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Camera composition: change your perspective

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Lessons

1. Cover the bases: the basics of photo composition
   The major difference between a terrific photo and an average one is knowing—and following—a few simple rules and guidelines. In this lesson, you'll learn the fundamentals of photo composition. You'll also examine the different shooting modes your camera offers and learn to choose the appropriate one for your photo.

2. Faces: taking portraits with personality
   When photographing people, you must first consider the story that you want to tell. Learn essential portrait photography techniques and find out how to use poses, camera angles, perspective, backgrounds, light and motion to create captivating portraits.

3. Spaces: capturing the world around you
   Believe it or not, there are other things to photograph besides people! You can find interest in everyday objects by looking for natural patterns, getting closer and photographing the unexpected. In this lesson, you'll explore landscape photography techniques and learn how to take better close-up photos.

4. Photography lighting techniques, exposure and more
   This lesson introduces you to some more ideas for taking photos from a different point of view. First you'll learn more details about controlling light and exposure. Then you'll explore some creative exercises and camera features that can really make your photos stand out.

Cover the bases: the basics of photo composition

The major difference between a terrific photo and an average one is knowing—and following—a few simple rules and guidelines. In this lesson, you'll learn the fundamentals of photo composition. You'll also examine the different shooting modes your camera offers and learn to choose the appropriate one for your photo.

Welcome to the course

No matter what camera you're using, from an entry level point-and-shoot to a high-end SLR, simple changes in camera composition can turn a lackluster picture into an engaging one. By taking the time to carefully compose your photo, you can draw in your audience and communicate the story and emotion behind the photo more effectively. This course not only takes the mystery out of camera settings, composition and concepts like depth of field, but will also give you a checklist of creative ideas to have you shooting pictures like a pro.

Here's what each lesson will cover:

Lesson 1 covers the fundamentals of photo composition. You will also examine the different shooting modes your camera offers and learn to choose the appropriate one for your photo.

Lesson 2 will focus on what makes a good portrait, including posing, using light to your advantage,
and how to create a focal point. Lesson 3 will teach you what elements to look for and how to get the best landscapes and close-ups. People are not the only interesting subjects to photograph. The world around you is filled with amazing photo opportunities. Lesson 4 wraps up the course with ideas to stretch your creativity using a number of perspective-changing techniques. By the time you complete this course, you will be well-versed in good composition and how to use your camera as a creative tool. Let's begin with learning how to see the world through a lens.

Removing distractions
It's human nature for your eyes to instantly focus on your subject and ignore everything else when you look through the viewfinder of your camera or its LCD panel. Your camera, unfortunately, records everything within view. It can not discriminate between subject and background. It has no way of knowing, let alone warning you, that the bright orange road sign is going to be an eyesore in your otherwise beautiful photo. You'd think that something as obtrusive as a large road sign would jump out at you immediately, but it's not necessarily the case. Have you ever looked at your pictures and thought, “Why didn't I notice all of those toys in the yard?” Any background clutter in your photo pulls your eye away from the subject, so your eye is fighting to focus on what is really important.

In Figure 1-1, notice how hard it is to keep your eye from bouncing around between the piles of clothes, furniture, and the light coming in the window.
Figure 1-1: Clutter in the photo pulls attention from the subject.

Scan the four corners
You can avoid this problem very simply. Once you have your photo composed, let your eyes sweep to each of the four corners of the viewfinder. This simple exercise takes your eye away from the subject and forces you to consider the background. Make it a habit to always take this step before clicking the shutter and you won't be disappointed by distracting backgrounds again.
Light can be clutter, too. When you check your corners, look for light that competes with your subject.
Once you find the problem, how do you fix it? Removing the item is the easiest option. If it is a stationary object, you may need to simply move yourself and/or your subject to remove it from view. If neither of these options is available, try using a shallow depth of field to blur the background. You will learn how to control depth of field in the next lesson.

Flattening the world
Another consideration when you are taking photos is that you are turning a three-dimensional world into
two dimensions. You are flattening everything the camera sees into one visual plane. In reality, a light pole may be 50 feet away behind your subject and therefore not seem to be a problem. On film, the two objects will look fused together. Figure 1-2 shows an example of what can happen if you don't pay attention to the faraway objects as well as the nearby clutter.

Figure 1-2: Beware of objects growing out of heads.
To prevent this from happening in your photos, make it a habit to look behind your subject and detect any objects that may be a problem. Move yourself or your subject to put the distracting background somewhere other than directly behind. Use your digital camera's display to get immediate feedback and re-shoot the photo, if necessary.

Now let's take a deeper look at some visual composition basics.

**Visual composition: how we see**

Before we jump into the rules of composition, it will be helpful to consider what these rules are trying to accomplish. Our eyes and brains work together in ways that we aren't aware of. When we look at a photograph, painting, or any group of objects, our brains immediately try to organize the information into logical relationships. For instance, you see one leaf and you think "leaf." If you see many leaves all together, you don't compare each one to all of the others. You group them all together as being similar and related and think "tree."

Your brain also tries to create order out of chaos, seeking recognizable patterns in what you are seeing. For this reason, symmetry is very pleasing to the eye. Pleasing is not always what you are going for, however, because something that is pleasing to the eye doesn't necessarily capture your attention.

In the following sections, you will be introduced to several visual rules that apply to every visual medium. Photography literally means "painting with light," so it follows that the rules that apply to painting would be equally as relevant to photography.

**Equal space and off-center space**

Centering your subject within the frame, leaving equal space surrounding it is a common, but very static composition, as you can see in Figure 1-3.
Creating a composition with unequal spaces challenges the eye and makes the photograph more dynamic. Figure 1-4 is a great example of placing the same subject off-center in the frame from another angle. While it is preferable to not center your subject, be aware of the outside edges. Leaving a margin of relatively similar size around the subject anchors it, making the composition look intentional and feel stable.

Avoid distracting "bad tangents"

When you decide where to place your subject, watch out for areas that almost, but don't quite, touch -- these are called tangents. If the subject almost touches the edge of the frame or another object, your eye will be drawn to that area and away from the focal point of your photo.

There are a few options to preventing these bad tangents. First of all, if the tangent is on the perimeter of the photo, move in closer or take a step back to create a defined margin of space or completely remove the outside space. Notice that in Figure 1-5, your eye will keep traveling over to the right edge of the photo, where the little girl's shoulder almost touches the edge of the photo.

If the tangent area is located within the photo, you can either rearrange the elements or change camera angles to unify the objects into a single composition, rather than treat them separately.
Symmetry

Human faces are an example of symmetry. If you drew a line down the center of a face, the forms and features are the same on both sides. This balance is comforting to your eye. Figure 1-6 shows a symmetrical arrangement of similar objects.

