High Tunstall College of Science Curriculum Intent

Subject: Physics (Separate) Year: 11

Thread 6—Waves and Space



	Physics Thread 6	Progre	ess	
Торіс	Key ideas	R	Α	G
Waves and space	I can compare transverse and longitudinal waves, and apply the equation <i>wave speed = frequen-</i> cy x wavelength			
	I can use data from practical work to calculate wave speed			
	I can explain how waves are reflected and refracted			
	I can explain how waves are used for detection and exploration, for example seismic waves and ultrasound			
	I can recall the waves of the electromagnetic spectrum and give their use and properties			
	I can explain that sound waves are longitudinal waves, and how sound travels			
	I can explain how lenses are used, comparing images produced by convex and concave lenses			
	I can explain how visible light behaves with different materials			
	I can explain what is meant by 'black body radiation'			
	I can recall information about our solar system and explain the life cycle of a star			
	I can explain what red shift is and how this provides evidence for an expanding universe			

Lesson	Learning Focus	Assessment	Key Words
1	What are transverse and longitudinal waves?	Extended comparative writing	Transverse, longitudinal
2	RPA—Waves	Completion of practical work and correct calculations	Wave speed, frequency, wave length
3	How are waves reflected and refracted?	Completion of practical work and conclusions made	Reflection, refraction
4	RPA—Reflection and refraction	Completion of required practical activity	Angle of incidence
5	What are EM waves and how are they used?	Completion of exam questions related to the electromagnetic spectrum	Electromagnetic spectrum
6	How are EM waves used to communicate?	Completion of differentiated tasks	Waves, transmitter, receiver
7	RPA—Radiation	Completion of the required practical activity	Radiation
8	What are sound waves?	Completion of differentiated tasks	Longitudinal, vibration
9	What are seismic waves?	Application task to real life situations, such as prediction of earthquakes	Wave, seismic
10	What is ultrasound and how is it used?	Completion of exam questions	Ultrasound
11	How are lenses used?	Completion of practical work investigating lenses and real life application	Concave, convex
12	How does visible light behave?	Completion of practical work looking at how visible light behaves , such as refraction and absorption	Refraction, absorption, emis- sion
13	What is black body radiation?	Application of understanding to real life situa- tions, such as the temperature of the Earth	Black body radiation
14	What is our solar system like?	Completion of the lifecycle of a star flow dia- gram, application to exam questions	
15	What is red shift?	Evaluation and explanation of how red shift supports the Big Bang Theory	Red shift, Doppler effect