Introduction to Images and Documents

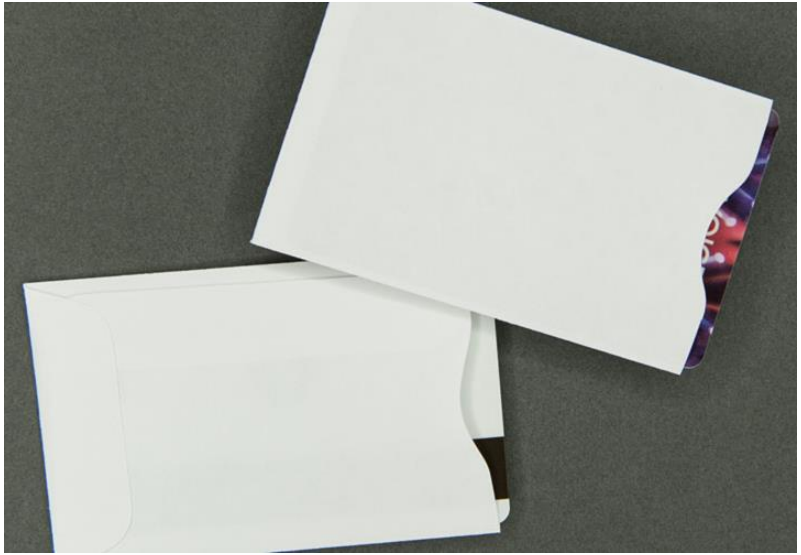
Digital Stewardship Curriculum

Temperature and Relative Humidity

- **Temperature:** 65-70 degrees Fahrenheit
- **Relative Humidity:** 30-40% (fluctuating less than 10% per day)
- Cold storage for sensitive materials: color photographs, nitrate film, or acetate film.

Handling and storage

- Clean hands, or gloves - keep food away!
- Passed PAT: Folders, sleeves, envelopes - some flat
- Paper enclosures, mylar
- Organize by similar size, not overcrowded
- If displaying
  - Light
  - Mounting