Just as with using equal space around your subject, a symmetrical composition is not necessarily the best option. Asymmetrical arrangements, like the one in Figure 1-7, are more energetic and engaging. Depending on the feel, or mood, you envision for the photo, you may choose either one.
Asymmetrical compositions are more energetic and engaging.

The rule of thirds

The rule of thirds is more of a guideline than a rule, but a powerful one nonetheless. To demonstrate this rule, divide a photograph into thirds both horizontally and vertically, creating a grid of nine sections. When you place your subjects, horizon lines and light along the lines and intersections of the grid rather than the center, you create tension and energy in the image. This tension keeps your eye actively involved and interested. Look at the intersections of the grid lines in Figure 1-8. Notice that prominent features of the two subjects are located on three of the four intersections.
As you learned at the beginning of this section, your brain tries to determine recognizable patterns and relationships in what you see. You can convey the importance of certain elements in your photos by establishing a visual hierarchy.

You can accomplish this by giving one object, your subject, a greater visual weight than the other elements in the photo. There are a variety of methods to establish your subject as the focal point of your photo.

Size
Making your subject larger than the other elements in the photo or placing it in the foreground creates an obvious focal point. Figure 1-9 shows an interesting composition created by making the teacher larger in the frame (as well as focusing on her glasses).

![Figure 1-9: Making your subject larger in the frame creates a dramatic focal point.](image)

Focus
Another way to attract attention to your subject is to use a shallow depth of field and blur everything else in the image. In Figure 1-10, it's obvious who is the focus of this photo. You will learn different methods of altering the depth of field in a later section of this lesson.

![Figure 1-10: Using shallow depth of field to focus the on subject.](image)

Light
By putting the spotlight, so to speak, on your subject, you can emphasize it as the star of your photo, as in Figure 1-11. Lighting doesn't have to be elaborate studio lighting; it can be as simple as the light
filtering in through a window or even sunlight.

Figure 1-11: Use light to emphasize your focal point.
Contrast
Remember the popular children's game that goes "one of these things is not like the other"? By placing your subject in a composition where it stands out as different from everything else, you are giving it a greater visual weight. You can use color, texture, or even shape to differentiate your focal point from the rest of the photo.

Figure 1-12: Using contrast to define your focal point.
Framing
Framing your subject is a wonderfully effective way of showcasing it as the focal point. You can use whatever is handy to your location to create a frame. Figure 1-13 two convenient trees as frames. You can use playground tunnels, doorways or arches, windows, or any other elements that create a visual frame.
In the next section, we'll talk about understanding and using your camera settings to help you capture great photos in various shooting situations.

**Camera settings**

In this section, you will briefly explore the camera settings that can assist you in getting the photos that you want. You'll examine these settings in depth in later lessons of the course, but this introduction will start you thinking about how to use your camera as the creative tool it is.

Shooting modes are all the other camera settings your camera offers besides auto mode. Get to know them! Auto mode is the quickest and easiest setting, but when you keep your camera on auto mode you lose out on the special effects you can get by learning what your shooting modes can do. Depending on the particular camera model you own, these modes may vary in name, but the capabilities should be similar.

**Portrait Mode**

As the name implies, this is the shooting mode to use for capturing portraits. This mode enables you to focus on a main subject in the foreground while using a shallow depth of field to blur out the background. Doing this puts the focus on the subject in a flattering way, as you can see in Figure 1-14. In Lesson 2, you'll learn how more about depth of field and how to control it.

**Landscape Mode**

This mode is essentially the opposite of portrait mode. It leaves the depth of field as long as possible so that details in the background are as crisp as the foreground. This is the mode to choose for cityscapes or landscapes. Because the depth of field is longer, the background details stay as sharp as the foreground, as you can see in Figure 1-15.
Figure 1-15: Using Landscape shooting mode keeps background details in focus as well as the foreground.

**Action Mode**

This mode uses a very fast shutter speed to enable you to stop motion. It is useful for sports as well as any moving object -- Figure 1-16 shows an amazing sports shot captured with Action mode. Keep in mind that you need plenty of available light to use this mode, so use it outdoors -- preferably during the day.

Figure 1-16: Using Action shooting mode lets you freeze-frame the action for outdoor shots.

**Macro Mode**

This mode allows you to take extremely close up photos -- it's very useful for capturing the details of a
flower or any other subject you want to show in extreme close-up. This mode is best used for subjects less than a foot away. The depth of field is extremely narrow, so you can expect the background to be blurred while the subject is in extreme close focus, as Figure 1-17 shows.

Figure 1-17: Use your Macro shooting mode to capture detail from less than a foot away. You'll learn more about macro shooting modes and close-up photography in Lesson 3.

Theatre Mode
This mode is useful for low light situations where your flash is not an option, like the theater photo shown in Figure 1-18. Flash photography may not be allowed, or you may be too far away from the subject for your flash to be effective. In addition to setting the correct shutter speed and aperture for these situations, it also sets the white balance to keep the photos looking natural without an obvious color cast.

Figure 1-18: Theater shooting mode captures low-light situations while adjusting white balance.
Most on-board flashes have an effective range of less than 6 meters, or roughly 19 feet. Most digital cameras typically will have these modes, plus several others, depending on the camera model. Some of them include modes for taking pictures in snow, at the beach, or at sunset. Refer to your camera's user manual or on-board menus to determine which modes are available to you.

Moving on

In this lesson, you learned several techniques to guide you to take better photos. You learned how to minimize distractions, how to create a solid focal point using visual compositional rules, and how to use the automated shooting modes your camera has to offer. Before moving on, practice these new techniques in the assignment section and test your knowledge with the quiz for this lesson.

In Lesson 2, you will focus on photographing people. You will learn how to control depth of field, use varying perspectives, dynamic camera angles, and camera and subject height. You will also spend time exploring creative poses to use with individuals and groups. Until then, happy shooting!

Assignment #1

You learned a lot of great compositional skills in Lesson 1. Just as with anything that you learn, if you don't immediately put it into practice, you will forget it. To help you solidify what you have learned, here is your assignment.

Find a subject of your choice and then take photos using all of the techniques from Lesson 1. Take at least one picture, preferably more, using the following guidelines:

- Check your frame to remove distractions and verify your visual crop.
- Correct a two-dimensional flattening problem.
- Create an obvious focal point using any of the strategies you learned: size, focus, light, contrast or framing.
- Use the rules of visual composition to create photos for each: space, symmetry, and the rule of thirds.
- Explore the shooting modes on your camera and create a unique photo for each one.

