

Wide Angle & Telephoto

Ph2/2b

Name: _____ Blk: _____

Prerequisite:

Materials:

Total time: 5 hours

Deadline: Dec. 2/10.

Evaluation:

5 4 3 2 1 0 Worksheet (-1 for each incorrect answer)

3 2 1 0 Wide, Normal, Tele (photos show varied angle of view)

3 2 1 0 28mm or 35mm distortion (photo shows distortion of view)

3 2 1 0 28mm or 35mm depth (photo creates a feeling of depth)

3 2 1 0 Telephoto compression (135mm and up) (photo shows compressing effect of tele lense)

8 7 6 5 4 3 2 1 Photos printed straight, spotted, full tonal range, appropriate mounts, labeled

_____ x4= _____ % (minus 10% per day past deadline) - _____ = _____ %

Instructors Notes:

PURPOSE: to develop an understanding of the characteristics of wide angle and tele-photo lenses, and demonstrate that knowledge by completing the following assignments

CONTENT: - three photos from the same location, showing angle of view of 28mm,(35 mm) 50 mm and 135 or 200 mm lenses
-one photo shot with 28mm showing distortion of shape and scale
-one photo shot with 28mm creating a feeling of depth
-one photo shot with 135mm or 200 mm demonstrating the compressing effect on perspective

HOW: Plan: by reading and knowing the attached handouts. You may wish to get additional information by reading photo books or articles. You must also view the video on lenses available from your instructor, and while watching complete the attached worksheet.

Do: by shooting the required photos. Contact your negs, then print the three "angle of view" photos full frame (3 X 4 1/2); mount and label on one sheet

Print: the final 3 photos 3 X 4 1/2, mount and label. Be prepared to defend your composition and technical quality.

Additional Lenses

Most 35mm cameras are equipped with a 50 mm lens referred to as a "standard" lens. Objects photographed with the standard lens will appear in a similar perspective as seen by the human eye.

Lenses of a shorter focal length (ie 28 mm) are referred to as **wide angle lenses**, while those of a longer focal length (ie 135 mm) are referred to as **telephoto lenses**.

It is also common today to use lenses that zoom through a variety of focal lengths. This may include wide angle to short telephoto (ie 35 - 70 mm) or longer telephoto lengths (ie 70 - 310 mm).

Advantages of fixed focal length lenses

Generally speaking, fixed focal length lenses have the following advantages.

1. lower price
2. lighter weight
3. sharper optics
4. greater light gathering ability (larger available aperture)

Advantages of zoom lenses

Zoom lenses have advantages as well:

1. greater flexibility in composition
2. special effects
3. may replace 3-4 lenses with one lens

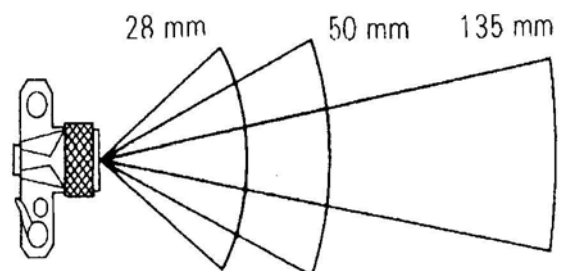
How picture taking is affected by lenses

The use of additional lenses affects picture making in three main ways.

