



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

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

Task 1 Prompt 2 Scored and Annotated Anchor Set

May 2025

Grade 8 Unit 4: Providing Solutions to Problems Using Simple Wave Properties, Task 1 Prompt 2 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 1: Now You See It

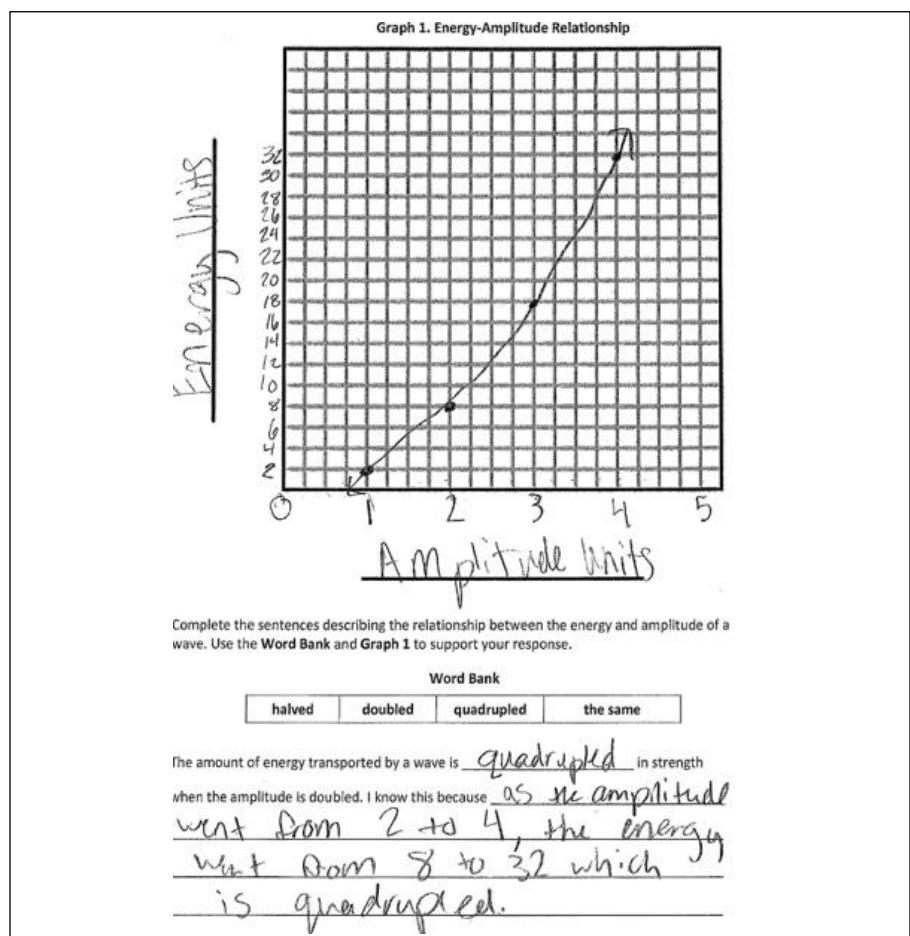
Prompt 2 Score Point 4

Prompt 2 Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 2	No aspect of the response is correct	Response includes one (1) of the four (4) aspects	Response includes two (2) of the four (4) aspects	Response includes three (3) of the four (4) aspects	Response includes the following aspects: Part A - Correct labels for the <i>x-axis</i> (amplitude) and <i>y-axis</i> (energy) - Accurate scale for the <i>x-</i> and <i>y-axis</i> with correct data points plotted and connected by a line Part B - Energy quadrupled in strength - Explanation of the proportional relationship (energy is proportional to the square of the amplitude) using data

Score Point 4 (4/4 aspects met)

- Part A
 - Includes correct labels for the *x-axis* (amplitude) and *y-axis* (energy).
 - Includes accurate scale for the *x-* and *y-axis* **with** correct data points plotted and connected by a line.
- Part B
 - Includes that energy **quadrupled** in strength.
 - Explains the proportional relationship using data (i.e., the answer uses the data to logically demonstrate that the energy is quadrupled).



