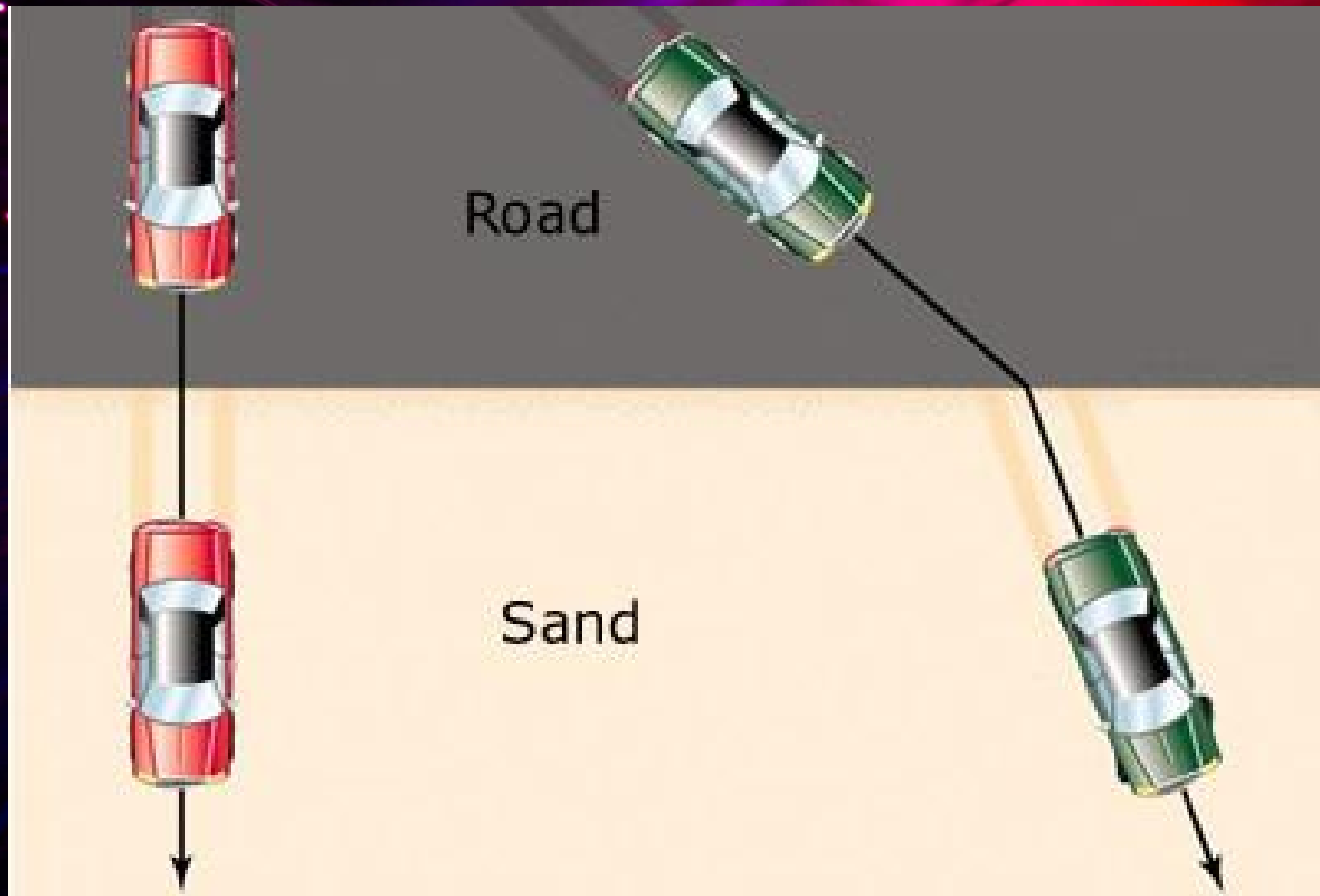




Refraction

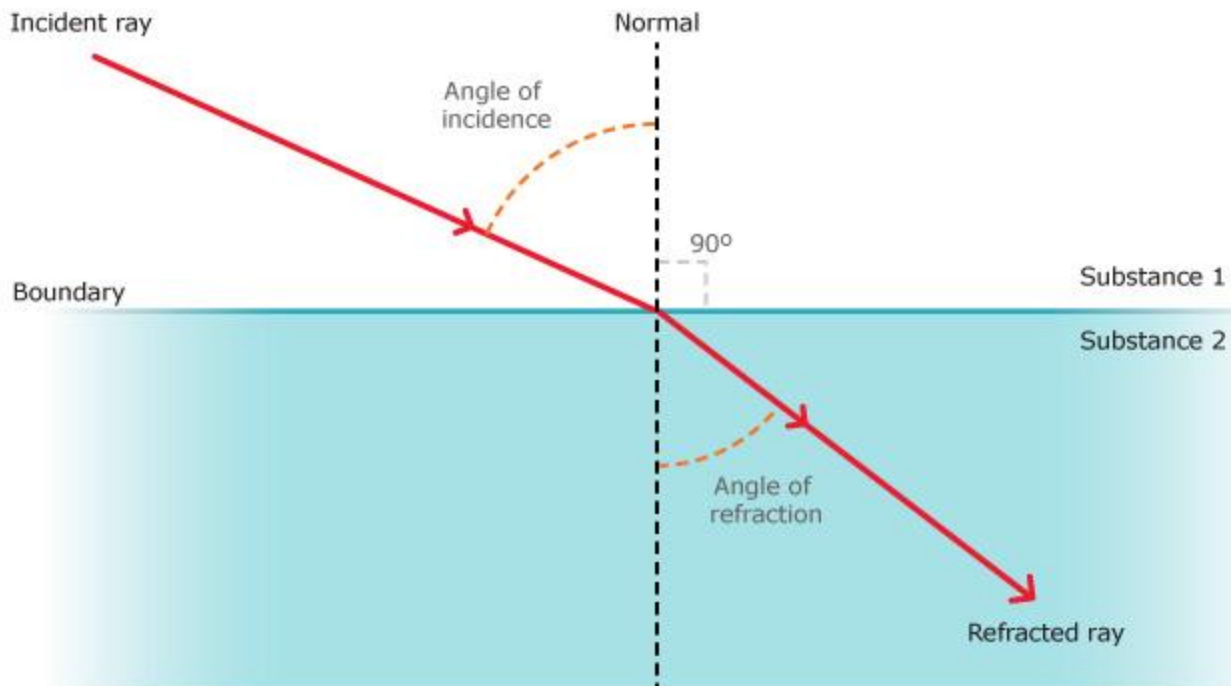
Bending Light



Refraction

- When a wave enters a new medium and moves at a different speed, causing its direction to change

