

Combined Science - Physics Paper 2 Foundation Tier Personal Learning Checklist (PLC)

P5 Forces and Motion

Learning Objectives:	Confidence		
	R	A	G
Describe weight and explain that its magnitude at a point depends on the gravitational field strength			
Calculate weight by recalling and using the equation: [$W = mg$]			
Represent the weight of an object as acting at a single point which is referred to as the object's 'centre of mass'			
Describe examples of the forces involved in stretching, bending or compressing an object			
Explain why, to change the shape of an object (by stretching, bending or compressing), more than one force has to be applied – this is limited to stationary objects only			
Describe the difference between elastic deformation and inelastic deformation caused by stretching forces			
Describe the extension of an elastic object below the limit of proportionality and calculate it by recalling and applying the equation: [$F = ke$]			
Explain why a change in the shape of an object only happens when more than one force is applied			
Describe factors that can affect a driver's reaction time			
Explain methods used to measure human reaction times and recall typical results			
Interpret and evaluate measurements from simple methods to measure the different reaction times of students			
Evaluate the effect of various factors on thinking distance based on given data			
Explain methods used to measure human reaction times and take, interpret and evaluate measurements of the reaction times of students			

Explain how the braking distance of a vehicle can be affected by different factors, including implications for road safety			
Explain how a braking force applied to the wheel does work to reduce the vehicle's kinetic energy and increases the temperature of the brakes			
Explain and apply the idea that a greater braking force causes a larger deceleration and explain how this might be dangerous for drivers			
Draw and interpret velocity-time graphs for objects that reach terminal velocity			
Interpret and explain the changing motion of an object in terms of the forces acting on it			
Explain how an object falling from rest through a fluid due to gravity reaches its terminal velocity			

P6 Waves

Learning Objectives:	Confidence		
	R	A	G
Describe waves as either transverse or longitudinal, defining these waves in terms of the direction of their oscillation and energy transfer and giving examples of each			
Define waves as transfers of energy from one place to another, carrying information			
Define amplitude, wavelength, frequency, period and wave speed and Identify them where appropriate on diagrams			
State examples of methods of measuring wave speeds in different media and Identify the suitability of apparatus of measuring frequency and wavelength			
Calculate wave speed, frequency or wavelength by applying, but not recalling, the equation: [$v = f \lambda$] and calculate wave period by recalling and applying the equation: [$T = 1/f$]			
Describe, with examples, processes which convert wave disturbances between sound waves and vibrations in solids			

P7 Magnetism

Learning Objectives:	Confidence		
	R	A	G
Describe the attraction and repulsion between unlike and like poles of permanent magnets and explain the difference between permanent and induced magnets			
Draw the magnetic field pattern of a bar magnet, showing how field strength and direction are indicated and change from one point to another			
Explain how the behaviour of a magnetic compass is related to evidence that the core of the Earth must be magnetic			
Describe how to plot the magnetic field pattern of a magnet using a compass			
State examples of how the magnetic effect of a current can be demonstrated and explain how a solenoid arrangement can increase the magnetic effect of the current			
Draw the magnetic field pattern for a straight wire carrying a current and for a solenoid (showing the direction of the field)			