Quiz #1

Question 1:
True or False: Photography is a three-dimensional art.
A) True
B) False

Question 2:
True or False: Landscape Mode uses a very shallow depth of field.
A) True
B) False

Question 3:
True or False: A centered subject creates a very static composition.
A) True
B) False

Faces: taking portraits with personality

When photographing people, you must first consider the story that you want to tell. Learn essential portrait photography techniques and find out how to use poses, camera angles, perspective, backgrounds, light and motion to create captivating portraits.

What makes a portrait?

In Lesson 1, you learned to see the world as the camera sees it. You learned compositional principles that you can use to create more dynamic photos and were introduced to the shooting modes that allow you to control how your camera functions in specific shooting situations.

You also learned how to create a focal point using several visual hierarchy principles: size, focus, light, and contrast. All of these principles apply to photographing people as well, but let's consider a very specific type of photo -- the portrait.

Isolate your subject

One of the most concrete and often overlooked aspects of a portrait is that the subject is usually displayed against a simple, unobtrusive background. It's a simple concept and is easy to create in almost any situation or location.

If you can't find a solid color that will be flattering to your subject, you can always use the sky or ground. You can create a portrait in almost any situation just by using these natural elements that are always available.
Shoot looking up at the sky
By altering the camera angle, you can look up at your subject, using the simple blue of the sky as your background. Make sure that you are not pointing the camera towards the sun, unless you can block it with your subject, as in Figure 2-1. In this scenario, called a backlit photo, you need to use your flash to fill in the subject's face. Otherwise, the subject's face would be lost in the shadows against a very bright background. If you turn your subject so that they are facing the sun, you can use the sunlight to light the face and the sky usually turns out a richer, more vibrant blue. Don't make your model squint into the sun. It is painful for them and doesn't give you the most flattering light. Instead, position them so that the light falls sideways across their face.

![Image of a person looking up at the sky](image)

Figure 2-1: Using the sky as an elegant backdrop.
If the light is still too bright, use whatever shade you can find to block some of it out; use the shade of a tree or patio or even stand in the garage with the door open.
Professional photographers use reflectors to move available light where they need it. You can use objects in your location as reflectors as well. Pose your subject near a light-colored wall and the light will bounce off the wall and fill in some of the shadow areas in your subject's face.

Shoot down toward the ground
You can also use the ground as a simple backdrop. By aiming the camera down on your subject and filling the frame with the ground, as in Figure 2-2, you can achieve a portrait worthy of framing no matter where you happen to be.
Controlling depth of field
The other factor to consider when creating a portrait is that the subject is typically the only thing in focus. In the first lesson, you explored your camera's shooting modes, one of them being Portrait Mode. This mode automatically creates a shallow depth of field, which is the ideal for creating portraits.

Depth of field, or depth of focus, is the area in front of and behind your subject that appears to be in focus. If your subject and the background are equally in focus, you have a long depth of field. If the area just in front of and behind your subject are blurred, you have a shallow depth of field, as shown in Figure 2-3.

Control depth of field with aperture stops
If your camera offers an aperture priority mode, or even full manual control, you have the ability to decide exactly what aperture to use. To make the most of this advantage, you will need to understand how aperture stops function. It is slightly more complicated than changing program modes, but will give you a lot more control over how your photos look. The concept of controlling depth of field using aperture stops appears to be fairly complex, but it really is not. There's a little math involved to understand what your camera is doing, but once you grasp the concept, the rest is automated.

An aperture is simply the hole that opens in the shutter to allow light in. Think of it like the pupil of your eye. In low light, your pupil expands to bring in more light. In bright light, it contracts. This is the same principle you use to control how much light is allowed through the lens when you click the shutter to take your picture. You can choose to allow a lot of light in, or a tiny amount, depending on the diameter of the lens opening.

F-stop is the common name for an aperture stop. The aperture stop is a number controlling the size of that diameter. Typical aperture stops, or f-stops, range from about 2.8 to 22. These numbers represent fractions, so f/22 actually represents 1/22nd of the lens opening, while f/2.8 represents about half of the lens opening. The key thing to remember is: the
smaller the number, the larger the opening and vice versa. To create a shallow depth of field, we need to choose a larger opening, or smaller number. F/5.6 is a portrait standard, but that doesn't mean that it is the only choice. Play around with the settings and find the look that you like. Figure 2-4 shows how a shallow depth of field reveals the details of the subject's face.

Figure 2-4: Another example of how a shallow depth of field can create a wonderful portrait.

One final consideration to the depth of field concept is that the amount of your photo that remains in focus is also controlled by the lens you choose. If you have a zoom lens, or the ability to change lenses, keep in mind that at the widest angle, you will see less change in the depth of field. When you are zoomed in on your subject, you will see a much more noticeable change to the depth of field when selecting different f-stops. For example, an f/8 when shooting a landscape is going to look fairly crisp. An f/8 aperture, zoomed in closely to a subject or used in the macro mode, is going to give the photo a fairly shallow depth of field.

Now let's take a look at perspective angles.

Explore perspective angles
Digital cameras have dramatically changed the way we use photography as a creative medium. In the days of film cameras, using rolls of film to experiment with new techniques and ideas was cost-prohibitive. Not only that, but there was no immediate feedback on whether or not your experiment was successful. You had to wait for the film to be processed. By the time you received your prints, it was doubtful that you would even remember what you tried on which photo. Now, you can experiment to your heart's content, receiving instant feedback to guide you. Isn't technology wonderful?

With that in mind, the theme for this section is altering your camera angles to get fresh perspectives. Anyone can point the camera at a person at their eye level and snap a picture, but where is the fun in that? By moving yourself and the camera around your subject and exploring the almost infinite possible angles, you can achieve much more interesting results. In this section, there are no rules to learn, just some ideas to get your creative juices flowing.

Get down on their level
Look at the difference in personality between the following photos. In the first example, Figure 2-5, the photo was taken at the photographer's eye level.
Figure 2-5: Photo taken at photographer's eye level.
Figure 2-5 is a good environmental photo that captures the location very nicely, but it feels as though the photographer was just observing the family. In Figure 2-6, the photographer got down on the level of the subjects. The result is much more intimate and personal, creating the family as the definite focal point.

Figure 2-6: Photo taken at subject's eye level.
This is also a great way to capture pets. Getting down low to the ground will help you capture your pet's attention and will yield more engaging results, as Figure 2-7 shows.
Figure 2-7: Get down on your pet's level.
Next you'll find out how camera height -- where you hold the camera in relation to the subject -- can change photo composition in interesting ways.

Showing height
The height of the camera can distort a person's appearance, making them appear either smaller or larger than they are in real life. There are many circumstances, however, where you may be looking for just such an angle.