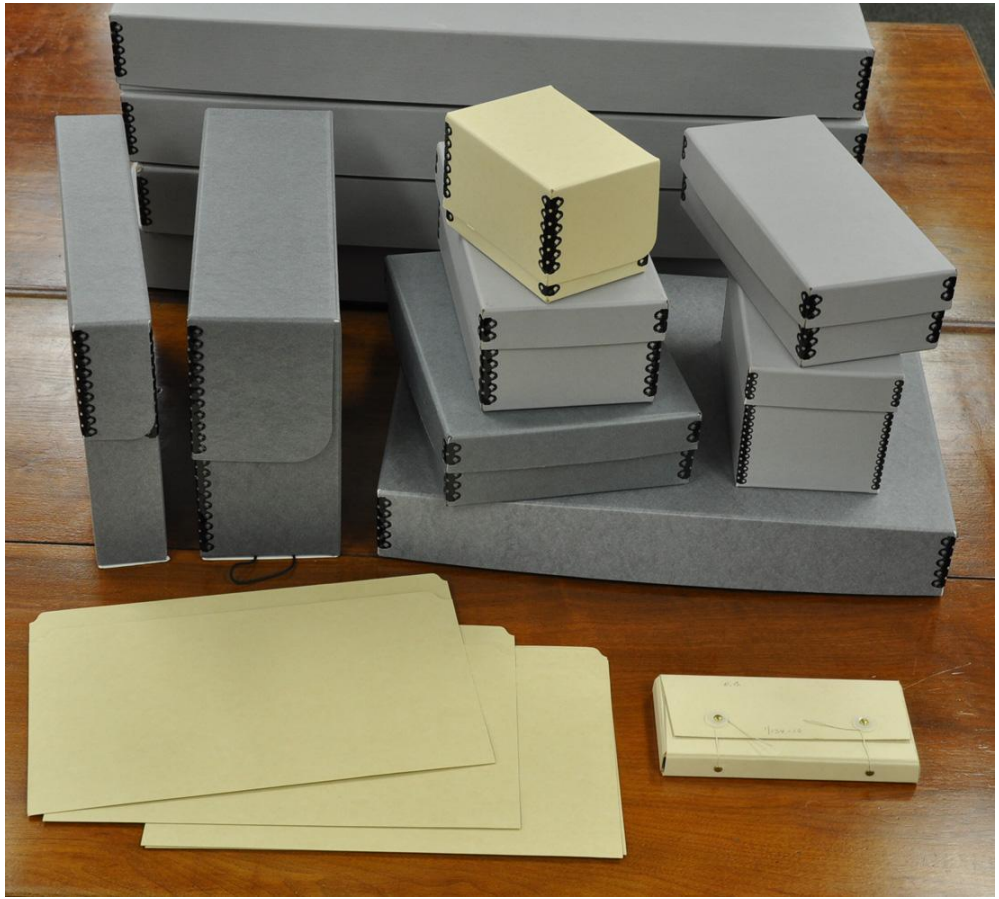


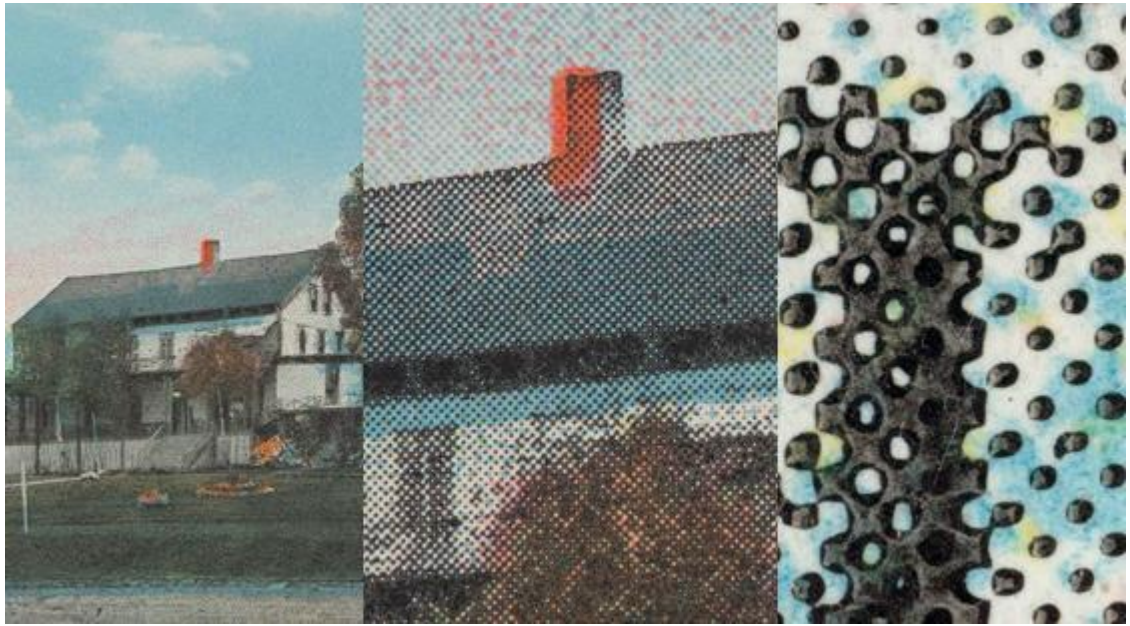
Photo Formats

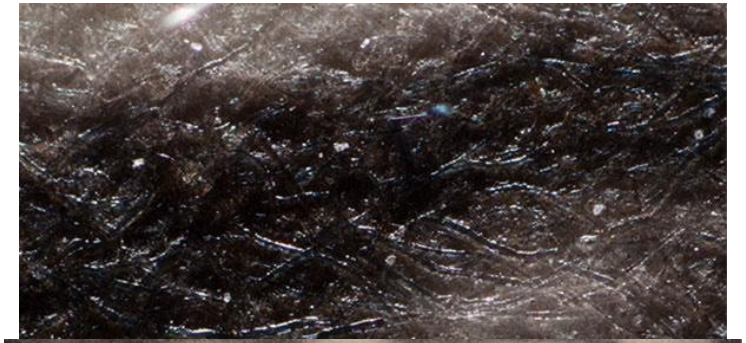
- Photograph Process, Photograph Type
- Negatives and Prints
- Ways to identify
  - Support material
  - Color and tone
  - Surface
  - Size
  - How the photo is deteriorating

