

LENSES
Photographic Workshop – Wild Ones – Sugar Grove Nature Center

Most cameras today have zoom lenses that cover from wide-angle to normal to telephoto. A *normal* setting has a picture angle and perspective similar to those of the human eye and is the most versatile setting for all-round shooting.

Wide-angle settings have a wider angle of view, enabling you to get more into an image. They are good for working in cramped quarters and for landscape and habitat images. A broad, perspective is produced, and objects in the foreground appear larger and those in the background smaller. Wide-angle settings have greater depth of field than a normal setting.

Telephoto settings have a narrower angle of view than normal settings and are used to bring distant objects nearer. Because of their shallow depth of field, telephoto settings are particularly useful in isolating a subject from the surrounding environment. The images produced at telephoto settings have a foreshortened effect and gives the impression of flattening objects and compressing them together.

In non-technical terms, the angle of view of a lens or lens setting is measured by its *focal length*, expresses in millimeters. A normal lens on a 35mm film camera is about 50 to 60mm. Common wide-angle lenses are 18mm (very wide), 24mm (noticeably wide), and 35mm (moderately wide). Telephoto lenses are 85mm (moderate effect), 135mm (noticeable effect), 300mm (substantial effect), and 500mm or more (extreme telephoto).

Because focal length numbers on digital cameras cannot be compared between camera brands or even between different lines within the same brand, the equivalent focal length ranges of lenses are compared to standard 35mm film cameras. This information is in instruction manuals or on the web.

So, when do you use which zoom setting? That is the purpose of these sets of exercises. Also, they will give you a better idea when to creatively use zoom settings to achieve images that you to capture the desired effect.

FIRST EXERCISE:

Purpose: to see the effect of zooming in on a subject without moving the camera. To produce images that can be compared, take the following steps.

- Use a tripod set 100 feet away from subject
- A good subject can be a large, somewhat isolated tree with other trees behind or in front of it.
- With the lens zoomed to long telephoto, compose image so that base of tree is towards base of image.
- Take a few test images to see if vertical or horizontal format works best.
- If possible, set the ISO setting to 100.
- If possible, use “aperture priority” with the f-stop set to wide-open.
- Or use an automatic program for portraits or close-ups (even though this is not a close-up).
- Take a series of images zooming from telephoto to normal to wide-angle.
- Do NOT move the camera up and down between images!
- Compare the different images, such as on your computer and notice the differences (see

SECOND EXERCISE:

Purpose: To keep the size of the subject the same in the image while moving the camera closer and then changing the zoom setting.

- Repeat the first seven steps above.
- Again, use a tripod if possible.
- Move the camera close to the tree (15–20 feet) and adjust the zoom so that the base of the tree is towards the base of the image, and then take a photo.
- Move the camera to around 50 feet from tree taking care not to move camera up or down, and adjust zoom so that tree is the same size as in first image, then take photo.
- Move the camera to 100 feet, being careful not to move camera vertically, adjust zoom, and take photo.
- Compare these photos to each other and to those from first exercise.

Kenneth R. Robertson, June 10, 2013