CASCIA Grade 8 EOU Assessment 4 Task 1: Now You See It

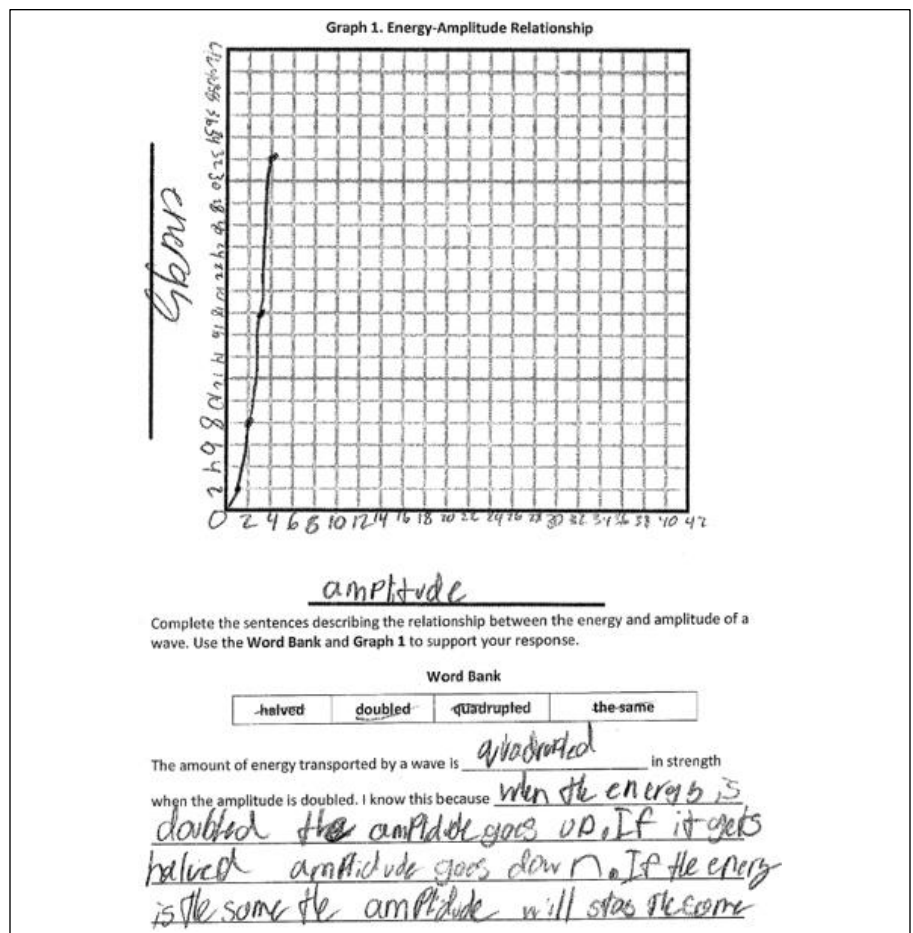
Prompt 2 Score Point 3

Prompt 2 Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 2	No aspect of the response is correct	Response includes one (1) of the four (4) aspects	Response includes two (2) of the four (4) aspects	Response includes three (3) of the four (4) aspects	Response includes the following aspects: Part A - Correct labels for the <i>x-axis</i> (amplitude) and <i>y-axis</i> (energy) - Accurate scale for the <i>x-</i> and <i>y-axis</i> with correct data points plotted and connected by a line Part B - Energy quadrupled in strength - Explanation of the proportional relationship (energy is proportional to the square of the amplitude) using data

Score Point 3 (3/4 aspects met)

- Part A
 - Includes correct labels for the *x-axis* (amplitude) and *y-axis* (energy).
 - Includes accurate scale for the *x-* and *y-axis* **with** correct data points plotted and connected by a line.
- Part B
 - Includes that energy **quadrupled** in strength.
 - Does **NOT** explain the proportional relationship (energy is proportional to the square of the amplitude) using data.



