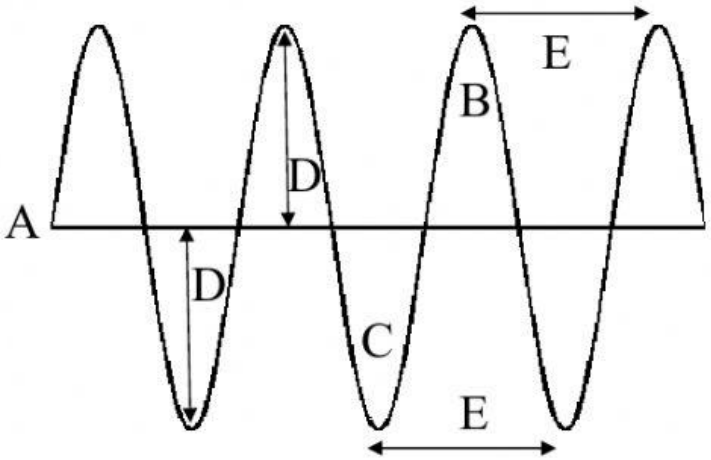
Name: _____ Date: _____

PHYSICS
BASICS OF WAVES

Part 1: Features of Mechanical Waves. Identify the regions and features of the transverse wave, longitudinal wave, and standing wave. Write the name of the correct wave feature on the line next to its letter.



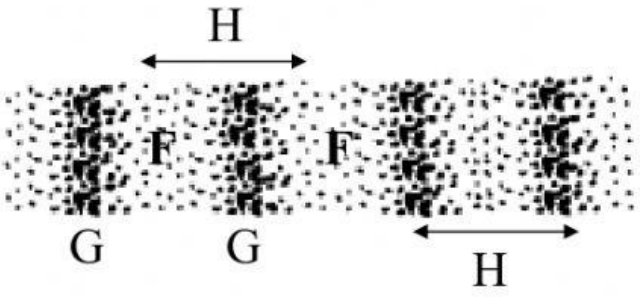
A _____

B _____

C _____

D _____

E _____



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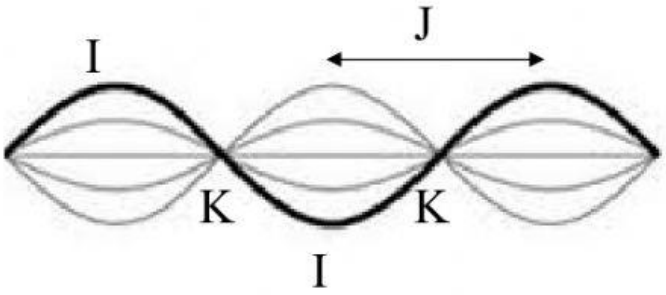

I _____

J _____

K _____

Part 2: Vocabulary. Read your notes. Write the correct term on the line next to its definition.

Amplitude	Crest	Oscillation	Standing wave	Wave
Antinode	Mechanical wave	Pulse	Trough	Wavelength
Compression	Node	Rarefaction	Vibration	

_____ **1** What is the maximum displacement of a wave from its equilibrium position?

_____ **2** What is the maximum displacement of a transverse wave in the up direction?

_____ **3** What is the maximum displacement of a transverse wave in the down direction?

_____ **4** In a longitudinal wave, what is the region of particles that are temporarily bunched-up and squeezed closer together?

_____ **5** In a longitudinal wave, what is the region of particles that are temporarily pulled-apart and expanded?

_____ **6** What is the distance between two identical positions on two consecutive waves, such as crest-to-crest length or compression-to-compression length?

_____ **7** A repetitive back-and-forth motion of particles or an object around its fixed position, like a string that has been plucked, or molecules in a solid.

_____ **8** A repetitive up-and-down motion, side-to-side motion, or undulation. Examples of this motion are ocean waves, a spring moving up-and-down, or a pendulum swinging back-and-forth.

_____ **9** Which wave must pass through matter? They cannot pass through vacuum or through space.

_____	**10**	A traveling disturbance through matter that carries energy away from the source of the disturbance. They may be one or in a series.
_____	**11**	A single traveling wave or disturbance that passes through matter.
_____	**12**	A wave on a string or wire. It moves back-and-forth so fast that it appears to be motionless at the nodes and at the antinodes.
_____	**13**	The position on the standing wave where the wire or string appears to be motionless.
_____	**14**	The position on the standing wave where the wire or string is moving with the greatest up and down amplitude.

Part 3: Short response. Answer the questions in complete sentences.

1. How does a longitudinal wave move through a medium?	
2. How does a transverse wave move through a medium?	
3. What is meant by "Waves carry energy but they do not carry the matter"?	
4. How does a standing wave form?	
5. What is frequency?	
6. What is period?	