

Investigating Refraction

Aim: To investigate the relationship between the angle of incidence and the angle of refraction when light passes from one medium to another



Method:

1. Open the refraction simulation. Set the top medium to Air ($n_1 = 1.00$) and the bottom medium to Glass
2. Set the angle of incidence to 10° . Record the angle of refraction shown in the readout.
3. Increase the angle of incidence in 10° steps up to 80° . Record each angle of refraction.
4. Calculate ***sin i*** and ***sin r*** and record in your table

Results:

i (°)	r (°)	sin i	sin r

Analysis:

Plot a graph of sin i (x-axis) against sin r (y-axis)

Measure the gradient of the graph - what do you notice?

Extension:

Change the view from 'Rays' to 'Waves'

What happens to the wavefronts when they enter a denser medium?

Does this help explain why waves change direction?