SOUND

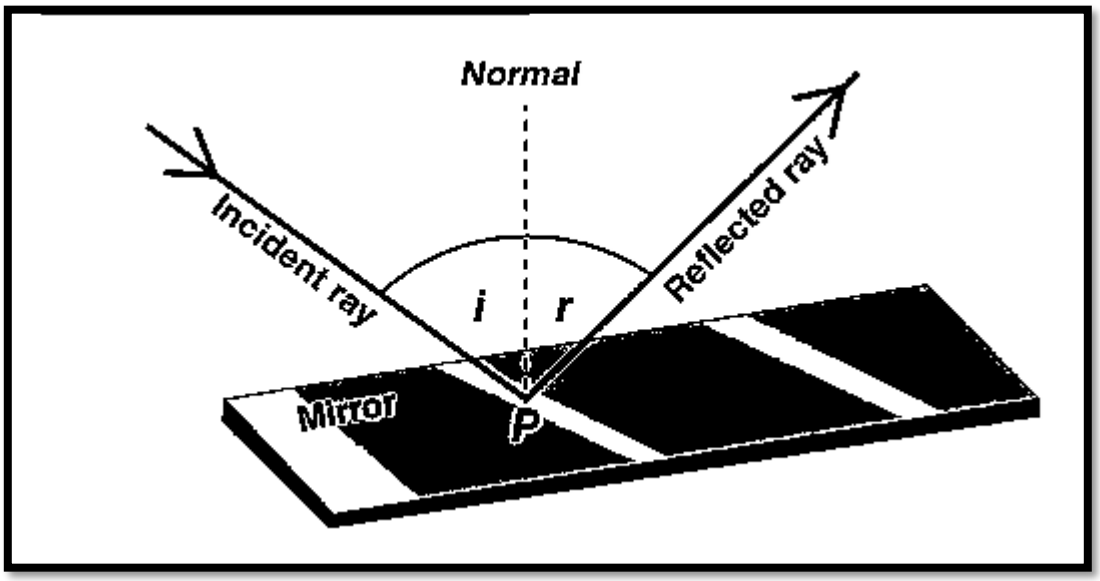
Reflection from Plane Mirror

Reflection from Plane Mirror

It's because of the phenomenon known as reflection. Light waves, sound waves, and water waves can undergo reflection. In this session, let us learn about the reflection of light and the types of reflection in detail.

Reflection of Light

When a ray of light hits a polished surface, and the ray bounces back, it is known as the reflection of light. The incident light ray that falls on the surface is reflected off the polished surface. The light ray that bounces back is known as the reflected ray. A perpendicular drawn on a reflecting surface is called normal.



Laws of Reflection

The laws of reflection are divided into two main points and they are:

- The angle of incidence is equal to the angle of reflection.
- The incident ray, reflected ray, and the normal at the point of incidence all lie in the same plane.

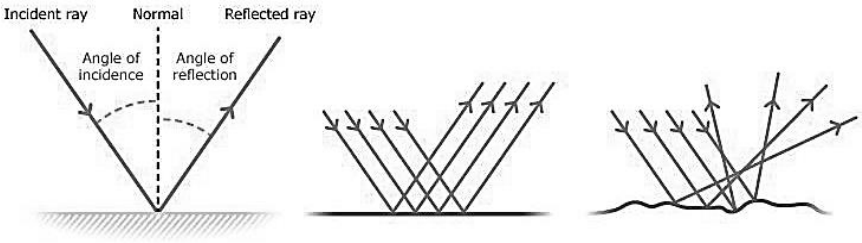
Reflection on a Plane Mirror

When the light rays get stroked on the flat mirror, they get reflected back. According to the laws of reflection, the angle of reflection is equal to the angle of incidence. The image is obtained behind the plane, which is present in the mirror. This process of obtaining a mirror image which is virtual and erect is known as a reflection on a plane mirror.

Types of Reflection

Following are the two types of reflection of light:

- Specular or regular reflection
- Diffused or irregular reflection



(a)Mirror reflection (b)specular reflection (c)diffuse reflection

Image Formed by the Plane Mirror

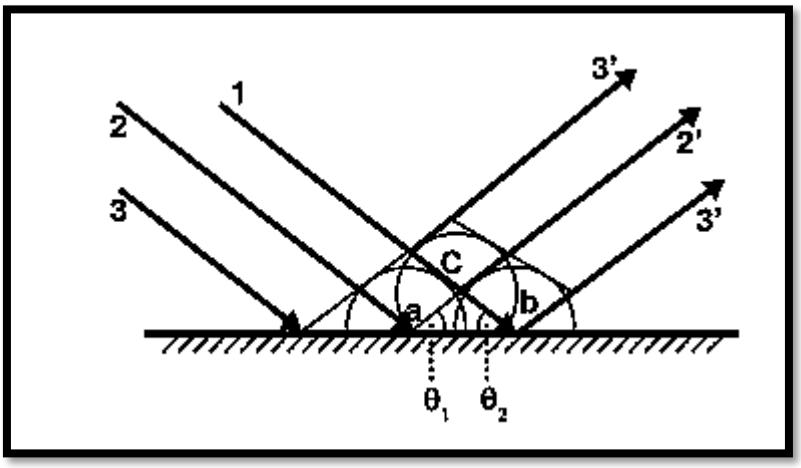
Consider the light rays 1, 2 and 3 shown by solid lines. The wavefronts which are perpendicular to these light rays are shown by the thin lines. The secondary wavefronts generated are the circular fronts described.

At point a, a wavefront is generated due to the secondary source on ray 2. At the same time, other wavefronts are generated at points *c* and *b*. Since wavefronts at points, *a* and *b* are generated at the same time ac = cb. Thus, the triangle *acb* is isosceles and the angles $\theta_1 = \theta_2$.

Note that θ_1 is the angle of incidence and θ_2 is the angle of reflection.

Thus, Angle of incidence = Angle of reflection

Below is the image formed by the plane mirror


1
2
3
3'
2'
3'
C
a
b
θ1
θ2