

Light

Refraction and Lenses

Before You Read

Key Concept

- Why does a polar bear's body look different in water?

What do you think? Read the two statements below and decide whether you agree or disagree with them. Place an A in the Before column if you agree with the statement or a D if you disagree. After you've read this lesson, reread the statements to see if you have changed your mind.

Before	Statement	After
	Light waves always travel at the same speed.	
	When light moves from air into water or glass, it travels more slowly.	

Read to Learn

What happens when light passes through a medium other than air?

Light always travels through empty space at the same speed—about 300,000 km/s.

Medium Interactions Light travels more slowly when it moves through a medium such as air, glass, or water. This is because the atoms of the material interact with the light waves and slow them down.

Refraction of Light As a light wave moves from one medium into another, its speed changes. If the wave enters the new medium at an angle, the wave will change direction. *The change in direction of a wave as it changes speed while moving from one medium to another is called refraction.*

Index of Refraction The index of refraction is a property of transparent and translucent materials. The index of refraction indicates how much a medium can change the direction of light. A medium that has a high index of refraction is sometimes called slow because light moves more slowly through it. A medium that has a low index of refraction, such as air, is called fast.

Study Coach

Create a Quiz Write a quiz question for each paragraph. Answer the question with information from the paragraph. Then work with a partner to quiz each other.

Scientific Vocabulary

medium
(*noun*) a substance that something exists in or moves through

Essentials Of Refraction

Emilie Sanchez



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