Get low
In the first section of this lesson, you learned a technique for getting below your subject to use the sky as a simple background. A low camera angle is also useful for creating the illusion of height, as you can see in Figure 2-8. The lower you get to the ground and the closer you are to the subject, the more pronounced this illusion becomes. Keep in mind that to get this effect, your camera should be set on the widest angle lens possible.

Figure 2-8: Emphasize height with a low camera angle.

Look down from above
The reverse is true if you stand above your model and look down on them. In Figure 2-9, the camera angle paired with the subject looking up into the lens conveys a feeling that you have the subject's complete attention. If your goal is to make the subject appear smaller than real life, this is a good angle to try. It also distorts the distance between the camera and subject and can make them seem further apart, especially when shooting almost straight down.
A twist on using this perspective is to have your subject lie on the ground and shoot looking down at them. This works especially well if you are trying to capture little ones who won’t sit still. Figure 2-10 shows an example of what you can capture using this technique. Shooting from above captures the children's natural expressions and tells a story about their friendship, as well.

Next we’ll cover two more fun ways to photograph your subjects from a different point of view.

**Tilting and getting closer**

Tilting the camera and getting closer to your subject are two more techniques that can add compositional interest.

**Tilt your camera**

Tilting the camera to an angle other than vertical or horizontal is unconventional. Your eye is used to the symmetry of 90-degree angles, so using such an angle creates an energy and interest in and of itself, regardless of the subject. Figure 2-11 uses a dramatic tilt to convey the energy of a child making soap bubbles.
One of the most common errors that amateur photographers make when photographing people is that they try to include too much of the background in the photo. The closer you get to your subject, the more intimate the photo feels.

Figure 2-12 is a wonderful photo. But when compared to the same subjects photographed closer, notice how much more dramatic it becomes.

A general guideline for you to follow is once you compose your photo, take two steps closer. You will probably be happier with the results.
You can also apply this same principle afterwards by cropping your photos with a photo-editing program. But it's a good idea to get in the habit of eliminating excess background while you shoot. Now that you have explored ways to alter the camera to capture great people photos, you'll learn some basic guidelines for posing your subjects.

**Posing your subjects**

Remember back to Lesson 1 when you learned about the hazards of flattening the world into a twodimensional film plane? It happens to the people you are photographing as well. This is why standing people in a line and photographing them straight on yields flat, lifeless results. How can you compensate for this shortcoming of photography? Pose people in dynamic ways, which is what you will be learning in this section.

**Turning and leaning**

Just by doing something as simple as turning a person's shoulder toward the camera, you give them so much more depth. Another great trick is to ask them to lean in toward you. They may feel silly doing it, but it looks great on film. Figure 2-14 shows the great results of using this posing technique. If you have more than one person in your photo, stagger them so they aren't in a straight line.

Create height
When photographing a large group of people, you will need to stack them up in short, loose rows. You don't want anyone struggling to be seen. Use your surroundings to find props you can use to create height. In Figure 2-15, the photographer used stairs to stagger the height of the subjects. Having them posed while seated keeps to the casual feel of the photo.

Figure 2-15: Use props to create height.
Keep in mind that when you add depth to the subjects, you will need to add depth of field. You don't want the people on the back row to be out of focus.

Pay attention to relationship
When you photograph people together, ask yourself what you want the photo to say; what story should it tell. If you are photographing members of a family together, pose them in ways that show the closeness. Figure 2-16 is an example of an interesting pose for parents and children. One of the many benefits here is that the child cannot run around if her feet are off the ground. Other posing options to consider could be hugging, playing together, or doing something that's unique to their relationship.
Another concept that can assist you when taking photos of people together is that they don't always have to be looking at the camera. Take the obligatory posed shot, but then be patient and observe quietly. You will be amazed at what you can capture when people are relaxed and aren't performing for the camera.

**Think about clothing color**

When photographing a group of people together, make sure their clothing doesn't clash. Solid neutral colors work best because you don't have to worry about color or patterns that compete for attention with your subjects. A big trend in professional portraiture is to have everyone in the portrait wearing the exact same outfit; especially white shirts and khaki pants. It looks unified and pulled together and keeps the focus on the people. For a more informal look, you may just want to ask your group to stay away from patterns. Red is a very tricky color to work with and should typically be avoided for group photos, but if only one person is wearing it, it can work fine. Figure 2-17 shows a nicely coordinate range of clothing colors.

**Environment and props**

Every person is individual and unique. Consider your subject's interests, hobbies, favorite places, and prized possessions before photographing them. If the person plays guitar, you can capture them in midsong,
as shown in Figure 2-18. If the family loves to sail, photograph them on their boat. Not only will the photos be more personal, but your subjects will be more comfortable if they have something to do or feel that they are in a familiar place.

Figure 2-18: Capture people doing what they love.

Pay attention to mood

One of the biggest trends in wedding photography in the past decade is using a photo-journalistic style for the majority of the photos; capturing candid photos of the day rather than posing. You can use the same concept in your own photos, no matter what the subject. Pay attention to the mood of your subjects and what you are trying to convey. If you are taking pictures of your kids playing and they're acting silly, so much the better for your pictures. The photo in Figure 2-19 shows that your subject doesn't even have to be right side up to capture a great picture.

Figure 2-19: Follow the mood of your subjects.

Moving on

You learned many creative methods to experiment with in this lesson. You now understand how to make the camera see what you want it to see through changing angles, height, and perspective. You also have a great checklist of posing ideas to work with the next time you photograph people.

In Lesson 3, the focus is on the world around and the unique considerations and opportunities for photographing objects.
Before you move ahead, make sure you complete your assignment for this lesson. Practicing what you have learned will help to solidify your new skills. You can test your new knowledge in the quiz section as well.

**Assignment #2**

It's time to put all of your new portrait skills to the test. Select a subject who will be patient and cooperative while you work. Work on all of the techniques you learned in Lesson 2, including:
- Using multiple camera angles and heights to explore perspective.
- Controlling depth of field, either with Portrait Mode or Aperture Priority mode.
- Isolating your subject against a solid background, sky or ground.
- Posing your subject to convey depth and interest.

Best of luck!

**Quiz #2**

Question 1:
True or False: The best poses keep the person completely perpendicular to the camera.
A) True  
B) False

Question 2:
Which of the following aperture stops will give the photo the shallowest depth of field?
A) f/11  
B) f/22  
C) f/5.6  
D) f/8

Question 3:
True or False: To create more engaging, personal photos, you should crop out most of the background and focus on the subject.
A) True  
B) False

**Spaces: capturing the world around you**

Believe it or not, there are other things to photograph besides people! You can find interest in everyday objects by looking for natural patterns, getting closer and photographing the unexpected. In this lesson, you'll explore landscape photography techniques and learn how to take better close-up photos.

