

Shutterbug

photography training

Beginner Photography: Class 1

Photo File Formats

By default, most cameras capture images in the **JPG format**, and unless you changed any of the camera's settings, they are what you are downloading to your computer.

There is another format option available called **RAW** in which to record your photos. This format is similar to **film negatives** and gives you **greater control over your photos**.

The choice of which file format you use ultimately comes down to **how you intend to work with your photos**.

If you are comfortable with running your images through an image editing application, such as **Adobe Photoshop Lightroom**, then by all means, give RAW a go. If not, then you will be more interested in JPG.

RAW vs JPG

Pros of RAW

- RAW is considered a *digital archival format* (like film negatives).
- There is *no post-processing* done by the camera.
- You have *full control over the image* for greater adjustments.

Cons of RAW

- Since they are not processed by the camera, they are *huge in file size*.
- They require the use of a *RAW conversion software*.

RAW vs JPG

Pros of JPG

- Compared to RAW files, they are relatively *small in file size*.
- Since they are small in file size, you can *store more images* on your memory card and hard drive.

Cons of JPG

- *Images are processed* by the camera's on-board software.
- They have *less latitude for adjustments* (corrections) after the shot.

Demystifying the Megapixel

By definition, the term 'megapixel' refers to a **collection of one million pixels**. For instance, if you have an 18-megapixel camera, it would be capable of capturing images with a **maximum of 18 million pixels**.

The above camera is capable of taking images with fewer pixels, but it **cannot capture images greater than 18 million pixels**.

That's because in addition to file formats, your camera includes **several image size choices** that determine how many pixels are included in each photo. These different settings have a direct effect on your photo's **pixel dimensions**, which determines how **large of a print you can make**.

 Consult your camera's user manual.

Resolution and Print Size

For those interested in printing photos, be aware that the **maximum print size and image quality** are tied to the **resolution of your image**.

So, what does 'image resolution' actually mean? Image resolution is the **number of pixels per inch** within an image, not the total number of pixels contained within an entire image... think **pixel density**.

In order to make a **quality print**, your image file will need to have a **certain number of pixels per inch**, otherwise the resolution won't be high enough and the output quality will be poor.

Home/office printing: minimum resolution of 150 ppi

Professional printing: minimum resolution of 300 ppi

Resolution and Print Size



These examples show how the resolution of a 400 x 600 (small) image would change when printed at different sizes. While the images vary in terms of resolution and size, their pixel dimensions do not change.

Keep in mind that as you **increase the print size** of an image, it's **resolution will decrease**. And, when you **decrease the image's print size**, it's **resolution will increase**.

Memory Cards

Memory cards come in several varieties, with the two most common being **Compact Flash** (CF) and **Secure Digital** (SD). They both perform the same function of storing images... they just look different.

While you are likely familiar with the **capacity designation** that tells you **how much information** that particular card can hold (16 or 32 GB, etc.), there's another number you should be aware of.

If you plan on **shooting sports (action) or video**, you need a card that has a fast write/rewrite speed. This speed rating is displayed on your card as **MB/s**, which stands for **megabits per second**.

The **faster the MB/s, the faster the camera can write to the card**. This is important in order to avoid 'stutter' or dropped frames in video.

Memory Cards

While it sounds like a splendid idea, *don't always go for the largest capacity memory card* - in other words, don't put all of your eggs (photos) in one basket (memory card).

Instead, try using *multiple memory cards with smaller capacities*, such as an 8, 16, or 32 GB card.

Smaller capacity cards *motivate you to actually download your photos to a computer* and, more importantly, reduces the number of images you would lose in the event a card becomes corrupt.

If you shoot video, you may want to go for a larger capacity card, such as a 64 GB or 128 GB. *Video is notorious for eating up lots of memory.*

Image Transfer

Your camera should have come with a USB cable, which allows you to transfer images from your memory card to your computer.

There are two downsides to using this USB cable; the *transfer speed is painfully slow*, and your *camera must be on during the transfer*, which drains your batteries.

