Questions

Activity 1: Two Truths and a Lie
Question Group 1
Question 1
Consider the three statements. Two are true. One is false. Select the false statement.
- All waves are created by vibrating objects.
- When a mechanical wave moves through a medium, the particles of the medium vibrate about a fixed position.
- An ocean wave transports water from a distant off-short location to a location near the shoreline.

Question 2
Consider the three statements. Two are true. One is false. Select the false statement.
- An ocean wave transports water from a distant off-short location to a location near the shoreline.
- All waves are created by vibrating objects.
- When a mechanical wave moves through a medium, the particles of the medium vibrate about a fixed position.

Question 3
Consider the three statements. Two are true. One is false. Select the false statement.
- When a mechanical wave moves through a medium, the particles of the medium vibrate about a fixed position.
- A fast wave is a wave that causes particles of the medium to quickly move from one end of the medium to the other end.
- All waves are created by vibrating objects.

Question Group 2
Question 4
Consider the three statements. Two are true. One is false. Select the false statement.
- A wave transports energy from the source to a distant location.
- A wave moves through a medium because Particle A pushes on Particle B which pushes on Particle C which pushes on ...
- When a wave moves through a medium, particles of the medium move along an undulating (curved) path from one end to the other.

Question 5
Consider the three statements. Two are true. One is false. Select the false statement.
- When a wave moves through a medium, particles of the medium move along an undulating (curved) path from one end to the other.

A wave transports energy from the source to a distant location.
A wave moves through a medium because Particle A pushes on Particle B which pushes on Particle C which pushes on ...

Question 6

Consider the three statements. Two are true. One is false. Select the false statement.

A wave moves through a medium because Particle A pushes on Particle B which pushes on Particle C which pushes on ...
When a wave moves through a medium, particles of the medium move along an undulating (curved) path from one end to the other.
A wave transports energy from the source to a distant location.

Question Group 3

Question 7

Consider the three statements. Two are true. One is false. Select the false statement.

When a mechanical wave moves through a medium, particles vibrate back and forth but don't move from one location to another.
A wave transports energy through a medium without transporting material.
A sound wave causes particles of air to travel from the source of sound (e.g., speaker) to the observer's ear.

Question 8

Consider the three statements. Two are true. One is false. Select the false statement.

A sound wave causes particles of air to travel from the source of sound (e.g., speaker) to the observer's ear.
When a mechanical wave moves through a medium, particles vibrate back and forth but don't move from one location to another.
A wave transports energy through a medium without transporting material.

Question 9

Consider the three statements. Two are true. One is false. Select the false statement.

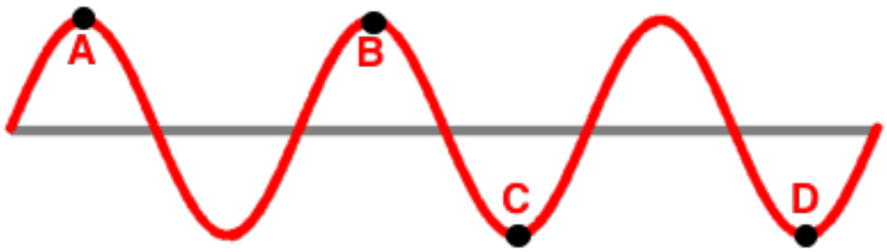
A wave transports energy through a medium without transporting material.
A sound wave causes particles of air to travel from the source of sound (e.g., speaker) to the observer's ear.
When a mechanical wave moves through a medium, particles vibrate back and forth but don't move from one location to another.

Activity 2: Matching Pairs

This activity presents learners with 8 different terms that must be matched by meaning. Learners tap on the terms to select them and then tap on the Check Match button. The order of the terms is randomized. A ms-matched pair restarts the *game* and re-randomizes the order of the terms. The terms are ...

Mechanical Wave
Transverse Wave
Particle motion and wave motion are parallel to each other.
Requires a material in order to move between locations.
This type of wave can move through a vacuum.
Longitudinal Wave
Particle motion and wave motion are perpendicular to each other.
Electromagnetic Wave

Activity 3: Wave Anatomy
Question Group 4
Question 10
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four points along the Slinky are labeled with a letter. Indicate whether these points represent crests, troughs, compressions, or rarefactions.



