

# OCC Program Applications Image Preparation Guide

The world of digital image management can be confusing. Let's start with a look at some commonly confused terms:

## Understanding DPI, PPI, LPI, SPI

**Resolution** is a measurement of the output quality of an image. DPI, LPI, PPI and SPI are all terms referring to resolution and which one you use depends on the output you are referring to.

**DPI (Dots Per Inch – Printer Resolution)** is the measurement of how many dots of ink per inch a printer can print. It is not a measure of scanned images, and not the resolution of images on your screen (however DPI is widely misused in place of LPI, PPI and SPI). DPI is entirely related to the quality of the printer used to print your images.

**LPI (lines per inch – Printer Resolution)** is used for printing and is a measurement of the line frequency of halftone spots. Printers lay down lines of halftone dots to create gradients, the greater the LPI the more continuous gradients will appear. The lower the lines per inch the more obvious the halftone spots will be.

**PPI (Pixels Per Inch – Display Resolution)** is the number of pixels used in the display of an image on screen. What PPI a graphics program displays an image at is not the images resolution but the display resolution for that program. Some programs such as Adobe Photoshop use PPI correctly to refer to display resolution while other programs such as Corel Draw use the term DPI incorrectly to refer to display resolution. SPI and PPI are often used interchangeably.

**SPI (Samples Per Inch – Scanning Measurement)** is a measurement of the amount of information a digital image is composed of. A digital image is composed of samples and information about how to display that image. The number of samples and information per inch is the SPI. When an image is scanned the scanning resolution is measured in SPI. Some scanner manufacturers incorrectly use the term DPI in their scanning software when the information they are referring to is actually SPI. Scanning at an insufficient resolution relative to the print output you desire will result in lower quality printed images. Scanning at a higher SPI than is necessary relative to the print output you desire will result in unnecessarily large file sizes.

## What image resolution and dimensions does the OCC require for their print publications?

The higher the printer DPI the more detail and subtle gradients the printer can simulate. The OCC uses printers that print at 300 DPI or higher. This means your digital image must have an SPI of at least 300 SPI. You must also take into consideration the dimensions that the image will be printed at since an image that is 300 SPI but only 3 inches wide will not maintain it's 300 SPI if blown up to print at 10 inches wide.

Many graphics programs (like Corel Draw) use the term DPI when what they are referring to is SPI.

The Ontario Crafts Council requires images for print be 300 dpi and the dimensions as close as possible or exceeding 3375 pixels high and 2625 pixels wide.

You will not be able to tell the resolution of your digital image on a monitor because monitor resolutions are very low. This is why an image might look good on the low resolution of a monitor but print poorly.



Ontario Crafts Council

990 Queen Street West  
Toronto, Ontario M6J 1H1

Tel: 416-925-4222 ext.222  
Fax: 416-925-4223  
awards@craft.on.ca  
www.craft.on.ca/awards

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## How do I change the dimensions and resolution of my digital image?

1. Open your digital image within your photo editing software. If you do not have photo editing software and you may wish to download the free image editing software “Infranview” from <http://www.tucows.com/preview/194967>.  
*Note: The OCC is not responsible for third party software programs or websites.*
2. Look for an “Image Size,” “Resize” or “Print Size” command. This should lead to a dialog box where you can change ppi.

If you are working with Infranview, click “Image” and select “Resize/ Resample.” In the “Resize/Resample image” dialogue box ensure “Preserve aspect ratio” is selected. Within the “Set new Size” area ensure the “Units” selected are pixels and change the “Width” and “Height” fields according to the final print output dimensions you require. (If you are preparing your photos for OCC print publications then the dimensions would be as close as possible or exceeding 3375 pixels high and 2625 pixels wide.) Note that what Infranview is referring to as DPI is actually PPI.

For those not using Infranview, if you see an option to “Resample” the image make sure this is disabled (resampling is explained in step 3). If you see an option to “constrain proportions” or “keep aspect ratio” make sure this is enabled, it will prevent your image from being distorted. Once you have done this enter the final print output dimensions you require (see OCC print requirements in the preceding paragraph).

3. If after you resize your image your PPI is less than 300 then your image will not produce a high quality print.

It may be tempting to “Resample” your image to a larger size. Resampling uses a process called interpolation where the values of the pixels the software needs to add to your image to increase it’s size are determined based on estimating the values of surrounding pixels. The result is a blurring of the image which will be particularly noticeable in areas of your image which have sharp lines or distinct colour changes.

You can only increase the PPI of your image while preserving image quality if you resize your image to print dimensions that are smaller than the original image.

4. Save your file as a high quality .jpg file under a new name. The OCC file naming convention for print ready digital images is your last name followed by your first initial, the last 2 digits of the current year, “p” which indicates this is a print ready file and finally an “\_” and the number you wish to assign this digital image.

*Examples: smithjo8p\_01.jpg, and smithjo8p\_02.jpg*

## How do I prepare my images so they can be used on the web?

DPI is not applicable to the web as no printing is involved and DPI is a term which refers to printers, however due to the wide misuse of the term DPI you will often see the required PPI for web ready graphics written as 72 DPI.

The steps for adjusting your image dimensions and PPI in preparation for web use are the same as preparing your image for print use, except the PPI and dimension specifications differ. Since monitors display at a low resolution the PPI required for web use is 72 PPI. Therefore, to prepare your images for the web follow the directions listed in “How do I change the dimensions and resolution of my digital image?.” If you are preparing your images for web use by the OCC your images should be 72 PPI (or DPI if that is the way your software refers to resolution), in .jpg format with dimensions as close as possible without exceeding in either direction 298 pixels high by 335 pixels wide.

The OCC file naming convention for print ready digital images is your last name followed by your first initial, the last 2 digits of the current year, “w” which indicates this is a web ready file and finally an “\_” and the number you wish to assign this digital image.

*Examples: smithjo8w\_01.jpg, and smithjo8w\_02.jpg*



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