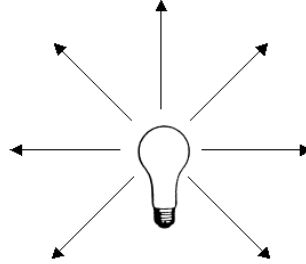


Summary of our Optics Inquiry

Light leaves sources in all directions traveling in straight lines



Lenses and mirrors change the path of light

Mirrors reflect light

Lenses refract light (bend the path of light)

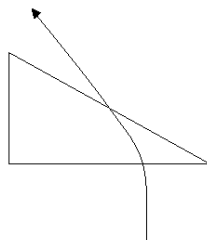
Convex and concave elements affect light differently: they converge or diverge the light rays

LENS	A diagram of a convex lens with parallel light rays entering from the left and converging to a focal point on the right. The word "CONVERGE" is written below the diagram. CONVERGE	A diagram of a concave lens with parallel light rays entering from the left and diverging as they pass through. The word "DIVERGE" is written below the diagram. DIVERGE
MIRROR	A diagram of a convex mirror with parallel light rays hitting the surface and reflecting outwards, diverging. The word "DIVERGE" is written below the diagram. DIVERGE	A diagram of a concave mirror with parallel light rays hitting the surface and reflecting inwards, converging to a focal point. The word "CONVERGE" is written below the diagram. CONVERGE
	CONVEX	CONCAVE

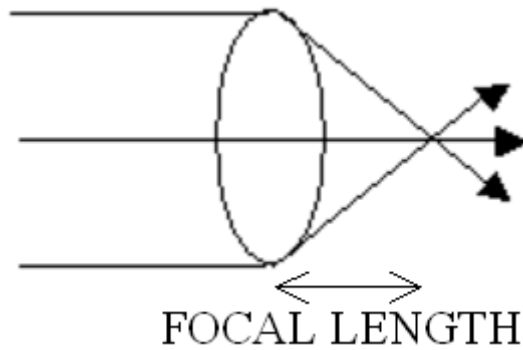
Images are formed where light is brought to a focus

Lenses:

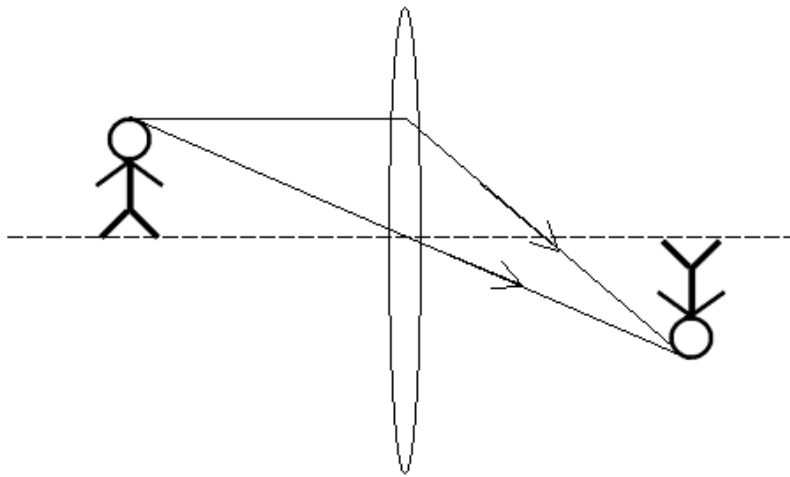
The law of refraction: Light going through glass is bent in the direction where the glass is thicker



The focal length of a lens is where parallel light rays are focused



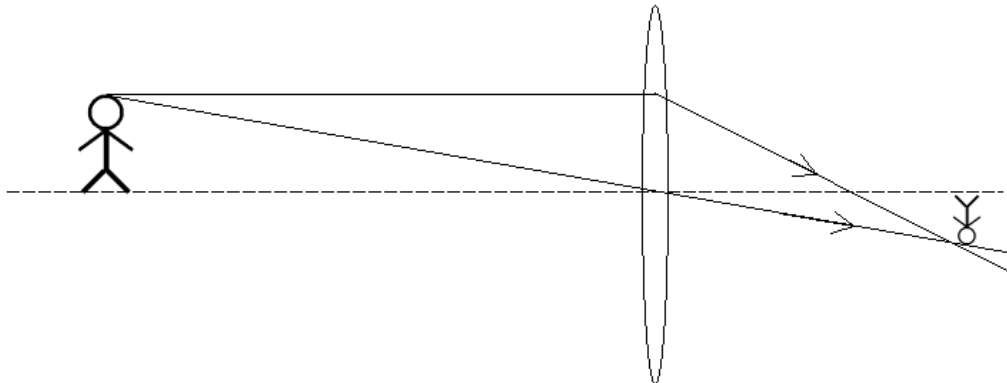
A single convex lens forms an inverted image



