



# Troop 61

# Self-Teaching Guide to

# Photography

# Merit Badge

Scout Name: \_\_\_\_\_

Date: \_\_\_\_\_

Adapted from: Kodak Self-Teaching Guide to Picture-Taking

Scout Name: \_\_\_\_\_

Date: \_\_\_\_\_

Init   Date

1. \_\_\_\_\_ Take and paste pictures into your booklet that demonstrate the following elements of a quality picture:
  - a. Steady Camera
  - b. Rule of Thirds
  - c. Level Horizon
  - d. Fill the Frame
  - e. Framing
  - f. Direction of Light: Back light, top light, side light
  - g. Quality of Light: Flat Light, Sunlight, Time of Day
  - h. Point of View: High / Low
  - i. Leading Lines
  - j. Flash
  - k. Bonus: Take pictures demonstrating exposure-aperture (f-stops), shutter speed, depth of field. Stars at night.
  
2. \_\_\_\_\_ Explain the basic parts and operation of a film camera or digital camera. Explain how an exposure is made when you take a picture
  
3. \_\_\_\_\_ Discuss with your counselor the differences between a film camera and a digital camera. List the advantages and disadvantages of using a digital camera versus a film camera.
  
4. \_\_\_\_\_ Do the following:
  - a. Explain to your counselor the basic parts common to all cameras using a diagram.
  - b. Explain common photographic terms such as lens, shutter, flash, viewfinder, exposure, and f-number.
  - c. Explain how to use a flash correctly
  - d. Explain how back light affects a camera
  - e. Explain three techniques for getting people to pose for pictures
  
5. \_\_\_\_\_ Discuss with your counselor the career opportunities in photography. Pick one that interests you and explain how to prepare for such a career. Discuss with your counselor the education and training such a career would require.

**Requirement 1a**  
**Steady Camera = Sharp Pictures**

The picture below is distorted. The camera moved as the picture was taken.



**Task:** Set your camera on a solid, flat surface, or use a tripod, and take a picture of yourself or a group. Use a timer if available.

(Put your Steady Camera example here.)

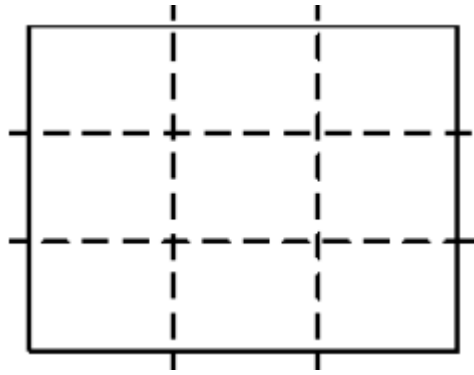
**Requirement 1b**  
**Rule of Thirds**

**Task:** In your mind, divide the picture area into thirds, both horizontally and vertically.

Place the most important part of your picture at one of the four places where the lines cross.

A person who is the center of interest should look or appear to be moving toward the center of the picture.

Try to place horizon lines on one of the dotted horizontal dividing lines. If you are taking a picture of a house and yard, place the house on the center third.



(Put your Rule of Thirds example here.)

## Requirement 1c **Level Horizon**

**Task:** Keep the horizon level!



This example shows what can happen if you don't. Take a few pictures that have a strong horizon line (sunset, open field, lake) and practice keeping it level with the top and bottom of the viewfinder.

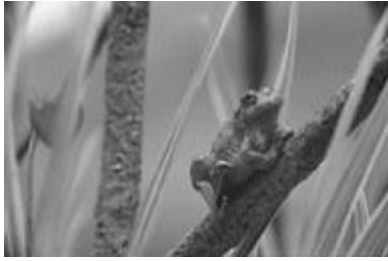
Place the horizon line 1/3 from the top or 1/3 from the bottom.

Incidentally, the same idea holds true when taking pictures indoors. Floors, walls, and ceilings shouldn't tilt.

(Put your Level Horizon example here.)

**Requirement 1d**  
**Fill the Frame**

**Task:** Move in close enough so that your subject fills the viewfinder.



Instead of This



TRY THIS!

If you are showing people doing something, be sure that you are close enough to see what they are doing.

(Put your Fill the Frame - Close Up example here.)

**Task:** Compose pictures of people so that they fill all of the picture.

Don't put the subject's head in the center of the picture. Put the head at the top! Take a picture using this technique.

Take a picture of people in which the whole picture is filled with just the head and shoulders of your subject.



