

**PROJECT WORK- 4****REFRACTION OF LIGHT BY CURVED SURFACES**

Some items to be given as project work for class-10 students.

They can do any one of the following. The report should be in at least two A4 pages.

1. Collect the information about the lenses available in an optical shop. Find out how the focal length of a lens may be determined by the given 'power' of the lens.
2. Collect the information about lenses used by Galileo in his telescope.
3. Collect information about making of soap babuls. What do you observe on seeing images on a soap babul? [nagamurthy.weebly.com](http://nagamurthy.weebly.com)
4. Draw the ray diagrams for the formation of images, when object is placed at different distances on the principal axis of a convex lens. Also draw the ray diagrams, when object is not placed on the axis.
  - (a) at infinity
  - (b) beyond  $C_2$
  - (c) on  $C_2$
  - (d) between  $C_2$  and  $F_2$
  - (e) on  $F_2$
  - (f) between  $F_2$  and P
5. Draw the ray diagrams for the formation of images, when object is placed at different distances on the principal axis of a concave lens. Also draw the ray diagrams, when object is not placed on the axis.
  - (a) at infinity
  - (b) beyond  $C_2$
  - (c) on  $C_2$
  - (d) between  $C_2$  and  $F_2$
  - (e) on  $F_2$
  - (f) between  $F_2$  and P
6. Take two watch glasses and affix them by pouring two different liquids ( Ex. Water, Navaratan oil) and now it will acts like a lens with two different materials . Put a light source (object) in front of this lens and note the observations and write a report on it.

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