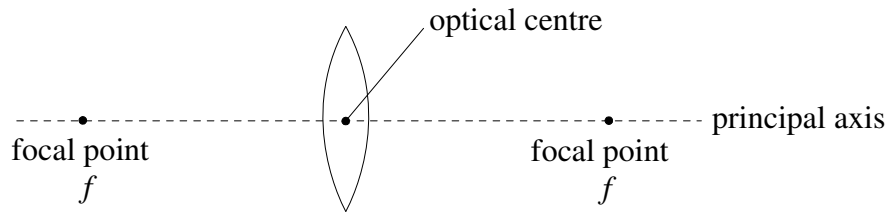


Lens Terminology

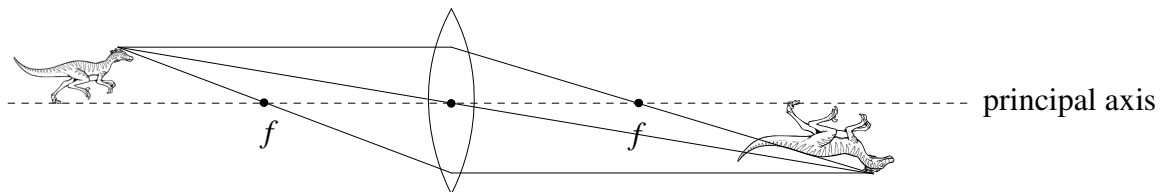


Ray Tracing

Rays of light from an object can be traced through a convex lens, and the focussed image can be found where the rays meet. Only two rays need to be traced, and they can be any of the three below:

- a ray passing through the optical centre of the lens will continue in a straight line
- a ray parallel to the principal axis will pass through f on the other side
- a ray passing through f will emerge parallel to the principal axis on the other side

Example:



If the rays converge on the same side of the lens as the object, the image is called *virtual* and is not visible in real life.

If the rays converge on the opposite side to the object, the image is *real* and can be projected onto a page.

If the rays never converge, there is *no* image.

The image may be *upright* (oriented the same way as the object) or *inverted*.

The magnification m of the image is:

$$m = \frac{\text{image size}}{\text{object size}}$$

If $m > 1$ the image is *enlarged*, if $m < 1$ the image is *diminished*.