(Put your Fill the Frame – Whole example here.)

(Put your Fill the Frame – Head and Shoulders example here.)

## **Requirement 1e** **Framing**

**Task:** This simple trick will make people think you're a professional. It's called framing. Use tree branches, bushes, part of a building, or a person to frame your subject.

Tree branches give added interest and depth to the picture. Some professionals have been known to cut a branch of leaves from a bush and hold it in front of the camera to achieve the framed composition they wanted. Framing is particularly important on those overcast days when the sky is all white or gray and just plain uninteresting. Position yourself so that a branch or something else fills most of the sky.

Indoor pictures can benefit from this too.



(Put your first Framing example here.)

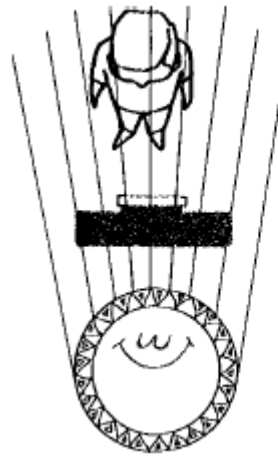
(Put your second Framing example here.)

## Requirement 1f **Direction of Light**

Light, along with a camera and a subject, is a basic ingredient for photography. But by thinking about light, you make a whole variety of pictures possible.

### **Frontlighting**

Most pictures use front lighting, here falls directly onto the subject. This kind generally provides good, bright, well-pictures.



Frontlighting

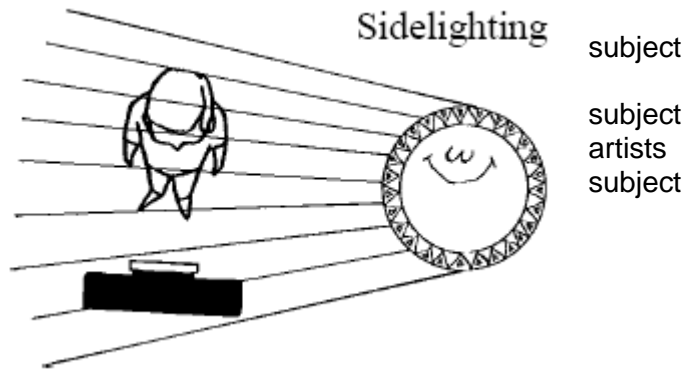
the light  
of light  
exposed

(Put your Frontlighting example here.)

**Requirement 1f**  
**Direction of Light**

**Sidelighting**

Just as it sounds, sidelighting means that the subject is lighted from the side. This kind of lighting generally casts shadows on half of the subject and produces what photographers and artists call modeling, where the surface of the subject reveals any ripples, bumps, or hollows.



(Put your Sidelighting example here.)

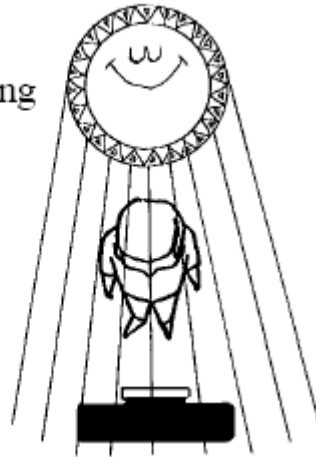
## Requirement 1f Direction of Light

### **Backlighting**

In this case, the light is in back of the subject. probably won't get much detail in the subject, backlighting will provide a strong silhouette sometimes a sort of halo effect. Backlight can be dramatic especially in early morning or late in when the sun is low. Indoors, silhouettes in window can be interesting.



Backlighting



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(Put your Backlighting example here.)

## **Requirement 1g** **Quality of Light**

### **Flat Light**

When the sky is hazy or thinly overcast so that it appears all white or light gray rather than blue, and shadows are very fuzzy or there are practically no shadows at all, it is called flat light or shadowless light.

There's no particular direction to the light; it is coming from all over the sky. This is a perfect time to take close-up pictures of faces.

Flat light is very flattering. Furthermore, since it is softer than bright sunlight, you'll get natural smiles without causing your subjects to squint. Try other subjects in flat light too. (It's also a good time to practice framing to cover up the white sky.)

(Put your Flat Light example here.)

**Requirement 1g**  
**Quality of Light**

**Bright Sunlight**

On a bright, sunny day, you can still get some soft, flat-lighted pictures in the open shade. But watch the background: If it is bright, you may end up with the background bright and your subject just a dark silhouette. On overcast days, you may end up with underexposed pictures if the light is too dim.



