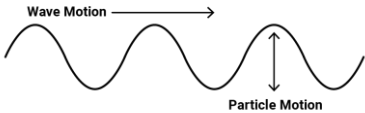
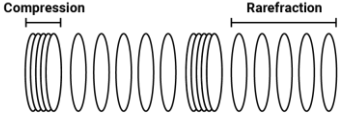

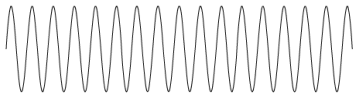
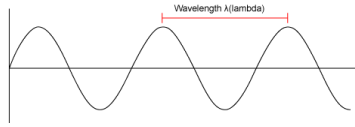
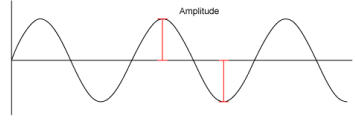
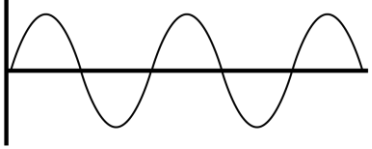
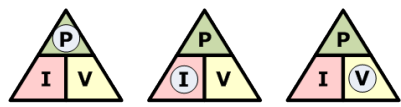
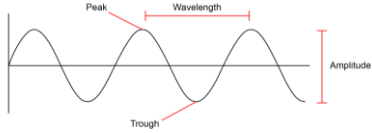



WAVE VOCABULARY TEACHER GUIDE

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	

Term	Definition	Examples
Velocity	<p>The speed that something travels</p> <p>If we know the speed something is traveling and the total time the object was moving, we can determine the distance it traveled.</p>	<p>Velocity = distance/time</p> <p>Distance = velocity · time</p>
Wavelength: λ <i>"lambda"</i>	<p>The horizontal distance between start and end points of one full wave cycle</p>	
Amplitude: A	<p>The vertical height of a wave, measured from the center line to the top of a peak or the bottom of a trough</p>	
Frequency: f	<p>The number of wavelengths that passes a fixed point in one second</p>	
The wave equation	<p>Velocity = Frequency · Wavelength</p> <ul style="list-style-type: none"> • 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	<p>Visual representation of equations to calculate velocity, frequency, and distance of wavelengths</p>	 <p> $P = I \times V$ $I = \frac{P}{V}$ $V = \frac{P}{I}$ </p>

Term	Definition	Examples
Inverse relationship	For two interconnected quantities, as one gets bigger, the other gets proportionally smaller, and vice-versa.	$f \rightarrow \lambda$ $\lambda \rightarrow f$
Interference	When two or more waves combine additively	
Constructive interference	Waves combine <u>peak + peak</u> or <u>trough + trough</u> to produce a wave of larger amplitude.	 <p>A diagram of a sinusoidal wave. A horizontal line represents the equilibrium position. The wave oscillates above and below this line. A red arrow points to the highest point, labeled 'Peak'. A red arrow points to the lowest point, labeled 'Trough'. A red double-headed arrow spans the distance between two consecutive peaks, labeled 'Wavelength'. A red vertical double-headed arrow on the right side indicates the height from the equilibrium line to a peak, labeled 'Amplitude'.</p>
Destructive interference	Waves combine <u>peak + trough</u> so that amplitudes cancel one another.	
Interference patterns	When two or more freely traveling waves interfere and merge via constructive and destructive interference	 <p>A photograph showing a complex interference pattern of light, likely from a double-slit experiment. The pattern consists of concentric, overlapping bands of light and dark colors, creating a series of bright and dark fringes that curve and overlap in a circular or semi-circular arrangement.</p>
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	