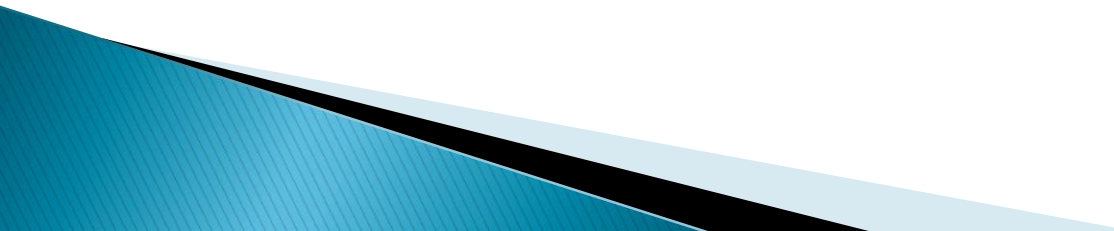# Printing

David Pearson
U3A Digital Imaging Group
18 July 2014
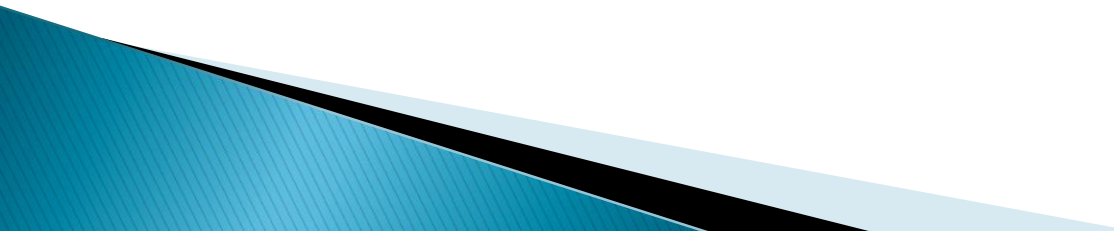
Printers

- Three types:
  - Inkjet – the best for photographic purposes
  - Dye Sub – not much used any longer
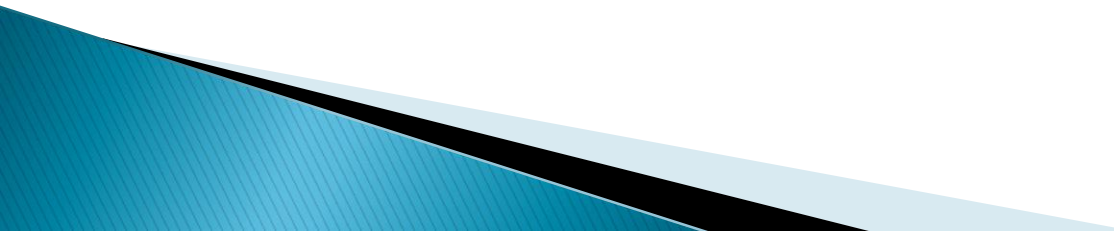 - Laser – fast and cheap to run but print quality lacking in domestic machines.

Inkjet Printers

- Can be A4, A3, A3+ (or bigger)

- Cheaper and 'all-in-ones' will give acceptable results

- Photo quality printers give best range of tones

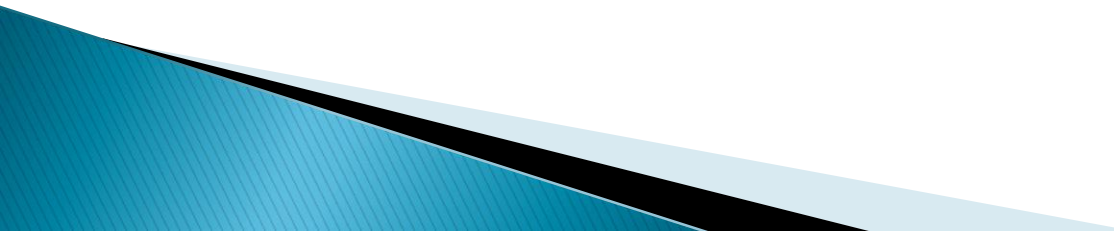- Cost £50 - £500. You get what you pay for.

