

# Photo 101

## Is focal length compression real?

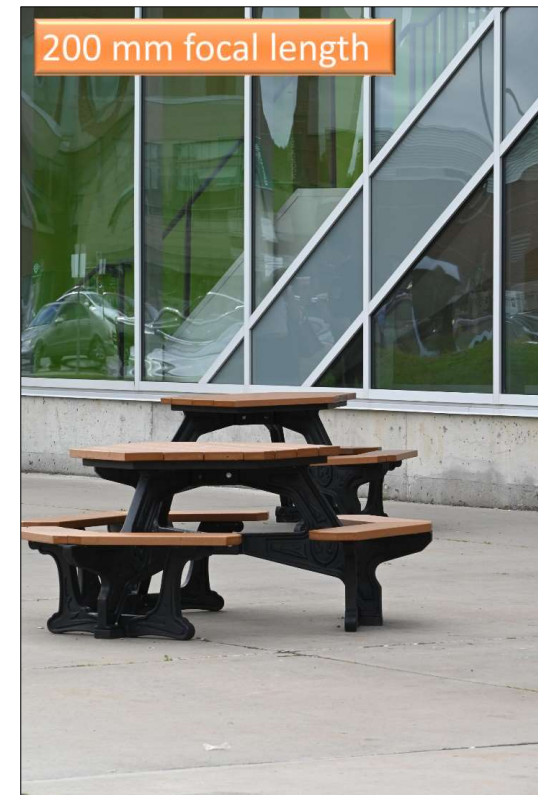
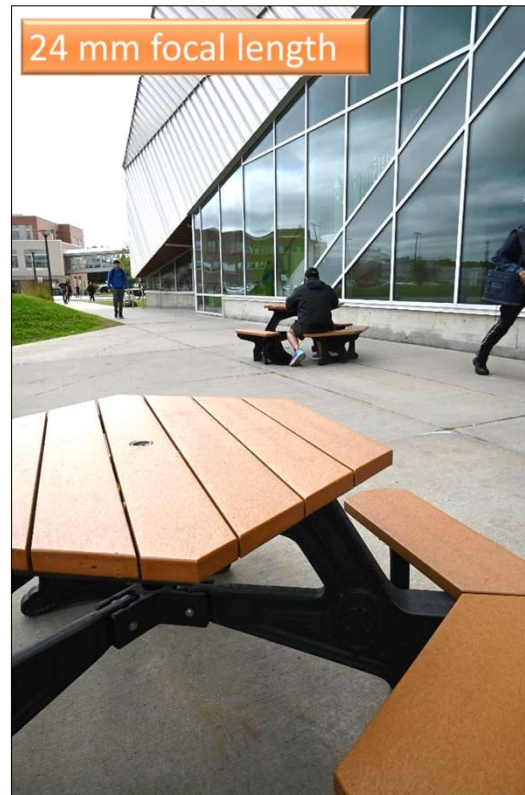
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# Focal length compression

- Commonly stated
  - as you *increase* the lens focal length
  - objects at different distances are *compressed* together

Same two tables



# Another example

Same two trees



But...

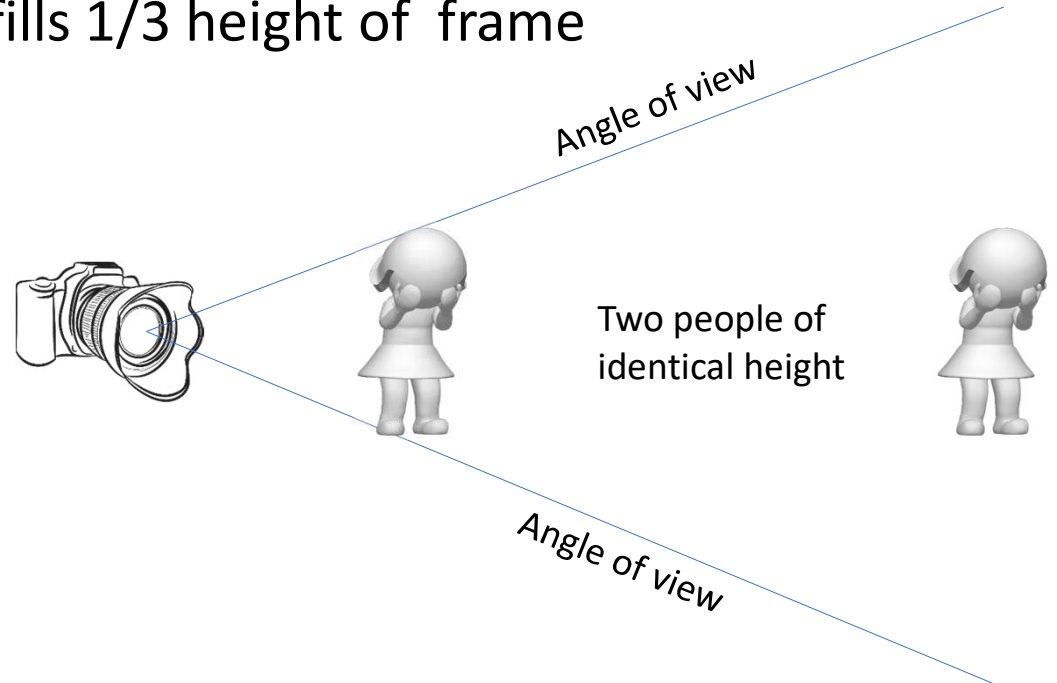
what really caused that effect?

