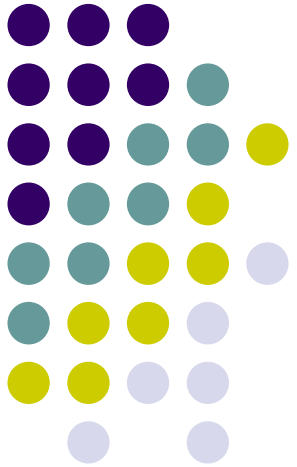
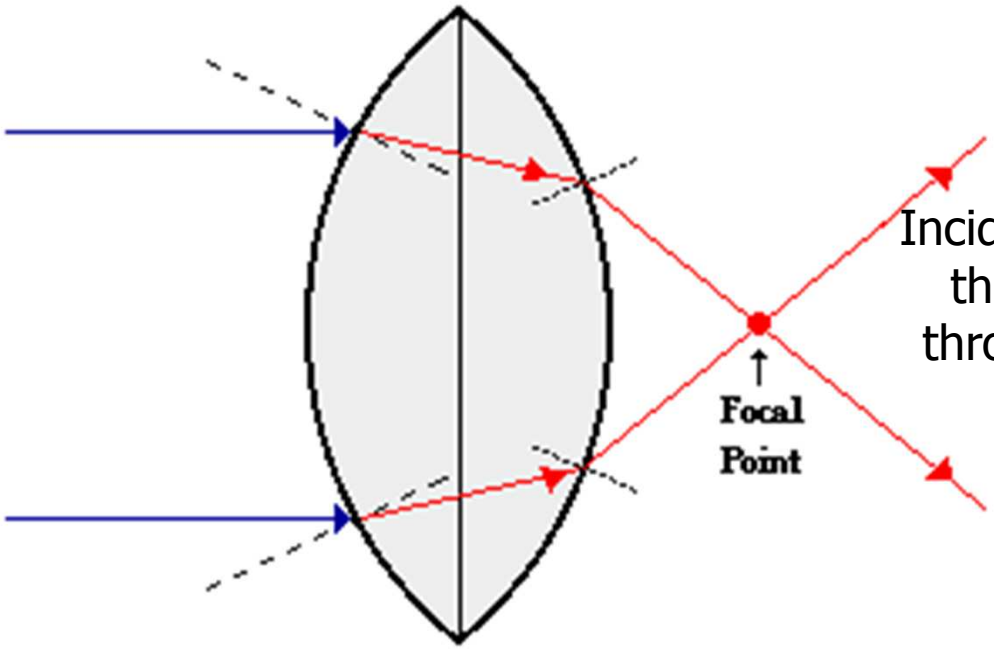
Ray Diagrams for Lenses



Convex (Converging) Lenses

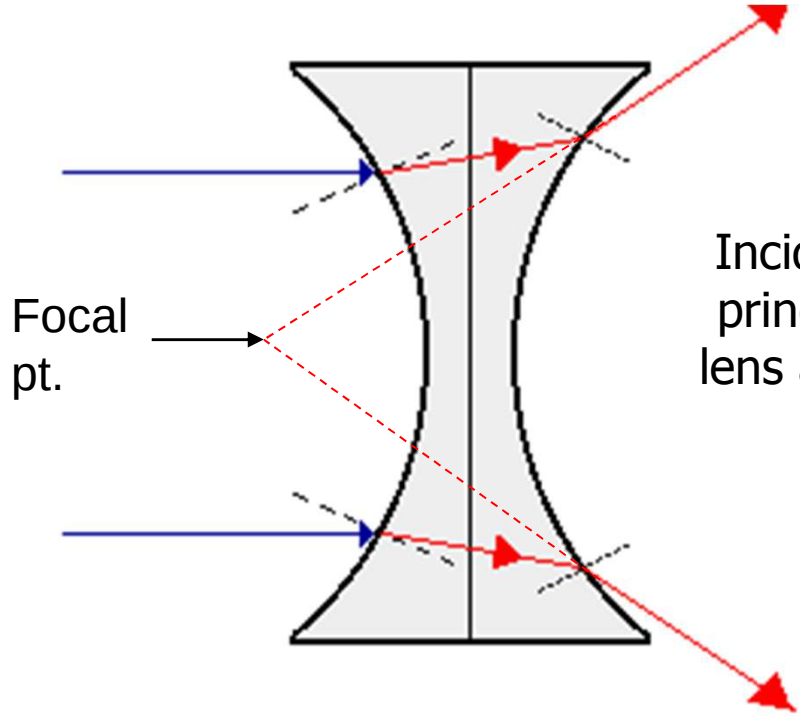
- There are two Focal points
  - One in Front and one Behind
  - Focal point is ½ way between Center of Curvature & Lens



Incident rays traveling parallel to the principal axis will refract through the lens and converge to the focal point