If you travel, this can be a problem. Instead of the USB cable, consider using a separate *card reader*. They are much *faster at transferring files*, and your *camera doesn't have to be on*.

Your *computer* may have an *input for an SD card*, and if so, then you don't really need to concern yourself with a card reader.

Formatting

Whenever you get a new memory card, you should ***format it before putting it to use***. The card will still work if you don't, but it's better to formally introduce the card to the camera to ***avoid corruption***.

You will also want to get into the habit of ***formatting your card after downloading your photos to a computer***. Manually deleting, or letting your computer/app delete them, is not the same as formatting.

By not formatting the memory card after each use, you run the risk of the card becoming ***corrupt***, which leads to lost images and the cost of replacement.

 Consult your camera's user manual.

Why Composition Matters

More than any other factor, composition can make the ***greatest difference between an average image and a great image***. In fact, good image composition is considered to be ***more important than proper exposure and tack-sharp focus***.

Composing elements in a scene involves the ***careful consideration of how points of interest in the scene are arranged***, and how they relate to each other. Not bothering with this consideration will often lead to flat, lifeless, and boring snapshots.

What follows are several ***compositional techniques that have been around for a long time*** that will help you in creating images with compelling compositions.

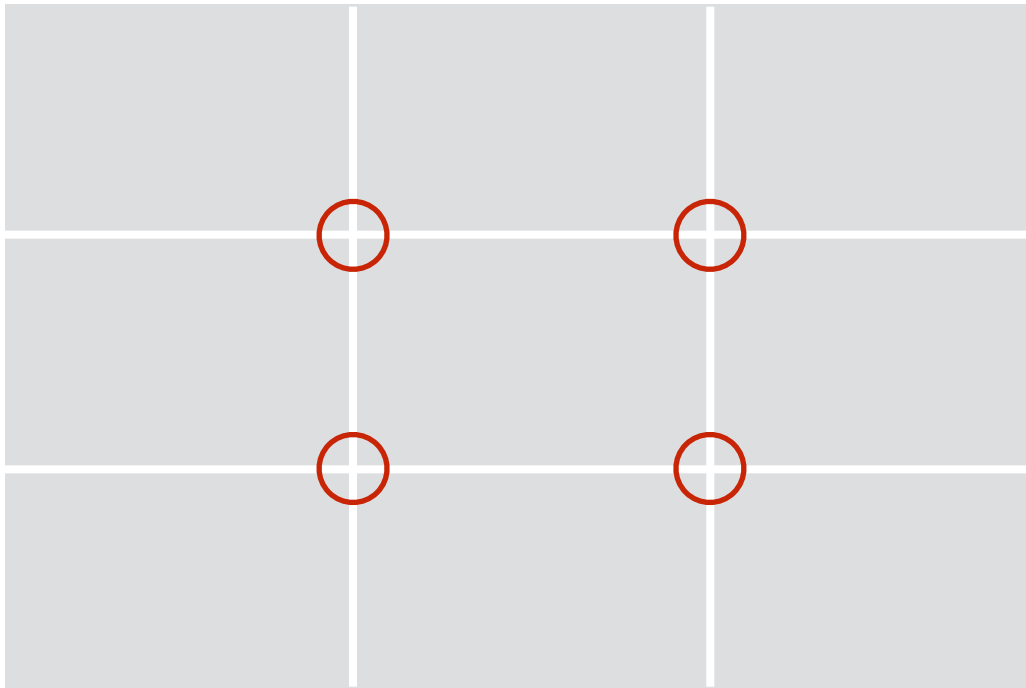
The Rule of Thirds

The rule of thirds is a simple, yet very effective, way of organizing elements in a frame so they create a **balanced composition**.

Placing your subject, whether it's a person or a tree, in the center of the frame usually results in a boring image. Conversely, **placing your subject off-center engages the viewer** and encourages them to look around the frame more.

