Sound and Light

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| **Across****2.** a phenomenon that occurs when two objects naturally vibrate at the same frequency; the sound produced by one object causes the other object to vibrate**8.** the increase of an object's apparent size by using lenses or mirrors**9.** radio detection and ranging, a system that uses reflected radio waves to determine the velocity and location of objects**10.** a unit or quantum of light; a particle of electromagnetic radiation that has zero rest mass and carries a quantum of energy**12.** any sound wave with frequencies higher than 20,000 Hz**14.** in optics, the process of separating a wave (such as white light) of different frequencies into its individual component waves (the different colors)**16.** a line in space that matches the direction of the flow of radiant energy | **Down****1.** an image that is formed by the intersection of light rays; a real image can be projected on a screen (563)**3.** a longitudinal wave that is caused by vibrations and that travels through a material medium**4.** a transparent object that refracts light waves such that they converge or diverge to create an image**5.** slow vibrations of frequencies lower than 20 Hz**6.** a measure of how high or low a sound is perceived to be, depending on the frequency of the sound wave**7.** an image from which light rays appear to diverge, even though they are not actually focused there; a virtual image cannot be projected on a screen**11.** in physical science, the rate at which energy flows through a given area of space**13.** in optics, a system that consists of two or more plane surfaces of a transparent solid at an angle with each other**15.** sound navigation and ranging, a system that uses acoustic signals and returned echoes to determine the location of objects or to communicate |