Concave (Diverging) Lenses

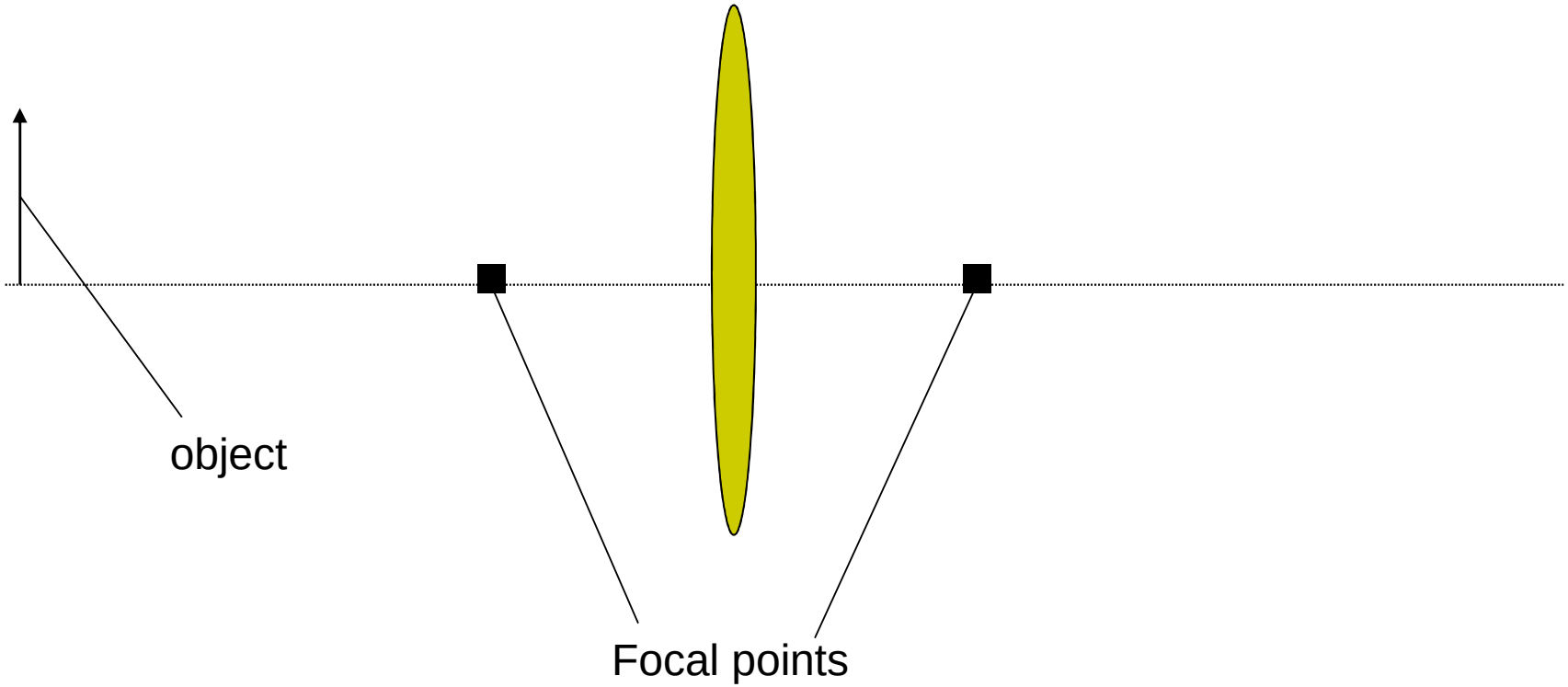
- There are two Focal points
  - One in Front and one Behind
  - Focal point is ½ way between Center of Curvature & Lens



Incident rays traveling parallel to the principal axis will refract through the lens and diverge, from the focal point.

