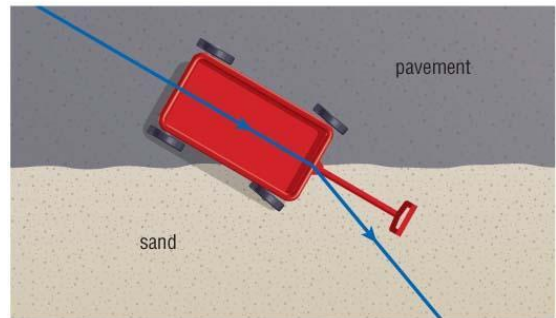


What is Refraction?

(pp. 515-519, Science perspectives 10, Nelson)

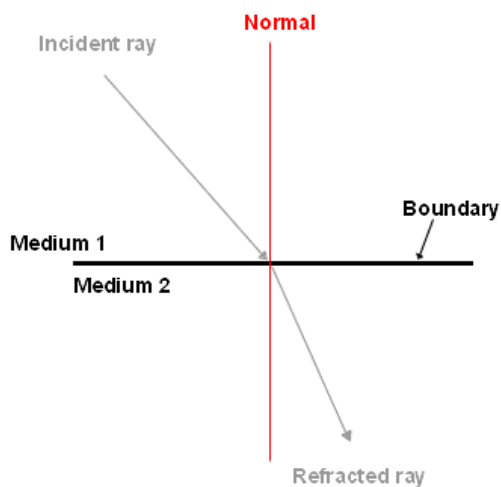
What is meant by the term “refraction”?



What causes refraction?

Homework Questions:

1. How does the speed of light in water compare to the speed of light in air?
2. The figure below represents a beam of light going from one medium to another. One medium is air, in which light has a speed of 3.0×10^8 m/s. The other medium is ice, in which light has a speed of 2.29×10^8 m/s. Identify which medium below is ice and air. Explain.



3. Which way will light bend if it is travelling
 - (a) faster in a medium?
 - (b) slower in a medium?
4. What is partial reflection? Explain some practical applications of partial reflection and refraction.
5. Explain, with the use of a diagram, why a pen appears bent when placed in a glass of water.
(See “The Bent Spoon”, p. 517)



What is Refraction?

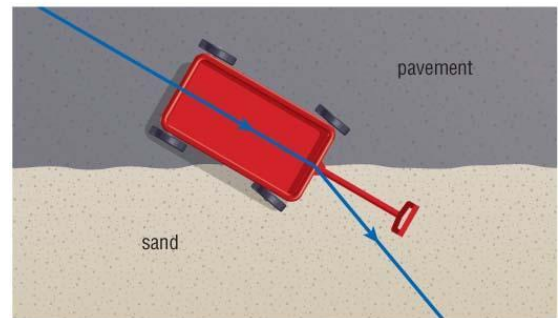
(pp. 515-519, Science perspectives 10, Nelson)

What is meant by the term “refraction”?

The bending of light when it travels from one material (medium) to another.

What causes refraction?

Refraction is caused by the speed of light changing (either slowing down or speeding up) when it enters a material that is more optically dense or less optically dense.

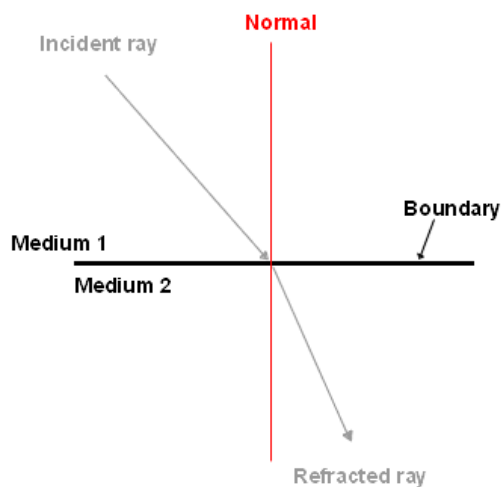


Questions:

1. How does the speed of light in water compare to the speed of light in air?

Light travels slower in water than in air.

2. The figure below represents a beam of light going from one medium to another. One medium is air, in which light has a speed of 3.0×10^8 m/s. The other medium is ice, in which light has a speed of 2.29×10^8 m/s. Identify which medium below is ice and air. Explain.
medium one is air, the ray is further from the normal. Medium 2 is ice.



3. Which way will light bend if it is traveling
(a) faster in a medium?

Away from the normal

(b) slower in a medium?

towards the normal

4. What is partial reflection? Explain some practical applications of partial reflection and refraction.

transmitted, some of the light is reflected)

Most common application: 2-way mirrors

5. Explain, with the use of a diagram, why a pen appears bent when placed in a glass of water. (See “The Bent Spoon”, p. 517)

Light travels slower in water than in air, so when a ray travels from the spoon to the eye, it bends away from the normal. When we trace the ray back in a straight line, we perceive the ray to be coming from a point farther back than it really is.

