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Kushal 16-9

"START" at SAFE HANDS

Learning by Doing

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Class - VIII

Subject - Science (Physics)

Topic - Reflection of Light

School - ST' Ann's English Medium School,
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Light

Introduction →

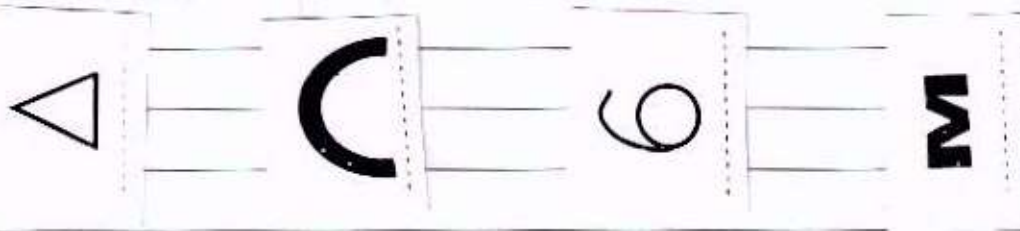
Light is the only thing we can really see. We probably learn more about the world around us from our sense of sight than from any of our other senses. The primary source of light is the sun. Other common sources are flames, white hot filaments in light bulbs and glowing gases in glass tubes. Light is a form of radiant energy. It does not require any material medium to propagate. It can travel through vacuum at a speed of $3 \times 10^8 \text{ ms}^{-1}$. Light travels from the source in straight lines. This is known as rectilinear propagation. The speed of light changes when it goes from one medium to another medium.

on 10/9/17 we had studied on the topic Reflection of light.

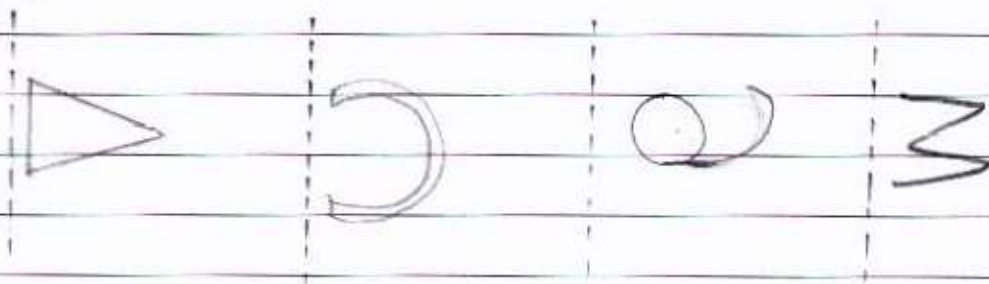
from this report I am going to give you more information about reflection of Light. By the explanation of experiments.

Activity 1st :-

In this 1st activity we were provided with a rectangular shaped mirror and on our worksheet there were four images. The images are shown below.



then after, we have to keep the mirror in front of the object (on the dotted line shown in the figure). when we keep the mirror in front of it. The result obtain is shown below.



From this activity we came to know that the image in a plane mirror is behind the mirror and at the same distance from it as the object.

Activity 2nd :-

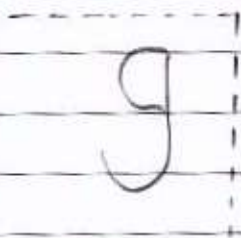
In this activity the topic was :-

Think of a situation when you can have image of :-

- ① Number four as six
- ② Image of nine as six
- ③ Image of nine will be eleven

In the first sentence we have write a no. four and we have to keep the mirror in such a way that the no. four when reflected in mirror it should look six. The question comes in our mind that How four will look as six. It is possible only when we write no. four in Roman no. (IV).

In the second sentence we have to write the no nine as six. It is possible when we keep the mirror on the place show below.