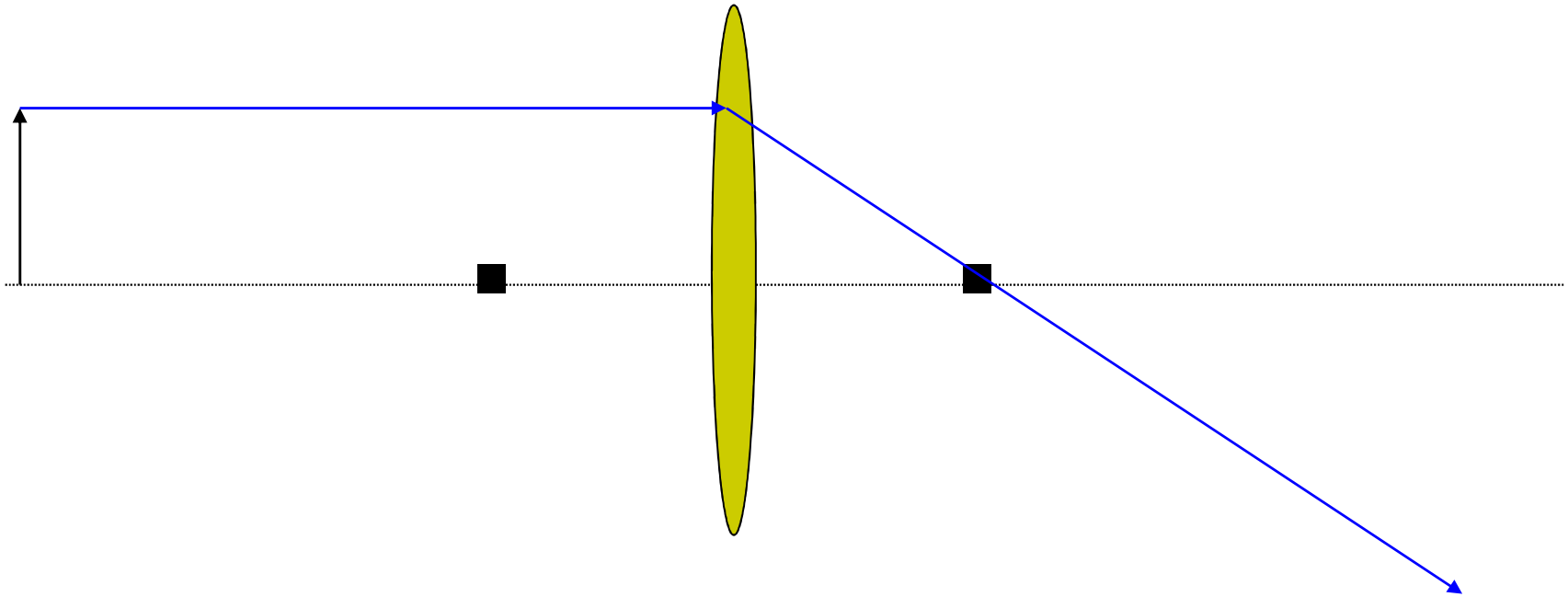
Converging Lenses

- Object outside the focal point



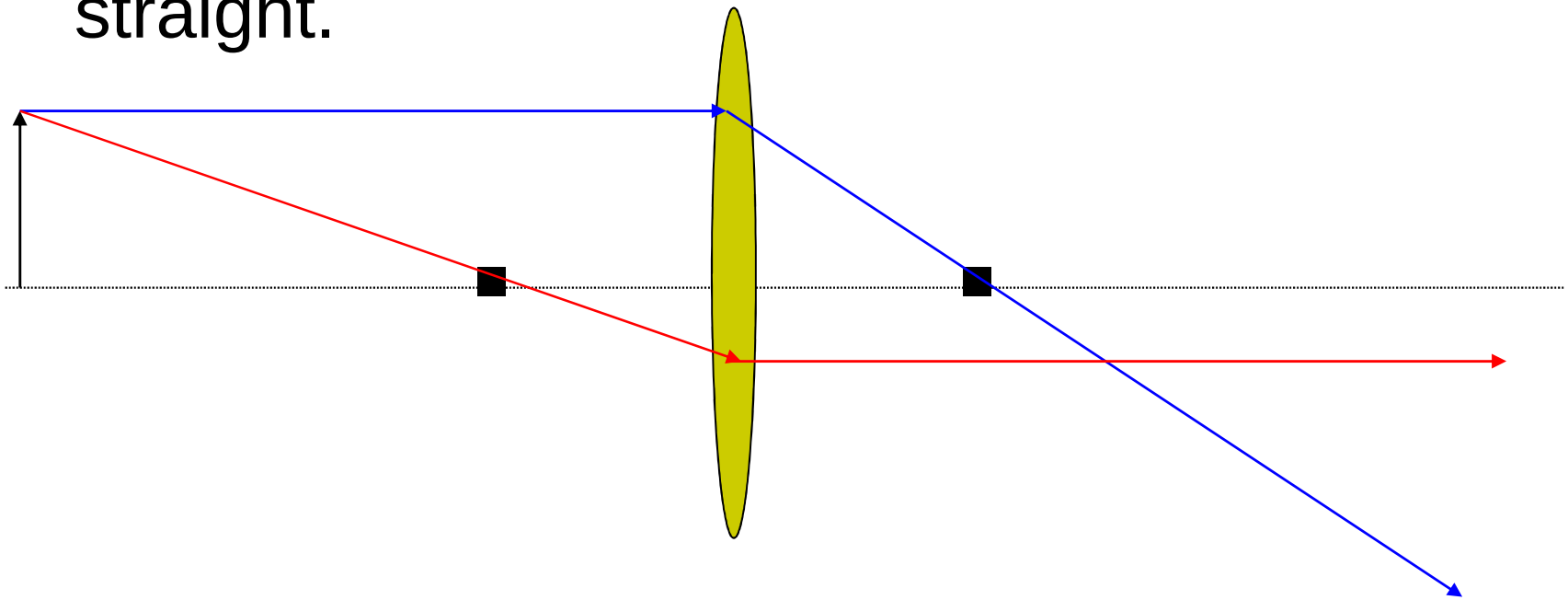
Converging Lenses

- Step 1, go straight in and bend thru focal



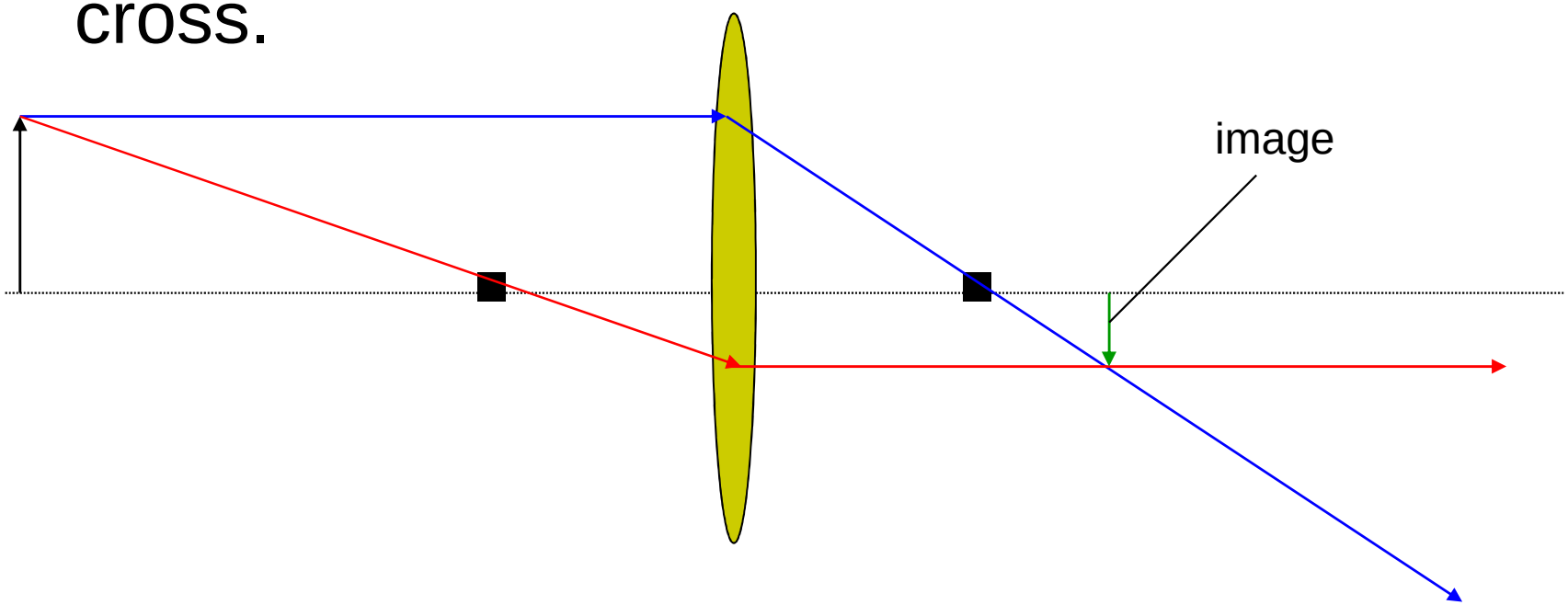
Converging Lenses

- Step 2, go thru other focal and bend out straight.