The rule of thirds utilizes a kind of **tic-tac-toe pattern** to help with the distribution of elements within the scene. It's a simple technique that has been around for a long time, and for good reason - **it works!**

TIP: the rule of thirds is more of a **suggestion** rather than a hard and fast rule. **Close counts** when it comes to using this compositional tool.



The Rule of Thirds

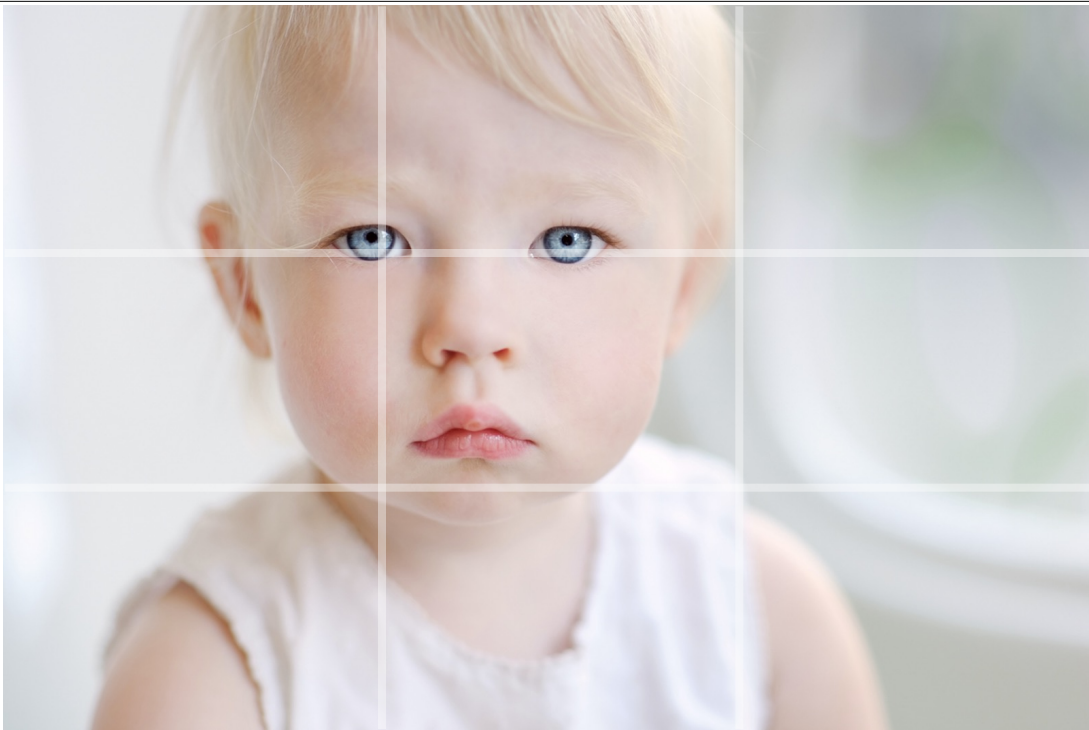
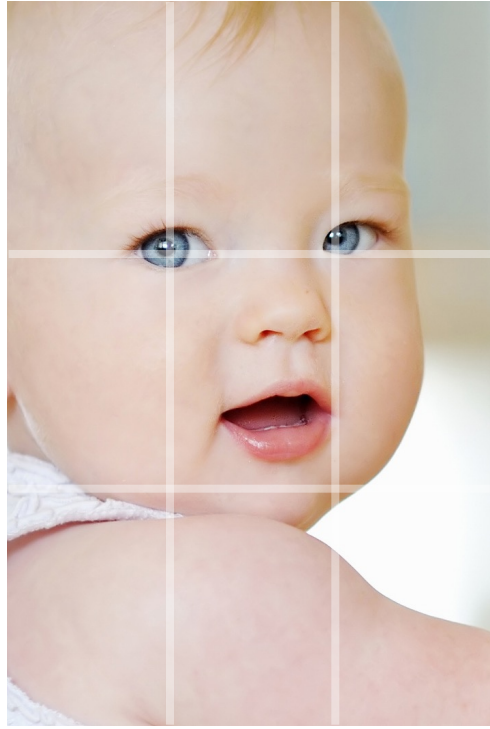
The **horizontal lines are primarily used for horizons**, emphasizing either the sky or landscape, depending on which **area of the scene is more important** to you.