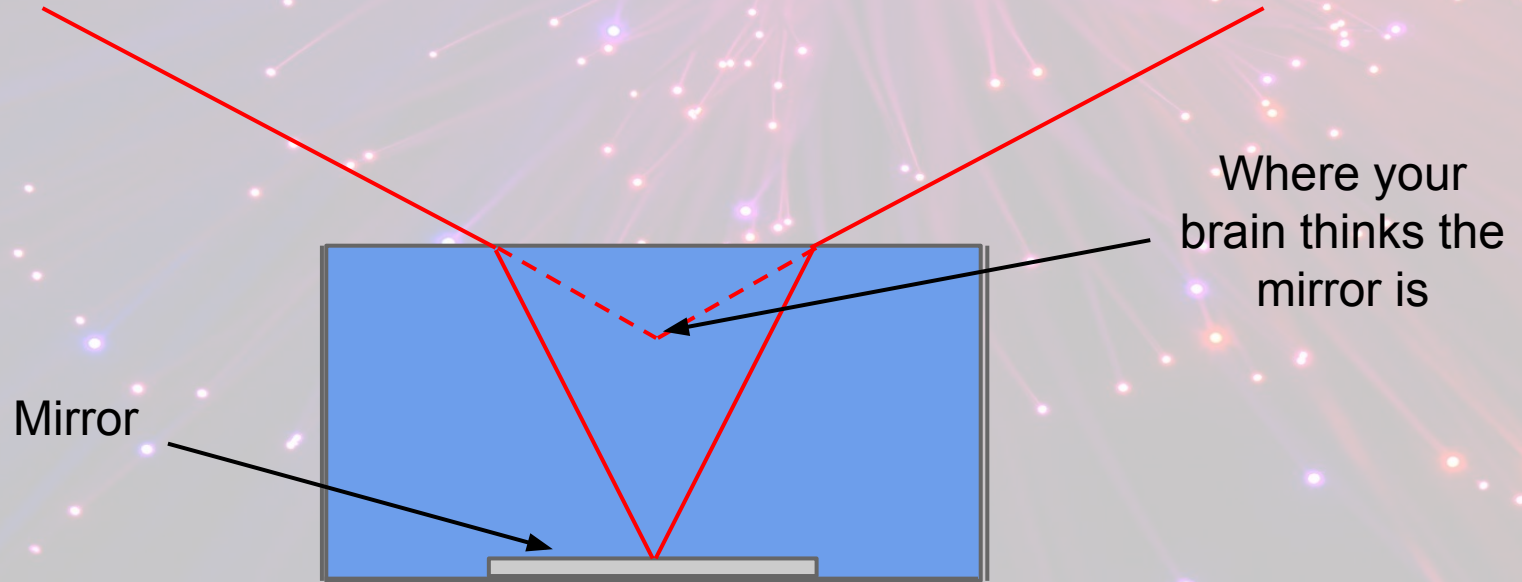
Refraction of light



Take note

- If ray slows down when entering the new medium
 - Ray bends towards the normal
- If ray speeds up when entering the new medium
 - Ray bends away from the normal