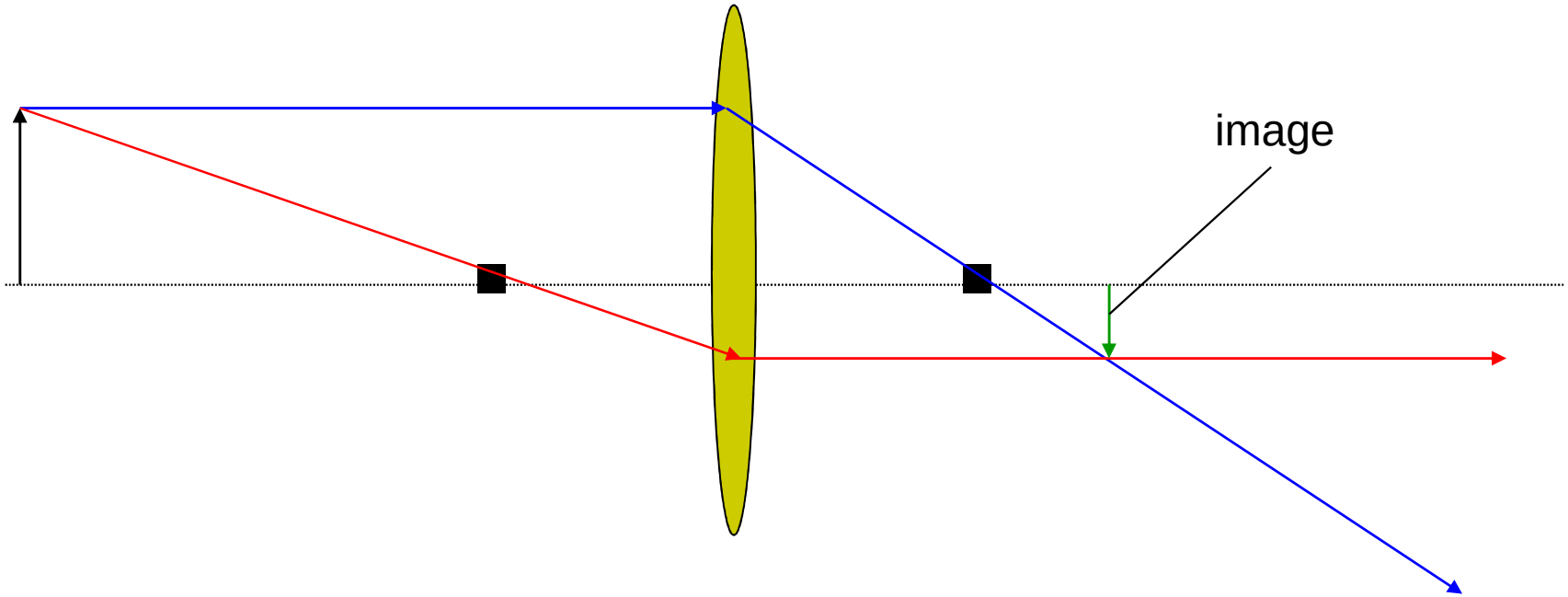
Converging Lenses

- Image is located where the 2 refracted rays cross.