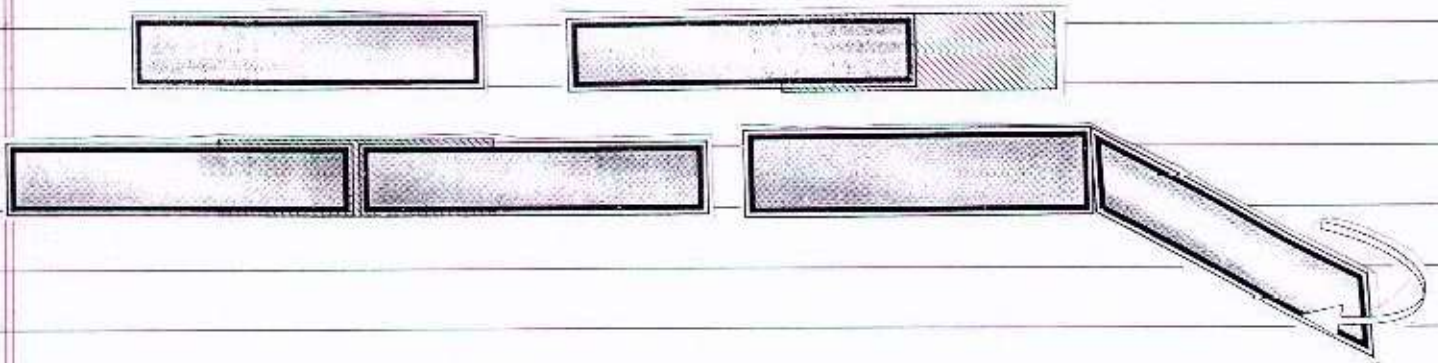


In above activity we will required 2 mirror

In 3rd sentence we have to show the no. nine as eleven. IT is possible when we will write write nine in roman no. (IX \rightarrow XI)

Activity 3rd :-

In this 3rd activity we were provided with two mirrors. we have to place the mirrors as shown in the figure and attach it using sticky tape. so now it becomes a flexible joint.



then after we have to place the mirror along the dotted line making certain angle.



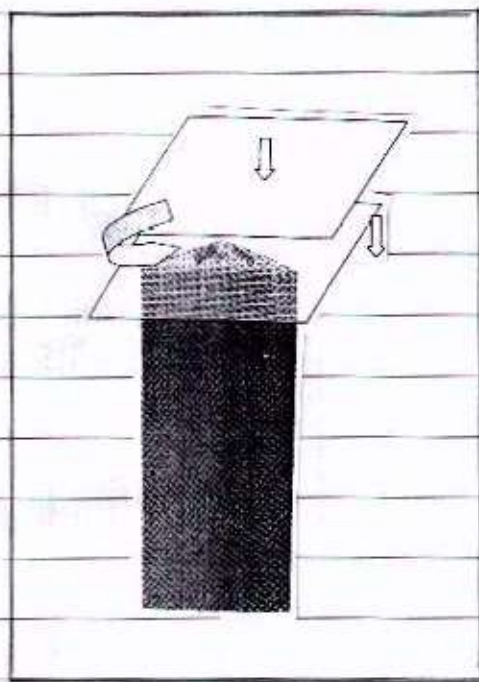
The question was How many images do you see?

Ans: we see four image Three of them are reflected once. one is the actual object. It means in the mirror image image is also formed.

Activity 4th :-

In this activity we learned to make Kaleidoscope. it means use of multireflection. our sir explained us how to make Kaleidoscope.

