

GUIDELINES/TIPS FOR:

Printing Quantities and Sharing Your Books

Acknowledgements

Printing Options

Photo Resolution
(insuring that your photos print well in your book)

Taking Good Photographs

Questions or concerns?

Please contact Barbara Cervone, WKCD, bcervone@whatkidscando.org
or Cathryn Berger Kaye, CBK Associates, cbkaye@aol.com



Please include these quantities when determining how many copies to print.

Mail six complimentary copies as follows:

- Send two copies to Barbara Cervone at What Kids Can Do. Barbara will be certain that one of these copies arrive at Awet Secondary School, to be part of their In Our Global Village book collection.
- Send four copies to Cathryn Berger Kaye, CBK Associates. Cathryn will retain two copies to be used as part of a traveling library as she speaks internationally on global literacy, service learning, and invites more schools into the In Our Global Village experience. Cathryn will also forward two copies to the Shinnyo-En Foundation, who is supporting this project with a generous grant to assist schools meet printing costs.

Prior to ordering your total number of copies, please consult Cathryn Berger Kaye at cbkaye@aol.com to find out if additional copies are requested that will also be purchased.

Mailing addresses:

Barbara Cervone, 10 Tall Pines Drive, Barrington, RI 02806
Cathryn Berger Kaye, 13108 Warren Avenue, Los Angeles 90066

Please include this copy or boilerplate on your book master.

In Our Global Village is an international service learning project and partnership between CBK Associates and What Kids Can Do to promote global literacy and understanding. All three partner organizations recommend service learning as a teaching methodology. Service learning enables youth of all grade levels and academic abilities to contribute their skills and talents to meet authentic community needs. Teachers and other adults guide the process, as student academic skills and knowledge are enhanced through relevant, valued application. The results are engaged enterprising youth and a better world for us all.



Printing options

There are several printing options for publishing the In Our Global Village book you and your students assemble. What makes most sense for you will depend on your own, individual circumstances.

Photocopying

Having your book simply photocopied at the local Kinko's may make the most sense if you plan to make only a small number of copies, it's mostly text, and the layout is pretty elementary. You can have it bound, perhaps with a laminated cover, and have a finished product within a day. But for a book that has photos and some design to it, photocopying is not the best choice.

Engaging a local printer

You should only do this if you have a local printer who will give you a deep discount—or better yet, cover the printing costs as a local donation. Local printers cannot compete with the costs and quality you get from the two online printers noted below.

Online printers (also known as "print on demand")

There are two online printers that win the best marks for producing attractive books in small quantities: http://www.blurb.com and http://www.lulu.com. They are different, though, in their approach and what they offer.

With blurb.com, you create your book using software they provide and you download. For folks who have no one they can tap to lay out the book in PDF form, with a professional look, blurb.com is the way to go. Their software makes it possible for you to create a professional-looking publication. Reportedly, it is easy to use. In exchange, the choices for book dimensions are limited to standard formats, while the cost per copy are somewhat higher than with lulu.com.

With lulu.com, you upload a PDF version of your book, which lulu.com then prints. For folks who have access to someone (with some experience) who can lay out the book as a PDF, lulu.com is a better choice than blurb.com. There are many more options with regard the book's dimensions and binding, and the price per copy is less than at lulu.com.

With both blurb.com and lulu.com, you start getting a discount price when the quantity of books printed goes up—at around 25 copies.

Online printers who use a "full" printing press

At What Kids Can Do, with our Next Generation Press, we often print 50 – 100 "advance copies" of a book we have in production, to share with folks as a prelude to the final publication (which we print in Hong Kong). We use Keystone Digital Press (http://www.kdpress.com/) for this, with great results. The downside is that the PDF you provide Keystone needs to be of a good professional quality, and they have specifications they suggest you to meet. But if you have a professional assisting with the book's design and layout and are looking to print, say, 100 copies or more, Keystone is an excellent choice. When printing larger quantities, they are half the cost of lulu.com or blurb.com.

A final note

We would not recommend choosing a book dimension greater than 8X10 (or 10 X 8). The larger a book's dimensions, the more strain it puts on layout and design and, especially, on how the images will look when printed. (It also costs more to print and mail.) We've found 8 X 8 to be an ideal dimension; 6 X 9 or 9 X 6 work well, too.



Photo resolution: insuring that your photos print well in your book

Since photographs (or scanned drawings) are the backbone of so many of the books being published in the "In Our Global Village" project, here's a short primer on how to make the photos in your publication look their best. We are not talking about picture composition, lighting, focus, and the various elements that make a photo stand out--see "Taking Good Photographs." Here, we're talking about a single subject: ***resolution.***

Here's the quick version.

