Science Unit Overview

Subject: SCIENCE  
Year: 7  
Term 3 Week 7 - Term 4 Week 3

Unit Title: ENERGY

Aim: This unit provides students the opportunity to describe the actions of unbalanced forces in everyday situations. Scientific understanding and technological development is explained, emphasising how they have contributed finding solutions to problems involving energy transfer and transformations.

What students will do:

Unit Outline
- Identifying objects that have energy because of their state of motion (kinetic) or because of other properties (potential)
- How does transfer of heat energy occur through the processes of conduction (insulation), convection and radiation, and in which situations?
- Making a simple electrical circuit and explain how energy transfers occur
- Investigate energy transformations that occur in everyday life
- Research how scientific and technological developments have led to finding solutions to current issues, e.g. improvements in devices

What students will learn:

Key Learning Outcomes
- First-hand investigation to understand the energy in objects – kinetic and potential and present ideas in report format with tables and graphs
- Experiment set-up of transfer of energy by conduction and present ideas to class as PowerPoint as to what objects act as conductors and what objects act as insulators
- Convection current experiment and writing an explanation text type on observations and inferences
- Group poster outlining the effect of radiation in an energy system, e.g. sunlight heating a house, microwave oven, or a light bulb

What students will be assessed on:

Evidence of Learning
- Follow rules (students follow instructions during experiments)
- A famous scientist (poster presentation)
- Lighting a Bunsen burner (“Bunsen Burner license” in students books)

Essential Words:
kinetic, potential, gravitational, elastic, nuclear, transformation, chemical, transformer, insulator, conductor, terminal, circuit, current, conduction, convection, radiation, absorption, shiny, vacuum, fossil, turbine, renewable, alternate, hydroelectric, geothermal

Homework:
Students are required to complete their comprehension and quiz based homework tasks once per fortnight.

Grade Descriptors  Work Samples: 0