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| **Across**  **2.** a wave vibrating in the direction of propagation  **3.** . a wave vibrating at right angles to the direction of its propagation.  **6.** is a type of electromagnetic radiation, as are radio waves, ultraviolet radiation, X-rays and microwaves  **11.**  a length or portion of time.  **12.** an electromagnetic wave of a frequency between about 104 and 1011 or 1012 Hz, as used for long-distance communication.  **14.** a sharp change of pressure in a narrow region traveling through a medium  **15.** distance between successive crests, troughs, or identical parts of waves.  **16.** a wave or system of waves set up at the bows of a moving ship.  **17.**  is the number of occurrences of a repeating event per unit of time.  **20.** a phenomenon in which two waves superpose to form a resultant wave of greater, lower, or the same amplitude.  **21.** form of electromagnetic (EM) radiation, as are radio waves, infrared radiation, ultraviolet radiation, X-rays and microwaves. | **Down**  **1.** The speed of a wave is only altered by alterations in the properties of the medium through which it travels.  **4.** vibration of a system which some particular points remain fixed while others between them vibrate with the maximum amplitude  **5.** electromagnetic wave of high energy and very short wavelength, which is able to pass through many materials opaque to light  **7.**  an increase (or decrease) in the frequency of sound, light, or other waves as the source and observer move toward each other  **8.** for a wave or vibration, the maximum displacement on either side of the equilibrium (midpoint) position.  **9.**  penetrating electromagnetic radiation of a kind arising from the radioactive decay of atomic nuclei.  **10.**  an oven that cooks food very quickly or made to cook in one of these ovens.  **13.** The waveform traced by simple harmonic motion, which can be made visible on a moving convey belt by a pendulum swinging at r  **18.** having a wavelength shorter than that of the violet end of the visible spectrum but longer than that of X-rays.  **19.** the SI unit of frequency, equal to one cycle per second. |

   radio wave's       bow wave       transverse wave       infrared wave       visible light       Doppler effect        standing wave       microwave       longitudinal waves       period       shock wave       hertz       interference pattern       frequency       ultraviolet       wave speed       wave legth       x-ray       gamma ray       sine curve       amplitude