

Unit 6: The Nature and Applications of Energy, Waves and Radiation

Outline Learning Plan

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities
Introduction to unit and safety briefing
<p>Theory work on energy stores and energy transfers, including how to measure energy transfers</p> <p>Practical activity investigating energy transfers, using and 'energy circus' approach, including simple measurements</p> <p>Assignment 1: Energy Stores and Energy Transfers (AC 1.1) - report identifying energy sources and transfers from the items/appliances in the 'energy circus'</p>
<p>Formal teaching of electromagnetic spectrum</p> <p>Theory work on applications of waves and radiation, including ionising radiation, waves for communications</p> <p>Demonstration of ionising radiation including absorbers and distances it will travel</p> <p>Assignment 2: Applications of Waves and Radiation (AC 2.1 and 2.2) – report, poster or leaflet identifying the different types of ionising radiation and electromagnetic waves and their applications</p>
<p>Theory work on power supplies and electrical circuits (simple series and parallel circuits)</p> <p>Practical activity constructing different types of electrical circuits and taking measurements of voltage and current</p> <p>Assignment 3: Electric Circuits (AC 3.1 and 3.2) – observation and practical report</p>
<p>Theory work on the structure of the Universe</p> <p>Discussion of the methods used to observe the Universe</p> <p>Practical activity observing objects in space (eg sun spots, stars and planets) using different instruments (eg pinhole camera, telescope, robotic telescope)</p> <p>Assignment 4: Space Exploration (AC 4.1 and 4.2) – report identifying the structure and dynamic nature of the universe and methods used to investigate objects in space</p>