

EXPERIENTIAL LEARNING ACTIVITIES

CLASS : X

SUBJECT : Physics

CHAPTER No.: 10

TOPIC : Light – Reflection and Refraction

SUB-TOPIC : Image formation of a Concave mirror and Convex lens

NAME OF THE ACTIVITY : U-V method

TYPE OF ACTIVITY : Group PLACE OF THE ACTIVITY : School (Physics Laboratory)

MATERIALS USED : Light source, concave mirror, convex lens, white screen, Lens/mirror stand, metre scale.

METHODOLOGY:

Students are divided into two groups.

GROUP 1:

- 1) The approximate focal length of the concave mirror is found by distant object method.
- 2) A metre scale is placed on a flat surface and the concave mirror is fixed at '0' (zero) of the meter scale.
- 3) Distances 'F' and 'C' are marked from the concave mirror.
- 4) The light source is placed at different positions (say beyond C, at C, between F and C, at F and between F and C)
- 5) The screen is moved in front of the mirror to get a clear image.
- 6) Position and nature of the image is noted.

GROUP 2:

- 1) The approximate focal length of the convex lens is found by distant object method.
- 2) A metre scale is placed on a flat surface and the convex lens is placed at '50' mark of the metre scale.
- 3) Distances 'F' and '2F' are marked on both the sides of the convex lens.
- 4) The light source is placed at different positions (say beyond 2F, at 2F, between F and 2F, at F, between F and O) on one side of the lens.
- 5) The screen is moved on the other side to get a clear image.
- 6) Position and nature of the image formed is noted.

QUESTIONS:

- 1) In what direction is the screen moved when the light source is brought closer to the convex lens?
- 2) Write two characteristics of real image.
- 3) How does the size of the image change as the object is brought closer to the convex lens/ concave mirror?

CURIOSITY QUESTIONS:

- 1) Why is a concave mirror used in operation theatres?

Answer Guide:

Think about:

- 1) What type of mirror is used as converging mirrors?
- 2) At what position of the object do we get a powerful parallel beam of light?