

Reflection of Light





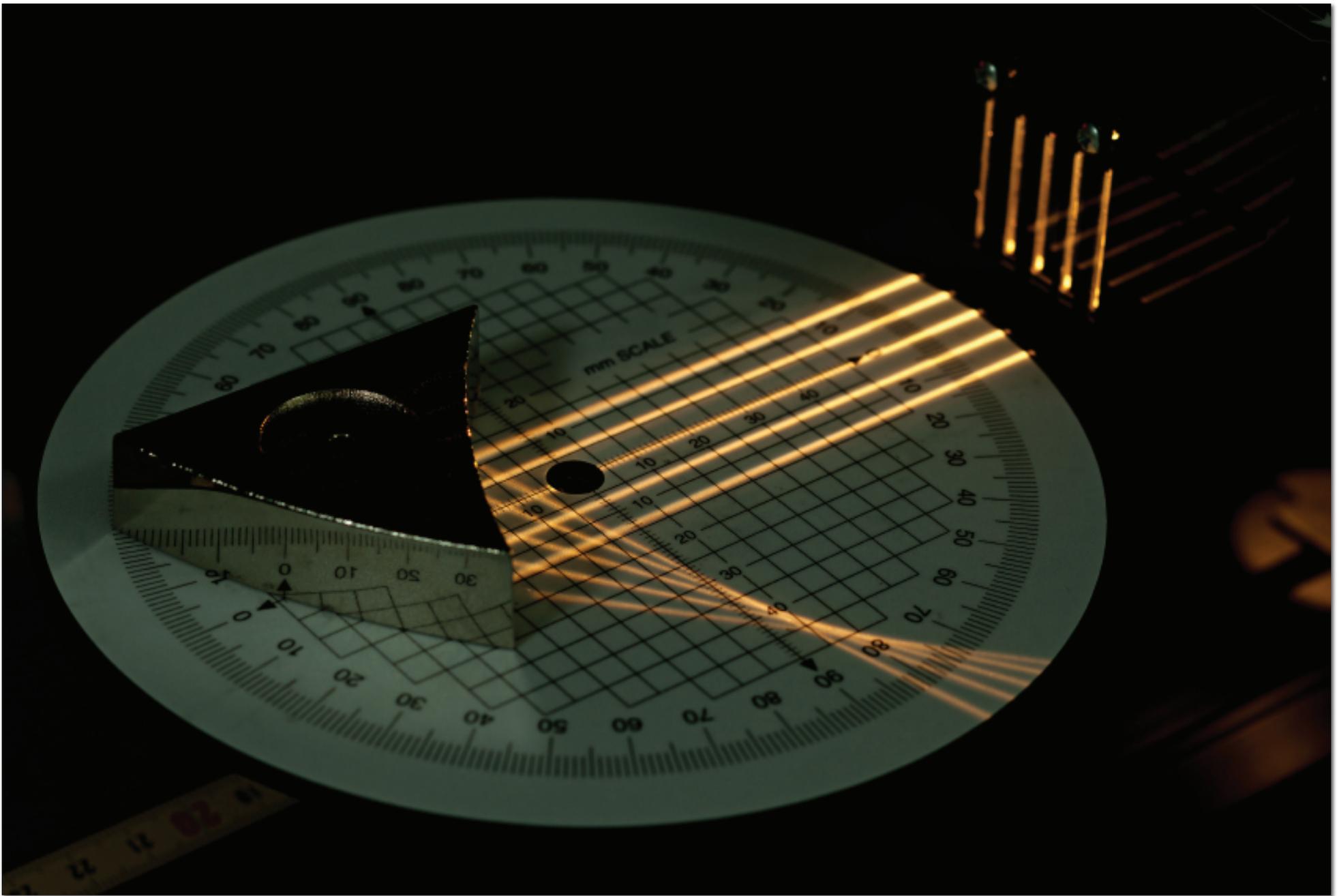
Behaviour of Light

Light radiates from the sun in all directions. Light waves travel in straight lines. You can sometimes see the rays of the sun shining through the clouds.

Sometimes the direction of light can be altered by objects in its path.

Light may go through some objects. It may be reflected by others.

Some objects absorb the light energy and convert it to heat within their particles.