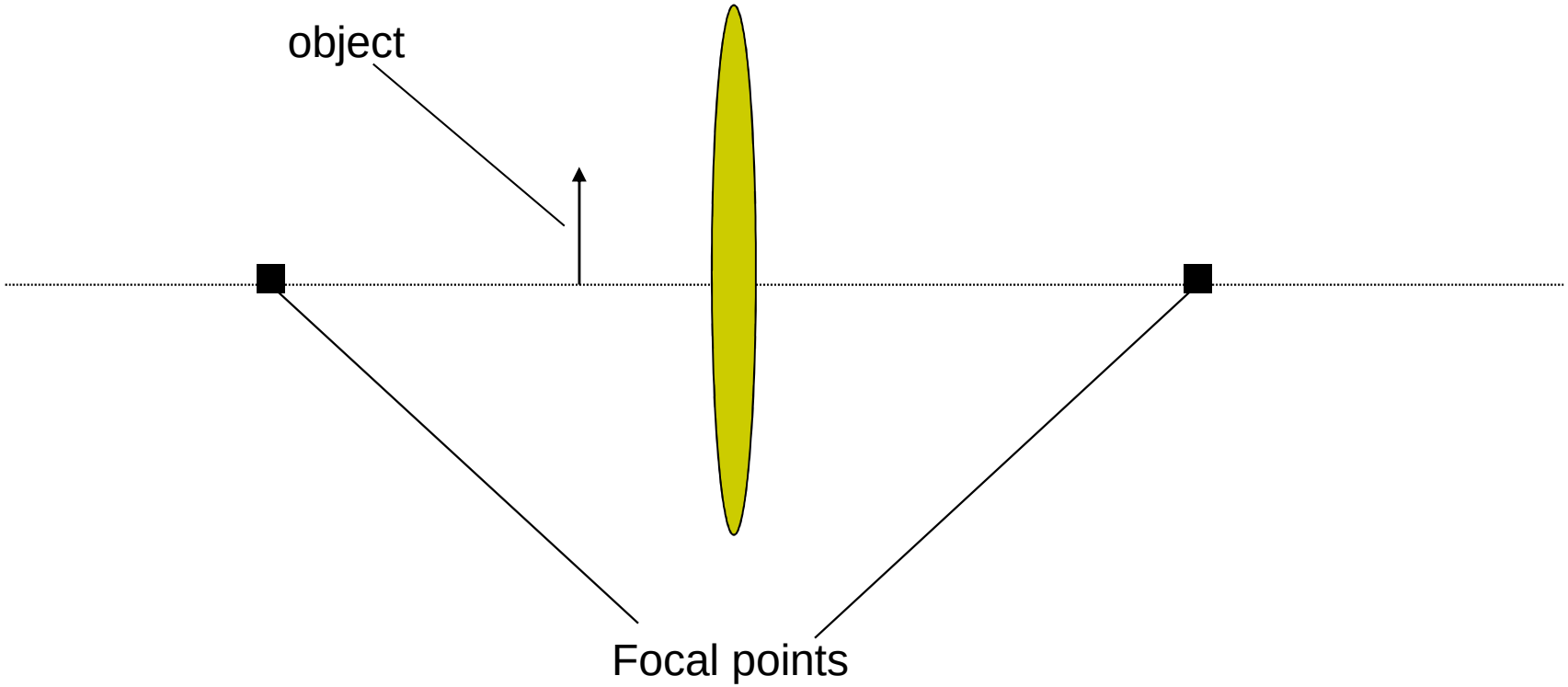
Converging Lenses

- Image is **REAL, INVERTED**, and **SMALLER**



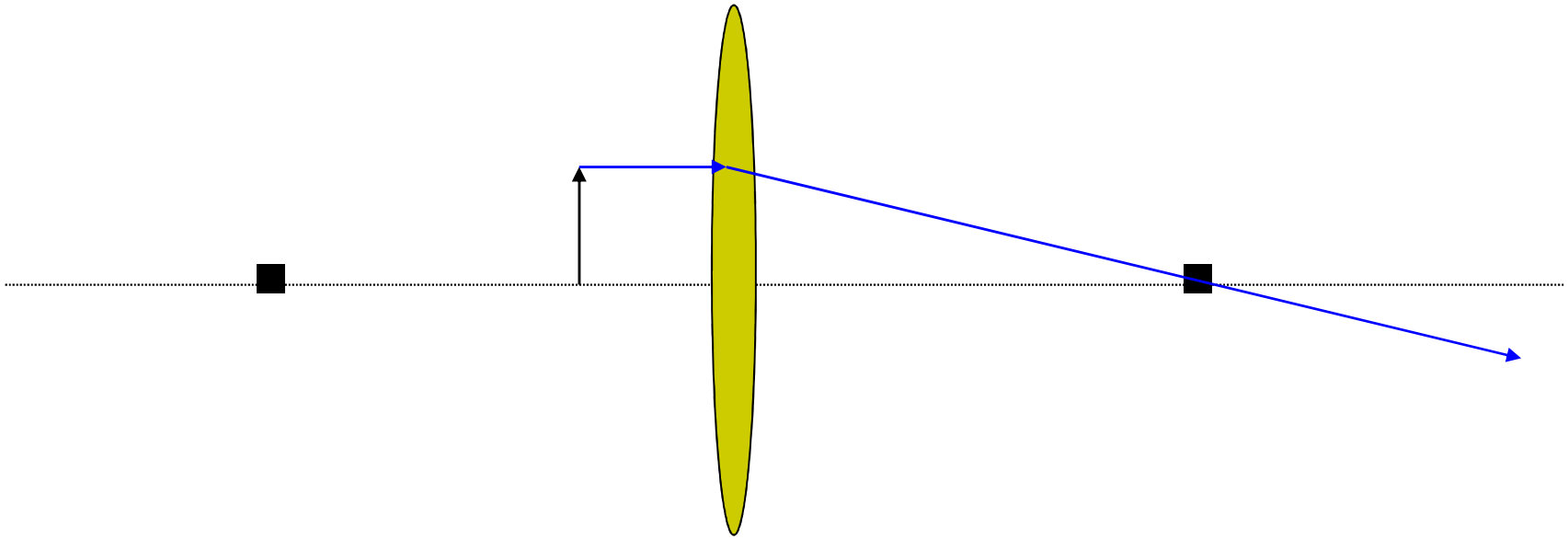
Converging Lenses

- Object inside the focal point



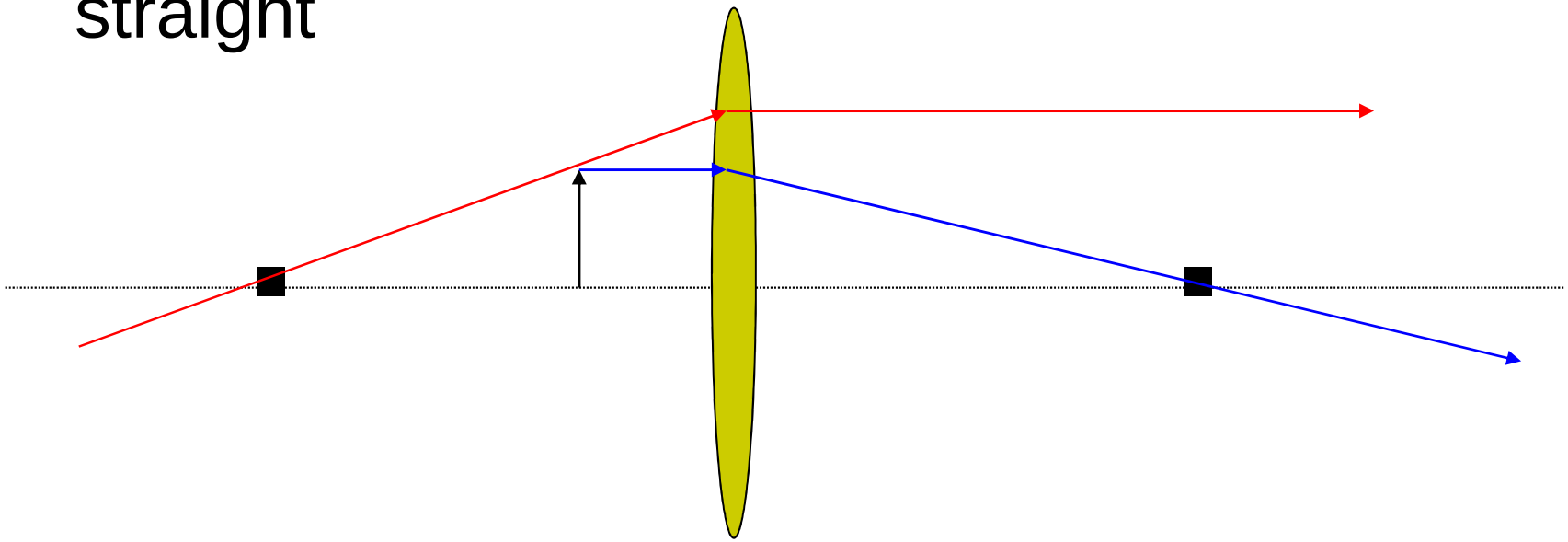
Converging Lenses

- Step 1-go straight in and bend thru focal pt.