**Landscape photography techniques**

When you go on vacation and find yourself in front of a beautiful building or a picturesque scene, what do you do? Most people take a quick picture and move on. Unfortunately, the easy shot is rarely the best one. Take the time to examine the object you want to photograph from all angles and perspectives. By all means, get the easy shot as a safety net, but keep searching for a better alternative. Not only will you come away with better photos, but you might find a little adventure along the way as well. Figure 3-1 shows a mosque from the vantage point of a nearby garden instead of standing right in front of the building.

![Figure 3-1: Don't be satisfied with the obvious photo.](image-url)
Wide angle
If you want to show the grand scale of your surroundings, it's best to use the widest angle possible. 35mm is about the widest angle lens available for most digital cameras, which is about equal to what your eye sees. In the example in Figure 3-2, the trees look so tall because of the use of a wide angle lens and the extremely low camera angle. Most likely, the photographer lay on the ground and shot directly up to get this photo.

![Figure 3-2: Use widest angle possible to convey the size and scale of your subject.](image1)

Scale
Landscape photos are one of the most common disappointments new photographers have. Have you ever taken pictures of a vast open area, only to find that the photos came back looking puny and dull? The problem with these photos is that the camera can't portray just how large or far away an object is. Remember from Lesson 1 that the camera flattens whatever it sees into two dimensions -- your eye sees in three dimensions, but your camera can't.
The way to overcome this obstacle is to place an object in the foreground to give the proper scale. If you're in the Rocky Mountains, for example, frame the shot with a nearby tree. The human eye can approximate how large a tree is and can deduce how large and vast the mountains are by comparison. In Figure 3-3, a floating log and the shoreline help give proper scale to the mountain in the distance.

![Figure 3-3: Use a foreground object to show scale of distant objects.](image2)
Figure 3-4 shows another helpful use for foreground objects -- they keep the photo looking threedimensional. One thing appears in front of another. The tree is in front of the beach, and the water is in front of the island. More water is beyond the island and land is visible in the distance. The depth of these objects gives dimension to the photo.

Figure 3-4: Use foreground objects to show depth in landscape photos.

Taking pictures of airborne objects can present the same scale problem. If you've ever taken a picture of a plane or hot air balloon against just blue sky, you have experienced this problem firsthand. There is no way of knowing how far away the aerial objects were from the photographer, or how high in the air they were flying. Placing something else in the photo -- whether it is just a few clouds or an entire beach, as shown in Figure 3-5 -- gives the viewer a frame of reference.

Figure 3-5: Aerial objects also need something in the frame to convey correct height.

Next you'll learn how to capture the sense of a place by capturing details close up.

**Macro and close-up photography**

While you are exploring your surroundings, whether somewhere exotic or just in your own kitchen, don't forget to look at the details. A visual memory of place and time can be extremely powerful.

**Environmental details**

Take the time to capture glimpses of where you have been that remind you of what you felt while you were there. Figure 3-6 shows a street sign that might not have ever been noticed as a photo opportunity, but
captures the essence of the place.

![Western Wall Road sign](image)

Figure 3-6: Capture details that remind you of a certain place.

Figure 3-7 isn't a macro shot, but it shows you how paying attention to the color and texture of the background can make a typical family photo much more interesting.

![Family photo](image)

Figure 3-7: Capturing the details of the building in the background makes this photo much more interesting.

**Macro shots**

In Lesson 1, you learned a little about shooting modes, including your camera's macro mode. Remember that the macro shooting mode and any detachable macro lenses you have are meant for extreme close-up photos, usually within a foot or so of the object.

A macro lens is a 1:1 ratio lens, which means that there is no magnification used. What you see is exactly what it will look like on film. This lack of magnification allows you to get very close to your subject, but there are a couple of drawbacks.

Keep in mind that the closer you get to your subject, the less depth of field you have to work with. If the subject is deep, parts of it will be out of focus. Figure 3-8 shows a flower center. Notice how much of the object is blurred due to the incredibly shallow depth of field. Even if you took this photo using an extremely long aperture, such as f/22, you would not be able to get the entire image in focus.
Figure 3-8: Extreme close-ups allow very little depth of field. By necessity, you must use a long aperture to achieve good macro photos, so you will be dealing with a lot of low-light situations, especially when you are shooting indoors. In the next section we’ll discuss how lines, shapes, and abstracts can add to your photos.

Lines, shapes and abstracts
Geometric shapes are comforting for your eye. They are easy for your eyes to recognize and make sense of. When creating abstract photos or even portraits, make use of shapes and lines wherever possible.

Lines
You may remember learning how to draw perspective in middle school art class. Using strong lines in your photos can give the feel of dimension as well. Figure 3-9 uses the line of the road to show the scale and distance of the mountain in the background.

Figure 3-9: Use lines to convey depth.

Curves
Lines in your photos needn't be straight. Curves of all kinds will guide your eye through the photo. In Figure 3-10, the repetition of the curve found in the arched doorway and the mosaic tile on the ground creates a very strong composition.
Shapes
Just as your brain tries to make sense of what you see by looking for relationships, it also seeks familiar objects such as shapes. By using simple shapes, such as circles, squares, and triangles in your composition, you are creating a photo that is very pleasing to the eye. The repetition of the circular shapes in Figure 3-11 gives the photo a very strong level of interest.
Use repeating shapes in your photos -- and arrange the faces in your photos to match.

**Visual triangles**
Just as lines draw your eye toward the subject of your photo, triangles keep your eye interested. Triangles are made by placing objects at three points with the subject either being one of the points or in the center of the points. Figure 3-13 shows that using three objects creates an area for your eye to circulate and remain involved in the photo. The bright yellow of the tents is also a contrasting color to the blue sky and water, which creates dynamic color energy as well.

The triangle adds compositional interest to people photos, as well. Note how the three faces form a triangle around the central bouquet in Figure 3-14.
Figure 3-14: Look for visual triangles when photographing people, as well. A guiding principle of interior design is to group items into threes and fives. These numbers are pleasing to the eye and are sought after in art as well. As you search for photography opportunities, train yourself to seek out natural groupings of three or five.

Patterns and repetition
As you learned in Lesson 1, your brain seeks out recognizable patterns. By creating a photo filled with the same patterns repeated throughout, you unify different objects into a single strong composition, as Figure 3-15 illustrates.

Figure 3-15: Repeating patterns create a unified photo.

Figure 3-16 proves that even a pile of pumpkins makes an interesting photo. The repetition of shapes...
results in a pleasing composition.