If you want to use photographs from your digital camera in your print publication, then *you need to set your camera on the highest pixel count possible*. An image shot at a low pixel count—otherwise known as resolution—will look fine on a computer monitor, but lousy in print. *Pictures shot at 300 pixels per inch insure the best results when it comes to printing.*

Every camera has settings for picture resolution (size) and quality (also known as compression). Put your camera's "image quality" settings at the highest possible. The only downside is that the images will take more space on your camera's memory card and take longer to upload to a computer. But good-sized memory cards (512 MB should be fine) are cheap and the extra minutes uploading is time well spent.

This also means that you must discourage your students from using cell phones to take photos; cell phones cannot provide the resolution required for print publication. You don't need a fancy digital camera, but you do need a digital camera.

Here's a longer version, courtesy of the online publisher Keystone Digital Press.

Explaining resolution

Image resolution is a subject that confuses a lot of people but it is not really so difficult to understand. Pictures should always be supplied at an effective resolution of 300 pixels per inch (PPI) for best results when printing on professional printing presses. Just what does that really mean? Below we will explain just what resolution is, what it looks like when printed (high and low resolution) and how it is affected when pictures are placed within a document and scaled up or down. When we are through, you will understand effective resolution and will be able to figure scale and place pictures just like a pro.

Let's start with the basics. All images from digital cameras or scanners are made up of PIXELS. The word PIXEL is a contraction of the term PIcture ELement. A pixel's appearance can be defined as a tiny square of color. You may find it helpful to think of it as a very small tile, such as a floor tile. If you magnified a high-resolution digital image to 1,600 percent you would see the pixels (or tiles) that the image is made up of.

When preparing files for printing, the problem that most people encounter with their digital pictures is resolution. What is resolution? Simply put, resolution is the amount of information contained in an image. A good way to think of resolution is to think of a digital photo as a design mosaic made up of those very small tiles we mentioned earlier. The smaller the tiles are, the greater the detail and the more intricate the design can be. The larger the tiles, the less detail and thus the simpler the design must be. The pixels we talked about earlier can be thought of as those tiles.

PPI or DPI?

We will discuss pictures in terms of pixel density or the number of pixels per inch (measured horizontally). This is referred to as PPI (or pixels per inch) but is also often called DPI. While this term is commonly accepted, it is not technically correct. DPI (or dots per inch) refers to the resolution of output devices such as laser or ink jet printers and plate setters or film image setters. For the sake of accuracy we will use the term PPI (or Pixels Per Inch).

In printing, we require a 300 PPI image at 100% to obtain good quality printing. Here is an example of a high quality 300 PPI file at 100%. Note the crisp detail. This picture will look very good when it is printed.



High Resolution 300 PPI Image

Below is an example of a low resolution 72 PPI image placed at 100%. This file will also not look any better when printed.



Low Resolution 72 PPI Image

Effective Resolution: What is it and how do I figure it out?

Effective resolution is simply the final resolution of any picture at the actual scale that it is placed within the document. This is really quite simple. If you place a 72 PPI image at 100% its effective resolution is 72 PPI. If you place it at 50% (half size) the effective resolution doubles and the result is 144 PPI. If you place it at 25% the effective resolution is quadrupled and is then 288%. You can determine the effective resolution of an image by dividing the actual image resolution by the scale.

Here are a few examples:

300 PPI divided by 200% (or 2) = 150 PPI (unacceptable)

72 PPI divided by 150% (or 1.5) = 48 PPI (unacceptable)

300 PPI divided by 60% (or .6) = 500 PPI (good)

72 PPI divided by 25% (or .25) = 288 PPI (acceptable)

Another problem we often encounter is the overly enlarged image. This occurs when someone tries to enlarge an image that is too small to fit his or her design. While it is true that you can enlarge an image safely, going beyond a certain size will result in a degraded or even a “pixelated” (or blocky) image. We recommend that you do not enlarge pictures more than 125% of the original size (at 300 DPI). Pictures enlarged beyond 125% will show noticeable degradation, and enlarging an image beyond 200% can result in the actual pixels that make up the photo becoming visible.

Resolution: Let's Play the Numbers Game

Let's take an example using Photoshop (other applications menu selections may vary slightly but will be similar). Make a new 4" square image that is 72 PPI and change its resolution to 288 PPI by doing the following:

1. Go to Menu > Image > Image Size
2. Uncheck the Resample Image option
3. Change the Resolution to 288 PPI

Notice that the width and height changed from 4" to 1" (or 25% of their original size). What you have actually done is to reduce the pixel size, which reduces the overall size of the image (from 4" to 1"), which in turn increases the pixel density (from 72 PPI to 288 PPI). This is because the total number of pixels has not changed.

