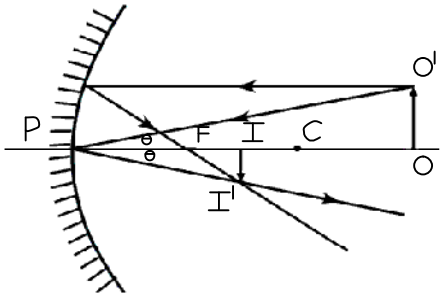
CLASS-10

PHYSICAL SCIENCE

PERIOD PLANS

CHAPTER: 03 – REFLECTION OF LIGHT BY DIFFERENT SURFACES

PERIOD PLAN-11 : Mirror magnification formula

Content Analysis	Class Room Environment	Teaching Learning Material
Magnification – Formula : $m = \frac{size\ of\ the\ image}{size\ of\ the\ object}$ $= \frac{height\ of\ the\ image}{height\ of\ the\ object} = \frac{H_i}{H_o}$	**Conversation :** About magnification. **Explanation:** about how the formula expanded. nagamurthy.weebly.com	Chart
The image formed by a spherical mirror varies in size. A ray coming from O^I is incident at pole with an angle of incidence θ, and get reflected with same angle θ. From ΔPOO^I , $\tan\theta = \frac{OO^I}{PO}$ .....(1) From ΔPII^I, $\tan\theta = \frac{II^I}{PI}$ .....(2) From 1 & 2 $\frac{OO^I}{PO} = \frac{II^I}{PI}$ $\frac{II^I}{OO^I} = \frac{PI}{PO}$ .....(3) according to sign convention PO = –u PI = –v $OO^I = h_0$ $II^I = -h_i$ Substituting the above values in equation (3). $\frac{-h_i}{h_o} = \frac{-v}{-u}$ $\frac{h_i}{h_o} = -\frac{v}{u}$ ∴ Magnification **m** $= \frac{h_i}{h_o} = -\frac{v}{u}$ $m = \frac{size\ of\ the\ image}{size\ of\ the\ object}$ $= \frac{height\ of\ the\ image}{height\ of\ the\ object} = \frac{H_i}{H_o}$ $m = \frac{-\text{image distance (v)}}{\text{object distance (u)}}$		

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