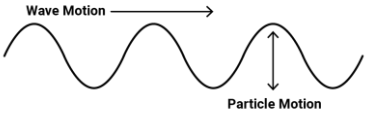
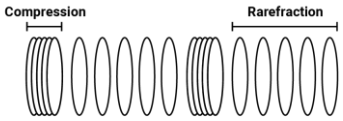
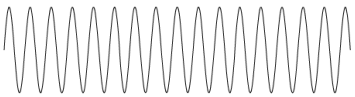
WAVE VOCABULARY TEACHER GUIDE

Term	Definition	Examples
Oscillation	Consistently repeating vibration or motion	
Medium	A physical substance that carries the wave; The wave medium always returns to its original position after the wave passes through it.	Almost any kind of matter, air, water, or solids, such as steel or rock.
Transverse waves	Bouncy waves; The medium vibrates up and down.	
Longitudinal waves	Stretchy waves; The medium expands (stretches) and compresses (squeezes).	
Wave pulse	A short duration vibration that creates a single displacement traveling through the medium	
Driven wave	A constant oscillation that creates a continuous displacement or vibration of the medium	

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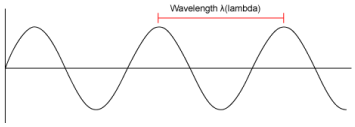
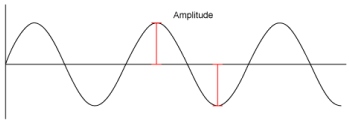
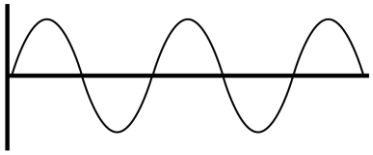
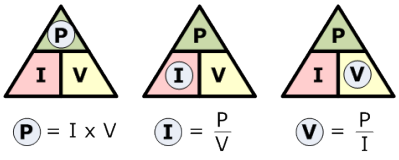
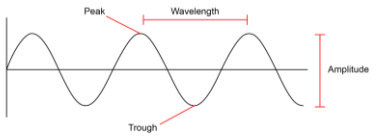
Velocity	The speed that something travels If we know the speed something is traveling and the total time the object was moving, we can determine the distance it traveled.	Velocity = distance/time Distance = velocity · time
Wavelength: λ *"lambda"*	The horizontal distance between start and end points of one full wave cycle	
Amplitude: *A*	The vertical height of a wave, measured from the center line to the top of a peak or the bottom of a trough	
Frequency: *f*	The number of wavelengths that passes a fixed point in one second	
The wave equation	Velocity = Frequency · Wavelength • Velocity is represented by a V • Frequency is represented by *f* • Wavelength is represented by λ, which is the Greek letter "lambda"	$v = f \lambda$
Triangle of Power	Visual representation of equations to calculate velocity, frequency, and distance of wavelengths	

Term	Definition	Examples
Inverse relationship	For two interconnected quantities, as one gets bigger, the other gets proportionally smaller, and vice-versa.	$f \rightarrow \lambda \quad \lambda \rightarrow f$
Interference	When two or more waves combine additively	
Constructive interference	Waves combine peak + peak or trough + trough to produce a wave of larger amplitude.	
Destructive interference	Waves combine peak + trough so that amplitudes cancel one another.	
Interference patterns	When two or more freely traveling waves interfere and merge via constructive and destructive interference	
Reflection	When a wave bounces off a barrier and changes direction of travel; A wave that encounters a hard barrier is flipped on itself.	
Phase	The position of one wave in relation to another	

Term	Definition	Examples
In phase	Peaks and troughs directly line up.	
Out of phase	Peaks and troughs do not line up.	
180° out of phase	Peaks and troughs are exactly opposite.	
Resonance	When a system vibrates at a single frequency we call this a standing wave; only wavelengths that fit within an object will resonate.	
Refraction	The fact or phenomenon of light, radio waves, etc. being deflected in passing obliquely through the interface between one medium and another through a medium of varying density	
Absorption	The process or action by which one thing soaks up or blots out another	
Emission	Something that has been emitted, released, or discharged	