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. | A close up of a logo  Description automatically generated |
| Longitudinal waves | Stretchy waves; The medium expands (stretches) and compresses (squeezes). | A close up of a logo  Description automatically generated |
| 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 |  |
| Velocity | The speed that something travelsIf we know the speed something is traveling and the total time the object was moving, we can determine the distance it traveled. | Velocity = distance/timeDistance = 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 λ |
| Triangle of Power | Visual representation of equations to calculate velocity, frequency, and distance of wavelengths |  |
| Inverse relationship | For two interconnected quantities, as one gets bigger, the other gets proportionally smaller, and vice-versa. | *f* → *λ λ****→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 | Free illustration: Vibrations, Interference, Wave - Free Image on ... |
| 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 |  |
| 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 |  |