Figure 3-16: Repetition of shapes and a good camera angle create a satisfying photo.

Abstracts
Some of the most unique and interesting photographs are ones that are unrecognizable. As you explore your surroundings, be on the lookout for intriguing objects that would make good abstract photos; more specifically, seek out interesting color, texture, and forms. Figure 3-17 is an excellent example of an abstract. It doesn't matter what it actually is; shot like this, it's art!

Figure 3-17: Look for unique subjects for creating abstract photos.

The next section covers a few more ideas to add to your collection of creative photo composition tips.

More creative ideas that add interest
This section focuses on a few creative ideas to enhance your photos of the world around you. Remember that all of the techniques, angles, and ideas you have learned in previous lessons can apply to photographing the outdoors or simple objects in your home.

Frames
You learned to use framing as a method of creating a focal point. When you are exploring all of the possible angles and locations around your intended subject, make sure that you look for framing possibilities. Figure 3-18 shows an interesting framing idea.
Figure 3-18: Frame your subject.
Figures 3-19 and 3-20 show you some interesting framing ideas you can try when you shoot family and group photos. If you're a scrapbooker, photos like these would make wonderful intro pages to your album.

Figure 3-19: A photo like this would make a great intro to an album of family vacation photos.
Figure 3-20 was taken through a boat window in Europe.
Reflections
Whenever you have a still body of water close to your subject, check for interesting reflections. Figure 3-21 shows a fantastic example of how to use a reflection as the subject of the photo instead of the object itself. Many times, you can see usable reflections in surfaces other than water, so watch all reflective surfaces for potential.

Silhouettes
Inevitably, you will get to the most beautiful location of the day when it is too dark to photograph it properly. You do have one option left to you as long as you have strong backlighting. Figure 3-22 shows an
example of creating a silhouette of the trees against the sunset. This is easy to accomplish; just have your camera focus on the sunset and the photo will be exposed for that area, leaving the foreground images as silhouettes.

Figure 3-22: Create silhouettes when light is low.
Figure 3-23 shows a silhouette of a mother and daughter in a sunset beach photo.

Figure 3-23: A family scene in silhouette against the ocean at sunset.

**Panoramic photos**

Even when you use the widest angle possible, there are scenes that simply won't fit into the frame of one photo. Figure 3-24 shows a great example of a scene too large to capture.

Figure 3-24: Some cameras have an in-camera panoramic photography tool that can stitch several photos together.

**Enlarge image**

Make sure that you hold the camera level as you take a series of photos, overlapping each photo by between 30 percent and 50 percent. When you're finished, the camera seamlessly stitches the photos together to create a beautiful panoramic photo.

**Moving on**

You've covered a lot of ground in this lesson! You now have the techniques and skills to create breathtaking landscapes and exceptional close-ups. You also have several ideas for finding and capturing powerful environmental detail photos.

In Lesson 4, the focus moves to light. You'll learn how to create photos in all lighting situations, including the best time of day to take photos and when to turn your flash off.

Now it's time to put your new skills to work. Make sure you complete the assignment and quiz for
Lesson 3 before starting the last lesson of the course.

**Assignment #3**

Macro photography takes a bit of practice, so that is what your assignment is for this lesson. Choose any subject that contains interesting details that would benefit from being "blown up." Select the macro mode on your camera and take some photos. Remember that you need plenty of light to compensate for the small aperture required for this mode. If you’re shooting outside, be aware of the wind. Because you are focusing on such a small area, even a small breeze can cause blur in objects that can move. Use your knowledge of changing perspective with angles and heights to compose several unique photos.

**Quiz #3**

Question 1:
True or False: When you’re taking landscape photos, you should zoom in as close as you can.
A) True
B) False

Question 2:
What is the correct method to show scale and depth in landscape photos?
A) Use a shallow depth of field
B) Use a fast shutter speed
C) Include a foreground object
D) Use the macro mode

Question 3:
True or False: Groupings of four objects are the most pleasing to the eye.
A) True
B) False

**Photography lighting techniques, exposure and more**

This lesson introduces you to some more ideas for taking photos from a different point of view. First you'll learn more details about controlling light and exposure. Then you will explore some creative exercises and camera features that can really make your photos stand out.

**Notice daily lighting changes**

The best light for photography is just before dawn and just after sunset -- professional photographers call these times "the magic hour" or "the golden hour." You probably don't usually spend much of this time with a camera in your hand, and you are not alone. You're missing some great lighting, though. At these magical times of day, the light is softer and shadows are minimal.

At dawn, you may notice that the quality of light has a blue cast to it, as shown in Figure 4-1.
Figure 4-1: The cool blue light of dawn. The reverse is true just at sunset. The light is warm and golden, which renders beautiful skin tones. For that reason, this is the preferred time of day for portraits. Figure 4-2 is a good example of the glowing light at sunset.

Figure 4-2: Warm light at sunset. Buildings made of stone or light brick will almost glow in the light just before sunset. Be on the lookout for opportunities to capture the phenomenon.

The rest of the day
Ideally, you should avoid taking outside pictures between the hours of 10 a.m. and 2 p.m., especially on very sunny days. Cloudy and overcast days afford a bit more flexibility regarding the quality of light. These hours extend during the summer, when days are longer.

Unfortunately, weddings, birthday parties, picnics, and trips to the lake all occur when the sun is out and at its brightest. When the sun is high in the sky, the light is very harsh. This harsh light creates problems in the highlight area of your photo, especially if the light is touching your subject directly. It can also create troublesome shadows.

Areas of the photo that are completely white from sunlight are called hot spots, or blown-out highlights. These hot spots are especially problematic when they rest on the face of your subject, as they do in Figure 4-3. Hot spots can't be corrected, even if you use a photo editing program. When an area of your photo has gone completely white, there simply isn't any information left to rescue.
What can you do to avoid these hot spots? The first option is to find some shade. Use whatever obstacle you can find to block the sun from your subject. Trees, buildings, and even cars can block enough of the sun to keep hot spots out of your photo. Figure 4-4 shows the same subject as the previous photo using a building to block the harsh light from her.

Another option is to use your flash to fill in the subject and even out the light. It sounds counter-intuitive to use your flash during the brightest light of the day, but it works wonders. Remember that your flash has a limited range -- your subject will need to be within that range for it to be effective. When you place your subject in the shade and the background remains very bright, your camera will meter, or determine correct exposure, based on the light in the entire scene. Using this default method, the background would be properly exposed, leaving your subject in the shadows. This is another opportunity to use your flash. In Figure 4-5, the little boy's face was filled in with flash, balancing the light in the foreground and background.
Using natural light indoors

Natural light is the best light for photography. It is the light we live in and are used to seeing other people in. It is warm and soft, creates beautiful catch lights in eyes, and is universally flattering.