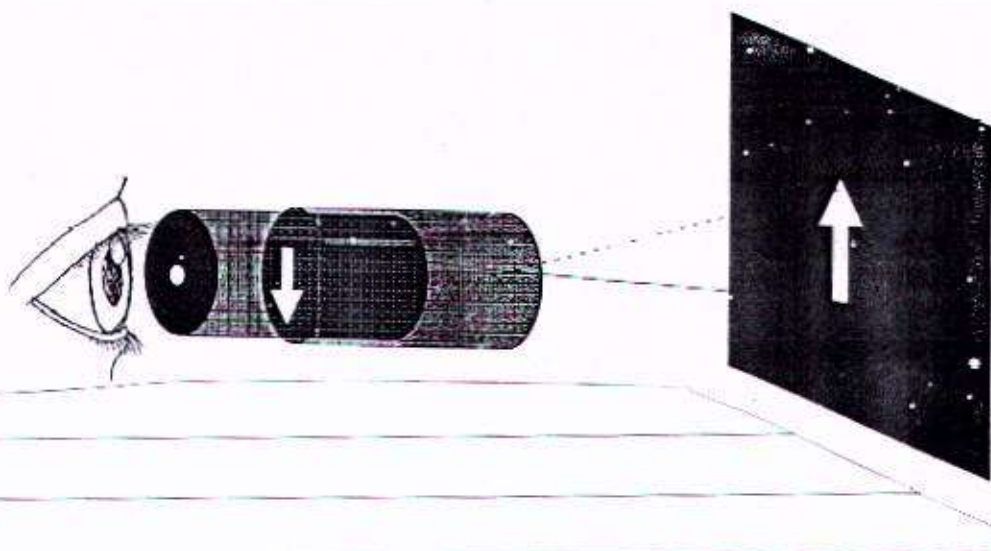
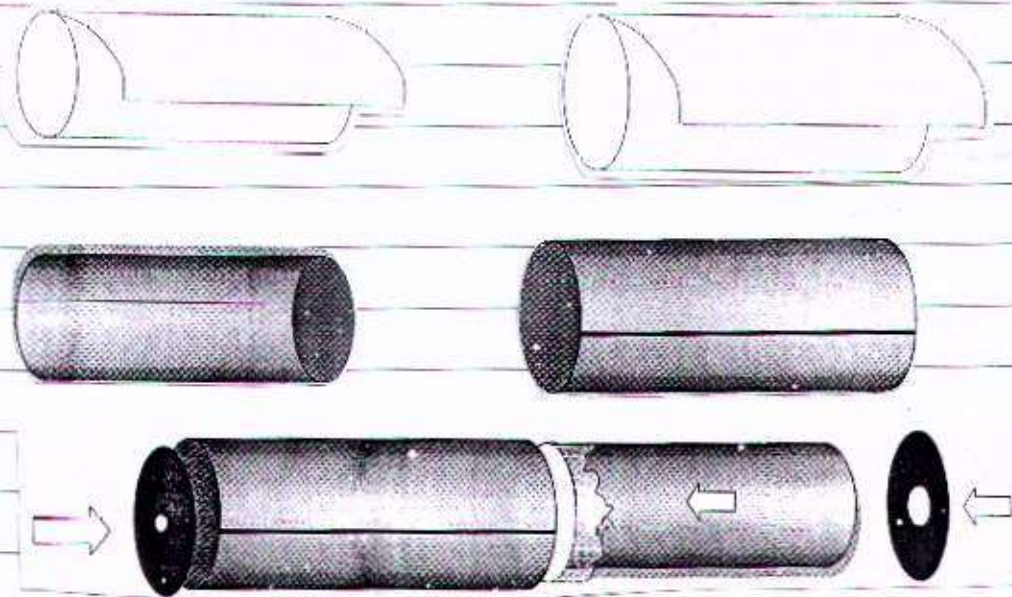
Take the three mirrors and make prism of it. then fix a transparent paper, add pieces of bangles on it and keeping small gap place butter paper. Means the bangle pieces are sandwiched between the two with transparent paper inside. Now Holding it you can see the magic of reflections.



The wonderfull designs are formed because of pieces of bangles unit.

Activity 5th :-

In this activity we learned to make a Pinhole camera. we were provided with two centuary paper. In this we have to make two rolls of centuary paper in such a way that they should slide over each other. After this we have to cut two circles with a hole in past its centre then paste it to the ends of the rolls. Pinhole camera is ready.



Activity 6th :-

Earlier the cataract operation was possible but lens transplant is recent technique. After cataract operation, removal of eye lens the pinhole camera was acting as eye lens. In rural area (or sometimes in urban also) if a person need to see far away he makes his eye smaller, puts his hand over it and see

Activity 7th :-

How to make a Periscope

Take a plastic bottle. Make two oblique cuts in it in two places, at the top and at the bottom, so that two plane mirrors can be fitted in them, parallel to each other and making angles of 45° with the length of the bottle. Make one-inch windows in the bottle in front of the two mirrors. Now, look in through the lower window. You will see the image of objects that are in front of the upper mirror. How does this happen? The rays from the objects first fall on the upper mirror. They get reflected onto the lower mirror. They get reflected again and as a result we see the image through the window at the bottom. This instrument is called a periscope. A periscope is useful on a submarine for keeping a watch on things above even while the submarine is below the surface of the sea.

Summary

Light: It is a form of energy which makes us the sense of vision.

Reflection of Light: When a ray of light travelling from one medium to another, bounces back in the same medium then this phenomenon is called reflection.

Law of reflection:

1. The angle of incidence 'i' is equal to the angle of reflection 'r'.
2. At the point of incident rays, the normal to the surface and the reflected ray all lie in the same plane.

Plane mirror:

A flat mirror is called a plane mirror. In this mirror the object distance is always equal to the image distance.

Real image: when the rays of light actually meet, the image so formed is known as real image.

Refraction: ~~we~~ When light passes from one medium to another, it is process of refraction.