**Unit 4 Waves Vocabulary**

**Hertz:** unit of measure for frequency

**Amplitude:** the maximum distance the particles of a medium move away from their rest position as a wave passes through the medium

**Compression:** the part of a longitudinal wave where the particles of the medium are close together

**Crest:** the highest part of a transverse wave

**Energy:** the ability to do work or cause change

**Frequency:** the number of complete waves that pass a given point in a certain amount of time

**Longitudinal wave:** a wave that moves the medium in a direction parallel to the direction in which the wave travels

**Mechanical wave:** a wave that requires a medium through which to travel

**Medium**: the material through which a wave travels

**Rarefaction**: the part of a longitudinal wave where the particles of the medium are far apart

**Transverse wave:** a wave that moves the medium in a direction perpendicular to the direction in which the wave travels

**Trough:** the lowest part of a transverse wave

**Vibration:** a repeated back-and-forth or up-and-down motion

**Wave:** a disturbance that transfers energy from place to place

**Wavelength:** the distance between two corresponding parts of a wave

**Unit 4 Sound Vocabulary**

**Acoustics:** the study of how sounds interact with each other and the environment

**Decibel:** a unit used to compare the loudness of different sounds

**Density:** the ratio of the mass of the substance to its volume

**Doppler Effect:** the change in frequency of a wave as its source moves in relation to an observer

**Echo:** a reflected sound wave

**Echolocation:**  the use of reflected sound waves to determine distances or to locate objects

**Elasticity:** the ability of a material to bounce back

**Fundamental tone:** the lowest natural frequency of an object

**Intensity:** the amount of energy per second carried through a unit area by a wave

**Larynx:**  two folds of tissue that make up the human voice box

**Loudness:** perception of the energy of sound

**Music:** a set of tones and overtones combined in ways that are pleasing

**Overtone:** a natural frequency that is a multiple of the fundamental tone's frequency

**Pitch:** perception of the frequency of a sound

**Reverberation:** the echoes of a sound that are heard after a sound source stops producing sound waves

**Sonar:** a system that uses reflected sound waves to detect and locate objects underwater

**Sound:** the energy caused by an object's vibrations

**Ultrasound:** sound waves with frequencies above 20,000 Hz

**Unit 4 Electromagnetic Spectrum Vocabulary**

**Electromagnetic radiation:** the energy transferred through space through EM waves

**Electromagnetic spectrum:** the complete range of EM waves placed in order of increasing frequency

**Electromagnetic wave:** transverse waves that transfer electrical and magnetic energy

**Fluorescent light:** light bulb that glows when an electric current causes ultraviolet rays to strike a coating inside a tube

**Gamma rays:** EM waves with the shortest wavelength and highest frequency

**Illuminated:** describes an object that can be seen because it reflects light

**Incandescent light:** light bulb that glows when a filament inside it gets white hot

**Infrared rays:** EM waves with wavelengths shorter than radio waves but longer than visible light

**Luminous:** describes an object that can be seen because it emits light

**Microwaves:** radio waves with the shortest wavelength and lowest frequency

**Photoelectric effect:** the ejection of electrons from a substance when light is shined on it

**Photon:** a tiny particle or packet of light energy

**Polarized light:** light that vibrates in only one direction

**Radar:** a system that uses radio waves to detect objects and measure their distance and speed

**Radio waves:** EM waves with the longest wavelength and lowest frequency

**Ultraviolet rays:** EM waves with wavelengths shorter than visible light but longer than x-rays

**Visible light:** EM waves that are visible to the human eye

**X-rays:** EM waves with wavelengths shorter than UV rays, but longer than gamma rays