(Put your Bright Sunlight example here.)

## Requirement 1g Quality of Light

### Time of Day

In most outdoor pictures, the light comes from the sun. That means the direction of the light changes throughout the day as the sun moves across the sky. If you are going to take pictures of your home or any other fixed object, watch for the best time of day when the sun lights up the important features or shadows add drama to the picture.

By just taking pictures of a building or a statue or a tree at different times of day, you can get an opportunity to study front lighting, backlighting, side lighting, top lighting, and on an overcast day, flat-lighting. Try it.



(Put your Time of Day example here.)

## **Requirement 1h** **Point of View**

There is no law that says all pictures have to be taken from eye level. Different angles can give you some very special pictures.

### **Low Angle**

Lie down on your stomach and take a few pictures. This way you can get bright flowers in the foreground. (They don't even have to be in focus since the color is what is important.) Even some weeds or a curb in the foreground can help set the scene. You also can avoid a cluttered background by looking up at people, with trees or a blue sky as background.



(Put your Low Angle example here.)

## Requirement 1h **Point of View**

### **High Angle**

Now, climb up on a few things and look down on the world. A high point of view offers lots of different opportunities. With people looking up at the camera, you'll see just their faces in the viewfinder without having to worry about posing their bodies or having the heads all lined up at one level. From up high you can also use grass or a bed of flowers for a background—it's another way to avoid a cluttered setting.



(Put your High Angle example here.)

## **Requirement 1i** **Use of Leading Lines**

A leading line can be almost anything: a road, path, sidewalk, fence, river, stream, hedge, driveway, or shadow. You won't find strong leading lines in every subject, but you can look for them and if they're there, take advantage of them.

Lines in a picture should lead into, not out of, the picture and they should lead your eye toward the main subject.

The road or fence will always be there; it's just a matter of choosing the right angle to make it lead into the picture.

Starting a leading line from a corner of your picture will often improve the composition. Watch tree lines and tree tops, curbs, paths, or driveways, and have them lead in from the corners of your picture.



(Put your Leading Lines example here.)

## Requirement 1j

### Flash

#### Range

The light from your flash gets dimmer as you go away from the camera. At about 10 feet it is just barely bright enough to make a good picture with most cameras. Beyond 10 feet there probably won't be enough light. On the other hand, the closer you get to the flash, the stronger the light is and if you get too close, your subject will be all washed-out and white.

**Task:** To demonstrate these possibilities and limitations of using flash with your camera, take the following picture outdoors at night in the dark.

Have three people stand in a line in front of the camera, about 5 feet apart, with the first person about 3 feet from the camera and the last person about 13 feet from the camera.

Stand so that you can see all of their faces and take a flash picture of them.

(Put your Range of Flash example here.)

Result: The person closest to the camera should be too light and the person farthest from the camera should be too dark.

Remember this lesson so that you don't try to take flash pictures in large rooms or auditoriums or at the ballpark. (Sometimes in rooms with light walls and low ceilings, enough light is reflected from the walls and ceiling to give you an acceptable picture at distances more than 10 feet. That's a result of good luck, however, so don't depend on it.)

## **Requirement 1j**

### **Flash**

#### **Reflective Surfaces**

Windows, mirrors, shiny walls, and pictures are some of the things that will cause glare in your flash pictures if you're not careful.

To avoid glare, just be sure that you take your picture at an angle to the shiny surface. Try this comparison:

Take a flash picture of someone standing about 7 feet from the camera in front of a window, mirror, or shiny wall.

Point the camera directly at the shiny surface.

(Put your first Reflective Surface Flash example here.)

## Requirement 1j

### Flash

#### Reflective Surfaces

Now take the same picture but move the camera so that it is at an angle to the shiny background.

(Put your second (better) Reflective Surface Flash example here.)

This principle also works when you want to take a picture through glass (for example a window or a display in the museum or zoo). If you take your picture at an angle to the glass surface, you'll be able to see right through it without any glare from your flash.

**Requirement 4a**  
**Parts of a Camera**

Point out the following parts on your camera and explain how they are used and what they do:

**Lens**

**Manual Focus / Auto Focus**

**ISO**

**Memory Card**

**Flash On/Off**

**Shutter Speed**

**Zoom**

**Shutter**

**Aperture**

**Timer**

**White Balance**