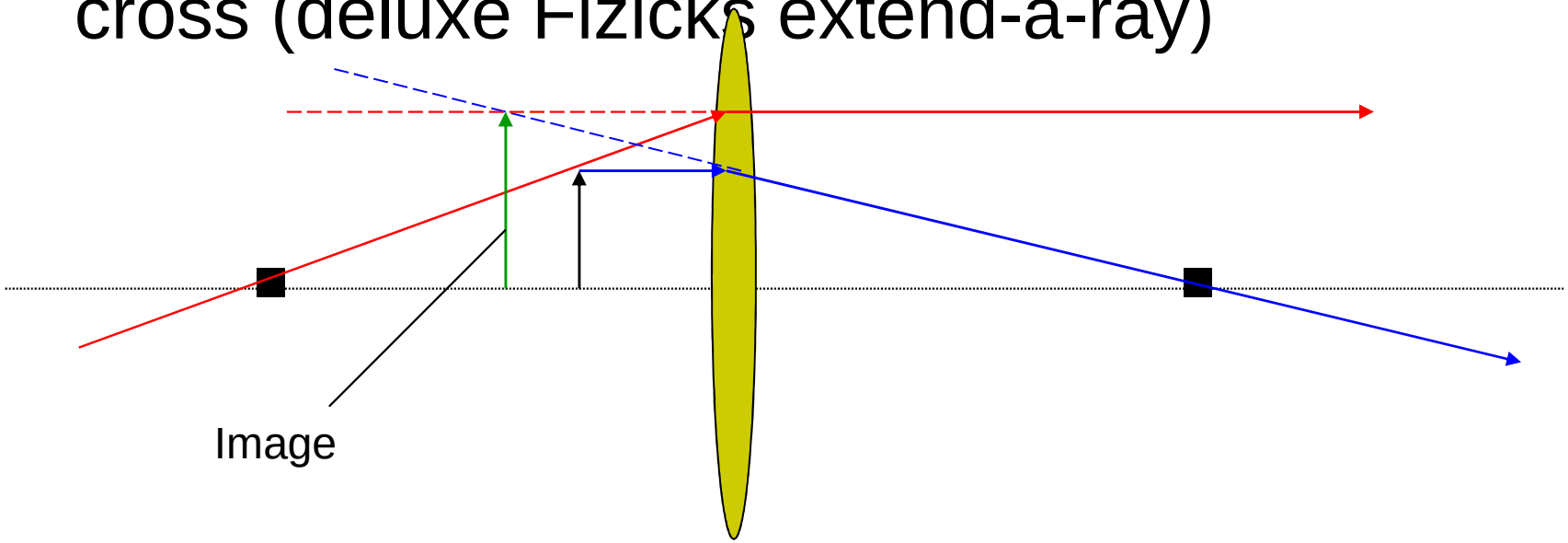
Converging Lenses

- Step 2-come thru other focal and bend out straight



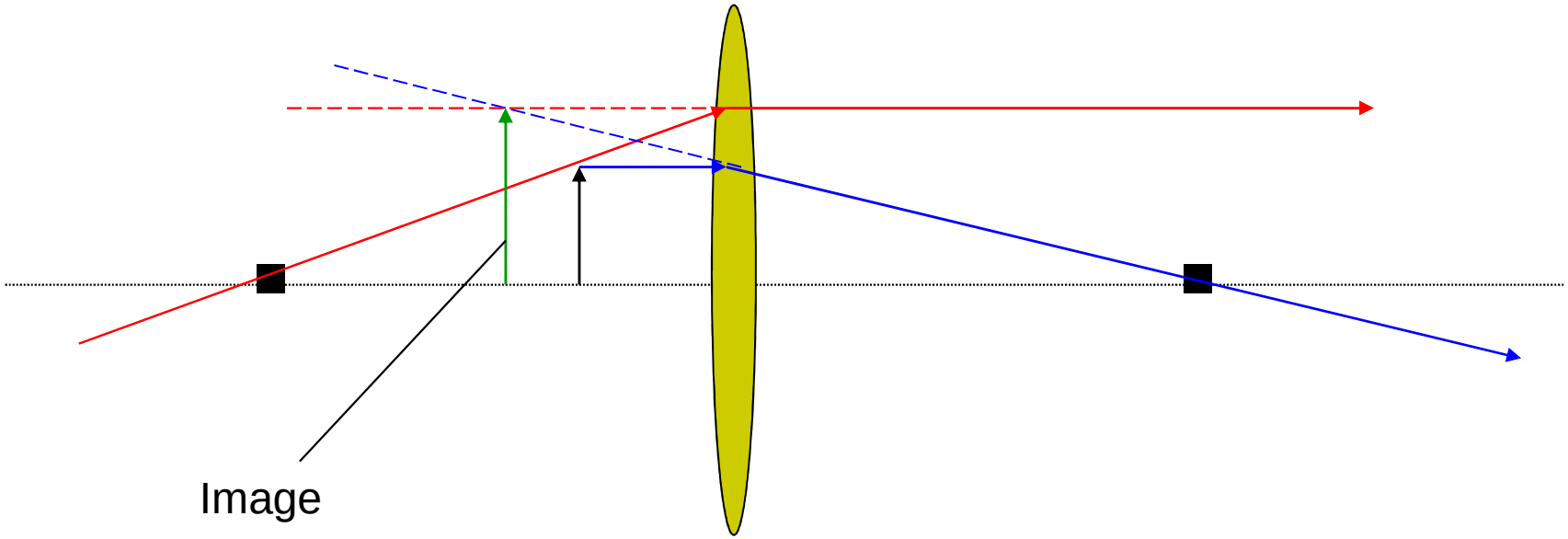
Converging Lenses

- Image is located where the two refracted rays cross (deluxe Fizicks extend-a-ray)



