Topic 5 Vocab NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  | **Definition** | **Diagrams, analogies, questions, or notes** |
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| **Periodic oscillation** | Repeating vibration |  |
| **Longitudinal wave** | Direction of oscillation is parallel to direction of travel |  |
| **Transverse wave** | Direction of oscillation is perpendicular to direction of travel |  |
| **Medium** | The substance the wave is oscillating as it travels |  |
| **Echo** | A reflected sound returning to the source |  |
| **Refraction** | Change in wave travel direction, caused by a change in medium |  |
| **Natural frequency** | The rate at which an object vibrates when it is disturbed by an outside force |  |
| **Forced vibration** | Occurs when a wave forces an object to vibrate at the same frequency as the wave |  |
| **Resonance** | Large-amplitude vibration that occurs in the object when the forced vibration is the same as its natural frequency |  |
| **Superposition** | Waves at the same point combine their effects |  |
| **Constructive interference** | When waves are vibrating the same way and combine to make a wave with greater amplitude |  |
| **Destructive interference** | When waves are vibrating the opposite way and combine to make a wave with smaller amplitude |  |
| **Standing wave** | Created when two waves travelling in opposite directions with the same frequency and amplitude interfere to create a wave which vibrates in one spot |  |
| **Beats** | When two waves with similar frequency interfere to produce a repeating pattern of high and low amplitudes |  |
| **Diffraction** | Waves spreading out after passing an edge or through an aperture (a gap or hole) |  |
| **Electromagnetic spectrum** | All types of visible and invisible light: radio, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays |  |
| **Plane of polarisation** | Direction of oscillation of the electric field |  |
| **Diffuse reflection** | Caused by a microscopically rough surface, the colours mix together |  |
| **Specular reflection** | Caused by a microscopically smooth surface, an image is reflected |  |
| **Direction of propagation** | Direction of travel of the wave |  |
| **Normal to the surface** | The line angles are measured from, at right angles to the surface |  |
| **Angle of incidence** | The angle at which light hits the surface (measured from the normal) |  |
| **Angle of reflection** | The angle at which light reflects back from the surface, equal to the angle of incidence |  |
| **Angle of refraction** | The angle of the light (measured from the normal) once it has entered the surface |  |
| **Index of refraction** | How much the speed of light is slowed down by the medium |  |
| **Snell’s Law** | The formula relating refractive indices, incident and reflected angles:$n\_{1}sinθ\_{i}=n\_{2}sinθ\_{r}$   |  |
| **Total internal reflection** | When all the light reflects back into the original medium (none refracts into the other medium) |  |
| **Critical angle** | The incident angle which gives a refracted angle of 90° (any incident angles greater than this will total internal reflect) |  |