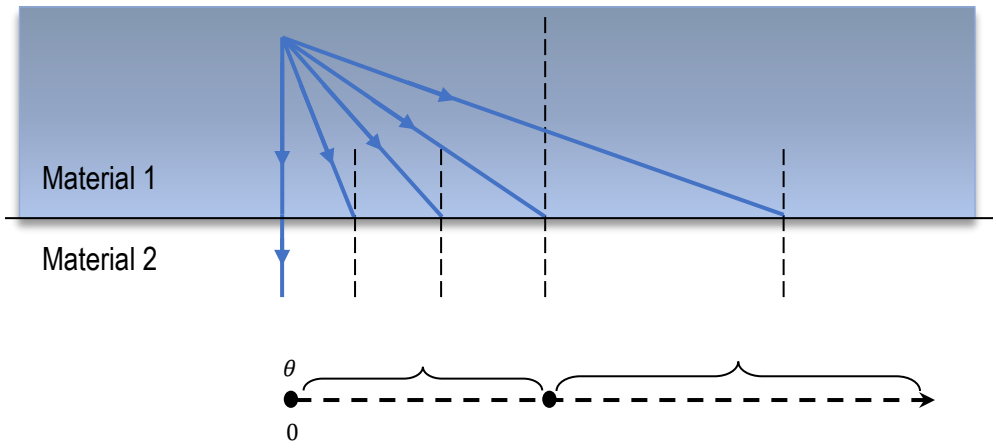
CONCEPT: TOTAL INTERNAL REFLECTION

● Remember: When light enters a material with a *lower* index of refraction $\boldsymbol{n}$, it bends *away* from the normal.



● At a **critical angle** (θ_{crit}) of incidence, the refracted ray is _____ to the surface, so θ_2 = _____.

- For angles > θ_{crit}, light is **NOT** refracted but totally _____ inward. This is called Total Internal Reflection.

$\boldsymbol{n_1 \sin\theta_1 = n_2 \sin\theta_2}$ ⇒ _____ = _____

(Critical Angle)

- Total internal Reflection happens only when $\boldsymbol{n_2}$ $\boldsymbol{n_1}$

EXAMPLE: In the image above, Material 1 is glass and Material 2 is air. What is the angle for which light will be totally reflected inward?

INDEX OF REFRACTION FOR COMMON MATERIALS	
Vacuum/Air	1
Water	1.33
Glass	1.46