1. A change in subject area and angle from the same camera position.

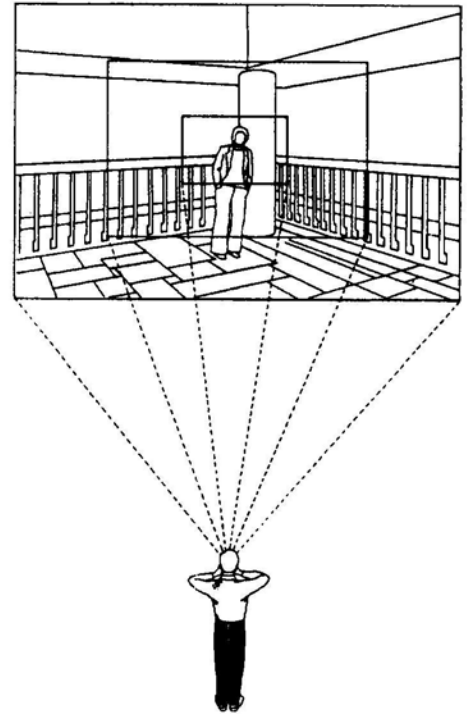
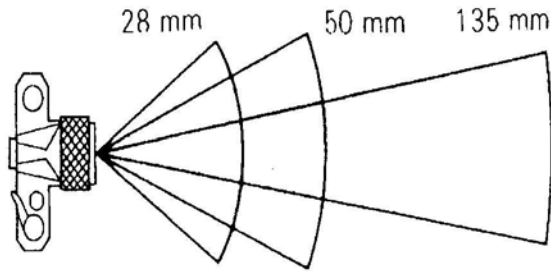
Picture area as well as angle of view are changed with the use of additional lenses.

Changing from a standard lens (50 mm) to a wide angle lens of approximately 25mm would double the angle of view, and quadruple (4X) the picture area.



Change in angle of view

Changing from a standard lens to a 100 mm lens would cut the angle of view to 1/2 and cut the picture area to 1/4. Using a 200 mm lens would cut the angle of view to 1/4 but would cut picture area to 1/16 that of the standard lens.



2. A change in perspective from the same camera position.

The eye judges distance by the way objects diminish in size. The standard camera lens records objects in much the same size relationships as seen with the human eye.

Short focal length lenses (wide angle) stretch the linear perspective by making elements in the background recede and appear smaller in size, thus making them appear farther away. Because of this, objects that are close to the camera may appear to be much larger in scale than objects of a similar size that are further from the camera. Wide angle lenses are well suited to picture making that requires an open or spacious feel (ie landscape photography, or real estate photography of a small room).

Long focal length lenses (telephoto) compact the linear perspective by bringing background elements almost to the same plane as foreground elements. This can be useful for effect, or for eliminating distracting backgrounds.

3. A reduction or an increase in the depth of field.

Short focal length lenses always increase the depth of field. This means that a greater number of elements in the linear perspective will be acceptably sharp. Long focal length lenses have a much narrower band (depth of field) in which items are acceptably in focus.

Remember that depth of field is increases with a small aperture, and decreases with a large aperture. Depth of field is also least when you focus on a subject that is very close to the lens. (Check the depth of field scale on your lens.)

Worksheet

1. The two ways the camera controls light, are by the use of the _____ and the _____ .
2. F stops on the lense increase and decrease by a factor of _____ .
3. Shutter speeds on the camera increase and decrease by a factor of _____ .
4. To increase light striking the film, we can (open close) the aperture or we can (increase decrease) the shutter speed.
5. To create the illusion of motion, we use a (fast slow) shutter speed.
6. The rule of minimum shutter speed to hand hold a camera as it relates to focal length of the lense being used says you should not use a shutter speed slower than the focal lenth of the lense. If you are using a 200mm telephoto lense, the minimum speed to hand hold it would be (1/60 1/125 1/250).
7. You will get the greater depth of field at an aperture of (f 4 f 5.6).
8. The speed of a lense refers to the maximum _____ of the lense.
9. A telephoto lense has a (shallow deep) depth of field.
10. Telephoto lenses have a (narrow wide) angle of view.
11. Telephoto lenses (compress extend) linear perspective.
12. Wide angle lenses have a (shallow deep) depth of field.
13. When shooting with a wide angle lense, people look fatter at the (edge center) of the picture.
14. Wide angle lenses distort the size of objects most when they are (close to further away from) the lense.
15. Label the following lenses 1. wide angle, 2. normal 3. telephoto
____ 28mm, ____ 50mm, ____ 200mm, ____ 35mm, ____ 100mm, ____ 80-200mm
16. Two disadvantages of zoom lenses are:

