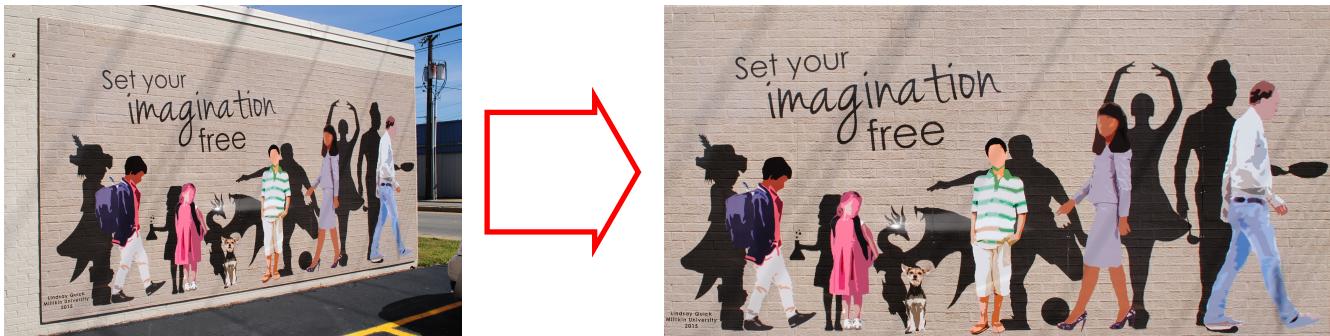
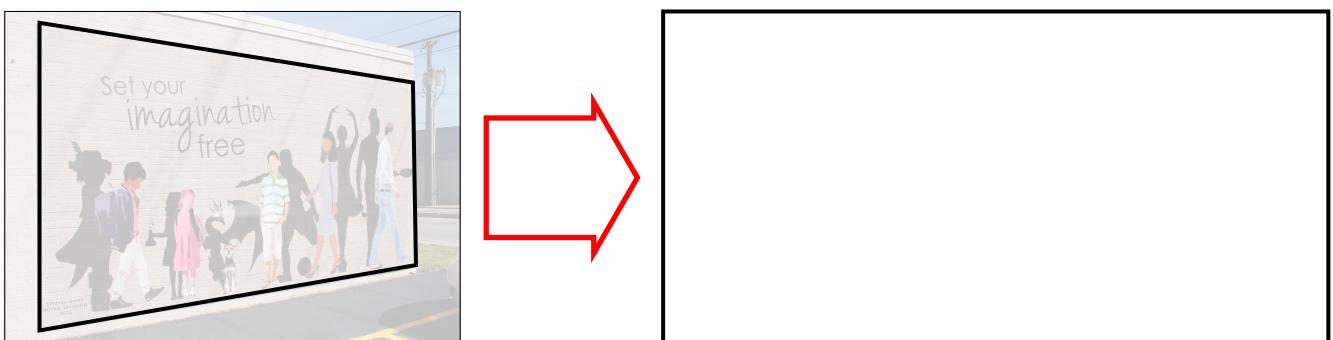


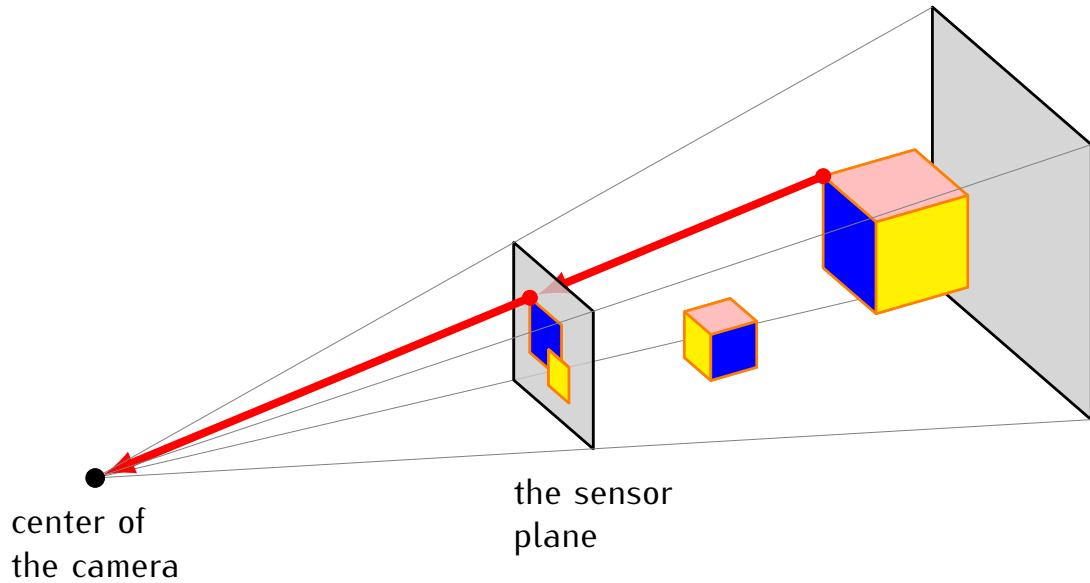
What we want:



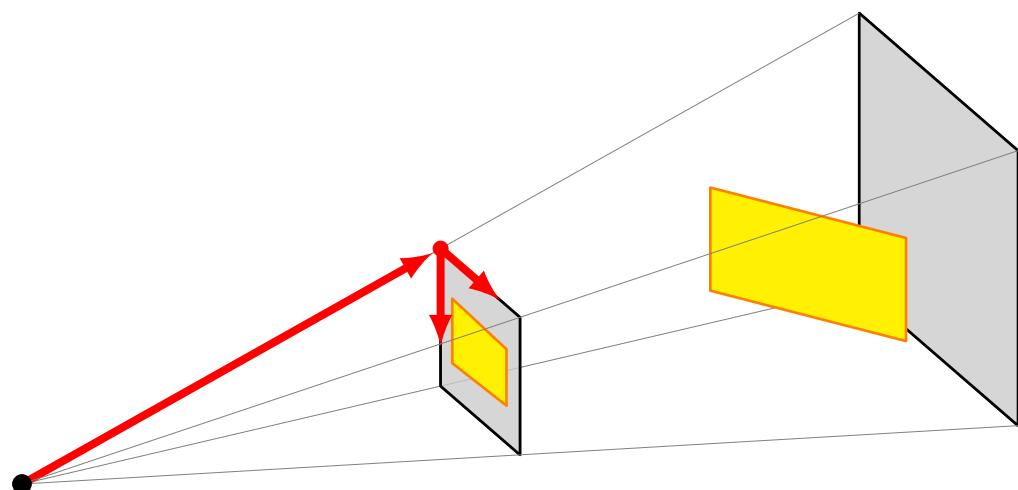
What we have:

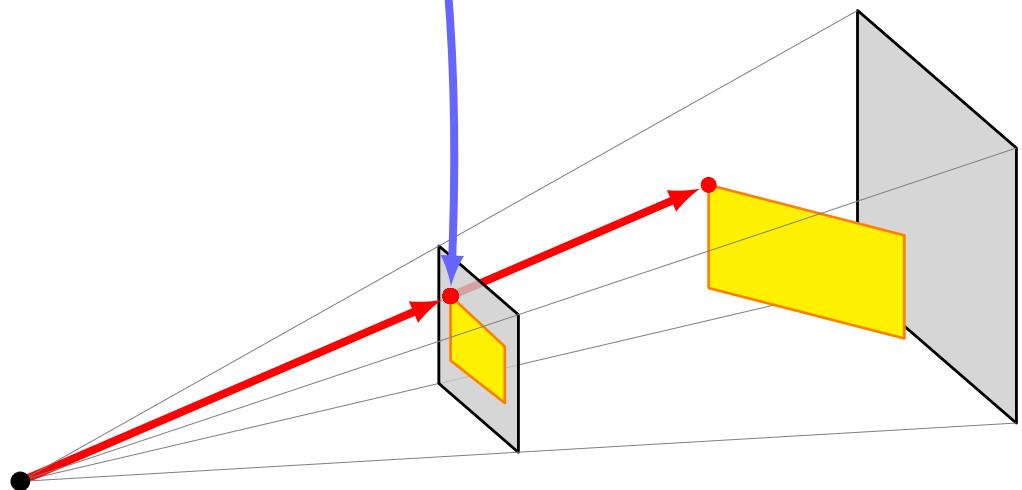


## Image formation in a camera

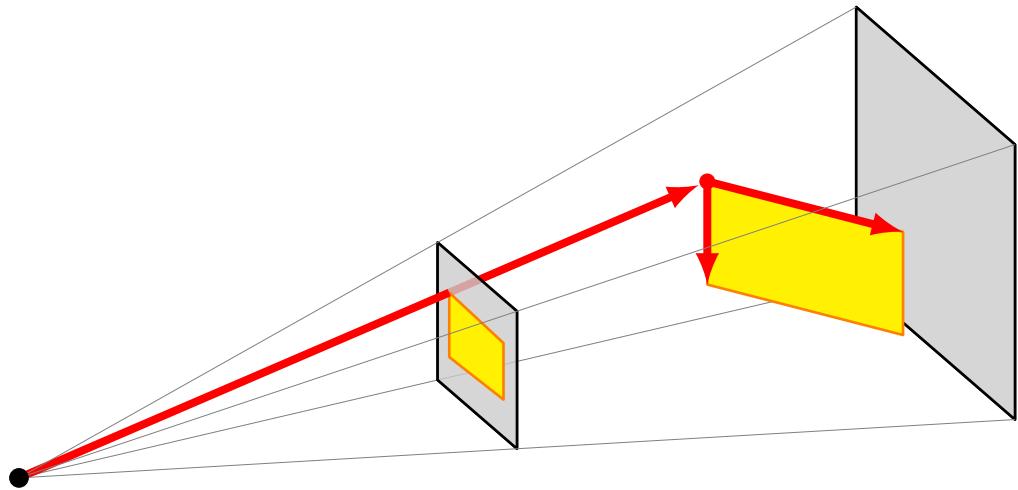


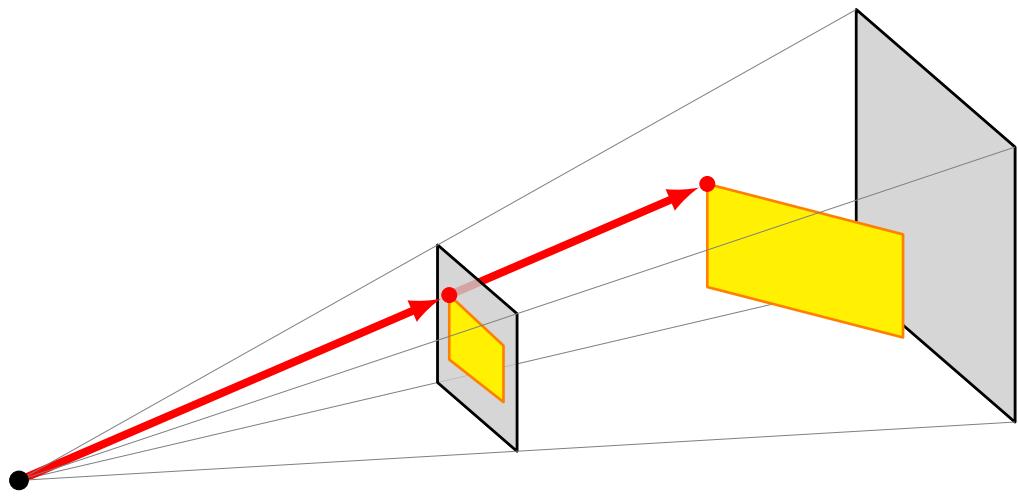
## The camera coordinate system $\mathcal{C}$



