

CLASS-10
PHYSICAL SCIENCE
PERIOD PLANS

CHAPTER: 03 – REFLECTION OF LIGHT BY DIFFERENT SURFACES

PERIOD PLAN-01 : Reflection of light – Concepts - Pin hole camera

Content Analysis	Class Room Environment	Teaching Learning Material										
<p><u>Types of substances:</u> Substances are of three types. Transparent substances -they allow the light to pass through them Opaque substances - they does not allow the light to pass through them Semi transparent or Translucent -they allows the light partially to pass through them.</p>	<p>Activity-1: Focus the torch on to a wooden card board. Is the light passes through it? Focus the light on to a glass plate. What happens? Focus the light on to a oil paper. What happens? Observation: The light passes through glass plate. It does not passes through card board. It partially passes through oil paper.</p>	<p>Torch Card board Glass plate white paper Oil drops (any other)</p>										
<p><u>Path of light :</u> Light passes in a straight line. nagamurthy.weebly.com</p>	<p>Activity-2: Lit a candle. See the flame through a rubber tube. What do you observe? Bend the tube as arc. Now see the flame. What happens? Observation: Light passes in a straight line.</p>	<p>Candle Match box rubber tube</p>										
<p><u>Images and shadows:</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Images</th> <th style="text-align: center;">Shadows</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">colourful</td> <td style="text-align: center;">Black colour</td> </tr> <tr> <td style="text-align: center;">All parts are visible</td> <td style="text-align: center;">Only shape is visible</td> </tr> <tr> <td style="text-align: center;">They may be same size.</td> <td style="text-align: center;">They are in different sizes</td> </tr> <tr> <td style="text-align: center;">We can identify the object</td> <td style="text-align: center;">It may not possible to identify the object accurately</td> </tr> </tbody> </table>	Images	Shadows	colourful	Black colour	All parts are visible	Only shape is visible	They may be same size.	They are in different sizes	We can identify the object	It may not possible to identify the object accurately	<p>Activity-3: Focus torch on to a geometry box. (vertically, horizontally). What happens? Focus torch on to a mirror. What happens? Focus torch on to our face, standing before mirror. Observation: When torch focused on the box shadows are formed in different sizes. Light focused on mirror it got reflected. At last the light from our face projected on the mirror and formed our image in the mirror.</p>	<p>Small Box Torch Mirror</p>
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<p><u>Pin hole camera:</u> Take two barrels or boxes so that one can be immersed through another. Place a dark, thick black paper at one end of the big barrel, and tie it with rubber band. Make a hole with pin at the centre of the paper. Tie a oiled paper which is semi transparent to the second small barrel. Immerse small barrel into big barrel and observe the flame of the candle. The light which comes from the top of the flame goes straight towards the bottom of the screen. Similarly the rays from the bottom of the flame goes straight towards the top of the screen.</p>	<p>Activity-4: Prepare a pin hole camera. Observe an object at some distance. Observe a flame of a candle in the room. What do you observe? Observation: This leads to the formation of an inverted image. If we increase the size of the pin hole camera, we get blurred image with big size. If the size of the hole is equal to the size of the flame , we get no image on the screen. Extra activity: Observe what happened to the image , if there are two holes in a pin hole camera.</p>	<p><u>Pin hole camera</u> Candle</p>										

