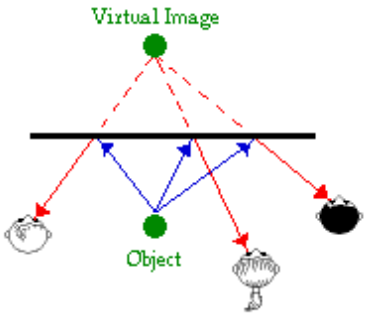
Image Characteristics of Plane Mirror

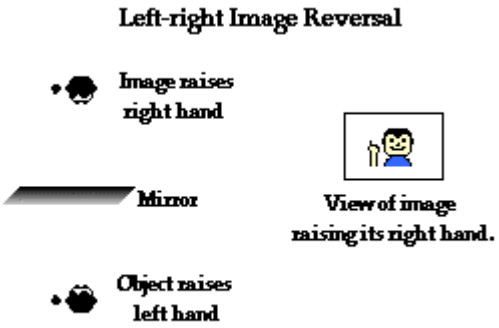
An image location is the location in space where all the reflected light appears to diverge from. Since light from the object appears to diverge from this location, a person who sights along a line at this location will perceive a replica or likeness of the actual object.



All observers would perceive light to be diverging from the same point - the image point.

In case of plane mirrors, the image is said to be a virtual image. Virtual images are images that are formed in locations where light does not actually reach. Light does not actually pass through the location on the other side of the mirror; it only appears to an observer as though the light is coming from this location. Whenever a mirror (whether a plane mirror or otherwise) creates an image that is virtual, it will be located behind the mirror where light does not really come from.

Besides the fact that plane mirror images are virtual, there are several other characteristics that are worth noting. The second characteristic has to do with the orientation of the image. If you view an image of yourself in a plane mirror (perhaps a bathroom mirror), you will quickly notice that there is an apparent left-right reversal of the image. That is, if you raise your left hand, you will notice that the image raises what would seem to be it's right hand. If you raise your right hand, the image raises what would seem to be its left hand. This is often termed left-right reversal. This characteristic becomes even more obvious if you wear a shirt with lettering. For example, a shirt displaying the word "NIKE" will read "EKIN" when viewed in the mirror. While there is an apparent left-right reversal of the orientation of the image, there is no top-bottom vertical reversal. If you stand on your feet in front of a plane mirror, the image does not stand on its head. Similarly, the ceiling does not become the floor. The image is said to be upright, as opposed to inverted.



A final characteristic of plane mirror images is that the dimensions of the image are the same as the dimensions of the object. If a 1.6-meter tall person stands in front of a mirror, he/she will see an image that is 1.6-meters tall. If a penny with a diameter of 18-mm is placed in front of a plane mirror, the image of the penny has a diameter of 18 mm. The ratio of the image dimensions to the object dimensions is termed the magnification. Plane mirrors produce images that have a **magnification** of 1.

In conclusion, plane mirrors produce images with a number of distinguishable characteristics. Images formed by plane mirrors are virtual, upright, left-right reversed, the same distance from the mirror as the object's distance, and the same size as the object.