

in photoshop

how do I

get my head around scanning issues

A photograph is made out of a series of continuous colours or tones that blend seamlessly into each other. A digital image, however, is completely different. The images you get from a scanner or digital camera are made up of discrete squares known as pixels (shorthand for picture elements). The words pixels and dots (ppi and dpi) mean different things. Just remember pixels refer to everything on screen, while dots refer to output. The resolution is the number of pixels per inch (ppi), measured either horizontally or vertically, contained in the image. This is entirely separate from the scale of the image.

Higher scanning resolutions produce smaller pixels, which means you can capture finer detail in the final image. Scanning an image at 100% keeps it the same physical dimensions as the original. Computer monitors only have a relative resolution of 72ppi, so you may not notice the difference between low and high-resolution images because your monitor doesn't show the extra detail when viewed at 100%. *For print quality images scan at 300ppi to output size.*

When an inkjet printer fires its ink dots onto paper, there's a phenomenon called 'ink-bleed', which refers to the way that the ink dots bleed into the porous paper fibres and then spread out so that they overlap with adjacent ink dots. This ink-bleed causes a slight loss of sharpness and detail in the printed image. However the latest inkjet printers are so well designed that you will be able to notice some difference between 300dpi and 600dpi printing, especially when using glossy photo-paper that is specifically designed to minimise ink bleed. This is where you need to experiment with your particular printer. There's nothing to stop you scanning an image at various different resolutions and printing it out at different printer settings in order to compare the results, except the high cost of the consumables (inks and photo quality paper).

Disk space may also be an issue. High scanning resolutions can produce huge files. A 5inch x 4inch photo scanned (in RGB) at 600ppi will be around 20Mb in size, compared with around 1¼Mb for a 150ppi scan. Just five 20Mb images will fill a standard Zip disk. The higher the resolution, the longer the scanning time, this can be an issue if you have many scans to perform.

If you plan on keeping the printed image the same size as the original, simply scan at your intended output scale and resolution. However, if you want to blow up a small original to a more impressive size, you'll need to adjust the resolution accordingly. Increasing the resolution means the pixels in the image are that much finer. This ensures that detail won't be lost when the image is blown up and printed once more. So if you intend printing the image at around 200% of the original's size, you should either increase the scanning scale by 200% , which delivers proportionately larger image dimensions at the same resolution, or increase the scanning resolution by 200%, which packs finer pixels into the same dimensions. For example, a 3in square original intended for use as a 6in square printout at 300dpi should either be scanned 200%, at 300ppi, or 100% at 600ppi. Therefore, ideally, one should set scanning figures with the intended output in mind. Finally, avoid scaling images up once you are working on the photograph in the editing software, as a loss of definition will probably occur.

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