Resolution is really just a numbers game in the end: one number (pixel density) goes up while the other (image size) goes down in direct proportion. The picture isn't really any different except that now the computer thinks that it is a smaller and higher resolution image than it was before you made the change. Now it will print well at 100% but it will only be 1" square. It would not have printed well at 4" before you made the change. No picture information has actually changed and nothing is lost or gained in this resizing process. Only the printed size has changed.

Image Quality

Images vary considerably in quality. Below is an example of a high quality 300 PPI image.



High Quality 300 PPI Image

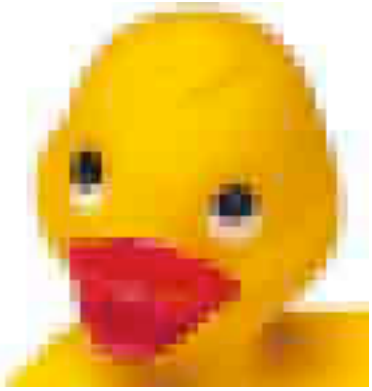
We recommend that all files be saved using the TIFF. We do not recommend using JPEG because it is a "lossy" format. That means that to reduce the file size, image data is actually thrown away. If you re-save a JPEG file repeatedly you are continuing to throw away more and more image data and the image will degrade further and further as a result. The JPEG format is really intended as a one-time use only format. If you must use the JPEG format please set the quality setting to Maximum to prevent unnecessary image degradation.

Next is an example of a low quality 300 PPI JPEG image.



Low Quality 300 PPI Image

This image has been over compressed (JPEG) or has been enlarged (resampled) from a smaller original file. Note the general blurriness and distortion. It looks a bit like looking as though you are viewing the image through water. This is generally due to lower quality JPEG compression. This file will not look any better when printed. At best, pictures copied that have been from the web will look something like this. At worst they will look like the example below.



Low Quality 72 PPI Image



Taking good photographs

How do you begin to take good photos? The first thing to remember is this: The photographer, not the camera, takes great photos. Second, remember that you master photography by doing it—experimenting and learning by trial and error.

The following tips should get you started. Some will have more meaning after you've gone out, shot a bunch of pictures, and analyzed the results.

Get your camera ready

Learn about the moving parts

Find and practice operating your camera's shutter, zoom, and LCD monitor/display screen. Learn what each of the mode settings on the dial next to the shutter is best used for. Learn how to review pictures you've taken, and how to erase a picture.

Check the memory capacity

It's terrible to be in the middle of taking pictures and then run out of memory space. Always have enough memory capacity in your digital camera. A 512 MB card is a good bet.

And always upload photos as soon as you've taken them. Then erase the images from the camera so that the memory card has space for new photos.

Set the mode dial to "AUTO"

Let the camera do most of the thinking for you. Put it on "AUTO" so that it will automatically adjust the focus and lighting.

Turn off your camera's "date function"

Photos that appear with the date in the corner are unusable when creating a professional-looking slideshow or exhibit.

Set your camera for high resolution and low compression

A big reason for packing a big memory card is so that you can shoot at your camera's highest resolution and lowest compression, both of which take up memory space. Why? Because these two factors—resolution and compression—determine how your photos will look when printed or blown up on a computer screen. A photo taken at a low resolution—640 x 480 ppi (pixels per inch)—will look fuzzy when enlarged beyond 4 by 6 inches. Compression works the other way. If compression is set too high, image quality goes down.

All digital cameras allow you to set resolution and compression levels. It sounds complicated, but here are suggested settings. If your photos will be published in a book or displayed in an exhibit, you must set the resolution to 2048 X 1536!

Use of Images	Resolution	Compression
Internet, email	640 x 480	Standard, high compression
4” x 6” print	1632 x 1224	Standard, high compression
5” x 7” print	2048 x 1536	Fine, low compression
8” x 10” print or larger	2816 x 2112	Fine, low compression

Learn to control the flash

When you set the mode dial on “AUTO,” the camera’s internal flash automatically goes off when you are taking pictures inside or under low light conditions. Sometimes, the flash is necessary. Often, it is not—this is one area where the camera’s thinking isn’t right on. Pictures taken with a flash tend to have a cool (blue-ish) rather than a warm tone. And sometimes the white light from the flash shows up in the picture, something you don’t want.

When you are taking pictures inside, you need to take the extra step of **turning off the automatic flash every time your camera comes on.** (Unfortunately, whenever your camera shuts off, it will automatically go back to the “flash on” setting, so you’ll need to turn it off again.)

How to turn off the automatic flash: Press the icon that looks like a lightning bolt. Then press it again. On the LCD screen, the lightning bolt icon should show up with a line through it. This tells you the flash is off.