Question 11
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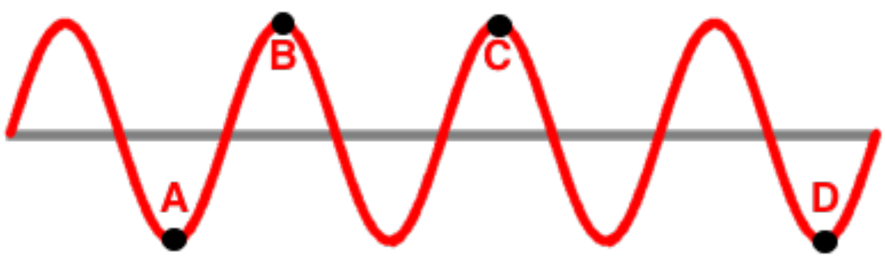
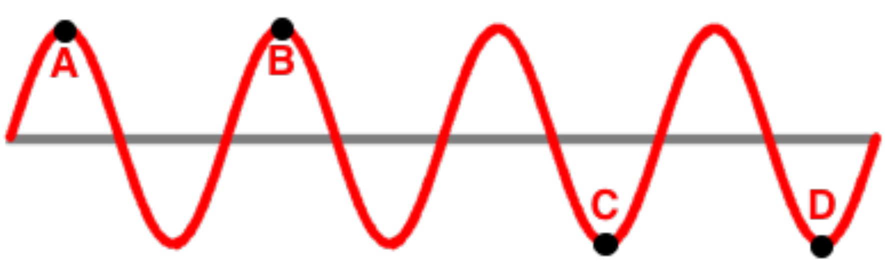


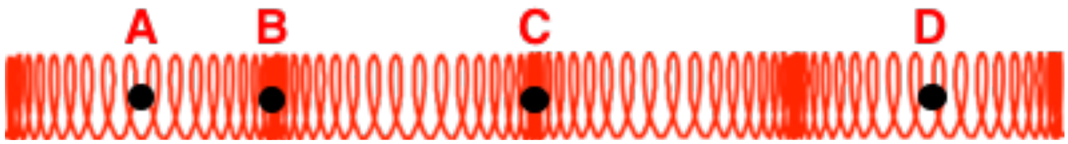
Question 12
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four points along the Slinky are labeled with a letter. Indicate whether these points represent crests, troughs, compressions, or rarefactions.



Question Group 5

Question 13

The diagram represents a snapshot in time of a wave traveling through a Slinky. Four points along the Slinky are labeled with a letter. Indicate whether these points represent crests, troughs, compressions, or rarefactions.

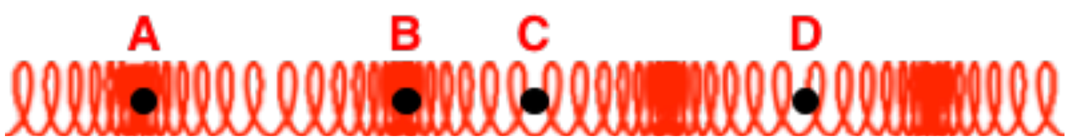


Question 14

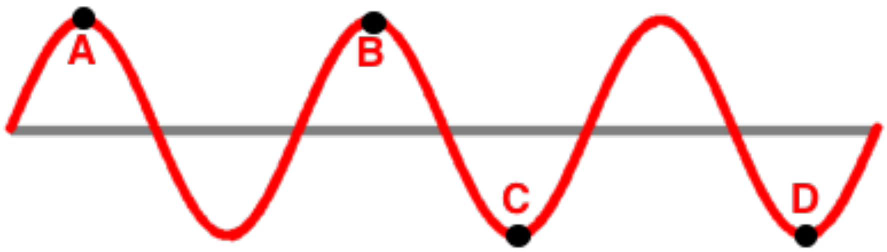
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four points along the Slinky are labeled with a letter. Indicate whether these points represent crests, troughs, compressions, or rarefactions.

Question 15

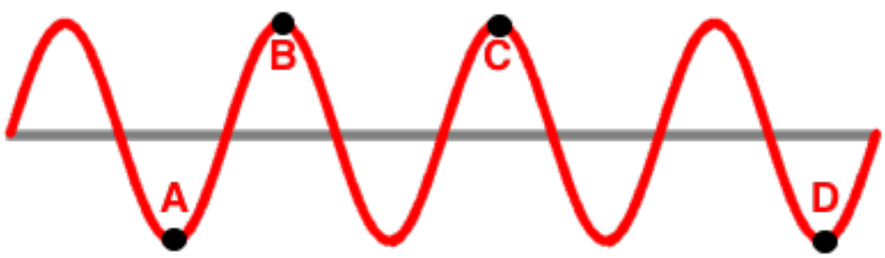
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four points along the Slinky are labeled with a letter. Indicate whether these points represent crests, troughs, compressions, or rarefactions.