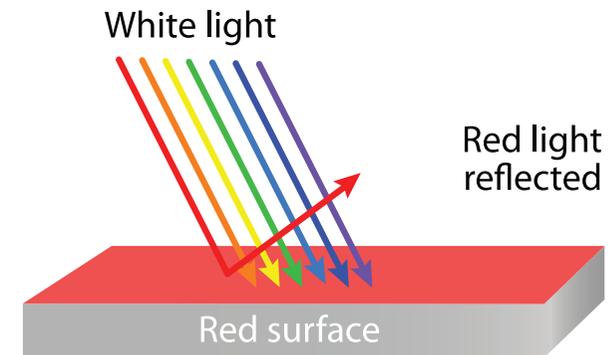
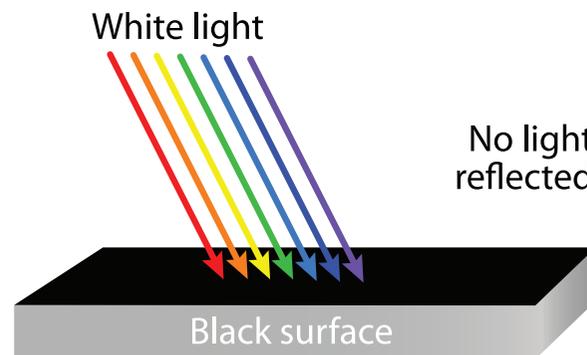
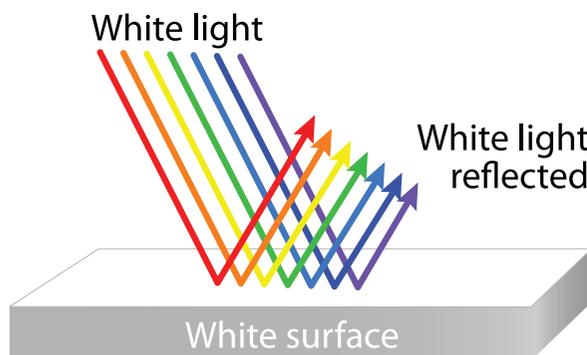
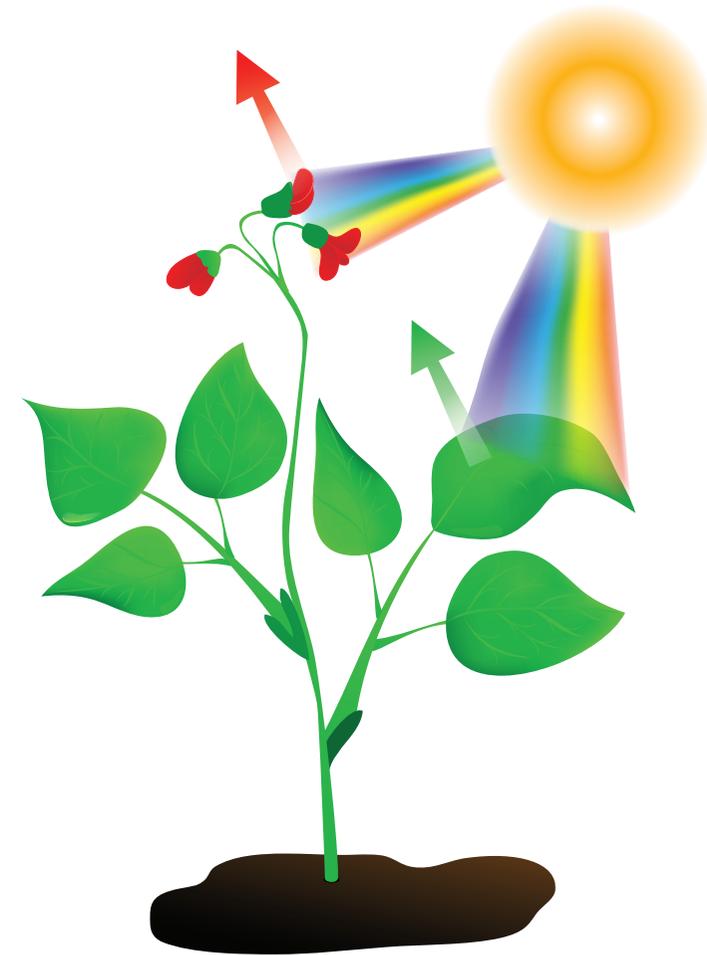
The rays of light in this experiment are shining on a smooth, curved metallic surface. The light is reflected from opaque objects like metal. The light reflects at different angles because the metal surface is curved.

Some coloured surfaces absorb light

Opaque surfaces do not allow light to flow through them. Light is absorbed by these surfaces or reflected from them. Dark surfaces tend to absorb light energy. Light coloured objects tend to reflect more light. Some objects are selective, absorbing some colour and reflecting others.

Have you ever worn a black hat and wondered why your head is so hot in the sun? If you swap your black hat for a white one you will find that you will stay cooler in the sunlight. This is because white surfaces reflect more light than darker ones do. The black hat absorbs the light energy which is converted to heat energy.

When an object looks to be a particular colour, red for example, the object is absorbing all the other colours of the spectrum except red. The red light waves are reflected. Therefore, red is the colour we will see and the object appears red to our eyes.



How Does a Mirror Work?

When light shines on a surface it is reflected in a certain way. The angle of the incoming light is equal to the angle of the light leaving the surface. However, when light meets an uneven surface it has many angles to deal with and it bounces back accordingly. The result is a **diffuse reflection** which scatters the light.

When light reflects from a smooth surface such as shiny metal or a mirror, the light is not scattered. The result is a **specular reflection**, which is more ordered.

The mirror consists of three layers: a glass top, with a silver coloured backing and a layer of black paint. The black paint stops light from escaping from the rear of the mirror. In the daytime, light is being reflected off you in a scattered pattern.

If you stand in front of a mirror the light reflects from you into the mirror surface. The atoms in the silver layer absorb the light energy and the electrons become excited. This releases photons of light. The photons and the reflected light are bounced back to you.



How Light Is Reflected by A Mirror:

