Year 10

Term 3

PHYSICS

Course Content

The majority of the term will be concerned with thermal physics and its applications. The term will start by discussing the kinetic theory of matter. Throughout the term we will be applying this far-reaching theory in explaining the concepts of temperature, pressure, phase changes, evaporation, thermal energy transfer, internal energy, specific heat capacity and gas laws.

Student will be exposed to a range of practical work to reinforce the concepts discussed and hone their practical skills. Class experiments will include identifying substances based on their melting points, calibration of thermometers without scales, investigation of evaporative cooling of aftershaves, determining the specific heat capacity of water and other substances, designing an insulation for coffee cups for a pizza company, evaluation of radiative heat transfer of variety of surface paints etc.

This term will include a major research project on Energy Resources (Chapter 4) which will culminate in a public class presentation. Should time permit, we may start discussing the phenomenon of waves by the end of the term.

Resources.

- Text: Pople, Stephen. 2014. *Complete Physics for Cambridge IGCSE, 3rd Ed.*, Oxford University Press
    - Section 5 - Thermal Physics - All
    - Section 4.04 - Efficiency
    - Section 4.05 & 4.06 - Electricity generation
    - Section 4.07 & 4.08 - Energy Resources
    - Class handouts, including past exam questions
- Further resources, links, video clips, computer simulations etc. posted on Edmodo.

Assessment.

- Class participation, project presentation, assignments, investigations and experimental reports 20%
- IGCSE-style, controlled, written assessments 80%