- Epson, Canon, HP all good makes.

Inks

- Dye based inks give brightest image but will fade in time

- Pigment inks are a little more subdued but will last 99 years+

- 4 – 10 different coloured inks. More inks give better tonal control.

- Best to start with printer manufacturer's own ink, though expensive, until confident.

- Cheaper inks may give inconsistent colour and/or block jets.

Paper

- Inkjet paper – useless for photographs

- Photo quality inkjet paper – OK for proofs

- Photo paper – the cheapest for acceptable prints

- Premium glossy, etc. – excellent quality, ~ 40p a sheet for A4.

- Archival, textured and specialist papers can give superb results but £2 a sheet.

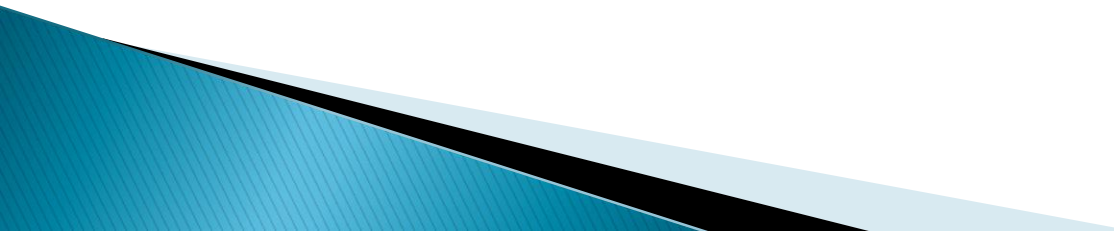- Best to use manufacturer's own paper until confident.

Maintenance

- Leave printer switched on at the mains.

- Use it once a week.

- Run nozzle check before serious printing session.

Before you start

- Load the printer drivers that came with the printer

- Print from Photoshop or other photo software.

Windows has a built in universal driver. This can be useful if your old printer driver is not supported by later versions of Windows, but facilities are limited.
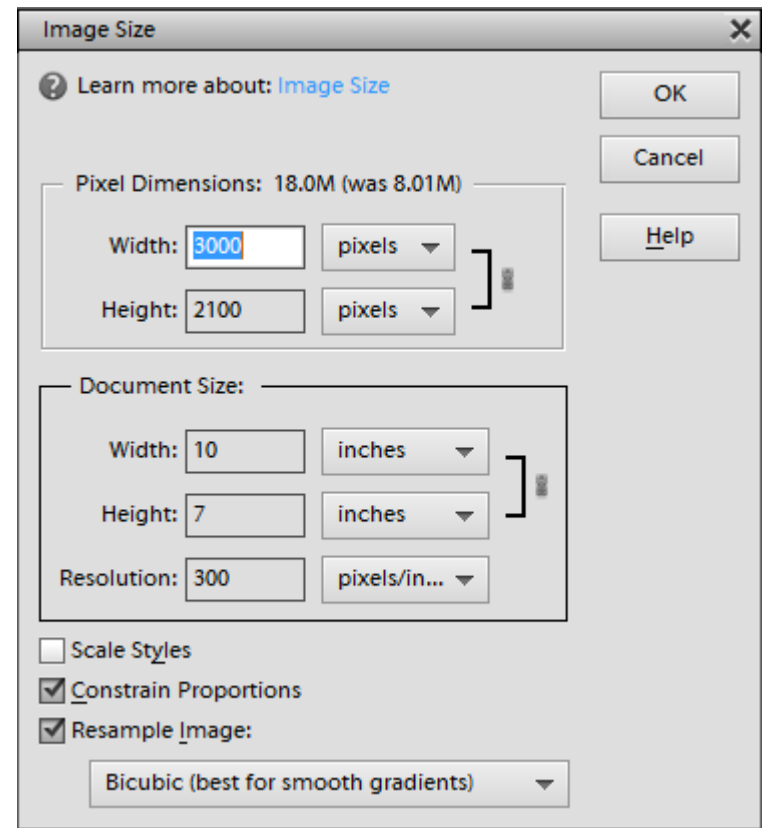
Prepare your image

- Make all adjustments (exposure, contrast, colour balance, cloning, etc.) on original (or copy) high resolution image.