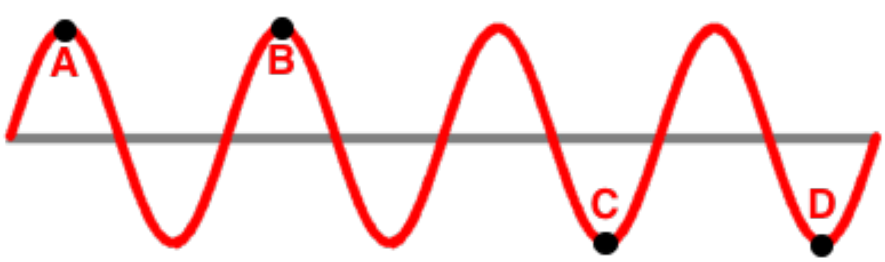
Question Group 6
Question 16
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four locations along the Slinky are labeled with a letter. Indicate the direction of vibration of the Slinky coils at these locations.



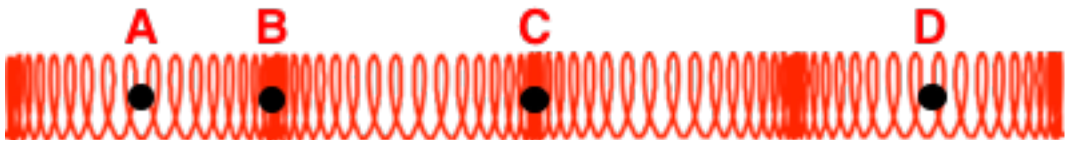
Question 17
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four locations along the Slinky are labeled with a letter. Indicate the direction of vibration of the Slinky coils at these locations.



Question 18
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four locations along the Slinky are labeled with a letter. Indicate the direction of vibration of the Slinky coils at these locations.

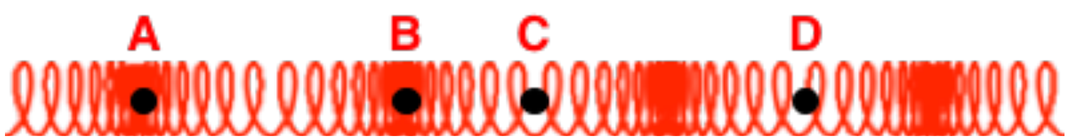


Question Group 7
Question 19
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four locations along the Slinky are labeled with a letter. Indicate the direction of vibration of the Slinky coils at these locations.

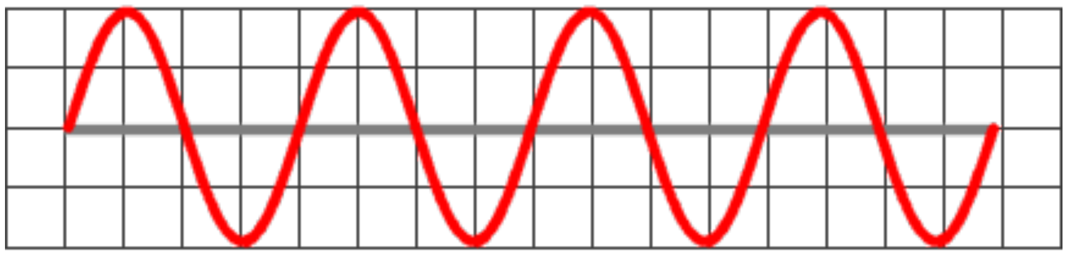


Question 20
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four locations along the Slinky are labeled with a letter. Indicate the direction of vibration of the Slinky coils at these locations.