Support materials

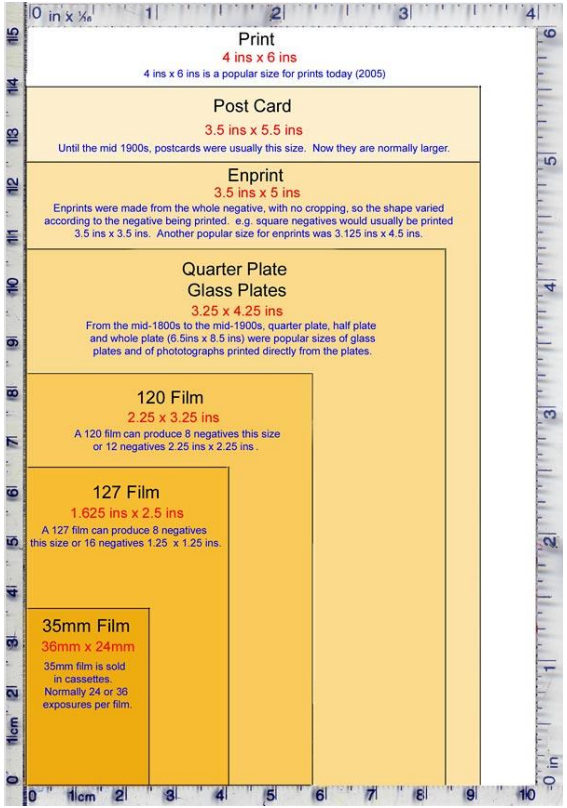
Color and Tone

Surface





Size


Print
4 ins x 6 ins
4 ins x 6 ins is a popular size for prints today (2005)
Post Card
3.5 ins x 5.5 ins
Until the mid 1900s, postcards were usually this size. Now they are normally larger.
Enprint
3.5 ins x 5 ins
Enprints were made from the whole negative, with no cropping, so the shape varied according to the negative being printed. e.g. square negatives would usually be printed 3.5 ins x 3.5 ins. Another popular size for enprints was 3.125 ins x 4.5 ins.
Quarter Plate
Glass Plates
3.25 x 4.25 ins
From the mid-1800s to the mid-1900s, quarter plate, half plate and whole plate (6.5ins x 8.5 ins) were popular sizes of glass plates and of photographs printed directly from the plates.
120 Film
2.25 x 3.25 ins
A 120 film can produce 8 negatives this size or 12 negatives 2.25 ins x 2.25 ins .
127 Film
1.625 ins x 2.5 ins
A 127 film can produce 8 negatives this size or 16 negatives 1.25 x 1.25 ins.
35mm Film
36mm x 24mm
35mm film is sold in cassettes. Normally 24 or 36 exposures per film.

Deterioration

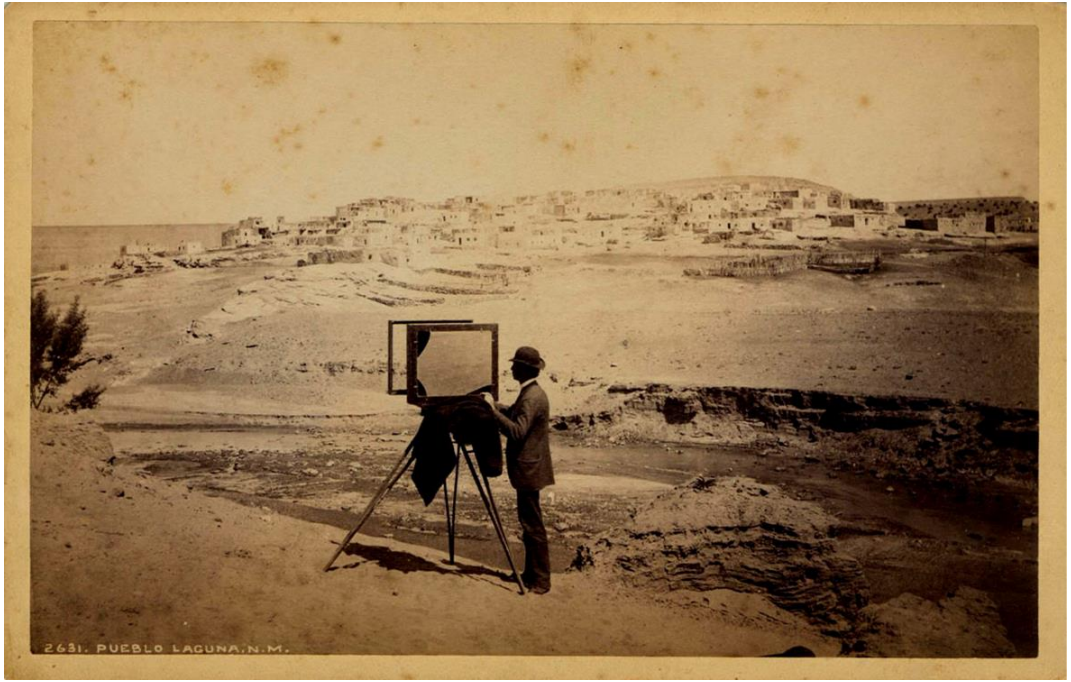


Photo dating and metadata

- Family, community, land history
- Clothing and hairstyles
- Scenery, background, event information