Studio photographers use very expensive lights, backdrops, reflectors, and diffusers to create beautifully lit photos. They use all of that equipment so that they have complete control over the light. The good news for you is that none of that is necessary. To approximate a natural light studio anywhere, follow these simple instructions.

Find a fairly large window, preferably facing north. If you don't have a good window to use, go out to the garage and open the door. Place your model so that he or she is perpendicular (at right angles to) to the window -- in other words, the light from the window should be falling on one side of your subject's face. You want the light of the window to light one side of the face without any light directly falling on them. Direct light will create hot spots. Usually, the subject will need be a few feet to the side of the window.

Check the frame to make sure that no clutter appears in your photo. Set your camera to portrait mode or select aperture priority mode and use a large aperture; f/5.6 is the standard. Figure 4-6 is a great example of a natural light portrait taken indoors.

Exposure: how it all works together

We've been talking about controlling light in this lesson -- using the magic hour lighting for flattering portraits and controlling light with a flash, and using natural light. But how do you control the exposure in your photos -- the amount of light that hits your subject? It seems that one of the most daunting tasks in learning photography is trying to grasp how all of the settings function together. Let's try to simplify the
process and hopefully help you see the forest for the trees.

There are three major exposure controls: aperture, shutter speed, and ISO. All of these controls may be modified either through shooting modes or through more manual control of the camera. Knowing which control to set to what value seems to be the key question.

Remember from previous lessons that aperture controls depth of field and how much light is hitting the film plane at a time. Shutter speed controls how long the film plane is exposed to the light. The ISO number refers to how sensitive the "film" is to light, so ISO 400 is about half as sensitive as ISO 800.

Think of exposure like a cup. To create a properly exposed photograph, the cup must be completely full. It doesn't matter how you fill it, just so long as it eventually gets full and doesn't overflow.

If you have the aperture wide open at f/2.8, a lot of light is hitting the film, so you have to speed up the shutter speed to compensate. In reverse, if you have a tiny aperture for light to come through, it is going to take a lot longer for that same amount of light to hit the film. The shutter will have to stay open much longer to allow that light to get in. For any given photo you take, there might be several correct exposure combinations.

Say you are outside photographing a deer in a field. Your exposure settings are as follows: ISO 200, using an f/11 aperture and a shutter speed of 1/250th of a second. What if you wanted to create a more shallow depth of field? You would open up your aperture a few stops, maybe to f/5.6. What would you need to do to your shutter speed to keep the photo correctly exposed? You would have to speed it up, maybe to 1/1000th of a second, to keep the balance.

Avoiding this balancing act for every shot is the reason aperture and shutter priority modes exist. In aperture priority mode, you select the f-stop you want to use and the camera sets the shutter speed appropriately. This is a much faster, sanity-saving alternative to a fully manual camera.

Now that you have some lighting techniques under your belt and have a better idea of how to control exposure, let's move on to some ideas for getting fresh perspectives in your photos.

Get yourself in the picture

If you are the primary photographer in your family, you may have noticed that you aren't in many of the photos. When you look back on your photos, your memories may be captured, but what about your presence? Will your children and family members remember that you were there? This section of the lesson is devoted to you; the person behind the camera.

Use your camera's self-timer

One way to make sure that you make an occasional appearance in your family's photographic history is to make use of your camera's timer. An inexpensive tripod would be preferable, but if it is not in your budget, you can make do with a solid level surface like a table or mantel.

The first step is to consult your camera's user manual and make sure that you know how to set the timer and note the amount of time you will have to get into position once the timer is set. Next, get your other subjects set up and check the composition of your photo without moving the camera out of position. Remember to leave a place for yourself in the group. You may have to go through a couple of practice runs before getting the timing and placement correct, but once you do you will have a wonderful portrait with you included.

Give the camera to your kids

Children have a unique perspective on the world and what they consider worthy of photographing. Ask them to be the photographer for the day and see what they create.

Only attempt this exercise if your children are old enough and mature enough to handle the camera properly.

Depending on the age of your children, you may or may not get mostly useable results. The object of this exercise is to get some photos that include you and some that you might not have ever taken. By looking at the world through a fresh set of eyes, you might just find an idea or two to add to your arsenal of photographic tricks.

Enlist other people

Try this unique party game at your next gathering. Ask every person present to take your camera for 10 to 15 minutes. Guide them to be as creative and spontaneous as they want to be with the photos. At the end of the party, you should see some truly unique photos!

Next up: creative exercises to train your eye.
This course is full of artistic approaches to photography and visual guidelines to help you create stronger compositions. Just because you read through the course doesn't necessarily mean that the information will stick. Like anything else in life, if you don't use it, you will lose it. Here are a few ideas to help you practice what you have learned.

**Exercise 1: track light through the day**

This exercise takes some commitment on your part. Pick a day when you can be available every hour on the hour. Pick an accessible subject to photograph and make sure that you include something in the photo that will cast shadows. Set up your camera, again preferably on a tripod to keep it steady. Just before dawn take the first photo. Take one picture of the same location at one-hour intervals until it's too late in the day to get another photo, usually an hour after sunset. At the end of the day, compare the pictures in chronological order. Pay close attention to the color of the light, the shadows, and whether objects look flat or dimensional. It may sound like a lot of work, but this exercise can really give you a firm grasp on how light changes throughout the day.

If you're thinking about planting a garden, this exercise can assist you in determining exactly how light falls on a particular area during the day.

**Exercise 2: aperture check**

This exercise takes much less commitment on your part than the last one. The goal of this activity is to see the power of controlling depth of field using your camera's entire range of apertures.

Select a location that contains several objects at varying distances from you: for example, a wooded area with trees, a parking lot full of cars, a soccer game, or a group of children playing. Feel free to stage them if necessary. You should attempt this exercise on a day when you have plenty of light to expose your photo correctly at even the smallest apertures.

1. Set your camera to aperture priority mode and select the largest aperture available. This number will differ from camera to camera and lens to lens. It can range anywhere from f/1.8 to f/5.6.
2. Focus on an object close to the center, which will be the focal point of the entire series. Take a picture at this setting and then move the setting to the next smallest aperture, either f/6.7 or f/8.
3. Continue taking a photo at each of the available aperture settings using the same focal point for each.

This is a good exercise to repeat often, using varying subjects placed at varying distances from you and each other. If your camera has a macro setting that allows you to override the aperture settings, try that as well.