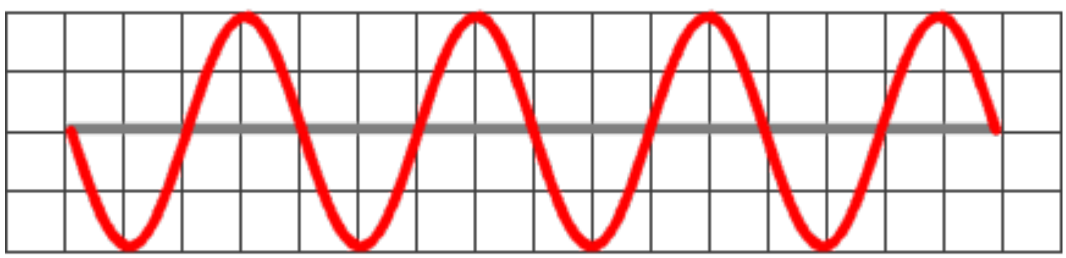
Question 21
The diagram represents a snapshot in time of a wave traveling through a Slinky. Four locations along the Slinky are labeled with a letter. Indicate the direction of vibration of the Slinky coils at these locations.



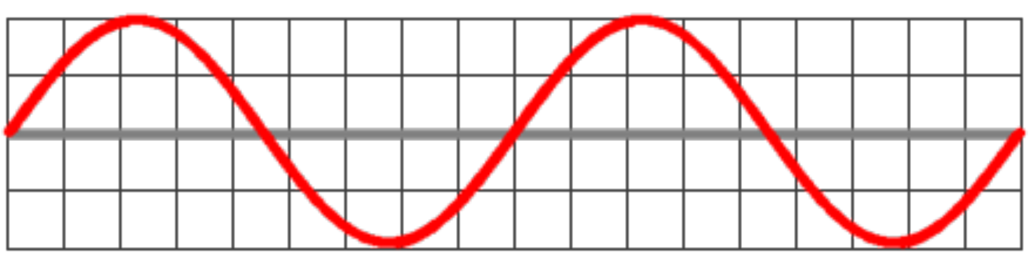
Question Group 8
Question 22
The diagram represents a snapshot in time of a wave traveling through a Slinky. Use the background grid to determine the wavelength and the amplitude of the wave. Each square measures 1-cm along its edge.



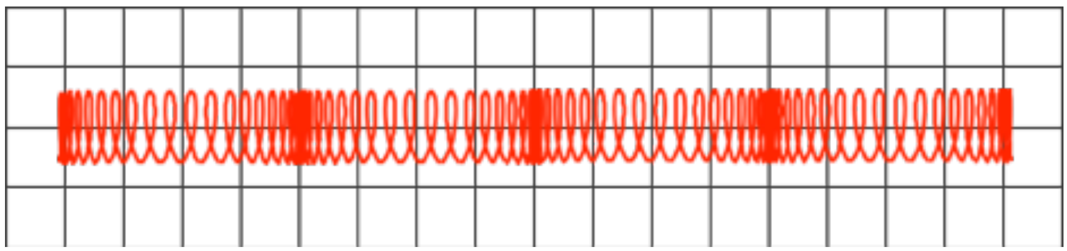
Question 23
The diagram represents a snapshot in time of a wave traveling through a Slinky. Use the background grid to determine the wavelength and the amplitude of the wave. Each square measures 1-cm along its edge.



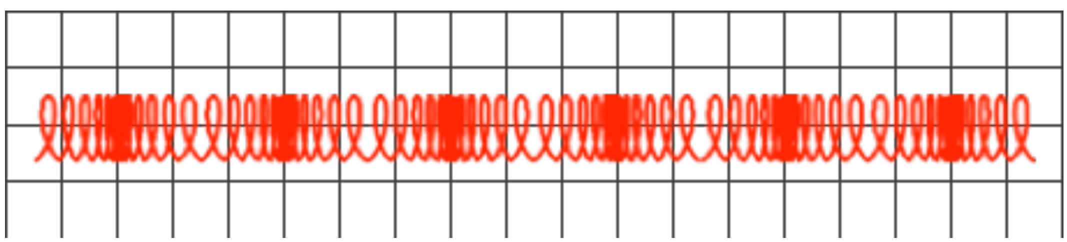
Question 24
The diagram represents a snapshot in time of a wave traveling through a Slinky. Use the background grid to determine the wavelength and the amplitude of the wave. Each square measures 1-cm along its edge.



Question Group 9
Question 25
The diagram represents a snapshot in time of a wave traveling through a Slinky. Use the background grid to determine the wavelength of the wave. Each square measures 1-cm along its edge.



Question 26
The diagram represents a snapshot in time of a wave traveling through a Slinky. Use the background grid to determine the wavelength of the wave. Each square measures 1-cm along its edge.



Question 27
The diagram represents a snapshot in time of a wave traveling through a Slinky. Use the background grid to determine the wavelength of the wave. Each square measures 1-cm along its edge.