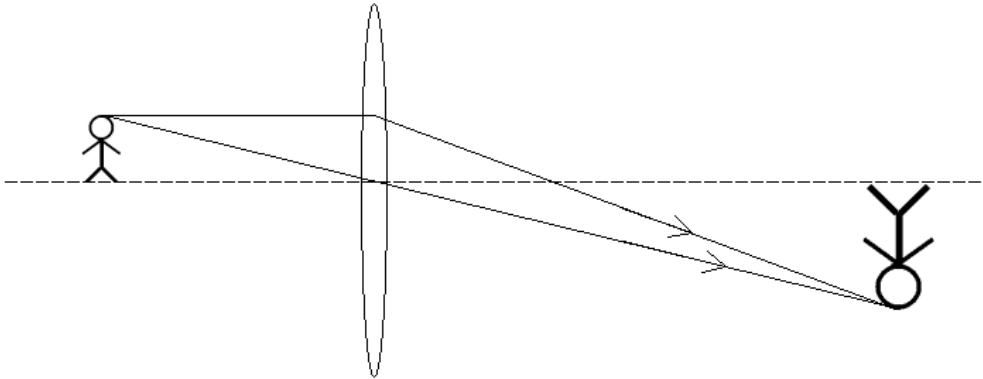
The greater the curve of a lens, the shorter the focal length

How big the image is (its magnification) is determined by the curvature of the lens, and the distance between the lens and the image

Lens closer to the image – smaller image

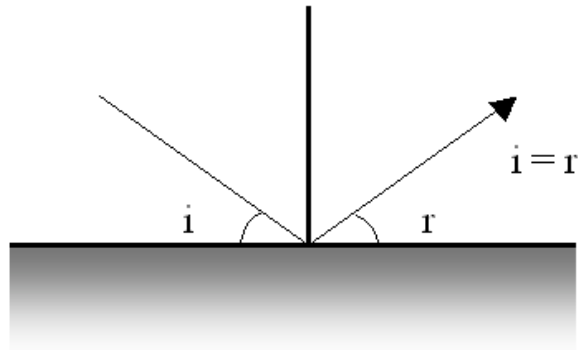


Lens farther from the image - larger image



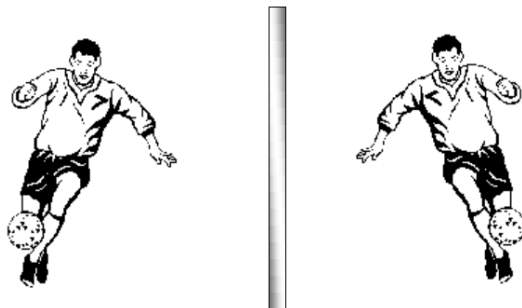
Mirrors:

The law of reflection: the angle of incidence equals the angle of reflection

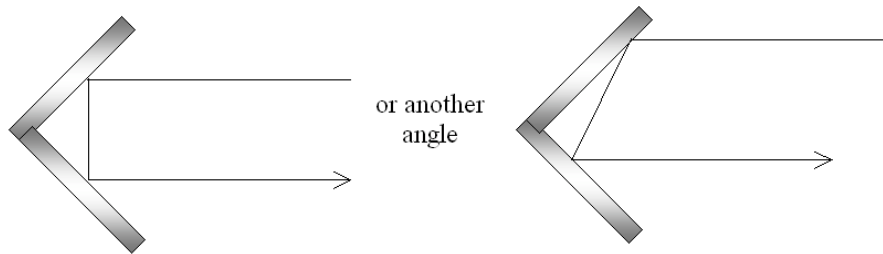


Flat mirrors:

The image in a single mirror appears to be behind the mirror



Mirrors at right angles bounce the light back towards the source



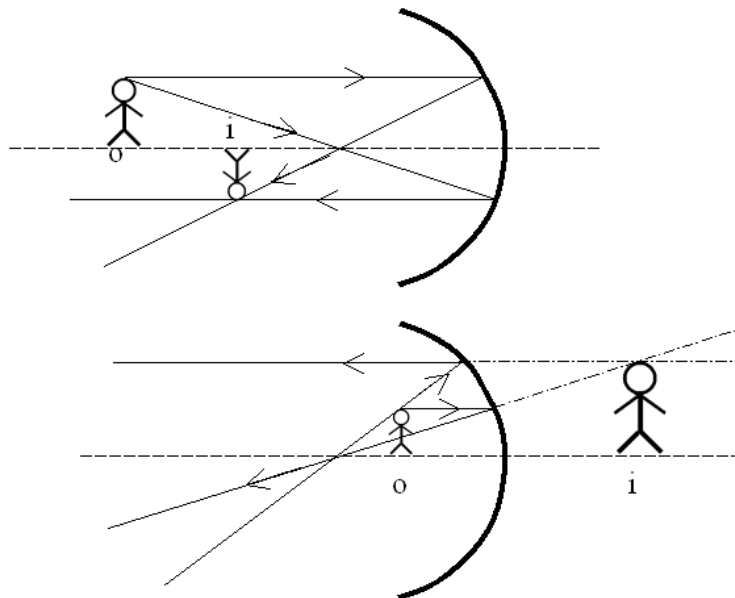
**Because you have two reflections you see the opposite of what you see in a single mirror
(You see yourself as others see you)**

Multiple mirrors like this are used in things like bike reflectors

Curved mirrors:

More strongly curved concave mirrors have smaller focal lengths “just like lenses”

Concave mirrors form two types of images



Convex mirrors form one type of image