CASCIA Grade 8 EOU Assessment 4 Task 1: Now You See It

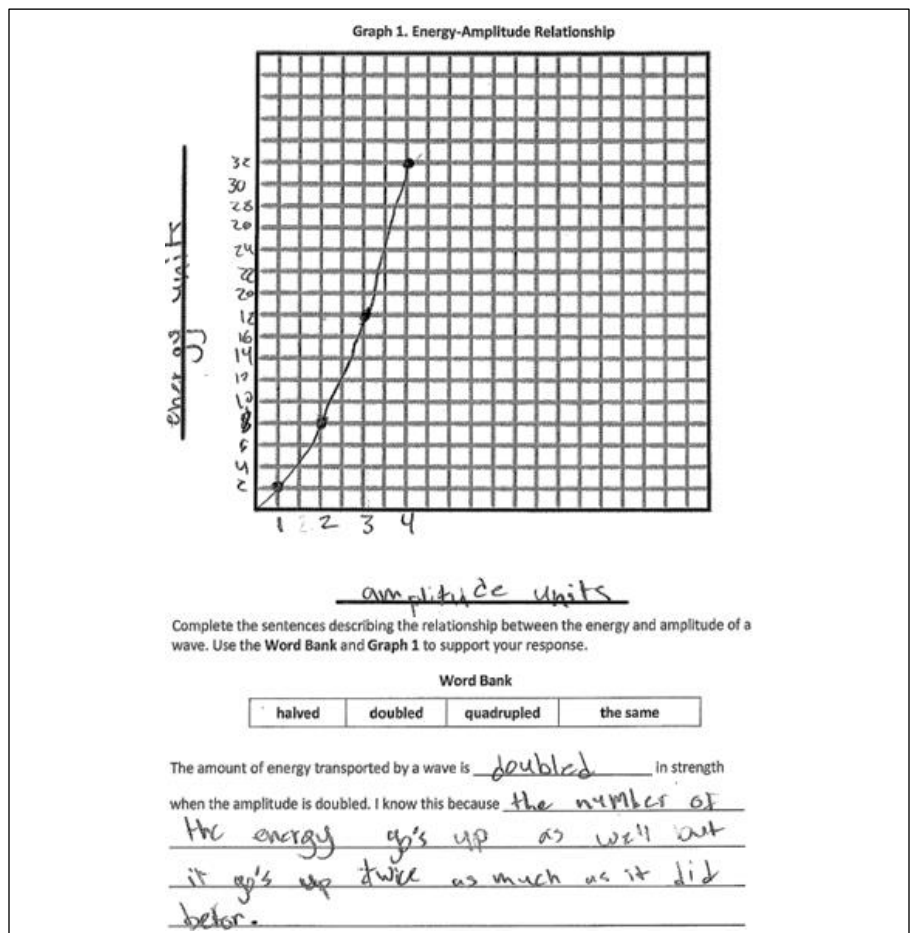
Prompt 2 Score Point 2

Prompt 2 Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 2	No aspect of the response is correct	Response includes one (1) of the four (4) aspects	Response includes two (2) of the four (4) aspects	Response includes three (3) of the four (4) aspects	Response includes the following aspects: Part A - Correct labels for the <i>x-axis</i> (amplitude) and <i>y-axis</i> (energy) - Accurate scale for the <i>x-</i> and <i>y-</i> axis with correct data points plotted and connected by a line Part B - Energy quadrupled in strength - Explanation of the proportional relationship (energy is proportional to the square of the amplitude) using data

Score Point 2 (2/4 aspects met)

- Part A
 - Includes correct labels for the *x-axis* (amplitude) and *y-axis* (energy).
 - Includes accurate scale for the *x-* and *y-axis* **with** correct data points plotted and connected by a line.
- Part B
 - Does **NOT** include that energy **quadrupled** in strength.
 - Does **NOT** explain the proportional relationship (energy is proportional to the square of the amplitude) using data.



CASCIA Grade 8 EOU Assessment 4 Task 1: Now You See It

Prompt 2 Score Point 1

Prompt 2 Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 2	No aspect of the response is correct	Response includes one (1) of the four (4) aspects	Response includes two (2) of the four (4) aspects	Response includes three (3) of the four (4) aspects	Response includes the following aspects: Part A - Correct labels for the <i>x-axis</i> (amplitude) and <i>y-axis</i> (energy) - Accurate scale for the <i>x-</i> and <i>y-axis</i> with correct data points plotted and connected by a line Part B - Energy quadrupled in strength - Explanation of the proportional relationship (energy is proportional to the square of the amplitude) using data

Score Point 1 (1/4 aspects met)

- Part A
 - Includes correct labels for the *x-axis* (amplitude) and *y-axis* (energy).
 - Does **NOT** include accurate scale for the *x-* and *y-axis* **with** correct data points plotted and connected by a line.
- Part B
 - Does **NOT** include that energy **quadrupled** in strength.
 - Does **NOT** explain the proportional relationship (energy is proportional to the square of the amplitude) using data.

Graph 1. Energy-Amplitude Relationship

Complete the sentences describing the relationship between the energy and amplitude of a wave. Use the **Word Bank** and **Graph 1** to support your response.

Word Bank

halved	doubled	quadrupled	the same
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The amount of energy transported by a wave is the same in strength when the amplitude is doubled. I know this because the wave is less than the amplitude

CASCIA Grade 8 EOU Assessment 4 Task 1: Now You See It

Prompt 2 Score Point 0

Prompt 2 Rubric

Prompt	Score Point 0	Score Point 1	Score Point 2	Score Point 3	Score Point 4
Prompt 2	No aspect of the response is correct	Response includes one (1) of the four (4) aspects	Response includes two (2) of the four (4) aspects	Response includes three (3) of the four (4) aspects	Response includes the following aspects: Part A - Correct labels for the <i>x-axis</i> (amplitude) and <i>y-axis</i> (energy) - Accurate scale for the <i>x-</i> and <i>y-axis</i> with correct data points plotted and connected by a line Part B - Energy quadrupled in strength - Explanation of the proportional relationship (energy is proportional to the square of the amplitude) using data

Score Point 0 (0/4 aspects met)

- Part A
 - Does **NOT** include correct labels for the *x-axis* (amplitude) and *y-axis* (energy).
 - Does **NOT** include accurate scale for the *x-* and *y-axis* **with** correct data points plotted and connected by a line.
- Part B
 - Does **NOT** include that energy **quadrupled** in strength.
 - Does **NOT** explain the proportional relationship (energy is proportional to the square of the amplitude) using data.

