Item	Grade	PE	SEP	DCI	CCC	DOK
8	High School	HS-PS4-1	5. Using Mathematics and Computational Thinking	PS4.A Wave Properties	2. Cause and Effect	2

ILCS: Describe how wavelength is related to the change in the medium.

Laser light of wavelength 785 nm in air travels from air (index of refraction = 1) into a glass block (index of refraction = 1.5). The frequency of the light does not change when the light enters the glass. How does the wavelength of the light change, if at all, when the light enters the glass, and what reasoning supports this claim?

Ⓐ The wavelength stays the same, because the wavelength can only change if the frequency changes.

Ⓑ The wavelength stays the same, because the speed of light is constant and the frequency does not change.

Ⓒ The wavelength decreases, because the speed of the light in the glass is less than the speed of light in air and the frequency does not change.

Ⓓ The wavelength decreases, because the speed of the light in the glass is greater than the speed of light in air and if the speed increases, the wavelength must decrease.

Key: C (1 point)