Once you have the photos, study them in order and compare the differences in depth of field. (Printing the photos on high-quality paper will make it easier to see what's changed.) Check the foreground and background for the changes, because depth of field applies to areas in front of and behind where you focus.

This activity is a wonderful way to get to know the capabilities of your camera and give you confidence in selecting the appropriate aperture for every situation.

**Exercise 3: how many angles can you find?**

For this fun activity, pick a stationary object to photograph. Select something that has interesting lines and shape, but most household items will work well: a fork, a banana, or even a decorative plate. Try to find as many ways to photograph this object as possible. Take photos of it from all angles, camera heights, and lens settings. Use your macro mode, tilt the camera, use your flash, zoom, and visually crop creatively. Find as many unique ways to capture the photo as you can. Your goal is to create 100 photos of this one object. Yes, you read that right -- 100 photos!

Obviously, this is an exercise that will stretch your creative muscles. It will also solidify a lot of the skills you have learned in this course. Rise to the challenge and don't feel bad if you can't come up with 100. It's just a target number. Even creating 50 original photos of one object is impressive.

**Exercise 4: a day in the life**

*Life is what happens to you while you're busy making other plans. -- John Lennon*

You probably have a daily routine: places you go, people you see, things you do frequently. Have you ever taken the time to record them with photos? Most people wouldn't consider their favorite coffee cup or the view from the carpool line worth photographing, but think of it this way -- it's your life. Wouldn't it be nice to remember these details years from now, when you can laugh at the clothes, hairstyles, cars, and cell phones?

This project doesn't have to be completed in one day, but take this opportunity to use your photographic skills to highlight the things that are important to you. Here are some ideas to get you going: the technology of now, your favorite things, a tour of your house in close-ups, people that are important to you, and your town.
Get inspired
Upon completing this course, you will be on overload with new skills to try. In a few weeks, you might be ready for more information. Where can you go for creative inspiration?

HP Creative Studio
The HP Creative Studio is the ideal place to find hundreds of free templates for making any imaginable kind of printed photo project. You'll find templates for photo keepsake gifts as well as cards, calendars, stationery, recipe cards, photo frames, toys, puzzles, party decorations and invitations, scrapbooking and quilting projects, custom CD labels, business cards and much more. Also, many Creative Studio photo project templates allow you to edit and crop your photos before inserting them into the templates.

The HP Digital Photography Center
The HP Digital Photography Center covers everything you need to take, print, and share digital photos. You'll find how-to guides, tips, and a wide range of resources for taking better photos, sharing them with the world and using them as a springboard for creative projects.

Photography Web sites
Most professional photographers have extensive galleries or portfolios on their Web sites. Browse through them to find innovative ideas for poses, composition, and cropping. Aside from scouring professional sites, seek out some of the many photo gallery sites where amateurs post their best work. There are practically limitless sources to spark your interest and motivate you.

Snapfish.com
Now that you have all of your incredibly beautiful photos, how do you share them with your loved ones? Snapfish offers free photo-sharing as well as the ability to order prints of your photos delivered to your door and create remarkable photo gifts such as cards, calendars, and photo books for everyone in your family. You can also print your digital photos at home or on the go, which you'll learn about next.

Print your photo masterpieces
Now that you've mastered the art of taking digital photos, it's time to share your work with the world. With the right equipment and know-how, printing your digital photos is a breeze.

Print your photos at home
If you're planning on printing your digital photos at home, it's essential that you have the best photo printer, ink, and paper for your needs.

Photo printers
Not all printers were created equal, so it's extremely important that you choose a printer designed for photo printing. HP Photosmart printers have hundreds of creative options and functions for printing the perfect photo, regardless of your project. These printers are designed to print photos in the most popular sizes for scrapbooking, framing, and sharing with friends and family. Some models even provide the option of printing with or without a computer; you're also not tied to printing at home. These portable printers feature a built-in handle and fold-up paper tray, so you can print your photos straight from your camera just about anywhere.

HP Vivera inks
To achieve vivid, stunning photo prints with your HP Photosmart printer, look to HP's Vivera inks. Vivera inks are created with exacting purity and top-shelf ingredients. The inks contain dyes, not just powdered pigments of other inkjet formulations. If you put a Vivera-printed photograph side by side with a photograph printed with another inkjet technology, you'll see a noticeable difference in the blues and realistic hues of the other colors. The surface of the Vivera print will be uniform, since colors are derived from blending and not diluting. You'll also observe a distinct absence of graininess. On glossy papers, especially, you'll sense three dimensions in your photos.

Vivera inks were designed to match HP papers. On HP Premium Plus photo paper, Vivera inks provide beautiful brilliance with the added plus of over 100 years of fade resistance.

Photo papers
Specially photo papers can provide the same feel and quality that you'd get from a professionally developed photograph. When selecting paper for printing your digital photos, consider the following:

Whiteness: The whiter your paper is, the more alive your pictures will appear. White paper produces sharp images and vibrant colors and is an essential element in the production of high-quality photographic prints.

Thickness: You want to select a paper that's thick enough to give the feel of a photograph but not so thick that it gets stuck in your photo printer.

Surface: There are two main types of surfaces for photographic printing. Glossy surfaces provide great
color and shine, but also collect fingerprints. Matte finishes produce slightly less vibrant colors, but are more amenable to rough handling. You'll also find variations on these two, like semi-gloss, soft-gloss, and satin-matte. If you're not sure which one is right for your efforts, visit a local office supply store and ask the manager or attendant to show you the differences between them.

Size: You'll probably want 3x5" or 4x6" paper to reproduce the standard size photographic prints that you're used to receiving when you develop regular film. Photo dimensions can vary by project, though, so consider the photos you want to print and choose the best size for your needs.

Moving on
We hope that you've enjoyed this course on camera composition and learning to change your perspective. There is one more assignment and one more quiz for you to complete. Remember to keep your camera close at hand and practice what you have learned here -- keep training your eye to capture the unusual and the beautiful. This course may have started your creative gears turning, but it's up to you to keep them moving. Good luck and happy shooting!

Assignment #4
Using the skills you gathered in Lesson 4, practice working with light at various times of day. Use light both outdoors and indoors. You can either choose a person or another subject, but be sure to choose something that's close enough to you to use your fill flash effectively.

Quiz #4
Question 1: True or False: The light at dawn has a warm, golden glow. Sunset light tends to be warmer.
A) True
B) False

Question 2: Which of the following will not help you avoid hot spots in your photos?
A) Use a large object (a tree or building, for example) to block sun from your subject
B) Select a shallow depth of field
C) Don't take pictures during the harsh light of the day
D) Use fill flash to fill in subject.

Question 3: True or False: Use a north-facing window to create natural light portraits indoors.
A) True
B) False

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