- Resize image according to desired print size

- Examine image at 100%

- Sharpen at 100%

- Set printer properties

- Print.

Resize the image

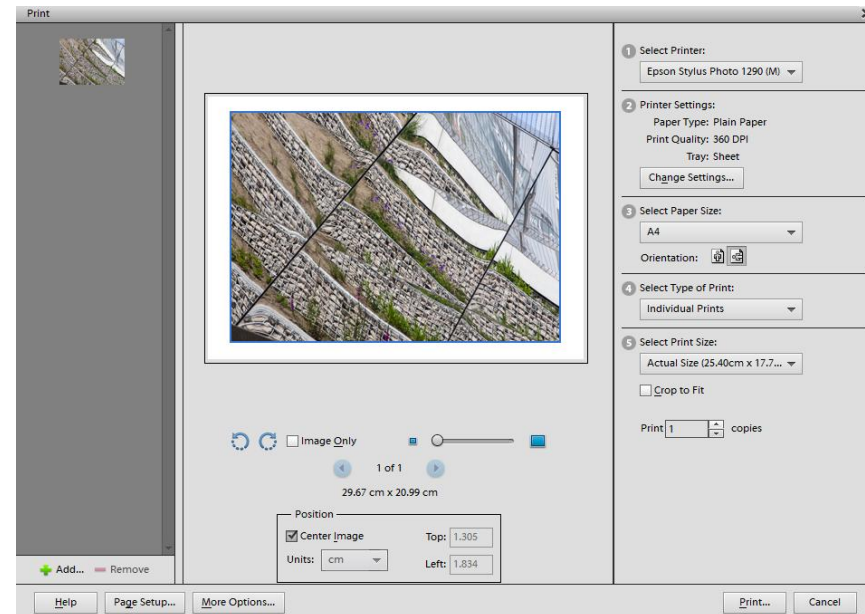- Recommended resolution for photographs is 300 pixels per inch (ppi)

- The eye will hardly detect any difference down to about 180 ppi.

- To print an image on A4 paper, say 10" x 7", at 200 ppi, you must resize the image to 2000 pixels by 1400 pixels.

- At 300 ppi it will be 3000 by 2100.

- Use bicubic method.

Image Size ✕

? Learn more about: Image Size

OK

Cancel

Help

Pixel Dimensions: 18.0M (was 8.01M)

Width: 3000   pixels ▼

Height: 2100   pixels ▼

Document Size:

Width: 10   inches ▼

Height: 7   inches ▼

Resolution: 300   pixels/in... ▼

☐ Scale Styles

☑ Constrain Proportions

☑ Resample Image:

