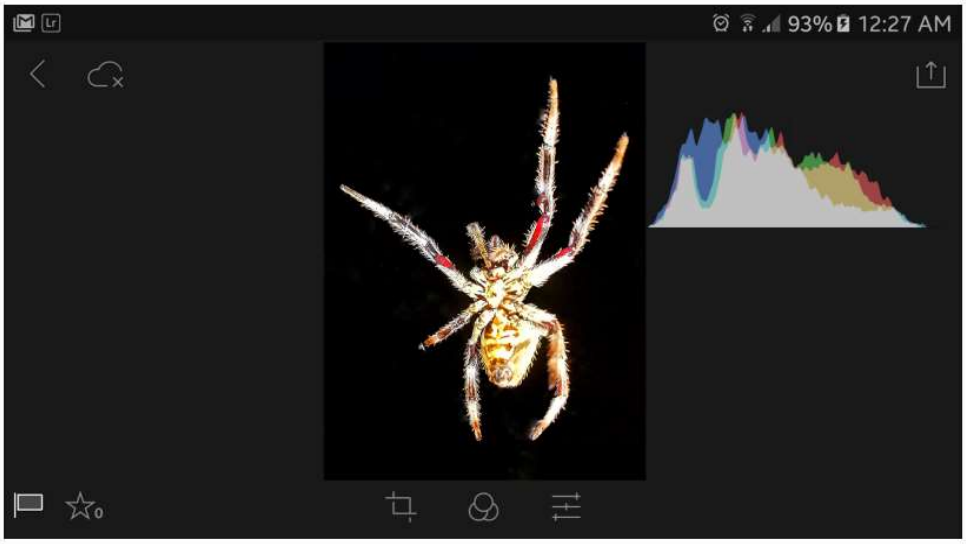
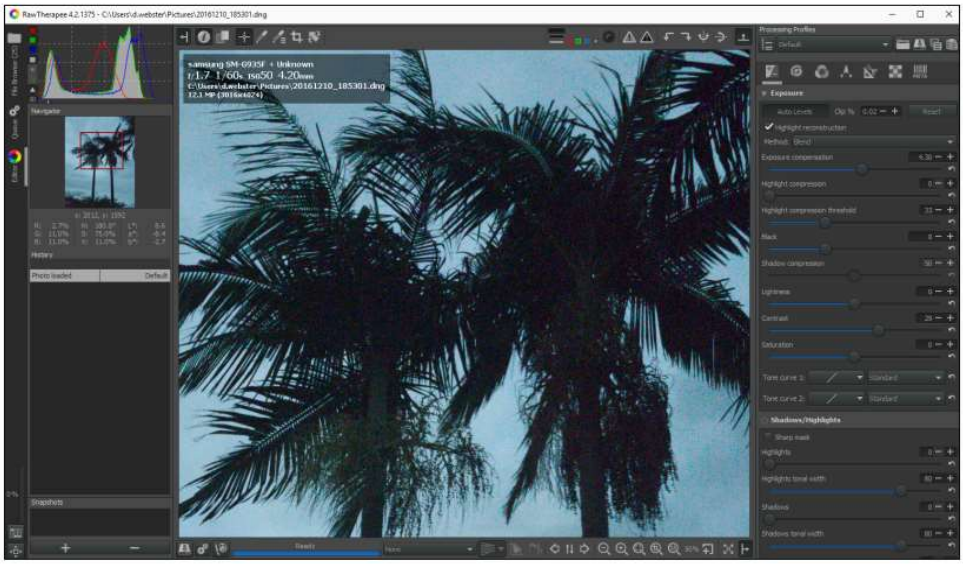
In fact, to edit, or even view RAW photos on your phone or computer, you are likely to have to install special software designed for just that. Most default or lower end photo editing software programs cannot handle photos in RAW format. **Adobe Lightroom,** seen below, is available for Android and iOS phones, and can view and edit RAW photos.



JPEG and RAW Photo Formats

Once you take a RAW file into a serious photo editing program, you may see a dazzling array of options that are at first confusing. Below, you can see just a fraction of the sorts of control over RAW photos you can get in a program called **Raw Therapee.**



JPEG and RAW Photo Formats

PNG Files. PNG is another common format you'll see on the web, and often on your camera. Generally, photo editors will save images in PNG format. Any screen shots you take on your phone are likely to be saved in PNG format.

PNG is a flexible format that can be used to store both cartoon like images, and photographic images. However, although PNG supports it, you'll get much better results using JPG to store photographic images.

The amazing PNG format advantage is called **alpha transparency.** Alpha Transparency not only allows transparent areas, but also partially transparent areas. This can give beautiful results.

While PNG format can be very flexible, it simply is not practical for photographs - unless you need a high quality 'cut-out', like that on the left.

JPEG and RAW Photo Formats

You've now completed this lesson.

In this lesson, we took a look at **JPEG and RAW Photo Formats.**