

### What light is

If u enter a dark room, the objects there are not visible. but if you switch on a light bulb, everything becomes visible, how?

the bulb gives out invisible energy called light. when light falls on the object in the room, it bounces off from the surface to the object. when this light enters our eyes, the eyes sense it and send a message to the brain which really sees. Eyes are only an aid in seeing objects.

*Eyes are only a aid in seeing light means eyes only help in seeing light, its not the only way we see light*

### More definitions for light

A source of light which is the size of pinhead of a common pin is called a **point source of light**.

Any source of light, which is bigger than the point source of light is called an **extended source of light**. examples include glowing electric bulb etc.

The path along which light energy travels in a given direction is called a **ray of light**.

A collection of large number of rays of light is called a **beam of light**.

When a collection of rays travel parallel to each other is called **parallel beam of light**. examples include spot light, the rays coming from a sun in a room etc.

When the rays of light starting from a point travels in various directions, then the collection of these rays are known as **Divergent beam of light**. examples include light from a light bulb or a burning candle etc.

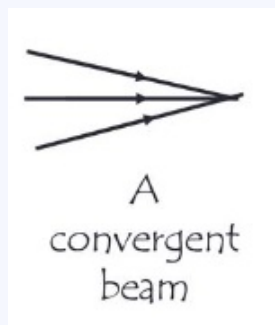
When rays of light coming from different directions meet at one point, then such a collection of rays are called **convergent beam of light**.

### Why do we say light is invisible?

### How non-luminous bodies can be made into luminous

Any non-luminous body can be made into non-luminous by heating it. for instance take a iron wire and heat it on a gas flame. in 2 min the iron wire will get red hot and start emitting light.

### Convergent beam of light



### General definitions for light

Anything ( material or non-material ) through which light can pass through partially or wholly is called a **optical medium or medium**.

A medium which has a uniform composition throughout, is called **homogenous medium**. examples include water, glass , pure alcohol

A medium which does not have a fixed uniform composition or has a different uniform composition at different points is called heterogeneous medium. Examples can include, air, muddy water, fog, smoke etc.

A medium which allows most of the light energy to pass through it, is called **transparent medium**. Examples include air, vacuum, alcohol etc.

A medium which partially allows the light energy to pass through it is called a **translucent medium**. Examples can include muddy water, smoke, dust filled air etc.

The bodies which do not allow light energy to pass through them, are called **opaque bodies**. they are called bodies instead of medium as they do not allow light energy to pass and medium means anything that allows light energy to pass.

### Speed of light

### Sources of light

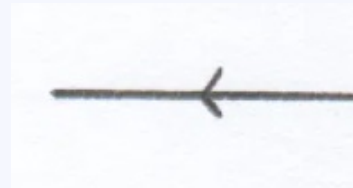
Sun is the primary source of light. it is a huge ball of burning gases which gives out huge amount of heat and light energy.

**The process by which light is given out by living bodies is called Bioluminescence.** examples can include glowworm, fireflies etc.

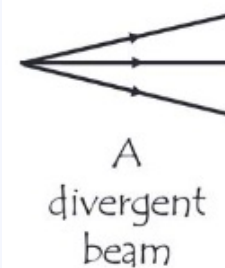
**All bodies which emit light energy by themselves are called luminous bodies.** examples can include light bulb, torch, fire, sun etc.

**Bodies which do not emit their light by their own, but reflect light energy falling on them and then become visible are called non-luminous bodies.** examples can be wood, metal, houses, etc.

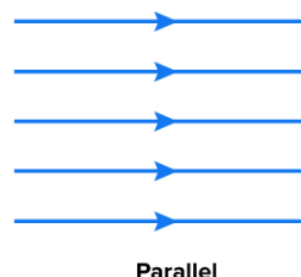
### Ray of light



### Divergent beam of light



### Beam of light



light is invisible as when light energy falls on the objects, we really do not see it. when light energy bounces off from the surface of the object and enters our eyes, this sensation produced by energy helps our brain to see.

**Light is an invisible energy, which causes the sensation of vision.**

Light travels at a very fast speed. the speed of light is 300,000,000 m/s or  $3 \times 10^8$  m/s

**moon the planets are considered as non-luminous**

moon and the planets are considered as non-luminous bodies as they do not produce the light of their own. instead they reflect the light of the sun falling on them.



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