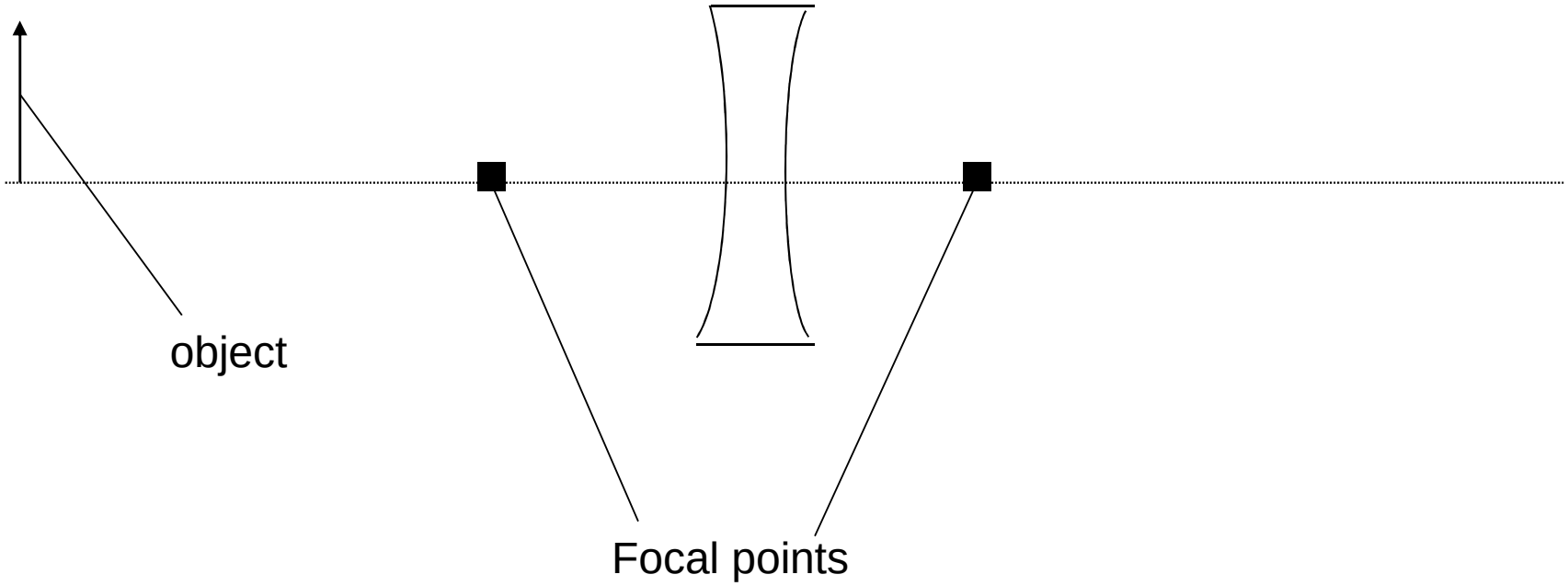
Converging Lenses

- Image is **VIRTUAL, UPRIGHT**, and **LARGER**



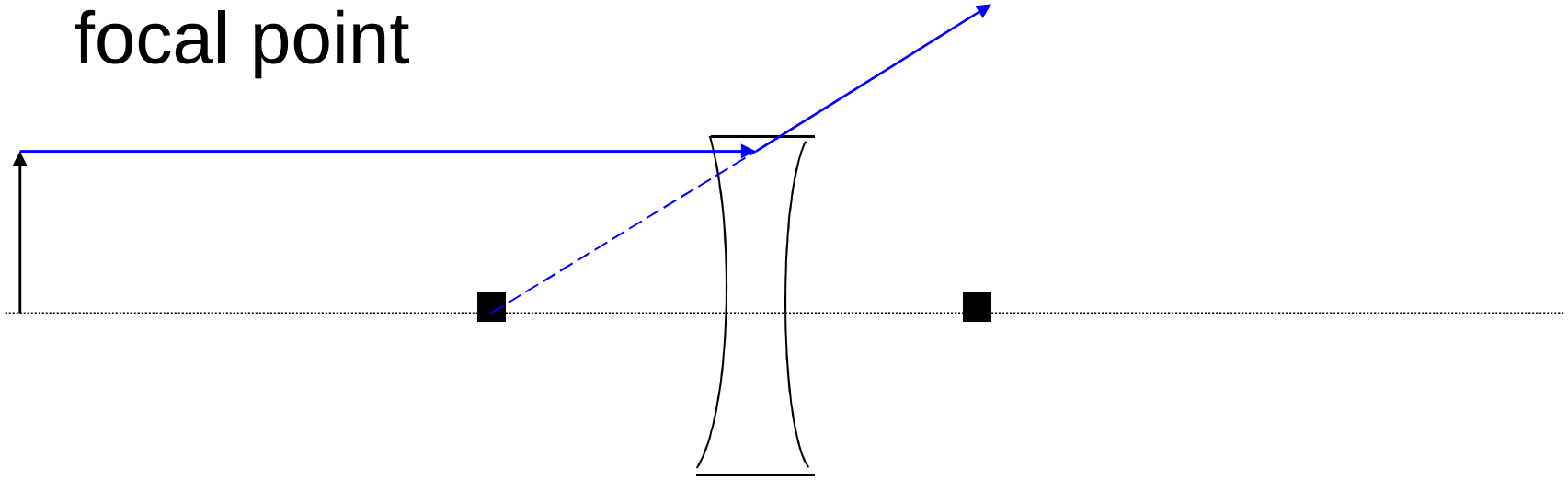
Diverging Lenses

- Object outside the focal point



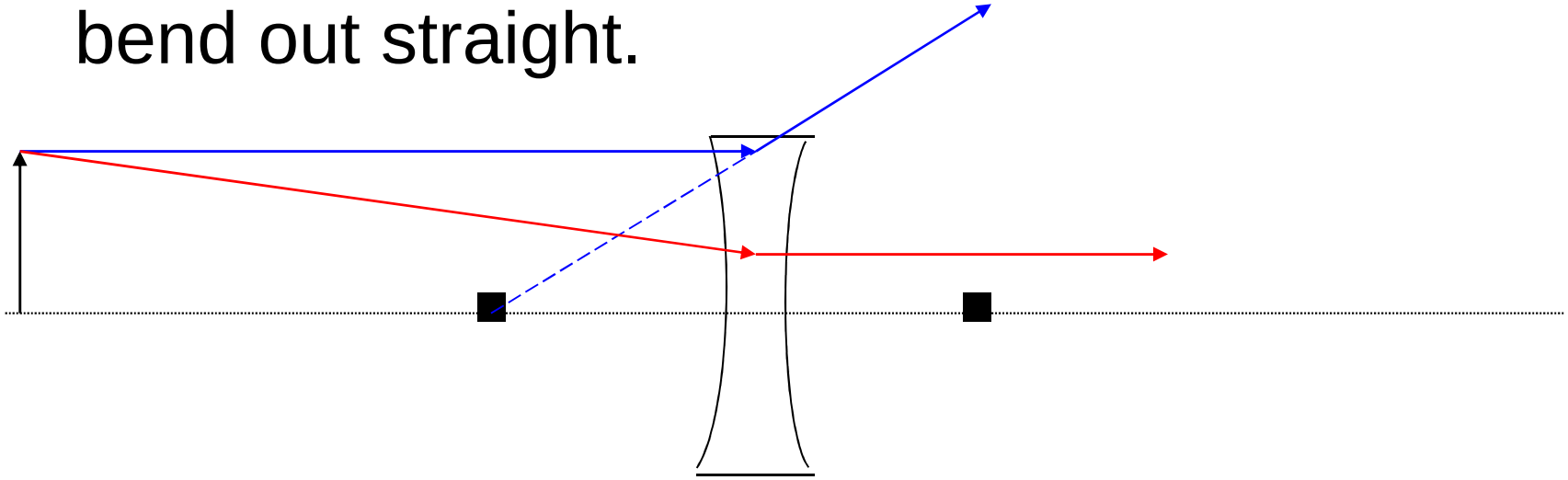
Diverging Lenses

- Step 1-go straight in and bend away from the focal point



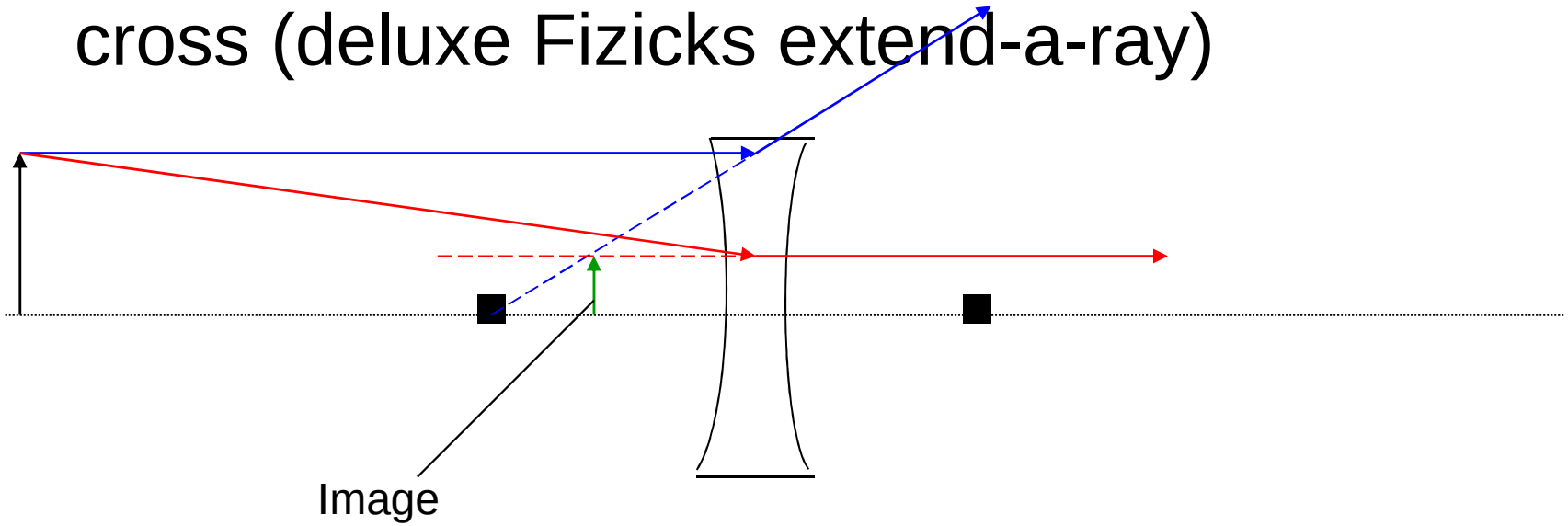
Diverging Lenses

