# Preparing Images

Introduction

When using images in articles, adverts and forms spending just a few minutes on preparing the image for use on the web, can both save on download time and improve the overall appearance of the final document. . The following provides just a few tips on how best to prepare your image for publication using some of the most popular image editing applications; if you do not have one of these applications you may be able to find similar features in your software:

Size the picture correctly

By re-sizing the image to the correct dimensions before uploading the image you can not only create a smaller file (and therefore save time in the upload process) you may also be able to produce a better looking image which displays more quickly on your church web site.

Pixels and dimensions

Every image stored on your computer is made up of a number of 'dots' known as pixels. Pixels have no set physical size; the size of your image when it appears on a web page will depend on how many pixels the computer has to fit into the dimensions of your screen (this is known as **display resolution** and is expressed as *pixels per inch (ppi)*). Each pixel in your image will use one pixel of your screen by default; as the illustration below shows if, for example, an image is 256 pixels wide it will occupy 1/4 of the width of the screen when your display resolution is set to 1024 x 768 pixels but it will occupy about 40% of the width of the screen when the display resolution is set to 640 x 480 pixels.
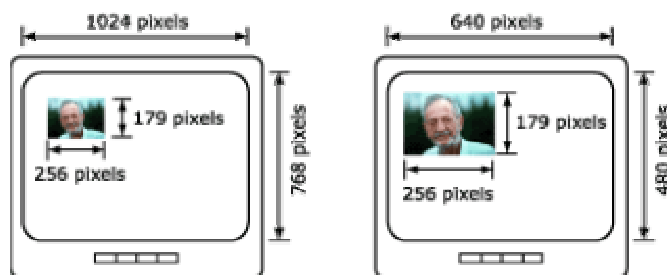
The display resolution is determined by the **display properties** of your operating system:

To check the display resolution in Windows 98, Me or 2000

↻ Click the **Start** button to display the start menu.

↻ Hover over the **settings** option and select **control panel**.

↻ Click on the **display** option in the control panel to show the display properties window.

↻ Select the **settings** tab. The screen area value (usually expressed as a number such as 640x480, 800x600, 1024x768) indicates your display resolution.

To check the display resolution in Windows XP

↻ Click the **Start** button to display the start menu.

- ⟳ Select the **control panel** option.

- ⟳ If you are using the category view to display your control panel select the Appearance and Themes followed by the change the screen resolution option.

- ⟳ If you are using the classic view to display your control panel select the display option.

- ⟳ Select the settings tab. The screen area value (usually expressed as a number such as 640x480, 800x600, 1024x768 etc.) indicates your display resolution.

Once your image has been added to a document you can resize it using the image handles, **however** this will not change the number of pixels in the image. Instead, the box that is used to 'contain' the image is resized and the image is 'squished' or expanded to fit into this box by the web browser. Consequently the **size of the file will remain unchanged**, and the result is often much less appealing than an image which has been sized to the right dimensions before uploading.

The two images below were included in a document; the first was a large image resized to the appropriate dimensions inside the document editor, the second was resized to the correct dimensions before uploading:

A 750 x 563 pixels gif file 166.9K in size. This would take 31 seconds* to upload to the **media** view in the web office.

A 227 x 170 pixels gif file 19.94k in size. This would take only 5 seconds* to upload to the web office. Notice how the definition of the speech bubble is much improved.

* times are based on a 56k dial-up modem connection.

For this reason the dimensions of your image should be set correctly before adding it to a document. You can resize an picture using image editing software as follows:

1. **Using the media view**

   If the image you wish to re-size has already been uploaded to the media view you can re-size it as follows:

   - ⟳ Display the **media** view for the content folder of your choice.

   - ⟳ Click on an image thumbnail as illustrated below:

   - ⟳ The **image properties** pane will be displayed shortly afterwards.

- ➲ Resize your image using one of the following methods:

  - o **Using the width and height paramaters** - enter new dimensions in the fields provided (the current size of the image is given in pixels). If you would like to keep the dimensions proportional tick the **keep original aspect ratio** option; when a new dimension is entered in either field the other will adjusted automatically by pressing the **tab** key on your keyboard.

  - o **Using the select size drop-down** - select a new size from the options available; for each option the largest dimension of your image will be changed to one of the sizes below:

Tiny	largest dimension of 100 pixels
Small	largest dimension of 200 pixels
Medium:	largest dimension of 340 pixels
Large:	largest dimension of 500 pixels
Huge:	largest dimension of 750 pixels
Custom:	this option will be automatically selected when the dimensions have been altered from one of the presets.

  - o **Using the resize handles** - click the image preview to display the resize handles around the border of the image. Select one of the resize handles and hold the mouse button down then drag the mouse to resize the image.

- ➲ The image preview at the top of the **image properties** window will be updated show a representation of the new dimensions although at this stage the final image quality may not be representative.

- ➲ Once you have finished editing the properties of your image click the save button to commit your changes and return to the media view.

Note: any articles, adverts or forms containing the image you have just resized will be updated with the new size image unless the image has been manually resized within the document.