The **vertical lines are primarily used for creating strong verticals**, such as light houses. Western culture looks at things from left to right, which makes vertical subjects on the right side more pleasing.

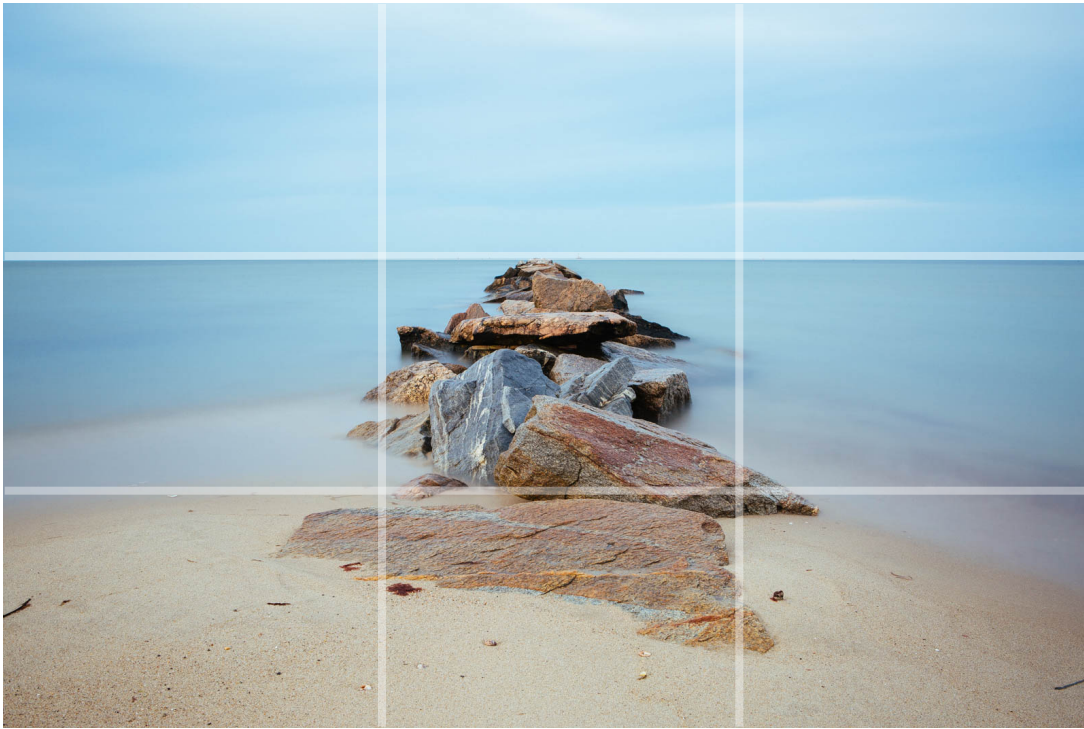
The **intersecting points are prime locations in which to place an object that has a strong presence in the scene**, but isn't necessarily a vertical element or horizon. A person's head/eyes are a perfect examples.

Think of these points as destinations, creating a visual anchor that gives the viewer's eye someplace to land while exploring the scene.









Foreground Interest

We see the world in *three-dimensions*, but the camera sees the world in only *two-dimensions*. The reason why is because we have two eyes and the camera only has one... the lens.

Landscape images often fail because they don't convey a strong enough sense of depth. Basically, there is no scale in which to base a visual relationship between subjects in the scene.

A wide-angle is the go-to lens for introducing *strong foreground interest* in your scene to create visual depth.

