

Wave Superposition

Name:

Date:

Part 1: Wave Behavior

Ruggles and Bop are having a disagreement.

Ruggles



When two waves meet in the same medium, they will reflect off of one another!

Bop



When two waves meet in the same medium, they will pass through each other!

Using the simulation, develop a way to disprove one of these theories. Describe what you will do below.

Carry out your test, and record the outcome below. Then, state which theory is supported by your results.

Part 2: Constructive Interference

Click to 'Show Grid'. Then use the various options to input the wave pulses shown below. Pause the simulation when the pulses are fully overlapping, and draw the net wave.

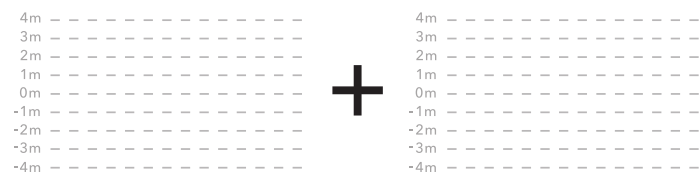
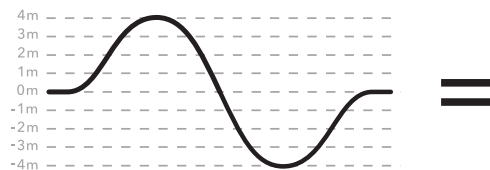


Why does the net wave have this height? Explain.

Draw the superposition of the pulses for each.



Which two waves would combine to form this net wave?



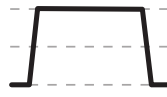
Part 3: Destructive Interference

Click to 'Show Grid'. Then use the various options to input the wave pulses shown below.
Pause the simulation when the pulses are fully overlapping, and draw the net wave.



Why does the net wave have this height? Explain.

Draw the superposition of the pulses for each.



Which two waves would combine to form this net wave?



Part 4: Putting it All Together

Draw the wave that could be superimposed with the pulse on the left to produce the net wave shown.



How do you know what the superposition of two waves will look like? In the space below, construct a **general rule** for determining the size and shape of the net wave.

Build your own wave puzzle! Choose your favorite two wave pulses from the simulation, and draw them below. Then, solve your puzzle or challenge a friend!