- Step 2-go towards the other focal pt. and bend out straight.



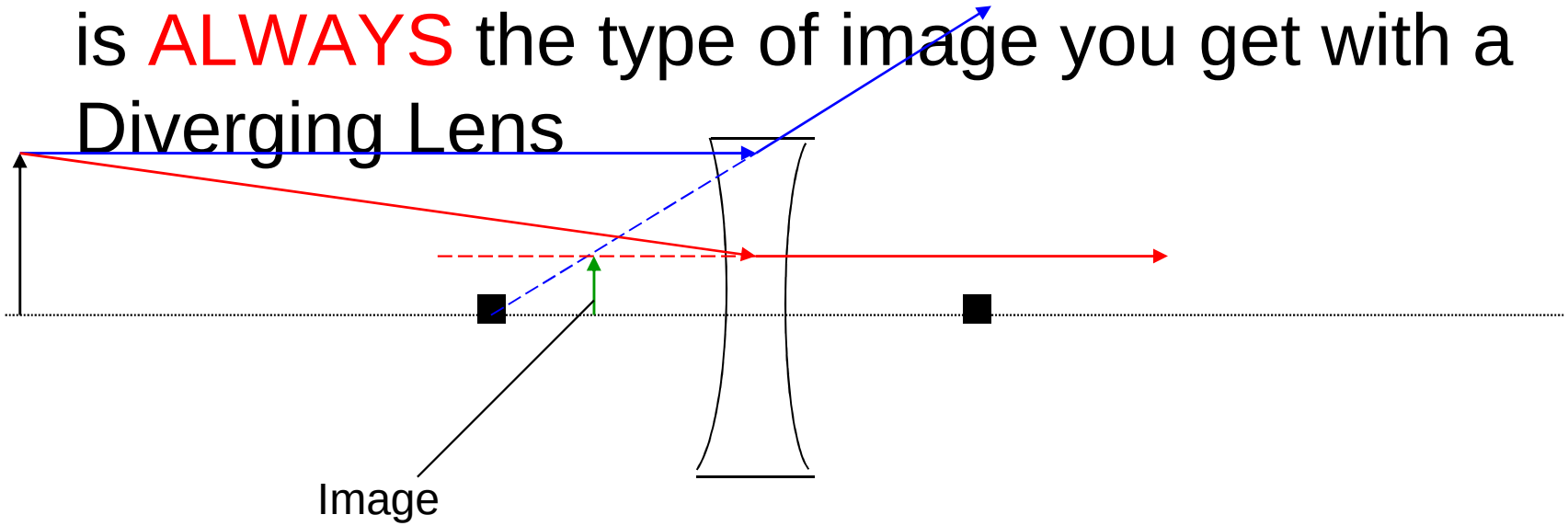
Diverging Lenses

- Image is located where the 2 refracted rays cross (deluxe Fizicks extend-a-ray)



Diverging Lenses

- Image is **Virtual, Upright**, and **Smaller**. This is ALWAYS the type of image you get with a Diverging Lens



Homework

- Do the ray diagram worksheet