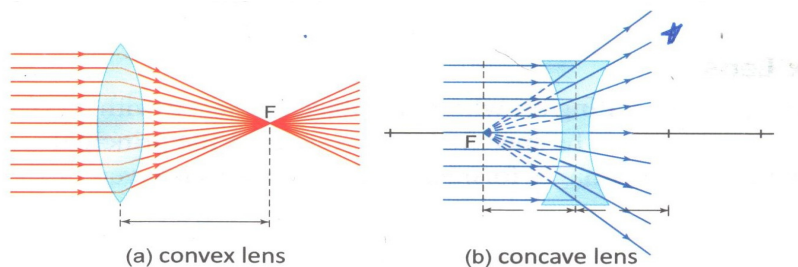


7th – LIGHT II

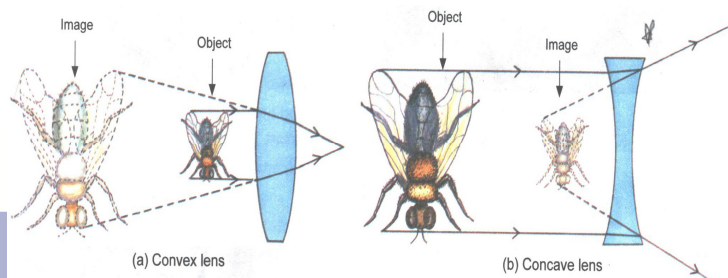
Lenses- A lens is a curved and polished piece of glass or any other transparent material.

Common lenses are of two types -convex and concave a convex lens is thicker in the middle than at the edges a magnifying glass is a convex lens a concave lens is thicker at the edges than in the middle things look

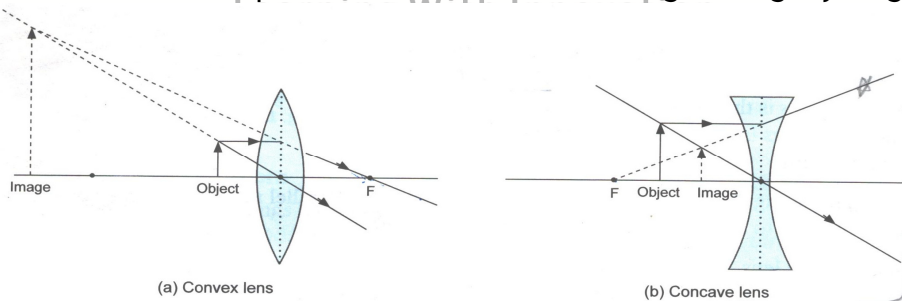


smaller through a concave lens the light falling on the lenses can be represented by rays parallel rays falling on a convex lens converge to a point known as the principal focus .in a concave lens parallel rays appear to diverge from the principal focus whereas in a convex lens parallel rays converge to the principal focus due to this convex and concave lenses are also known as converging and diverging lenses respectively.

The nature of the image formed by a convex lens varies as the distance of the object from the lens change however with a concave lens we always get virtual upright and diminished image (regardless of the distance of the objects from the lens)



Given below is the representation of the above images using ray diagrams.



Images formed by a convex lens- a convex lens forms a variety of images depending on where the object is placed with respect to the lens the position of the objects can be specified with respect to the principal focus of the lens the nature of the images formed by a convex lens is given in table

Object position	Image position	Nature of the image
Between the lens and the focus (F)	On the same side of the lens as the object	Upright, enlarged, and virtual

7th – LIGHT II

At F	At infinity (the image formed cannot be seen)	Inverted, highly enlarged, and real
Between F and 2F	Beyond 2F	Inverted, magnified, and real
At 2F	At 2F	Inverted, same size as the object, and real
Beyond 2F	Between	Inverted, diminished, and real
At infinity	At F	Inverted, very much diminished, and real

Colors-white light is composed of many colours when these colour combine they look white one way of showing that white light is composed of different colors its to make white light pass through a glass prism. This splits up the white light into its constituent colors. If you hold a screen in its path you will see band of colour this band of colours is called the spectrum. As it's visible to the human eye it is called the visible spectrum.

Newton's disc- Newton's disc is a colored disc which is painted with the colours of white light [i.e., violet, indigo, blue, green, yellow, orange, and red (VIBGYOR) in equal proportions so that when it is rotated very fast, the disc appears white. This is because of a property of our eyes called persistence of vision. This means that an image formed by the eye remains for a fraction of a second. When the disc is rotated at a high speed, the image of the different colours overlap in our eyes and the brain perceives it as white.