Bicubic (best for smooth gradients) ▼

Set up print
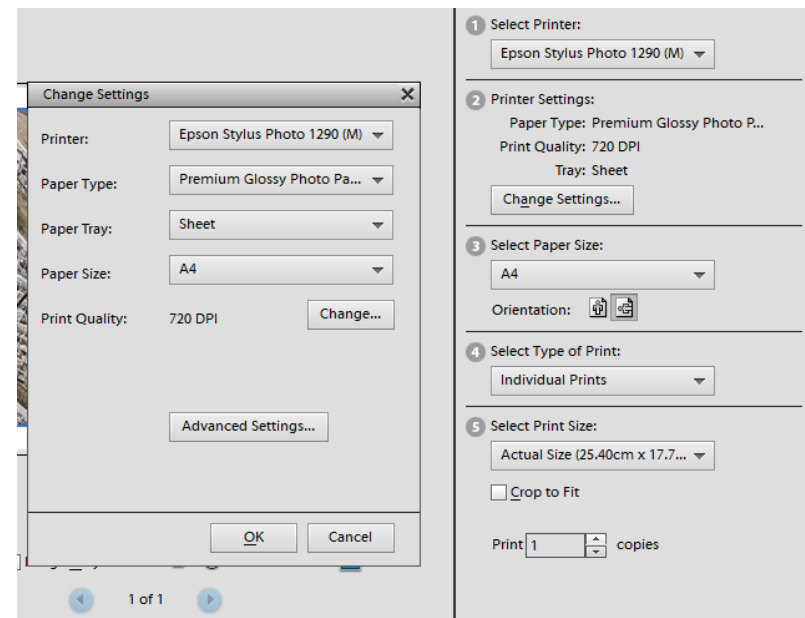
- Select printer

- Select paper size

- Leave 'individual print'

- You have already sized the image so select 'Actual Size'

- Change position of image on paper if desired

Note that illustrations here are from Photoshop Elements and

a particular printer. Other combinations may look different.

Set up print 2

▸ For printer settings, click on 'change settings'

▸ Select the correct paper type, or the nearest to it if not listed
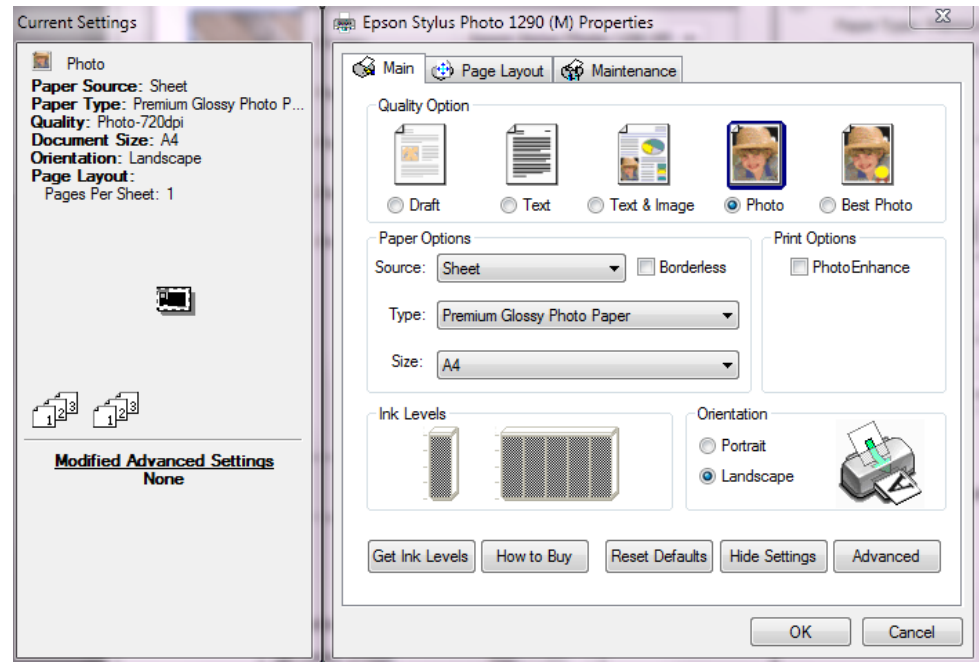
▸ For print quality, click on 'change'
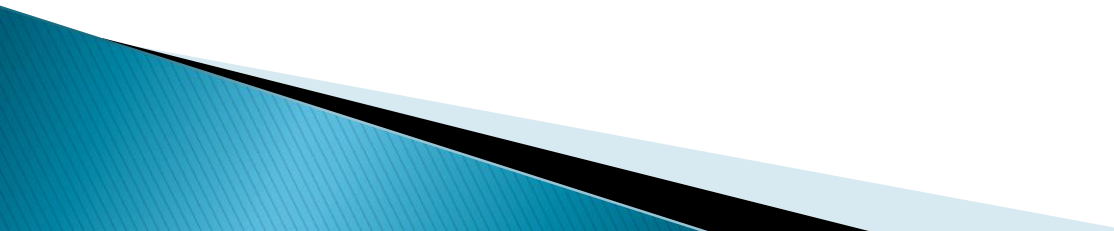
Set up print 3

▸ Select the print quality.