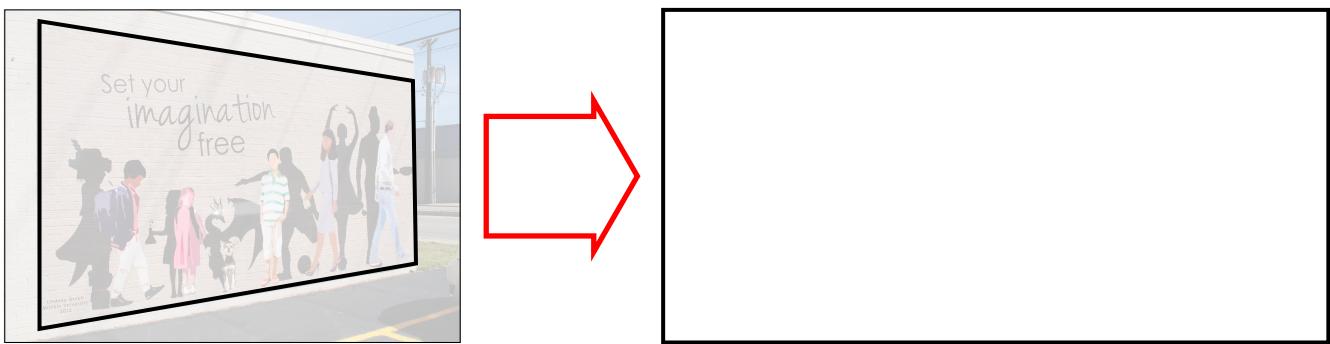


## The mural coordinate system $\mathcal{M}$



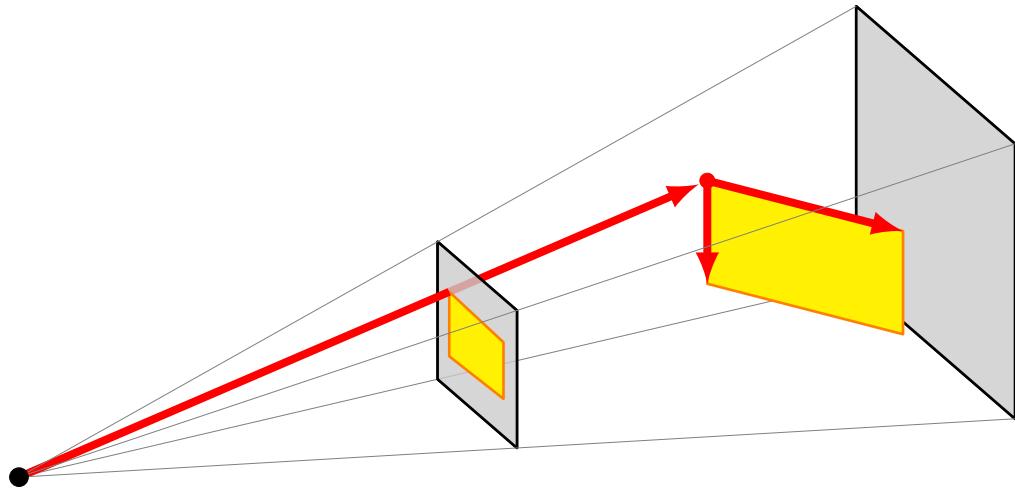


## Upshot.



## From mural coordinates to camera coordinates

$$P_{C \leftarrow M} = [ [\mathbf{m}_1]_C \quad [\mathbf{m}_2]_C \quad [\mathbf{m}_3]_C ]$$



**Problem:** What are the numbers  $a$ ,  $b$ ,  $c$ ?