

# Scanning Basics

VBGS How To Group Dec 2020

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## Commonly Used File Formats (there are others)

### JPEG (File Interchange Format)

- a compressed file format
- most common and widely supported
- good for web and social media
- loses clarity when compressed, no way to restore
- image degrades over multiple saves (from repeated compression)

### TIF (Tagged Image File Format)

- use to archive images
- creates large file sizes, not suitable web or social media
- it is lossless (does not degrade over multiple saves)

### PDF (Portable Document Format).

- best for text - viewing and searching
- can have multiple pages in one document
- small file size vs. images of documents
- OCR (Optical Character Recognition), auto recognition of text in file



tif – 962 KB



jpg – 188 KB



crop from tif – 371 KB



one crop from jpg – 74.2 KB



60 crops from jpg – 82.9 KB

Both jpg files are around the same size but the one cropped repeatedly looks a little muddy.  
If it's all you have, you keep it and love it.  
But, given a choice, we all want the better quality photo.

The repeatedly cropped jpg is a little fuzzy but it's not REALLY bad.  
pixels matter more...

## Digital Storage and File Size

- All digital files are stored as a series of 0 and 1 values
- Each digit is a bit
- larger file size does not necessarily mean better quality – pixels matter more

b	bit	
B	byte	8 bits
KB	kilobyte	1000 bytes
MB	megabyte	1000 KB
GB	gigabyte	1000 MB
TB	terabyte	1000 GB

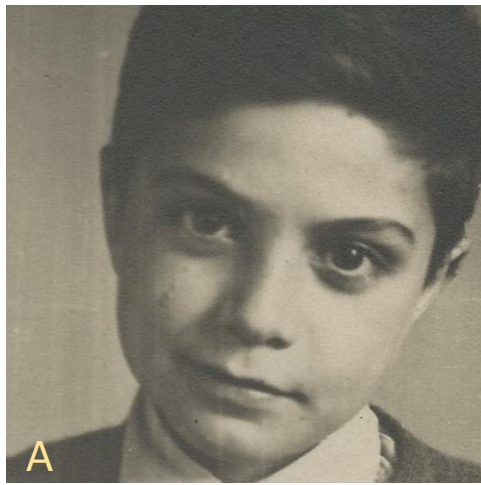
## Resolution

PPI (pixels per inch)

- measurement for digital screens
- pixel = each dot of color on a screen
- number of pixels per inch
- higher PPI – crisper image will display and ability to zoom without loss

DPI (dots per inch)

- measurement for printers
- number of dots per inch when printed
- higher DPI – clearer print will be



Pixels Matter More  
photos import at different sizes based on dimensions in file, not file size

- A. The original cropped tif image = 475 x 475 pixels (371 KB)
- B. Resized at 200 x 200 pixels (109 KB)
- C. Resized at 100 x 100 pixels (54.9 KB)
- D. Resized at 50 x 50 pixels (28.5 KB)



If we make B, C, and D the same size as A they look progressively fuzzier because there are now fewer dots of color coded for in the photo

(these are the same size as those on page 1)

## Scanners

### Flatbed

- stand alone or built into a printer
- different sizes
- control from scanner and/or computer
- manually place item, may have auto feed function
- good for documents and photos
- good for delicate or damaged items (they can be placed)
- Slover Library in Norfolk has large format flatbed scanners available for use (after being trained in use)



### Portable

- compact scanner that's easily portable
- different sizes
- control from scanner and/or computer
- may have built in storage for download later
- feed items through one at a time
- items are scanned as they are pulled through
- good for documents and photos
- NOT for delicate or damaged items (they get pulled)



### Wand/Handheld (I have not used one)

- compact scanner that's easily portable
- different sizes
- control from scanner
- download to computer
- takes practice to get good scans (requires a smooth motion)
- good for quick scans of documents/books
- maybe good for some photos, probably not the quickest unless you master the technique
- NOT for delicate or damaged items (slide scanner across)



photo attribution: flickr user Nicole Henning

## Scanning photos

- 300 dpi is generally fine to print photos
- Scan at 600 dpi (or more if wanted) to catch all the little details and flexibility for enlargement
- The higher the scan rating the longer the scan will take and the larger the file size
- Scan image as a tif if possible and convert to a jpg to use online
- If you want to scan as a jpg, try to put one aside as the master and make a copy to play with
- Scan documents as pdf
- Use greyscale setting for black and white photos – this captures the gradient of colors from black to white
- Use black and white setting for items like text