Changing lives through learning

Access to Higher Education Unit

This unit forms part of an Access to HE Diploma. This is a developmental unit so is only available as ungraded.

Unit Title: Science: Introduction to Physics

Ungraded Unit Reference Number: UD23DEV07

Module: Developmental

Level: Two (2)

Credit Value: Three (3)

Minimum Guided Learning Hours: 30

Learning Outcome (The Learner will):	Assessment Criterion (The Learner can):
1. Understand the nature of energy and energy resources	1.1 Describe different forms of energy
	1.2 Explain energy transfer for a range of systems and illustrate energy conservation and losses
	1.3 Identify sources of energy that could be used to generate electricity and trace each to the origin
2. Understand the concept of density	2.1 Identify the formula for density and use this to perform calculations giving answers in appropriate units
	2.2 Explain the Archimedes' Principle and how a steel ship floats on water
3. Understand the nature and effects of force	3.1 Define the term force and provide examples of different types of forces
	3.2 Explain the relationship between the force, mass and weight of an object
	3.3 Complete a practical investigation into balancing forces and use results to identify practical applications of the Principle of Moments
	3.4 Define the terms speed, velocity and acceleration and calculate their SI units

	3.5	Interpret distance/time graphs
4. Understand the nature of electricity	4.1	Explain the properties and uses of electrical conductors and electrical insulators
	4.2	Explain the production of static electricity and give examples, including the behaviour of charged bodies with the same or with opposite charge
	4.3	Explain the terms: a) Current electricity b) Current c) Voltage d) Potential difference e) Resistance f) Power g) Direct Current (DC) h) Alternating Current (AC.)
	4.4	Present calculations using the formulae V= IR and W = IV for DC circuits
	4.5	Interpret and present circuit diagrams using standard electrical symbols for: a) Cells b) Batteries c) Resistors d) Lamps e) Switches f) Capacitors g) Fuses
5. Understand the wave nature of sound and light	5.1	Interpret diagrams of waves to calculate the frequency, wavelength and amplitude
	5.2	Explain the nature of sound waves and the relationship between pitch, frequency and wavelength
	5.3	Define amplitude and explain its relationship to sound
	5.4	Explain the wave nature of electromagnetic radiation
	5.5	Identify different types of radiation in the electromagnetic spectrum and outline practical uses for each