(DATE - 30 Sep 2024)

TENDER HEART HIGH SCHOOL, SECTOR-33'B, CHD.
CLASS - VII SUBJECT - PHYSICS
CHAPTER - 4 TEACHER - CHARANJEET KAUR

LIGHT ENERGY

Good Morning Students
Students this lesson is of class - VII for the subject of Physics, Topic - 'Reflection of light' which is covered in chapter - 4 'Light Energy' starting on Page-50 of your text book titled - 'Concise Physics' by Selina Publications and is being submitted.

All students may now open Page Number - 50 in front of them.
If all students are ready then let us start with - 'Reflection of light'. All students please listen carefully.

Students before starting the topic, I want you all to keep a torch and a ball near you as we will be requiring them for our topic.
Now we are ready to start.
Students as you have already learnt that light is a form of energy which gives us the sensation of sight. We can not see light, but objects around us can only be seen in presence of light. Light also travels in straight lines and is known as rectilinear propagation of light. It is due to this rectilinear propagation of light that it casts the shadow of an opaque object.
Now Students I want you to understand this concept by performing a small activity. I want you all to switch off the light of your room. Now switch on the torch and focus its light on the wall in front of you. You will be able to observe the situation as shown in Figure-1.

CLASS - VII PHYSICS

CHAPTER - 4 LIGHT ENERGY

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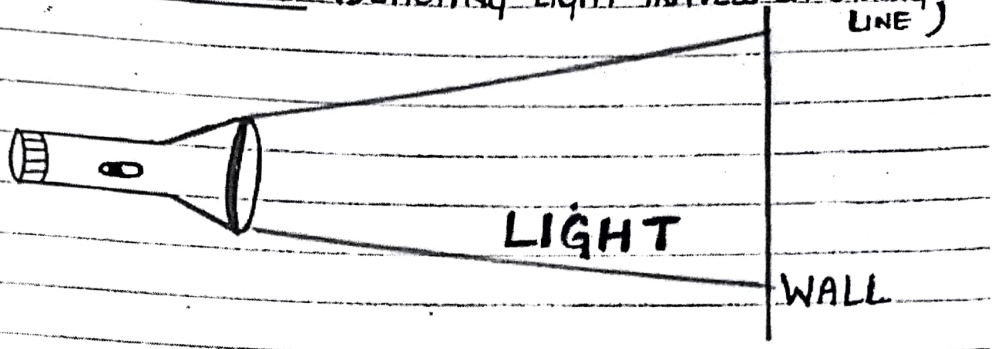
FIGURE-1 (DEPICTING LIGHT TRAVELS IN STRAIGHT LINE)



You will notice that a certain area of wall will be lighted while the other area of wall is still dark. This happened because light travels in straight line and hence strikes the wall in similar fashion.

Now students place your Physics Book vertically between wall and torch and then observe the pattern of light on wall.

After observing the pattern, write the answer to the questions which I am going to ask you now:

Q1. Do you observe any dark region inside the region lighted by the torch on the wall?

Q2. What is this dark region named as?

Q3. Out of - transparent, translucent and opaque object - in which category do you put your Physics Book.

Students now pause this session and write the answers in your Physics notebook.

I hope you all have written the answers by now. Let us check the answers now.

Ans 1. Yes, a dark region is observed.

Ans 2. This dark area is known as shadow of Physics Book

Ans 3. Physics Book comes in the category of opaque object.

Students, it can be concluded from this observation that - light travels in straight line

and if an opaque object is kept in way of light, a shadow is cast.
Students you might be knowing that:
Opaque object does not allow light to pass through it while transparent object allows light to pass through them easily and hence they does not cast any shadow.

Students now you may take 3 minutes break. Pause the session for 3 minutes and play with the ball by dropping it on the floor from a height. Do it 3 to 4 times.

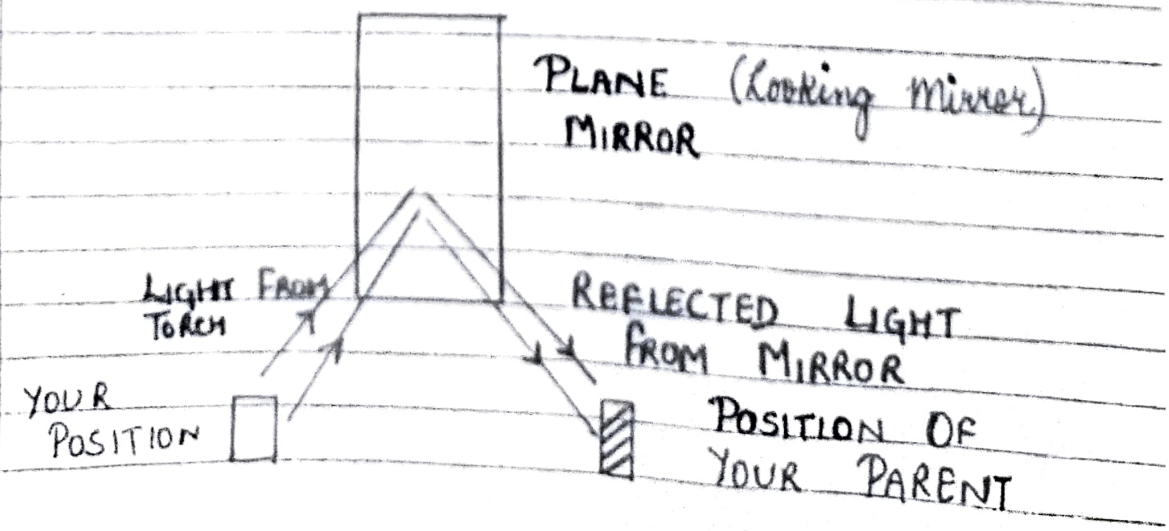
NOTE — (Students, you must throw the ball with some force such that the ball bounces back)
I hope you must have enjoyed and now let us further continue with the topic.
Students when you threw the ball on the floor you may observe that it bounce back in upward direction. The same happens with light too.
When light falls on a shiny surface such as a mirror, it returns back into the same medium after striking the surface.
The returning of light in the same medium after striking a surface, is called reflection of light. (Students, learn this definition of reflection of light).

Further, when light falls on an opaque object a part of light is reflected back and the remaining part of light is absorbed by the object. But if the object is transparent, the remaining part of light passes through it while very less percentage of light is reflected back by the transparent object.
Students, it is to be noted that different

* Objects reflect light to different extents. A highly polished and smooth surface (like plane mirror - or looking mirror used in your home) reflects maximum part of light falling on it, while a transparent object reflects the least amount of light.

Now before starting the next topic I want you all to perform one more activity. In this activity you will be needing a torch, looking mirror (preferably your dressing mirror) and one volunteer (your mother or father or sibling). This activity should be done at night or in a dark room. Ask your mother or father to stand in front of mirror at a certain distance and beyond the width of plane mirror. Now you take the torch and stand parallel to your parent and focus the light of torch on the plane mirror placed in front of you. You will be amazed to see the ray of light falling on your parent.
Students this activity can be done only in a dark room and for your clarity all the positions is being marked and shown in figure - 2 (given below)

FIGURE - 2



After performing this activity, try to answer why the light is seen on your parent despite the fact you have directed the light on the mirror

Children now I am ending the lesson for today. You all are required to read the notes again and then read the topic 'Light' and 'Reflection of light' given on Page Number-51 of your Physics Book. You are also require to learn the definition of the term Reflection of light as mentioned on Page Number-51.

Thank you!

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