- ➲ If you have resized the image you can check the appearance of the image with new dimensions by re-displaying the **image properties** window and

clicking the internet browser **refresh** button (you can also do this by pressing the **F5** key in Windows® Internet Explorer).

Using the media view to re-size images will not reduce the time take to upload the image but it will save time for those people displaying the images on the church web site. The image below shows how the same 750 x 563 image has been re-sized using the media view:

2. **Using Microsoft® Paint**

Microsoft® Paint can be found on most computers using a Microsoft® Windows operating system. Use this application to re-size your image prior to uploading it as follows:

- ➲ From the **file** menu at the top of the screen select the **open** option.

- ➲ Select the file you wish to re-size using the **open** dialogue box. Use the **files of type** option to select the display the appropriate images types if necessary.

- ➲ Click the **open** button to load the image.

- ➲ From the **image** menu select the **stretch/skew** option.

- ➲ Enter a new size as a percentage of the existing size; click **OK** to confirm your action. The image will be re-sized shortly afterwards.

- ➲ From the **file** menu select the **save as** option.

- ➲ Enter a name for your new file and select an appropriate location to store it. Click the **save** button to complete the process.

The following image was re-sized using Microsoft® Paint:

3. **Using Microsoft® Photo Editor**

Microsoft® Photo Editor is supplied free of charge with a number of Microsoft® operating systems. Re-size an image using this application as follows:

- From the **file** menu at the top of the window select the **open** option.

- Select the file you wish to re-size using the **open** dialogue box. Use the **files of type** option to display the appropriate images if necessary.

- Click the **open** button to load the image.

- From the **image** menu select the **resize** option.

- Enter a new size for the image *either* as a percentage of the original image size *or* as new dimensions in pixels (use the **units** setting to change between these two options).

- Click the **OK** option to confirm your action.

- From the **file** menu select the **save as** option.

- Enter a name for your new file and select an appropriate location to store it. Click the **save** button to complete the process.

The following image was re-sized using Microsoft® Photo Editor:

4. **Using Jasc Paint Shop Pro 8**

Paint Shop Pro is a low cost graphics editing package widely used for home image editing.

- From the **file** menu at the top of the screen select the **open** option.

- Select the file you wish to re-size using the **open** dialogue box. Use the **files of type** option to select the display the appropriate images types if necessary.

- Click the **open** button to load the image.

- From the image menu select the **resize** option.

- In the pixel dimensions area enter a new size for the image *either* as a percentage of the original image size *or* as new dimensions in pixels as illustrated below:
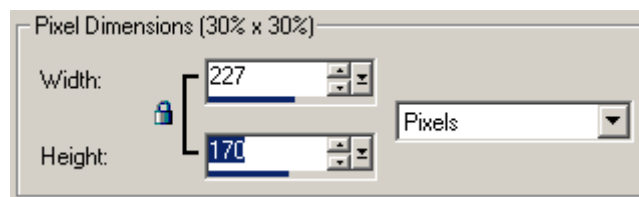
- Click the **OK** button to confirm your action; the image will be re-sized shortly afterwards.

- From the **file** menu select the **save as** option.

➲ Enter a name for your new file and select an appropriate location to store it. Click the **save** button to complete the process.

The following image was re-sized using JASC Paint Shop Pro 8:

5. **Using Adobe Photoshop**

Adobe® Photoshop is probably the most popular professional tool for image editing.

➲ From the **file** menu at the top of the screen select the **open** option.

➲ Select the file you wish to re-size using the **open** dialogue box. Use the **files of type** option to select the display the appropriate images types if necessary.

➲ Click the **open** button to load the image.

➲ From the **image** menu select the **image size** option.

➲ In the pixel dimensions area enter a new size for the image *either* as a percentage of the original image size *or* as new dimensions in pixels as illustrated below:
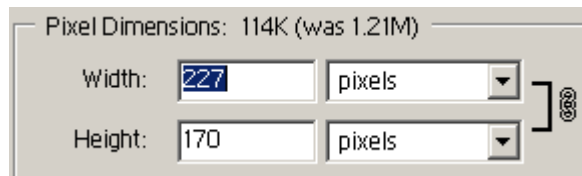
➲ Click the **OK** button to confirm your action; the image will be re-sized shortly afterwards.

➲ From the **file** menu select the **save as** option.

➲ Enter a name for your new file and select an appropriate location to store it. Click the **save** button to complete the process.

The following image was re-sized using Adobe® Photoshop:

As a 'rule of thumb' you should ensure that your images do not exceed the following maximum dimension recommendations as follows:

	Max dimensions
Articles & forms in normal use	550 pixels wide max.
Articles & forms used as a group home page	360 pixels wide max.

The maximum dimensions for an advert will vary according to the layout of your web site.

Choose an appropriate file type

Two different types of image file can be added to your document as follows:

Graphics Interchange Format (.gif) - suitable for computer generated images such as logos, lines or short animations. The GIF file format allows for a maximum of 256 colours in an image but can be configured to have as few as 2 colours. It works by identifying blocks of exactly the same colour and recording information about these blocks, rather than having to record information about every pixel. Simple images (using a fixed palette of colours) produce very small files - which will display quickly on your web site.

