

Physics – Waves **Points in bold are HT only**

Content	End
Describe the origin and properties of longitudinal and transverse waves and give examples	
Calculate frequency of waves using frequency = number of waves/time and use Hz as the unit	
Use the wave equation to calculate wave speed, frequency or wavelength including using standard form	
Describe properties of all EM waves	
Name the 7 EM waves and describe their uses and dangers	
Link uses of EM waves to their properties	
Describe three things that can happen to waves when they meet an object – Triple Physics only	
Describe and construct ray diagrams to show reflection at different surfaces – Triple Physics only	
Describe the effects of reflection, transmission and absorption at material surfaces – Triple Physics only	
Explain what happens to waves as they travel into more or less dense materials - Triple Physics only	
Label a diagram to show refraction of light, including the normal and angles of incidence and refraction - Triple Physics only	
Describe ways of measuring wave speed– e.g ripple tank, waves on a string	
Describe how to measure the speed of sound and know it's approximate value in air	
Describe how sound waves cause vibrations in solids and how this relates to hearing Triple Physics only	
Know the range of hearing in humans Triple Physics only	
Describe how waves can be used for exploration and detection - e.g ultrasound, echo sounding and seismic waves Triple Physics only	
Describe the electromagnetic spectrum	

Content	End
Different substances may absorb, transmit, refract or reflect electromagnetic waves in ways that vary with wavelength.	
Some effects, for example refraction, are due to the difference in velocity of the waves in different substances.	
Students should be able to use wave front diagrams to explain refraction in terms of the change of speed that happens when a wave travels from one medium to a different medium.	
Describe uses of electromagnetic waves.	
Give brief explanations why each type of electromagnetic wave is suitable for the practical application	
Explain how IR radiation emission and absorption is affected by surface and describe an investigation to measure this	
Explain some of the dangers of EM waves and how the radiation dose is measured	
Explain how radio waves are generated by oscillating charges in the transmitter and how this generates a current in the receiver	
Draw and interpret ray diagrams for concave and convex lenses -Triple Physics only	
Describe the properties of the images formed in different lenses and calculate magnification Triple - Physics only	
Describe specular and diffuse reflection - Triple Physics only	
Explain how colour filters work to produce light of different colours - Triple Physics only	
Explain how the colour an object appears is related to the wavelengths of light reflected and absorbed by the object - Triple Physics only	
Describe black body radiation - Triple Physics only	
Explain how the temperature of a body is related to the balance of incoming radiation and radiation emitted, including the temperature of the Earth Triple Physics only	