Emphasizing the foreground *creates an entry point that pulls the viewer's eye into the scene*, and thereby creates, or increases, the perception of distance and scale.





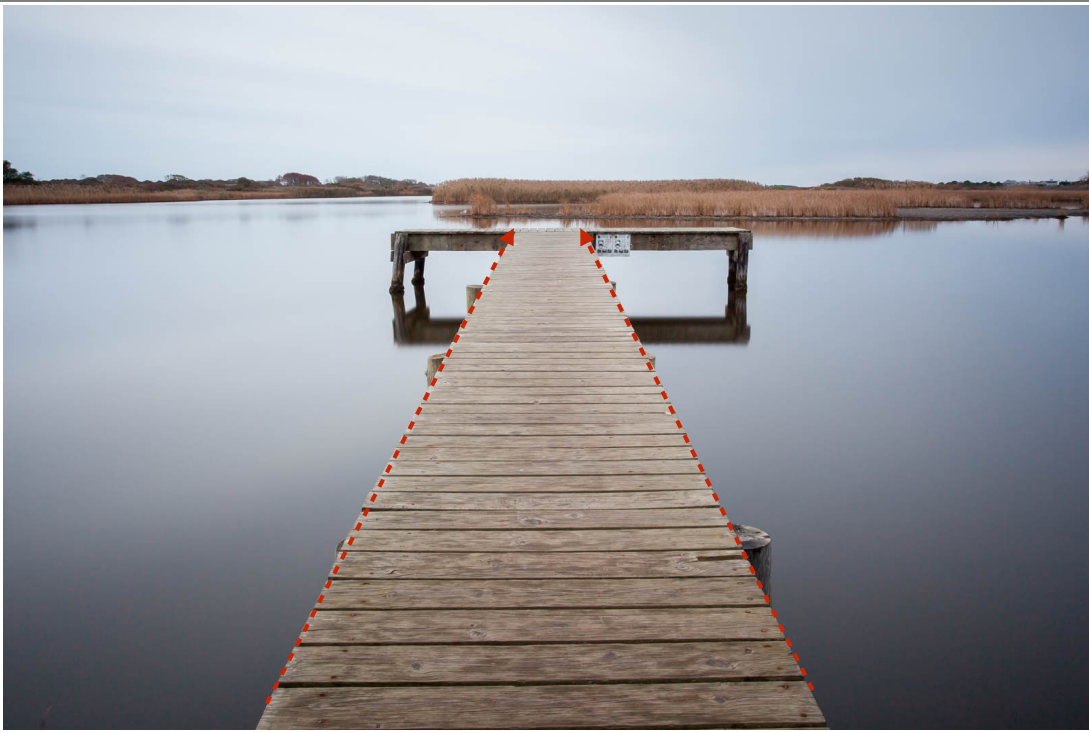
Lead-In Lines

Lines present in your photo help to represent depth, which can be used to lead your viewer's eye into the photo and guide them around the scene. By using lead-in-lines, you are essentially ***showing them where you want their eyes to go***.

Lines are everywhere, from man-made items such as roads, piers, and fence rows, to more natural lines, such as rivers and coastlines.

However, lines ***don't have to be actual objects***, they can be ***implied patterns***, such as those created by clouds, waves, grasses, or any object(s) ***pointing into the frame***.

By ***leading the viewer's eye*** through the entire scene, you are allowing them to take in other elements within the composition.





Cropping

What you have *showing in an image is just as important as what's not showing*. Certain elements are visually acceptable to be left out of the frame, while others are not.

If you are capturing your subject from *head to toe*, then you only need to concern yourself with *composition*. However, when *only including portions of your subject*, cropping becomes important.

Always try to *avoid cropping* your subject at an *area of the body that flexes*, such as an elbow or knee. When you do this, it creates the appearance of a possible lost appendage.

Whether you are cropping in-camera or in post, be sure to *zoom in or out on your subject as needed* to avoid cutting a person off at a joint.

