

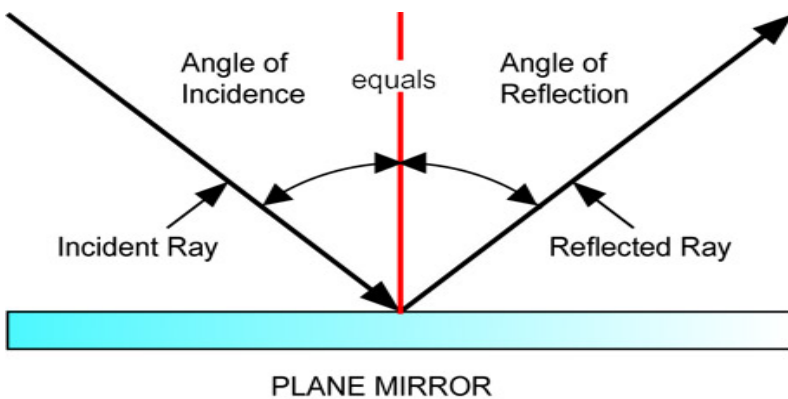
Reflection

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Introduction to Reflection

What is reflection?

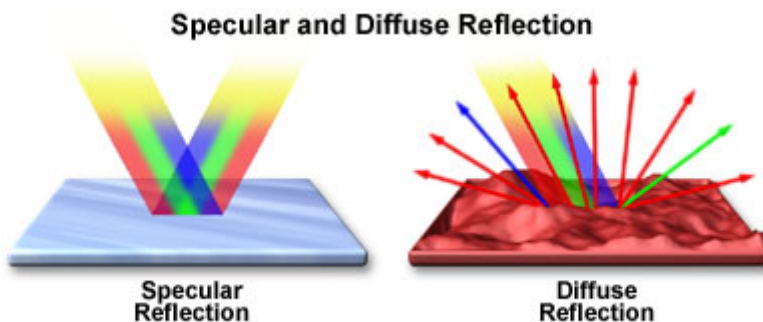
Though light is a very complex phenomenon, its behavior can be understood in many situations through a simple model based on rays and wave fronts. A ray is a thin beam of [light](#) that travels in a straight line.



Reflected rays are simply those waves that are

neither transmitted nor absorbed, but are instead reflected from the surface of the medium they encounter. When a ray approaches a reflecting surface, such as [a mirror](#), the ray that strikes the surface is called the incident ray, and the ray that bounces back is called the reflected ray. An imaginary line perpendicular to the point at which the incident ray strikes the reflecting surface is called the [normal](#), or the perpendicular. The angle between the incident ray and the normal is called the angle of incidence. The angle between the reflected ray and the normal is called the angle of reflection.

Different types of reflection



Specular reflection (regular reflection) occurs when

parallel incident rays are also reflected parallel from a smooth surface. If a surface is rough (on a microscopic level), then parallel incident rays will no longer be parallel when reflected. This results in diffuse reflection (irregular reflection).

The laws of reflection apply to diffuse reflection and not only regular reflection. Picture an irregular surface as a manifold of many small planar reflecting surfaces that are positioned at slightly different angles. Indirect (or diffuse) lighting produces soft shadows, and causes less strain to the eyes than harsher, direct lighting.

Reflection off of smooth surfaces such as mirrors or a calm bodies of water leads to a type of reflection that is known as specular reflection. Reflection off of rough surfaces such as clothing, paper, and the asphalt roadway leads to the type of reflection known as diffuse reflection

Laws of reflection

- The angle of incidence is equal to the angle of reflection
- The incident ray, the normal, and the reflected ray are coplanar

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Reference Links:

- <http://en.wikipedia.org/wiki/normal>
- <http://www.physicsclassroom.com/services/images/ico/classroom32.ico>
- <http://en.wikipedia.org/wiki/refraction>

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