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| **Across**  **4.** All of the frequencies are wavelengths of electromagnetic radiation  **5.** A wave consisting of electric and magnetic fields that vibrate at right angles to each other.  **8.** Electromagnetic waves with wave lengths shorter than visible light but longer than x-rays  **10.** When no waves are reflected  **11.** A longitudinal wave that is caused by vibrations and that travels through a material medium  **13.** Electromagnetic waves with the longest wave length and the lowest frequency  **14.** Electromagnetic ways with wave length shorter than radio waves but longer than visible light  **15.** A mirror with a surface that curves outwards | **Down**  **1.** a lens that is thicker in the center than the edges.  **2.** Electromagnetic waves with waves lengths shorter than ultraviolet rays but longer than gamma rays  **3.** Electromagnetic waves with the shortest wave length and the highest frequency  **6.** a lens that is thinner in the center than the edges.  **7.** Radio waves with the shortest wave length and the highest frequency  **9.** a curved piece of glass or other transparent material that is used to refract light.  **12.** Electromagnetic waves that are visible to the human eye |