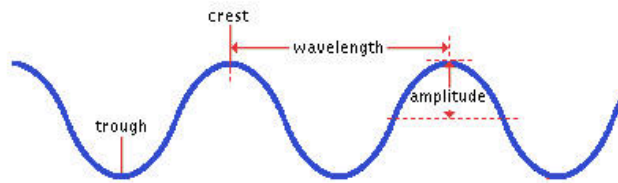


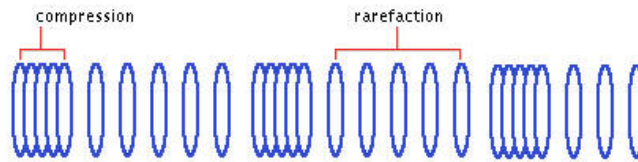
Unit No/Name	Subject Name	Teacher Name	Date
Waves, sound and light	<b>Waves Properties 1.1 &amp; 1.2</b>	<b>Ayman Al Omari</b>	
Student No:		Student Name:	
		Group:	VEDC+

There are two types of waves:-

- 1) ..... **Transverse waves** .....  
 examples:- **Light**, .....
- 2) ..... **Longitudinal waves** .....  
 examples:- .... **Sound, compressed spring** .....



1) ..... **Transverse waves** .....

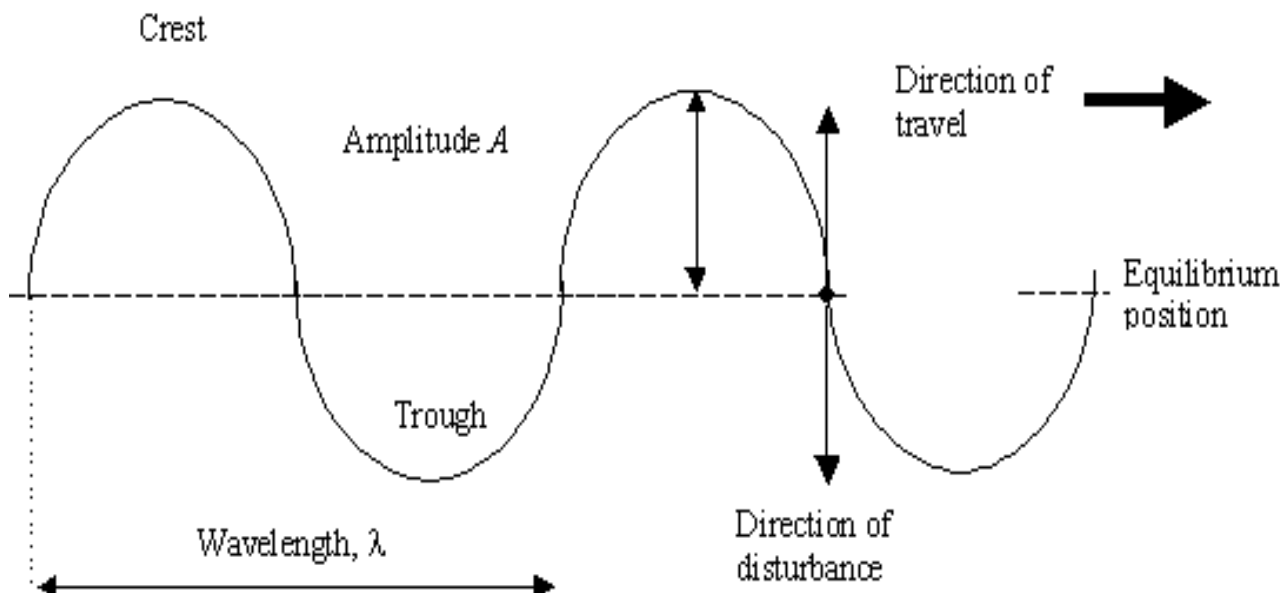


2) ..... **Longitudinal waves** .....