Distortion



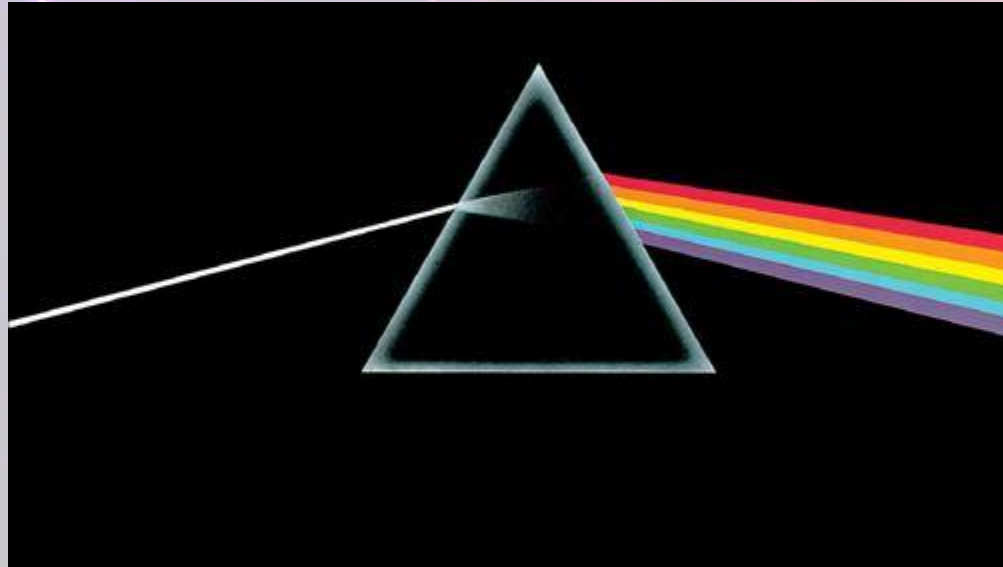
Refraction in Air



Mirage



Prisms

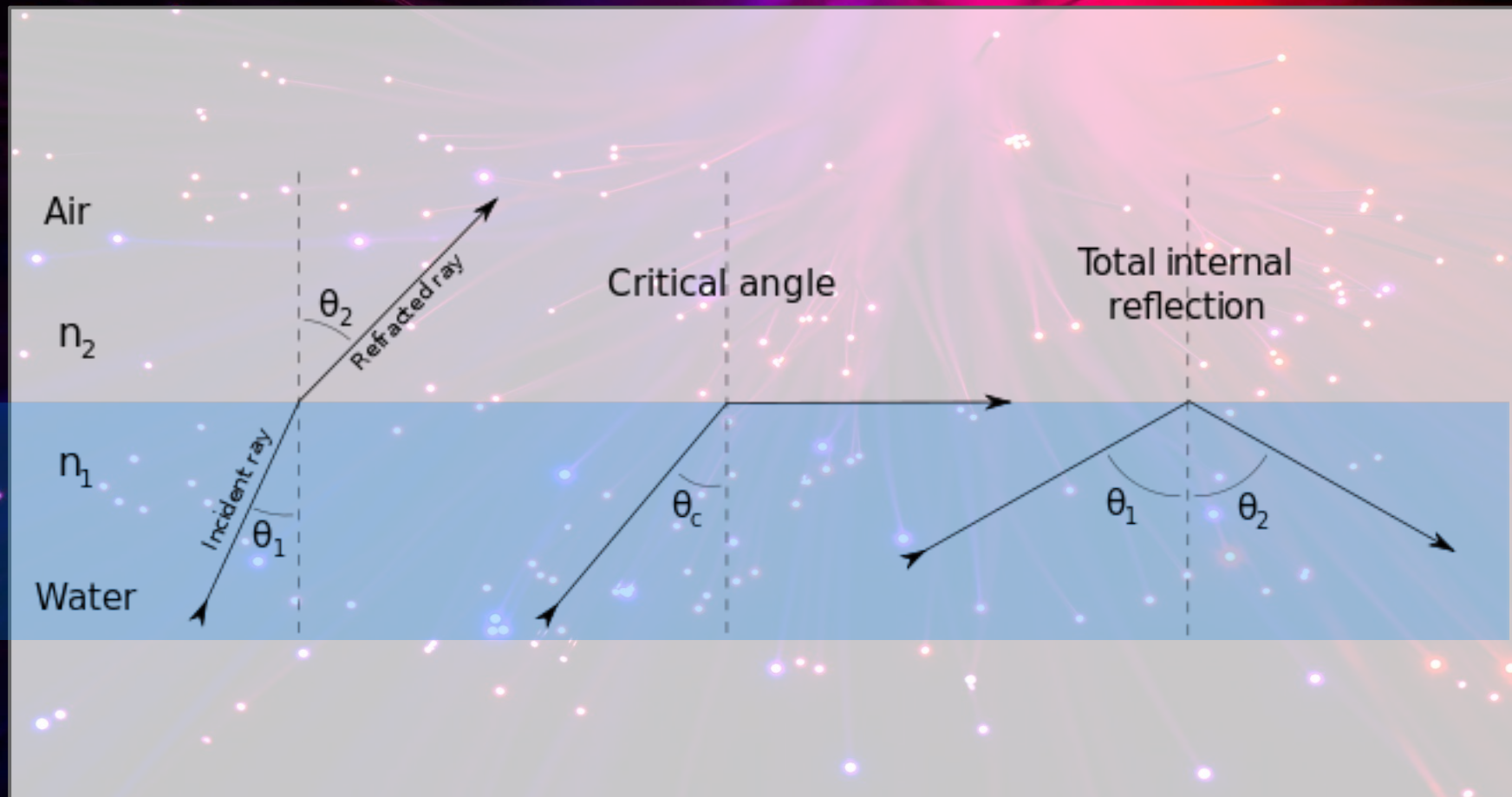


Prisms (cont)

- Refracting light
- Each frequency of light travels at a different speed
 - interacting with material
 - they come out the other side at different times
- Dispersion - the separation of light into colors arranged by frequency

Internal reflection

- Whenever light enters a new medium a part of it is reflected
- At the **critical angle** it is all reflected and none transfers to the new medium
- This phenomena is called **total internal reflection**



Fiber Optics

- “Fiber” Internet uses total internal reflection in the wires
- Wires are bent perfectly so light is internally reflected along the wire