Where this is given as text, choose as appropriate. You may well find that one down from the best gives a satisfactory print and may be faster and use less ink.

Some printers define quality in terms of dots per inch (dpi). Again, try one down from the highest figure given, probably 720 or 1440 dpi.
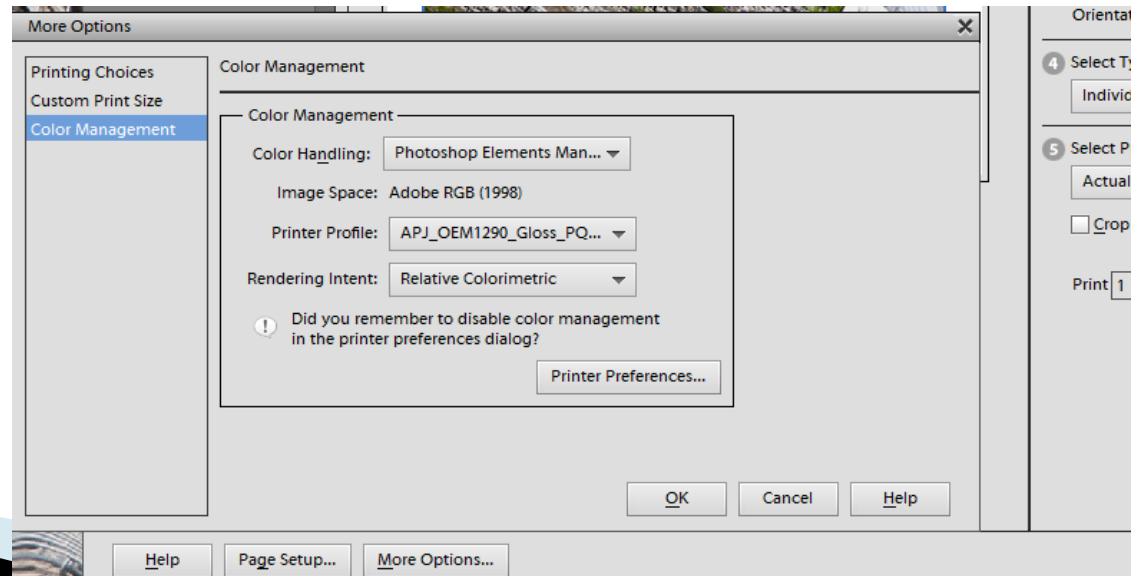
▸ Click 'OK' twice and 'Print'.

Colour Management

- How to get the print looking the same as the screen

- If the print seems too dark it probably isn't – it's the screen that's too bright. Turn it down.

- If your monitor offers different modes, choose 'standard', 'neutral' or 'sRGB'.

- The only way to ensure complete accuracy is to use proper screen and printer profiles. Most modern equipment is fairly accurate out of the box if you stick to the manufacturer's paper and ink.

- Software is available to calibrate monitors but is not as accurate as using a proper hardware calibration tool.

Colour Management 2

▸ Printer profiles for the manufacturers paper and ink will have be installed with the printer driver.

▸ Profiles for other reputable makes of ink and paper can be downloaded from the maker's website, or custom profiles can be supplied. You need a separate profile for each ink/paper combination.

▸ To use these profiles click on 'more options' in the printer driver.

▸ Set Color Handling to 'PSE manages color' and select the appropriate printer profile.

Colour Management 3

▸ Now click on 'printer preferences' and then on 'advanced'.

▸ Ensure that 'no color adjustment' is selected. Otherwise both Photoshop AND the printer driver will try to correct colours, resulting in a double correction and an overall colour cast.