

## The “How To” Recipe

Here's a simple way to take digital photos of artwork outdoors, which is a quality level suitable for submissions to shows and image archives. We will go over the most basic setup to do the job, but will answer questions from more advanced attendees.

### Pixels and Megapixels Explained

Pixels are tiny squares of color grouped together to capture the digital image on the camera sensor and display on the computer screen. 1 megapixel is 1 million of these pixels. A camera might be a 6 megapixel camera. This means that the image sensor in the camera is 3,000 pixels by 2000 pixels in size (3000x2000). Usually more pixels gives more detail in the image.

### DPI Explained

DPI is a term used in relation to printing only. It means Dots of printing ink Per Inch of paper. 300 DPI = 300 dots per inch in printing. For best quality printing, you need a minimum of one pixel of digital information translated to 1 dot on the printed page. If you have a 6 megapixel camera, the sensor longest dimension is 3000 pixels, so at 300 dpi, a 10 inch print is the largest quality print.

### Tripod & Easel

A cheap \$30 tripod is all you need to hold your camera in position and very steady. You will also need a stand or easel to hold the artwork. Set up the camera perpendicular to the artwork to avoid the “keystoning” of the perspective (not perfectly square) in the digital image. Using a small hardware store level is very helpful.

### Photograph Unframed Originals

This is best for photography. Unmatted is better still to avoid shadows from the edges of the matt or from the frame. Place a large black matt or plastic sign board behind the original and lightly tape the original to the black board. This cuts down on the glare of light from colored matts, frames or other background. Make sure the easel used is steady and balanced with this set up in case of wind outside. You may need to secure the board to the easel to secure it.

### The Light

Photograph outdoors for accurate colors. The best light is between 10am and 3pm on a sunny, cloudless, day. Make sure the artwork is angled to receive EVEN LIGHT over all, and that no shadows are cast from trees, branches, the photographer, etc. Sunlight should be lighting the art at about a 45 degree angle. It should be photographed without glass to avoid glare and reflections. You can photograph indoors with two matched wattage incandescent lights, but this is a more advanced setup, that we will on briefly describe.

### Camera Controls

Use the viewing screen on the back of the camera so you can see exactly how your artwork is centered. It's best to have a camera with some exposure control. Zoom in some on the subject to control perspective and keep the image level. Taking the photo without zooming in some will create a lens distortion or bowing of the edges of the artwork. This may require that you back up the position of the camera. You may need to move the position of the camera to get the ideal setup.

### White Balance

White balance is controlling & correcting the color of your light source. The light source can change the color of your picture. If

incandescent is orange, fluorescent lights are green. If in sunlight, set the **White Balance** to Sun or Daylight. If in Shade, remember to change the White Balance to Shade. Beware of additional color being reflected onto the artwork from nearby colored objects. Set the IMAGE QUALITY to its highest level. Do not use Auto White Balance setting for copying artwork.

### Taking the Photo

ISO is a setting on your camera to change the sensitivity of the camera sensor to light. A lower ISO number yields images of higher quality. Higher ISO setting numbers are for low light situations. For copying artwork use the lowest number ISO setting available on your camera.

Closer cropping is always better. Make the subject as large as possible in the picture frame or camera viewfinder/screen. Make sure the horizontal and vertical edges of your painting are parallel with the edges of your LCD viewfinder. To maximize the image size, rotate vertical art to horizontal to fill camera frame to get largest possible image area. Rotate vertical later.

Gently squeeze the SHUTTER RELEASE BUTTON half-way down. This makes the camera automatically set the camera exposure and focus on the painting. Then press the button the rest of the way to snap the picture. Use your camera to shoot alternate pictures a little lighter and a little darker than your normal setting using the +/- exposure override. This will control the very light areas in the photograph. If the white areas are gray, then you need to add (+) to the exposure. If the whites are white but don't show the detail in the painting, then you need to underexpose (-) the shot. Slightly underexposed is better than overexposed.

You might use the SELF TIMER feature if you are using a tripod and don't want to jiggle the camera. Refer to your camera's user manual if you don't know where these features are on the camera.

***Always preview the images on your camera and on your computer BEFORE you take down your setup! Take the memory card from the camera and preview at least one image on the computer to be sure all is OK.***

### Transfer Images to a Computer

Most digital cameras come with a cable to connect the camera to your computer for downloading images to the computer. You may also use a "card reader" which is a small cheap device that your camera memory card plugs into and the device plugs into a USB port on your computer, which is the same place that the cable from camera to computer would plug in.

Then copy your images to a folder on your computer. It is very important that you set up a folder for pictures. Then, within that folder, is a folder for each set of image downloads. That folder should be named, for example, with the date of the download and a name for the subjects; i.e. 20140128\_FlowerPaintings. In this way you can find these images in the future. It is also helpful to rename the image file name, e.g. 20140128\_Roses, so you can find specific

images easily. When computers are new, they have a default "Pictures" folder so use this to be consistent.