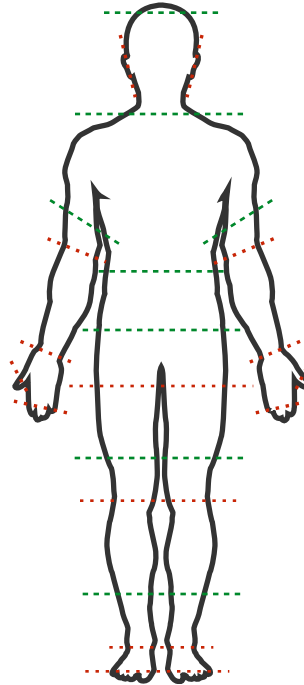
Cropping Okay

Areas with a **green dashed line** indicate where it is acceptable to crop.



Cropping Not Okay

Areas with a **red dotted line** indicate where it is not acceptable to crop.



Aspect Ratio

Aspect ratio describes the *relationship of an image's width to its height*, and is usually expressed as one number followed by a colon and then followed by another number (3.2).

ASP-C and full-frame cameras come with a sensor that has an *aspect ratio of 3:2*, which means the sensor is *1.5 times as wide as it is high*. Micro four-thirds and compact cameras have an aspect ratio of 4:3.

Why does this matter? Depending on how tight your shot is, you may have part of your photo *unintentionally cropped* when printed.

Some cameras allow you to change the aspect ratio, but this isn't necessary. If you want to *change your image's aspect ratio*, it's much better to do so *in post* with applications such as Adobe PS Lightroom.

Ultraviolet (UV) Filters

The intended purpose of UV filters is to **reduce atmospheric haze created by ultraviolet lights**. This was a big concern with film, but not so much with newer digital sensors and lenses.

The **real reasons** you should use one is to **protect the lens element (glass) from unintentional bumps**, and to **keep it clean**. It doesn't interfere with letting in light, so you can keep this attached to your lens most all the time.

Just because the filter is there to take a hit, **don't cheap-out** and get a piece of junk. You can have the high **quality of a professional lens absolutely ruined by using off-brand filters**. You don't need to buy the most expensive one out there, but don't get the cheapest one either.

Polarizing Filters

A polarizing filter is a must-have piece of kit to have in your arsenal if you are at all serious about landscape photography.

Unlike many of the effects that can be **mimicked in Photoshop** after the shot is captured, the effect you get from using a **polarizing filter is not one of them**.

Polarization is caused when **light hits a surface and is scattered in different directions**, which causes unwanted glare and reflections that reduce overall color saturation in your images.

Polarizing filters keep this stray light under control by only allowing light to **pass through the lens from one direction**, and that's what keeps the polarized light from entering the camera.

How to Use a Polarizer

Using a polarizer is simple because you can see the effects happening in **real-time** by looking at either your **LCD panel or through your viewfinder**. Once attached to the camera, simply **rotate the polarizer to dial in the amount of polarization** your scene requires.

Polarizers work in both **sunny and cloudy conditions**. For example, use them on **bright sunny days to deepen a blue sky**, or use them on **overcast days to reduce glare and reflections** to bring out color saturation of foliage.

TIP: When trying to capture the sky, **polarizers work best when the sun is at a 90-degree angle to the camera**. The filter will have no effect if you are shooting toward the sun, or if the sun is at your back.

How to Use a Polarizer

Another consideration to keep in mind when using polarizers is that **polarization is uneven across the sky**. So, if you are using a wide angle lens with a focal length **shorter than 24mm**, your sky could appear to be **darker on one side of the photo and lighter on the other**.

A polarizing filter will **only cut glare and reflection from non-metallic surfaces**, so don't become frustrated when certain reflections just won't disappear.

You will want a **circular polarizer** and not a **linear polarizer**. They aren't called 'circular' because they're round - it's because a circular polarizer is **made up of two parts**, and when the inner part is secured on the lens, the outer part rotates to allow **adjustment for the proper amount of polarization**.

