Wave Interference

Activity 1: To Construct or Destruct Question Group 1 Question 1

Wave 1 (in Red) and Wave 2 (in Blue) are moving through the same medium and undergoing **interference**. They have different wavelengths, frequencies, and amplitudes. For the five labeled points, categorize each as being locations where either constructive or descructive interference occurs.



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Constructive interference occurs at locations: A B C D E (Circle) Denstructive interference occurs at locations: A B C D E (Circle)



Question Group 2 Question 3

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Question Group 3 Question 5

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Question Group 4 Question 7

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Activity 2: Principle of Superposition Question Group 5 Question 9

Wave 1 (in Red) and Wave 2 (in Blue) are moving through the same medium and undergoing **interference**. The displacement of the medium at each location will depend upon the individual displacements of the two waves at that location. For the three labeled locations, determine the nearest estimate of the resulting displacement of the medium. (Each small square is 0.10 m along its edges.)





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Question Group 6 Question 11

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Question Group 7 Question 13

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Question Group 8 Question 15

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Activity 3: Sum It Up Question Group 9 Question 17

Here's two waves undergoing interference. You have to determine the shape of the resultant wave (or wave sum). To begin, drag each grey dot downward to the height the resultant would have for that horizontal location along the medium.



Question 18

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Question Group 10 Question 19

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Question 20

Here's two waves undergoing interference. You have to determine the shape of the resultant wave (or wave sum). To begin, drag each grey dot downward to the height the resultant would have for that horizontal location along the medium.

