

# Focal Length Panels

- 1) Choose to use a zoom lens or a group of three primes.
- 2) An ideal “wide” focal length will be between 15 mm and 30 mm, “middle” focal length will be between 30 mm and 60 mm, and “long” focal length will be more 80 mm or longer. With a crop sensor camera, your numbers will be less than if you use a full frame.
- 3) If using three primes, the “middle” should be roughly double the “wide” focal length and half the “long” focal length (for example a group of a 24mm, 50mm and 100mm would be satisfactory).
- 4) If you choose to use a zoom lens, use the “widest” and “longest” settings, plus use the approximate midpoint of the range as the middle setting (on the Canon 18 mm-55 mm use 18 mm, 35 mm and 55 mm or on the 24 mm-105 mm use 24 mm, 50 mm and 105 mm).
- 5) You will need to shoot four sets of images, each set having three images, one shot with your “wide” setting or lens, one at your “middle” setting or lens, and one at your “long” setting or lens. When you choose the shooting aperture, make sure it is available on all three focal length settings on the zoom lens or available on all three lenses.
- 6) Arrange your results in a “Focal Length Panel” and submit to Dave ([dnoordhoff@cogeco.ca](mailto:dnoordhoff@cogeco.ca)) by February 7.

## Focal Length in Zooms and Primes

Zoom lenses cover a range of focal lengths. A zoom can be set at its “shortest” (or “widest”) focal length up to its “longest” focal length, and anywhere in between.

Prime lenses do not have adjustable focal lengths, being “ultrawide”, “wide” or “short”, “middle”, “normal” or “standard”, “long”, or “super long”.



These two Canon zoom lenses can be set at 18 mm to 55 mm (left) and 24 mm to 105 mm (right) and anywhere in between).



These three Canon prime lenses have focal lengths of 24 mm, 50 mm and 135 mm.

# Focal Length Panels

Make up a panel of images showing your findings. Make sure the entire chart is no more than 1400 pixels wide or 1050 pixels high (size your images accordingly).

	WIDE 	MIDDLE 	LONG 
Field of View			
Depth of Field			
Perspective			
Portraits			

# Focal Length and Field of View

Shoot a landscape or urban image with each focal length. Keep the distance constant by taking all three images from the same position and shooting in the same direction. Do not change the aperture.

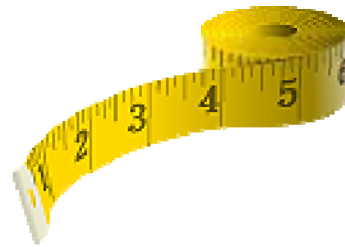
Keep constant with all three focal lengths



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# Comparing 18mm, 37mm and 55mm Settings on a APS-C Sensor

## Field of View COMPARATOR



A. APS-C Sensor at 18mm - 66° angle of view

LENS

▲

18 mm

▼



A. APS-C Sensor at 37mm - 35° angle of view

LENS

▲

37 mm

▼



A. APS-C Sensor at 55mm - 24° angle of view

LENS

▲

55 mm

▼

# Comparing 24mm, 50mm and 100mm Settings on a Full Frame Sensor

## Field of View COMPARATOR

LENS

24 mm



B. Full Frame Sensor at 24mm - 73.7° angle of view

LENS

50 mm



B. Full Frame Sensor at 50mm - 39.6° angle of view

LENS

100 mm

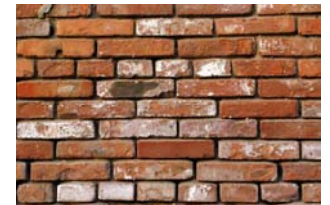
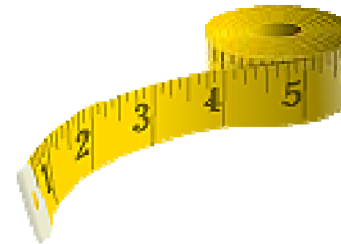
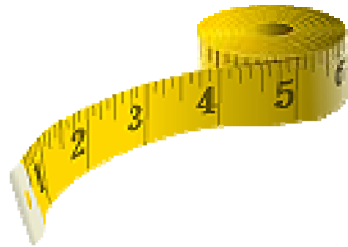


B. Full Frame Sensor at 100mm - 20.4° angle of view



# Focal Length and Depth of Field

Shoot a head and shoulders portrait with each focal length. Have the subject about two to three times closer to the camera than they are from the background. Increase or decrease the camera to subject distance to keep the height of the subject the same in all three images. Try to find a background with some detail. Do not change the aperture.



W      M      T

Change this distance to keep the image height the same with all three focal lengths.



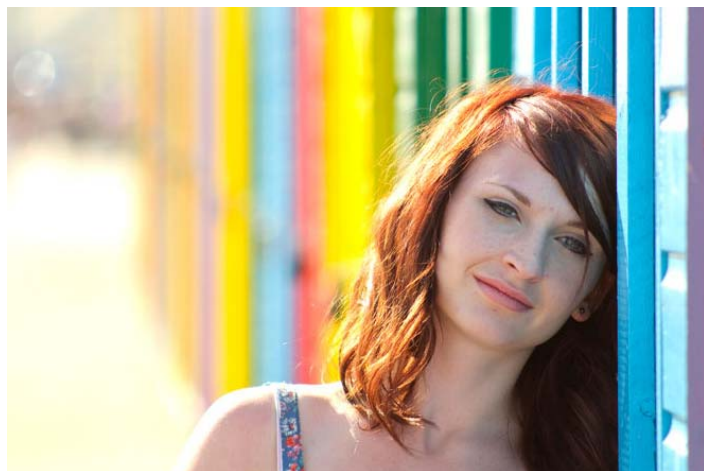
About double to triple of the subject to camera distance



18mm



70mm

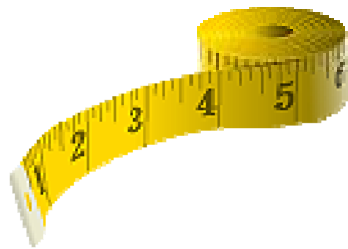


200mm



# Focal Length and Perspective

Shoot a head and shoulders portrait with each focal length. Have the subject much closer to the camera than they are from the background. Keep the subject to background distance constant. Increase or decrease the camera to subject distance to keep the height of the subject the same in all three images. Do not change the aperture.



Change this distance to keep the image height the same with all three focal lengths.

Make this distance much larger than the camera to subject distance. Keep this distance constant.



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# Focal Length and Portraits

Shoot one head and shoulders portrait image with each focal length. Increase or decrease the camera distance from the subject to keep the height of the subject the same in all three images. Do not change the aperture.

Change the distance to keep the image height the same with all three focal lengths



W M T