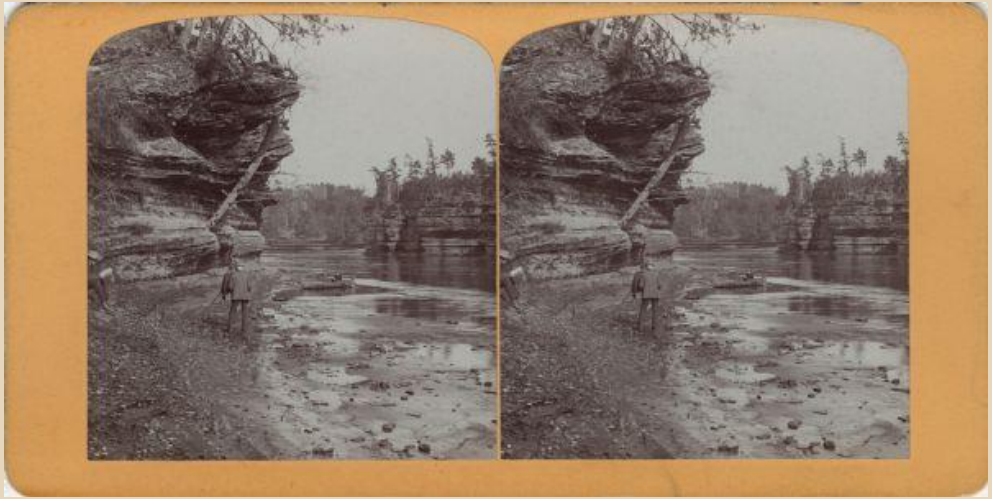


Photo dating and metadata

- Notch codes
- Photographer information
- Metadata written on or attached to photos, envelopes
- Metadata from related items or collections
- People, elders ID people, places, activities

Photo ID resources

- Graphics Atlas website
- PSAP - Photos and Negatives
- Workshops - historical societies, universities
- Books:
  - Care and Identification of 19th Century Photographic Prints
  - Photographs: Archival Care and Management

How to start digitizing?