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## First:- The Transverse wave

*A wave in which the oscillations of the wave particles are perpendicular to the direction of the propagation of the wave.*



**Displacement (y):** Position of an oscillating particle from its equilibrium position

**Amplitude (y or A):** The maximum magnitude of the displacement of an oscillating particle from its equilibrium position.

**Period (T):** Time taken for a particle to undergo one complete cycle of oscillation.

**Frequency (f):** Number of oscillations performed by a particle per unit time.

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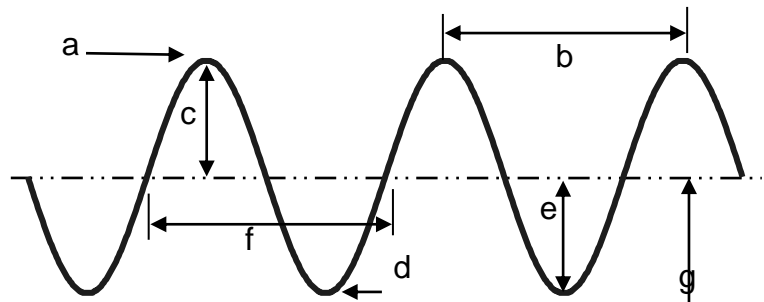
**Wavelength ( $\lambda$ ):** For a progressive wave, it is the distance between any two successive particles that are in phase, e.g. it is the distance between 2 consecutive crests or 2 troughs.

**Wave speed ( $v$ ):** The speed at which the waveform travels in the direction of the propagation of the wave.

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1. The illustration below shows a series of transverse waves. Label each part in the space provided.

- a. crest
- b. wavelength
- c. amplitude
- d. trough
- e. amplitude
- f. wavelength
- g. rest position



**Answer the following questions:-**

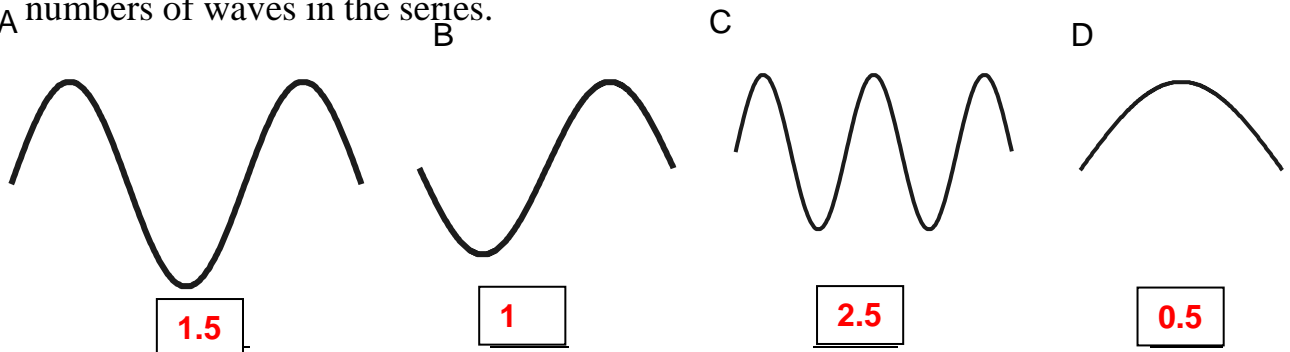
1. What is the top of a wave called? ... crest .....
2. What is the bottom of a wave called? trough .....
3. What is period?  
Time taken for a particle to undergo one complete cycle of oscillation.
4. What is frequency?  
Number of waves performed by a particle per unit time.(number of waves in a second)
5. What does amplitude measure?  
The maximum magnitude of the displacement of a wave from its rest position.
6. What is the distance from one crest to the next crest?  
Wavelength ( $\lambda$ )

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7. What is wave speed?

The speed at which the waveform travels in the direction of the propagation of the wave.

8. Below are a number of series of waves. Underneath each diagram write the number of waves in the series.



- a. Which of the above has the biggest amplitude?   A    
 b. Which of the above has the shortest wavelength?   C    
 c. Which of the above has the longest wavelength?   D