# Wide-angle lens

- Camera positioned so person closest to camera fills height of frame
- Person furthest from camera fills 1/3 height of frame

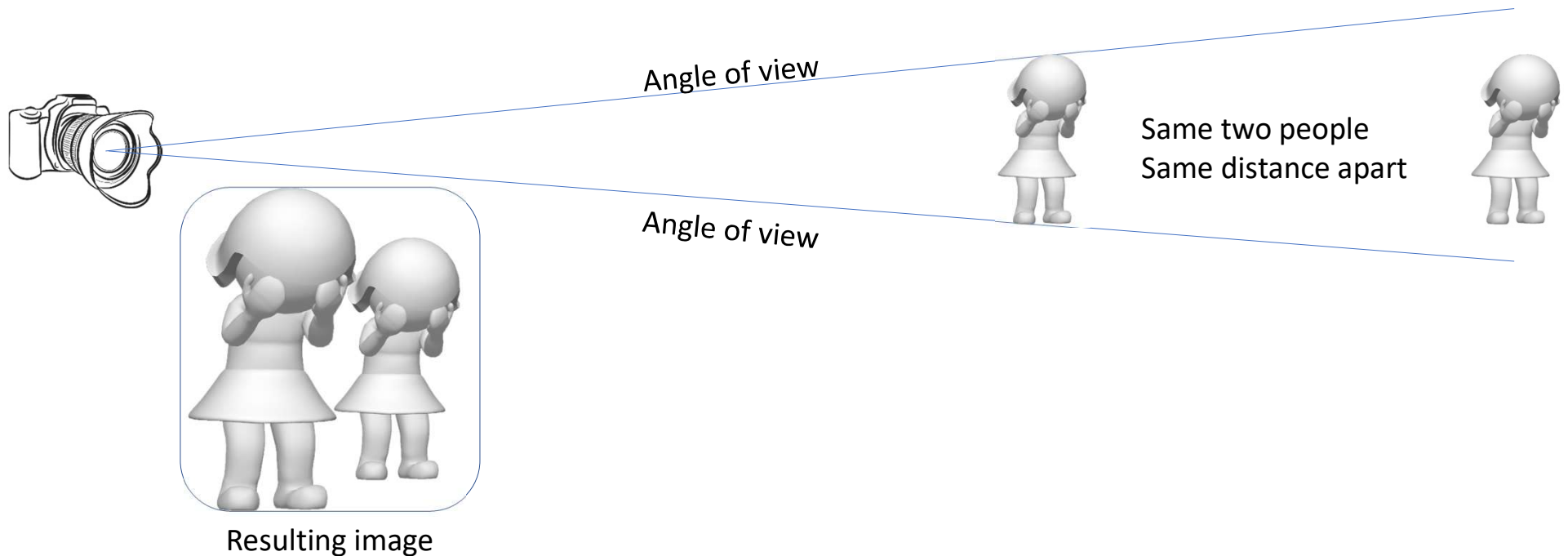


Resulting image



# Telephoto lens

- Camera moved back to fill frame with person closest to camera
- Person furthest from camera fills 3/4 height of the frame



# Relative distance to objects

Foreground subject 1/3 of the way to background subject

- subjects appear to be vastly different size
- **therefore appear to be far apart**



Resulting image

Foreground subject 2/3 of the way to background subject

- Subjects appear to be more similar size
- **therefore appear to be closer together**



Resulting image

The **relative distance to the various objects** in the frame gives a **compressed** or **expanded** view

Side view of bike racks

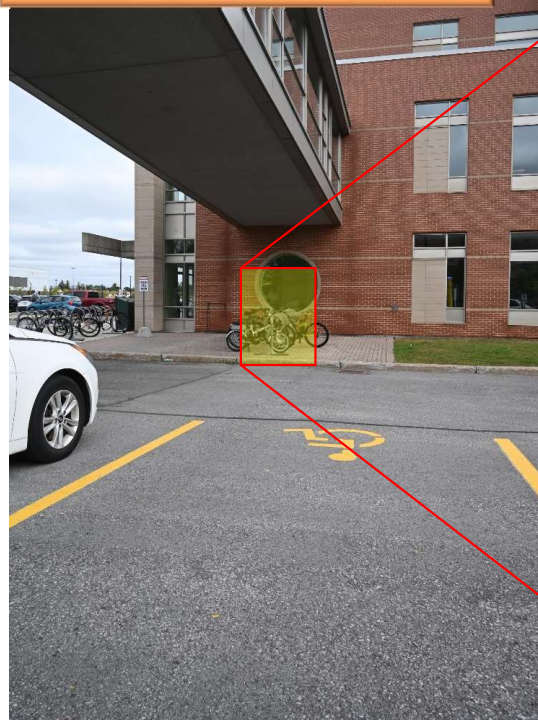


# Proof change in focal length not the cause

200 mm focal length  
• apparent compression



24 mm focal length  
• taken from same position



24 mm focal length  
• taken from same position  
• cropped to same area as 200 mm



Photo taken with 24 mm appears identical to 200 mm **when taken from same position and cropped**



# Bottom line

- To make objects appear to be closer together (i.e. compressed)
  - get physically further back



- To make objects appear to be further apart
  - get physically closer