- In house
- Collaboration
- Outsourcing

Good	Better	Best
$100-200	$1500-1700	$2000-3000

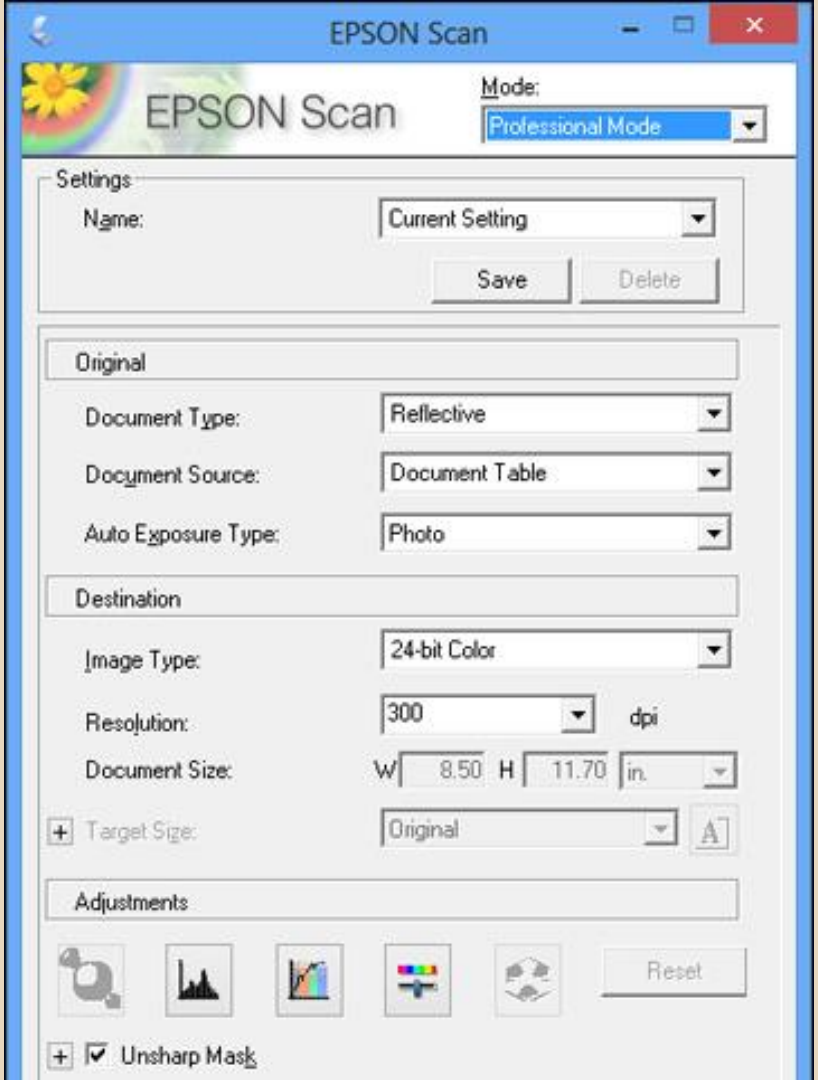
Copy stand with camera

Large format

Slide scanner

Questions to Consider

- What is being digitized?
- Where are the files going?
- Where will they be stored?
- Who will create them?
- What guidelines will be followed?
- What are the technical specifications?


EPSON Scan
EPSON Scan
Mode:
Professional Mode
Settings
Name:
Current Setting
Save
Delete
Original
Document Type:
Reflective
Document Source:
Document Table
Auto Exposure Type:
Photo
Destination
Image Type:
24-bit Color
Resolution:
300
dpi
Document Size:
W
8.50
H
11.70
in.
Target Size:
Original
Adjustments
Reset
Unsharp Mask

File Copies - Master and Access

- Preservation Master
- Access Copy
- Web-ready derivative

Standards for Images and Documents

Where can I find them?

- FADGI http://www.digitizationguidelines.gov/guidelines/
- Library of Congress Sustainable Formats http://www.digitalpreservation.gov/formats/intro/intro.shtml
- Library of Congress, NARA, Universities

File Formats

Best Practice:

- Master: TIFF (uncompressed)
- Access: JPEG (compressed)

- Other formats:

DNG (RAW); JPEG 2000, PDF, PNG, GIF

Resolution

Resolution: The number of pixels in each dimension that can be displayed - the density of pixels in the image.

PPI: pixels per inch (DPI = dots per inch)

4000-6000 pixels on long edge

The image to the left is from an image with nearly 3000 pixels along the long edge. The image on the right is from the same image with roughly 300 pixels along the long edge.

Finding an Item’s Best Resolution

- Measuring the long edge with a ruler
- 4000-6000 pixels on long edge
- Desired pixels divided by inches = Pixels Per Inch
- Use equation, or chart

Verso of Archival Material (Content Information Only)		Legacy Digitization (former standard of 300 ppi)		Photographic Content (Transmissive and Reflective)		Photographic Content (Reflective)		Manuscript and Textual Material	
Length of long edge (inches)	Digitization Resolution	Length of long edge (inches)	Digitization Resolution	Length of long edge (inches)	Digitization Resolution	Length of long edge (inches)	Digitization Resolution	Length of long edge (inches)	Digitization Resolution
1.0	2000	1.0	3000	1.0	6000	1.0	5000	1.0	4000
1.5	1350	1.5	2000	1.5	4000	1.5	3500	1.5	3000
2.0	1000	2.0	1500	2.0	3000	2.0	2500	2.0	2000
2.5	800	2.5	1200	2.5	2400	2.5	2000	2.5	1600
3.0	675	3.0	1000	3.0	2000	3.0	1675	3.0	1350
3.5	575	3.5	875	3.5	1750	3.5	1450	3.5	1150
4.0	500	4.0	750	4.0	1500	4.0	1250	4.0	1000
4.5	450	4.5	675	4.5	1350	4.5	1125	4.5	900
5.0	400	5.0	600	5.0	1200	5.0	1000	5.0	800
5.5	365	5.5	550	5.5	1100	5.5	925	5.5	750
6.0	335	6.0	500	6.0	1000	6.0	850	6.0	675
6.5	310	6.5	475	6.5	925	6.5	775	6.5	625