JPEG interchange format (.jpg, or .jpeg) - suitable for scanned pictures or photographs. The jpeg file format allows for 16.7+ million colours in an image, and works by efficiently storing the small colour changes that occur as you look across an image. Complex images with subtle changes in shading such as photographs, are realistically reproduced with a very small file size.

Example 1 - saving a photo image

original image - the original uncompressed file size was 6.92Mb

GIF format - close up of the wheel rim after the image has been saved in the GIF format using 64 colours. The file size in this case was 687Kb

JPEG format - close-up of the wheel rim after the image has been saved in the JPEG file format using a high quality setting. The file size in this case was 279.6Kb

Notice how the JPEG image represents the smooth graduation of colour much clearer than the GIF format image; the JPEG file format therefore produces a better looking photos with a much smaller file.

Example 2 - saving a computer generated image

GIF format - close up of the logo after the image has been saved in GIF format using 64 colours. The file size in this case was 2.5K

JPEG format - close up of the logo after the image has been saved in JPEG format using a medium quality setting. The file size in this case was 3.2k

Notice how the JPEG file format has blurred edges on the circles of colour and a 'blocky' effect inside the white text; the GIF format on the other hand has crisp edges and pure white inside the text. The GIF file format therefore produces a better looking computer created image with a much smaller file.

Notes about optimizing images.

Before saving an image in either the GIF or JPEG file format most image editing applications will allow you to change some of the image parameters in order to optimize the size of the file and speed up the display on the image on your church web site. The parameters that are available vary according to the image editing application and the type of file; below are some of the most commonly found parameters:

Optimizing an image for saving in GIF format

A size of a GIF format file is directly related to the number of colours stored in that image; the best way to reduce the size of the file therefore is to use as few colours as possible. The following settings are often used to help select an appropriate palette of colours for your image:

↻ **Number of colours** - a GIF format file can have as few as 2 colours or as many as 256 colours; the fewer the colours, the smaller the file.

↻ **Colour selection method** - when the number of colours in your image is greater than the number of colours you have selected for the final file the image editing application can use various models for selecting the most appropriate colours (these models are often labelled 'perceptual', 'selective', 'adpative', 'optimized median cut' or 'optimized octree'). The advantage of the GIF format is that you can also make one of the colours in your palette a transparent colour so that irregular-shaped images blend seamlessly with the background of your church web page.

In some image editing applications you will also have the opportunity to restrict your colour palette to a web-safe selection. If the computer displaying the image is set to display only a limited range of colours (e.g. 256 colours), the internet browser application will automatically reduce the number of colours it can display accordingly. This means that if you have chosen to store your GIF format image with a 64 colour palette, but those colours do not feature in the 'web-safe' palette they will be simulated using a dithering technique similar to the one described below. This feature is becoming less common as computer displays become more advanced and should not be a major concern.

↻ **Dithering** - in order to simulate colours in the image that are not part of the colour palette dithering takes adjacent pixels of two colours to make a third colour. For example, alternating red and yellow pixels will produce orange as shown below:

 - final colour

 - close up of the colour

Some image editing applications will also allow you to select from a range of dither algorithms as well as change the percentage of dither applied. Use the dither setting to produce less noticeable results from a limited colour selection.

Optimising an image for saving in JPEG format

The JPEG file format uses a compression algorithm to reduce the amount of information representing the image. The more compression the smaller the file but the lower the quality. The following parameters are often available when producing a JPEG file in an image editing application:

⮑ **Compression quality** - normally expressed as a value between 1 and 100 this setting is the primary influence on the size of a JPEG file.

⮑ **Blur** - the higher compression settings (i.e. those which produce the smallest file) will often produce blocky banding pattern such as those illustrated below:

The original image

The image stored as JPEG file with very high compression applied. Notice the dark purple bleeding into the dark green.

The image stored as a JPEG file with very high compression applied and a blur setting of 0.5. The banding in the green produced by the purple is made less noticeable by the addition of blur.

Note: reducing the number of colours prior to saving an image in JPEG file format will not reduce the file size.

Optimization settings for some of the most common image editing applications can be found as follows:

To set optimisation parameter for Microsoft® Photo Editor

⮑ From the **file** menu select the **save as** option.

⮑ At the bottom of the **save as** dialogue box click the **more** button to display the optimisation parameters.

To set optimisation parameters for JASC Paint Shop Pro

⮑ From the **file** menu highlight the **export** option and select **JPEG Optimizer** or **GIF Optimizer** as appropriate (these are also labelled **transparent GIF** and **JPEG** in some earlier versions of Paint Shop Pro).

⮑ Optimisation can be performed using the tabulated options available or by using the supplied **wizard**.

To set optimisation parameters for Adobe Photoshop

⮑ From the **file** menu select the **save for web** option.

⮑ Different optimisation settings can be compared alongside the original image using the tools provided. Commonly used settings can be added to a 'presets' list for later use.