Most importantly, all these images stored in these folders will be your originals. If you are going to do any work on these images, such as sizing, cropping, etc., you must first duplicate the image and give it a new name. ALWAYS work on a duplicate copy of the original image. NEVER save changes back by over writing an original image.

### Cropping & Rotation of Images

Most digital cameras come with software that can perform simple editing, such as rotate images, change image size, and cropping to remove the unwanted portions around the edges of artwork.

Popular after market programs include Adobe Photoshop Elements \$80 (Mac & PC), Pixelmator \$30, iPhoto (free). For Windows go to [download.cnet.com](http://download.cnet.com) to find free programs with ratings. You will need to know what system your Windows PC is running to download the correct software: XP, Vista, 7, or 8. Your Windows computer may come with a simple photo editing program already installed.

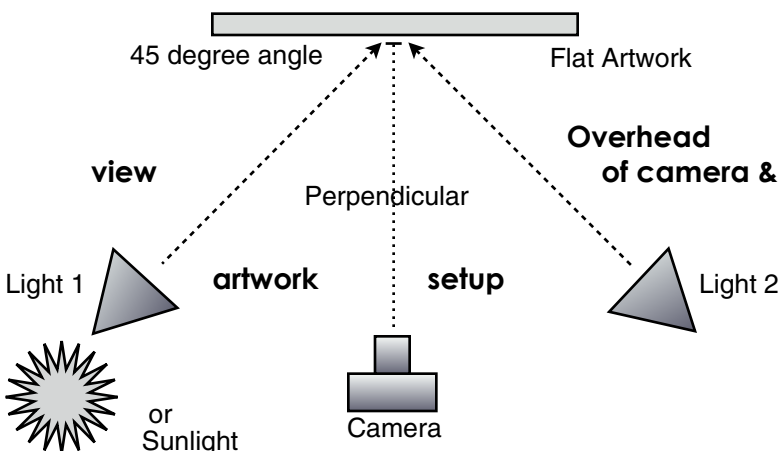
First check your image to see if the painting is square in the image frame. If not, you may need to rotate the image before you crop it. The rotation may be slight, e.g. 0.5 degrees or a lot. Most programs have grid lines that can be turned on so that you can better tell if the painting is square.

Crop or trim your images so only your painting is visible, no mats or pretty frames, or other background distractions.

The color will be close if you followed the set up guidelines. Some color paint pigments will not reproduce perfectly without sophisticated color correction. The usual suspects are deep violets. This is because the pigment color is outside the range of color sensors. You may see the violet as being less intense in the image.

Also, the very light areas, e.g. pastels or light highlights are sensitive to camera exposure. If these areas appear a little gray on the computer, you may need to lighten them or select a lighter image exposure.

Your computer monitor is probably not accurately color "calibrated". So don't start color correcting your image based on what you see on your monitor. If you do this, the end result will be an image file that is now off color. Just spend time setting up the shot correctly and you will have close color, except for maybe lighter or darker.



### Online Submission Sizing

Most show submissions are done through email or automated upload. The show will provide specifications for image submissions. These specs often tell what other text information is to be supplied with the images. It will also say how images are to be named. Read these carefully, for they allow the show to identify your image easily.

Not all art organizations have clear submission specs. And some do not seem to understand digital submissions themselves. When in doubt, call or email someone at the organizations for clarity.

On your computer duplicate the original image so you are working on a copy. Rename it to the specs for the show.

Most importantly they will specify the digital size the image must be. For example, they may say that all your submitted images must be 700 pixels long in their longest dimension, whether a vertical, horizontal or square painting. So if it is a vertical, it can be no taller than 700 pixels. Your original digital file may be 3000 pixels long. In the computer program you use there will be a sizing function. When you open the function it will show the image at 3000 pixels. You will change that 700 and it will resize it proportionally. They may also ask to make sure the DPI is set to 300. This is not necessary if they are not going to print the file, but do as they request. This is usually a setting in the same sizing "dialog box" on the computer.

The specs will also tell you to save it as a particular type of saved file, e.g. JPG. After you have resized the image, save it as the file type they have specified. Double check that the naming is correct for the show specs.

In your email program you will type in the needed text info. Double check the email address so that you send it to the correct place. They may ask that you have specific info in the **Subject:** line. There will be a way to attach your images to the image, probably unique to your email program. Double check everything again. For Mac to PC you may need to ZIP compress all images into one archive file.

So to summarize submission: text info, image pixel dimension size, perhaps DPI specification, proper naming, correct email address to send to, correct info in **Subject:** line. And then wait to receive notification that you are accepted to the show. Congratulations.

### Using sunlight: hard direct light

**White balance:** set White Balance for Sunlight.

### Using open shade: soft non-directional light

**White balance:** set White Balance for Shade (to compensate for the blueness).

### Using indoor incandescent lights

**White balance:** set White Balance to Incandescent (light bulbs) to compensate for warm color of light bulbs.

**Lights:** one clip-on reflector light set at 45 degrees to either side. Use 100 watt or greater bulbs.