Bit Depth

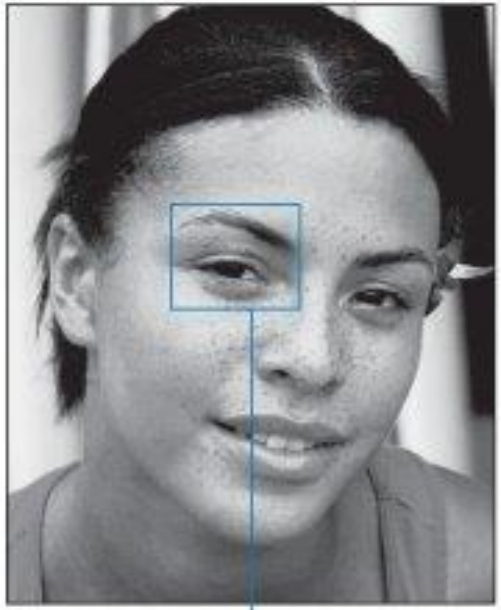
Bit depth: the color information stored in an image. (The higher the bit depth, the more colors an image can store.)

8 bit: 2^8= 256 colors

16 bit: 2^16 = 65,536 colors

24 bit: 2^24 = 16,000,000+ colors

48 bit: 2^48 = 3,000,000,000 colors



1 bit
2 possible values

2 bits
4 possible values

4 bits
16 possible values

8 bits
256 possible values

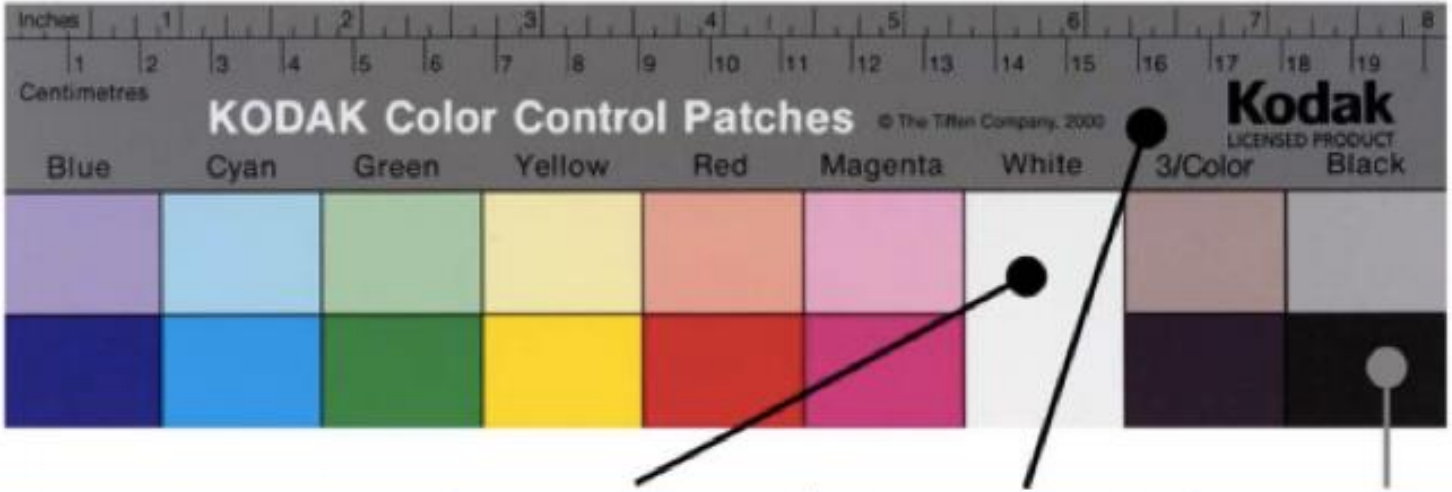

2-bit Color
4-bit Color
24-bit Color

Technical Specs - Color Mode and Tone

Color Mode: How colors combine over channels - each type of mode has a different number of channels.

Adobe RGB (1998) or **Adobe sRGB**

Tone: Range of values in an image - you want the whites not too bright and the blacks not too dark. Each pixel has a value of **0 - 255**.



		Neutralized White Point	Neutralized Mid Point*	Neutralized Black Point
Color Patch/Area		White	Gray Background	Single Color Black
Aimpoint	RGB Levels	237-237-237	102-102-102	23-23-23
	% Black	7%	60%	91%
Acceptable Range for Aimpoint	RGB Level	233 to 241	98 to 106	19 to 27
	% Black	5% to 9%	58% to 62%	89% to 93%

*Aimpoint for mid point (MP) to be calculated from actual values for white point (WP) and black point (BP) using the following formula: MP = WP – 0.63(WP – BP)

Photograph Identification Activity

Use worksheets, work in pairs, to match the photographic process with the print.

Graphics Atlas - tool for identification help