Unit 5 Objective Work 2020 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per \_\_\_\_\_

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| Objective | Notes |
| 1. Outline the properties of waves (i.e. velocity, wavelength, frequency, period, and amplitude) and describe their relationship.  Key Concepts: Velocity, wavelength (λ), frequency, period (T), T=1/f, amplitude (A),  v = λ\*f |  |
| 2. Describe the composition and production of electromagnetic waves.  Key Concepts: Electric field, magnetic field |  |
| 3. Explain how technological devices use the principles of waves to transmit information and energy.  Key Concepts: AM, FM, device ranges (remotes, CB’s, radio, wifi, 4G) |  |
| 4. Compare and contrast regions of the electromagnetic spectrum based on frequency, wavelength, and energy.  Key Concepts: radio, micro, infrared, visible, ultraviolet, x-rays, gamma |  |
| 5. Define diffraction and interference and justify how they illustrate the wave nature of light.  Key Concepts: Reflection, refraction, diffraction, interference, constructive, destructive |  |
| 6. Define the photoelectric effect and justify how it illustrates the particle nature of light.  Key Concepts: Photon |  |
| 7. Explain how energy in waves can be converted into other forms of energy.  Key Concepts: Kinetic, potential, chemical, sound, thermal, electromagnetic |  |