



AQA GCSE Combined Science: Trilogy

Topic Checklists

6.6 Waves

6.6.1 Waves in Air, Fluids and Solids

Topic	Success Criteria	Progress		
Transverse and Longitudinal Waves	I can name the two types of wave.			
	I know whether ripples on a water surface are transverse or longitudinal.			
	I know whether sound waves are transverse or longitudinal.			
	I can identify the two different areas of a longitudinal wave.			
	I can describe the differences between longitudinal and transverse waves.			
	I can describe evidence that, for ripples on a water surface, it is the wave and not the water itself that moves.			
	I can describe evidence that, for sound waves in air, it is the wave and not the air particles that move.			



Topic	Success Criteria	Progress		
Properties of Waves	I can describe wave motion in terms of their amplitude, wavelength, frequency and period.			
	I can describe what is meant by the amplitude of a wave.			
	I can describe what is meant by the wavelength of a wave.			
	I can identify amplitude and wavelength from given diagrams.			
	I can describe what is meant by the frequency of a wave.			
	I can calculate the period of a wave by applying the correct equation from the physics equation sheet.			
	I can rearrange the equation linking the frequency and period to calculate the frequency of a wave.			
	I can describe what is meant by the wave speed.			
	I can recall and apply the correct equation to calculate the wave speed.			
	I can rearrange the equation linking frequency, wavelength and wave speed to calculate the frequency or wavelength of a wave.			
	I can describe a method to measure the speed of sound waves in air.			
	I can describe a method to measure the speed of ripples on a water surface.			
	I can show how changes in velocity, frequency and wavelength, in transmission of sound waves from one medium to another, are interrelated.			
	I can make observations to identify the suitability of apparatus to measure the frequency, wavelength and speed of waves in a ripple tank and waves in a solid (required practical activity 20).			
I can take appropriate measurements to calculate frequency, wavelength and speed of waves in a ripple tank and waves in a solid (required practical activity 20).				

6.6.2 Electromagnetic Waves

Topic	Success Criteria	Progress		
Types of Electromagnetic Waves	I can describe what an electromagnetic wave is.			
	I know whether electromagnetic waves are transverse or longitudinal.			
	I can compare the velocity of all types of electromagnetic wave through a vacuum or air.			
	I can name the groups of electromagnetic waves in order of wavelength and frequency.			
	I can name the type of electromagnetic wave that our eyes can detect.			
	I can give examples that illustrate the transfer of energy by electromagnetic waves.			
Properties of Electromagnetic Waves 1	(HT only) I can name four ways that electromagnetic waves interact with substances in ways that vary with wavelength.			
	(HT only) I can explain how the velocity of waves in different substances determines some effects, for example, refraction.			
	I can construct ray diagrams to illustrate the refraction of a wave at the boundary between two different media.			
	(HT only) I can 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.			
	I can describe a method to investigate how the amount of infrared radiation absorbed or radiated by a surface depends on the nature of that surface (required practical activity 21).			



Topic	Success Criteria	Progress		
Properties of Electromagnetic Waves 2	(HT only) I can explain how radio waves can be produced.			
	(HT only) I can explain how radio waves can induce oscillations in an electrical circuit.			
	I can explain how changes in atoms and the nuclei of atoms can result in electromagnetic waves being generated or absorbed over a wide frequency range.			
	I can explain how gamma rays originate.			
	I can name the groups of electromagnetic waves that can have hazardous effects on human body tissue.			
	I can describe the factors that determine the effects of electromagnetic waves on human body tissue.			
	I can give a definition for radiation dose.			
	I can draw conclusions from data about the risks and consequences of exposure to radiation.			
	I can describe the impact of ultraviolet waves on skin.			
	I can explain the hazardous effects of X-rays and gamma rays.			
Uses and Application of Electromagnetic Waves	I can name two practical applications of radio waves.			
	I can name two practical applications of microwaves.			
	I can name three practical applications of infrared.			
	I can name a practical application of visible light.			
	I can name two practical applications of ultraviolet.			
	I can name two practical applications of X-rays and gamma rays.			
	(HT only) I can explain briefly why each type of electromagnetic wave is suitable for its practical application.			