Shooting basics

Hold the camera steady

If the camera moves while you are taking a picture, you will get a blurry image. The only thing that should move when taking a picture is your finger on the shutter. The more you can steady your arms, the sharper your pictures will be. When holding the camera, also be sure that you don’t have a finger in front of the lens or the flash.

Hold the camera level

If you forget to hold the camera level, your pictures will come out sloping to one side or another—cock-eyed. Look for the horizontal lines in the scene you are photographing (like the horizon!) and use them as guides.

Set the focus

If you get the focus right, you will get a sharp image. Rely on your camera’s automatic focus. Press the shutter button halfway down and wait a second for the camera to adjust the focus automatically. Then continue to press the shutter down fully. If you press halfway down, then let the shutter come back up and then press down fully, you will lose the focus you set.

Understand the zoom lens

It is tempting to over-use your camera’s zoom lens. It lets you get close to a subject without feeling like you are putting the camera in the person’s face. It can also help to create a focal point in a large landscape or to take pictures of people naturally going about their routine without their knowing you are photographing them. But there is a

trade-off. The more you zoom into a subject, the more the resulting image is affected by "camera shake." And when the camera shakes, photos come out blurred.

Unfortunately, your digital camera's "picture preview" mode, with its lack of detail, may not show that the photographs you took were blurred. You may only find out after you copy the pictures to your computer.

Shoot more

With digital cameras, there is no added cost to taking more photographs. Shoot more, not less. When you take multiple shots of the same subject, you increase the likelihood that one of the pictures will be a winner.

Photo composition

Move in close

It's always good to move in close to your subject. Most scenes will benefit from your taking several steps forward. The goal is to fill the picture area with the subject you are photographing. That way, you reveal details, like the expression on a face. As tempting as it is to use your camera's zoom to get close, the image quality is much better when you use the "sneaker" technique—walking up to your subject. As noted earlier, "zooming" can result in blurry images, especially when the light conditions are low or the subject is moving. The best choice is a compromise: Get as physically close to your subject as you can, then use the zoom lens a bit (but not all the way) to inch in closer.

Anticipate the moment

With digital cameras, there's a delay of several seconds from when you press the shutter button and when it takes the picture. If you are shooting anything active, make sure you press the shutter button down before your subject is at the position you're trying to capture. You may need to take many pictures to make up for the delay factor.

Look your subject in the eye

When taking a picture of someone, hold the camera at the person's eye level to unleash the power of a gaze or smile. Your subject need not always stare at the camera. All by itself, the eye-level angle will create a personal feeling that pulls you into the picture.

Take some vertical pictures

Most people take horizontal pictures. But there are times when what you are photographing will come out better if you rotate the camera and take a vertical shot. This way you can capture the length of what you are shooting. You will probably have to take a few steps back when shooting vertically, so that you don't cut off the top or bottom of what you are photographing.

Trust your instincts

In the end, trust your own instincts when it comes to composing your photos. As you frame the shot, move the camera and explore the scene. When you find an angle or composition that feels good to you, take the picture immediately. Then get several more shots.

Analyze your work

Look at the pictures you have taken and ask some questions. Did the image turn out as you planned? Do you like the composition? Could you have closed in more on the subject? Would the picture have come out better if you had turned the camera vertically?

Lighting

Always consider your lighting

Next to the subject, the most important part of every picture is the lighting. It affects the appearance of everything you photograph. On an older face, for example, bright sunlight from the side will emphasize the wrinkles, while the soft light of a cloudy day will soften them. Don't like the light on your subject? Then move yourself, or your subject.

Rely on available light as much as possible

Learn how to turn off your camera's automatic flash—and turn it off. Use the flash only when the lighting is poor and you have no choice but to rely on your on-camera flash. If you are not sure whether the picture requires the flash, experiment. Take a shot without the flash and look at it on the LCD monitor. Then take one with the flash. See which looks better.

Avoid red-eye

Do your subjects have red eyes? This is common when taking pictures with the flash on. If you notice this problem, make the feature "flash—remove red eye" is on.

Know the range of your flash

If you do use the flash, make sure you aren't taking the picture beyond the flash's range. Pictures taken beyond the maximum flash range will be too dark. For many cameras, the maximum flash range is less than fifteen feet—about five steps away.

Turn around to avoid the sun

When taking outdoor photos, position subjects so that the sun is behind you. If the sun is directly in your field of view, your subjects may look overexposed and washed-out. With the sun behind you, enough light reaches the subject to show a wide variety of color without washing out features like skin tones.

Don't shoot subjects or objects in front of a window.

If you are taking a picture indoors and the subject is close to a window, the person or object may turn out too dark. The camera's automatic light meter will lock onto the light coming in from the window, leaving your subject underexposed and mostly black—the opposite of the washed-out white look of overexposed pictures.