



Coherence and Alignment Among Science Curriculum, Instruction, and Assessment (CASCIA) Project

Grade 8 Unit 4: Providing Solutions to Problems Using Simple Wave Properties

Task 2 Prompt 2 Part A Scored and Annotated Anchor Set

May 2025

Grade 8 Unit 4: Providing Solutions to Problems Using Simple Wave Properties, Task 2 Prompt 2 Part A Scored and Annotated Anchor Set was developed with funding from the U.S. Department of Education under the Competitive Grants for State Assessments Program CFDA 84.368A. The contents of this paper do not represent the policy of the U.S. Department of Education, and no assumption of endorsement by the Federal government should be made.

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CASCIA Grade 8 EOU Assessment 4 Task 2: Color My World

Prompt 2 Part A Score Point 3

Prompt 2 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 2 Part A.	No aspect of the response is correct	Response includes one (1) of the three (3) aspects	Response includes two (2) of the three (3) aspects	Response includes the following aspects: • Different colors of light correspond to different wavelengths • Applies wavelength to the bend or refraction of those light waves • Includes the relationship between wavelength and speed of light	NA

Score Point 3 (3/3 aspects met)

- Part A
 - Includes different colors of light corresponding to different wavelengths.
 - Applies wavelength to the bend or refraction of those light waves.
 - Includes the relationship between wavelength and speed of light (i.e., "... red has a longer wavelength and would travel *slower* ...").

How are the speed of the light as it travels through the prism **AND** the different wavelengths of the colors of visible light related to the angle of refraction for red and violet?

The color violet would have a shorter wavelength and when it goes through the medium it will reflect alot having more of a bend. However the color red has a longer wavelength and would travel slower and when it would go through a medium it would still reflect but bend less.

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Prompt 2 Part A Score Point 2

Prompt 2 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 2 Part A.	No aspect of the response is correct	Response includes one (1) of the three (3) aspects	Response includes two (2) of the three (3) aspects	Response includes the following aspects: - Different colors of light correspond to different wavelengths - Applies wavelength to the bend or refraction of those light waves - Includes the relationship between wavelength and speed of light	NA

Score Point 2 (2/3 aspects met)

- Part A
 - Includes different colors of light corresponding to different wavelengths.
 - Applies wavelength to the bend or refraction of those light waves.
 - Does **NOT** include the relationship between wavelength and speed of light.

How are the speed of the light as it travels through the prism **AND** the different wavelengths of the colors of visible light related to the angle of refraction for red and violet?

the shorter the wavelength the more the bend violet and blue are short wavelengths so the bend increases orange and red are long wavelengths so the bend decreases
red = less refraction
violet = more refraction

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Prompt 2 Part A Score Point 1

Prompt 2 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 2 Part A.	No aspect of the response is correct	Response includes one (1) of the three (3) aspects	Response includes two (2) of the three (3) aspects	Response includes the following aspects: - Different colors of light correspond to different wavelengths - Applies wavelength to the bend or refraction of those light waves - Includes the relationship between wavelength and speed of light	NA

Score Point 1 (1/3 aspects met)

- Part A
 - Includes different colors of light corresponding to different wavelengths.
 - Does **NOT** apply wavelength to the bend or refraction of those light waves.
 - Does **NOT** include the relationship between wavelength and speed of light.

How are the speed of the light as it travels through the prism **AND** the different wavelengths of the colors of visible light related to the angle of refraction for red and violet?

They are different because red and violet have different wavelengths. Red is bigger than violet.

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Prompt 2 Part A Score Point 0

Prompt 2 Part A Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 2 Part A.	No aspect of the response is correct	Response includes one (1) of the three (3) aspects	Response includes two (2) of the three (3) aspects	Response includes the following aspects: - Different colors of light correspond to different wavelengths - Applies wavelength to the bend or refraction of those light waves - Includes the relationship between wavelength and speed of light	NA

Score Point 0 (0/3 aspects met)

- Part A
 - Does **NOT** include different colors of light corresponding to different wavelengths.
 - Does **NOT** apply wavelength to the bend or refraction of those light waves.
 - Does **NOT** include the relationship between wavelength and speed of light.

How are the speed of the light as it travels through the prism **AND** the different wavelengths of the colors of visible light related to the angle of refraction for red and violet?

Because a prism refracts all light but wavelengths only refract some.