Recommended Brands

When it comes to choosing a filter, quality matters. It doesn't make much sense to put a cheap filter over really nice glass.

There are many filter options for you to choose from, and which one you go with is entirely a personal, or financial, decision. Below are the filter manufacturers that we recommend:

Formatt-Hitech: www.formatt-hitech.com

Hoya: www.hoyafilter.com

B+W: www.schneideroptics.com

TIP: stay away from Cokin, Promaster, and Rockfish (Best Buy) brands.

Stability is King

If you're into landscapes, there is one piece of kit that is an absolute must, and that is a **sturdy tripod**.

You will likely be shooting scenes with **low-light levels that will require slower shutter speeds** in order to make a proper exposure. And, without a tripod, you will have a lot of soft, if not blurry, images.

A tripod is a love-hate relationship because dragging it around is a pain, but the benefits you get from using it make the effort worthwhile.



Really Right Stuff
TVC-33 Series Tripod

What to Look For

Considered *a good tripod an investment*... it's one piece of kit that *won't become outdated*, and is something you will keep for a very long time. When selecting a tripod, consider these qualities:

Stability: not all tripods are created equal, so be sure to get a tripod that is *sturdy but not overly heavy*. Remember, you have to carry this thing around, and you will end up leaving it behind if it's too much of a hassle to take along.

Carbon fiber: there's no doubt that carbon fiber tripods are more expensive than the metal/aluminum versions, however, their *light weight does come in handy if you are traveling or hiking* to your locations. If you can afford it, carbon fiber is the way to go.

Ball Heads

By far the most popular tripod head used by photographers of all types today is the ball head.

Aptly named because of the movable ball housed within a vice-like clamp, a ball head allows *infinite variation of movement* to adjust your camera position.

Seldom are you on an even surface while capturing landscapes, and the ball head is a great way to make sure you get level shots quickly and easily.



Really Right Stuff
BH-55 Ball head

Data Backup

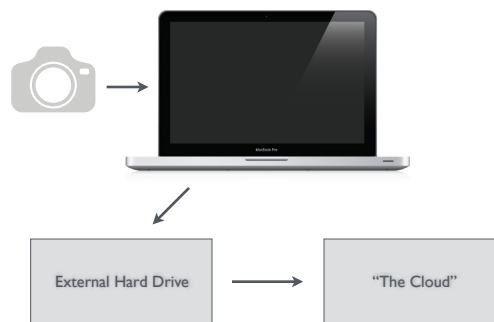
It's not a question of if your hard drive will fail, but when. And, the best time to begin backing up your photos (or any data) is now.

Backing up your data on a *CD/DVD or thumb drive is not considered a proper backup solution*, nor are they automated.

External hard drives are fairly inexpensive these days, and, if you think otherwise, wait until you price data recovery services. But, *hard drives are not the final answer* to protecting your photos.

- **Crashplan:** www.crashplan.com
- **Mozy:** www.mozy.com
- **Carbonite:** www.carbonite.com
- **Dropbox:** www.dropbox.com

Backup Workflow



Data Recovery

When the unthinkable happens...



Memory Card Recovery:

Camtronics Camera Repair
1025 W. 3rd Avenue
Columbus, Ohio 43212
(614) 483-5151 | www.camtronicscamerarepair.com

Hard Drive Recovery:

DriveSavers
400 Bel Marin Keys Boulevard
Novato, California 94949
(800) 440-1904 | www.drivesavers.com

Assignments

-  Locate your **image type** (RAW / JPG) and **image size settings** in your camera's menu. These different image sizes will likely show as small, medium, and large, or basic, normal, and fine.
-  Locate your camera's **format function**. Download any images from a memory card to a computer, **verify** that they are in fact on your computer (important), and then format the card.

Practice using the **compositional techniques** discussed; rule of thirds, foreground interest, and lead-in lines. Try using them singly at first, and then combine them if the scene permits.

Also, pay attention to the composition in other images.