

Physics

This study enables students to

- develop their understanding of the role of careful and systematic experimentation, and modelling, in the development of theories and laws.
- undertake practical activities and apply physics principles to explain and quantify both natural and constructed phenomena.
- find quantitative explanations for phenomena occurring from the subatomic scale through to the planets, solar systems and galaxies in the Universe.

Unit 1 What ideas explain the physical world?

In this unit students explore some of the fundamental ideas and models used by physicists in an attempt to understand and explain the world. They consider thermal concepts by investigating heat and assessing the impact of human use of energy on the environment. Students evaluate common analogies used to explain electricity and investigate how electricity can be manipulated and utilised. They examine current scientifically accepted theories that explain how matter and energy have changed since the origins of the Universe. They study in more detail nuclear energy and nuclear physics.

KEY SKILLS REQUIRED

Question and predict; plan and conduct experiments; record and process data; analyze and evaluate relationships in data; use critical & creative thinking; write a scientific report; and good mathematical skills

Assessed Tasks

Practical Work portfolio, Topic Questions, Topic Tests, End of Unit Examination

Unit 2: What do experiments reveal about the physical world?

In this unit, students explore the power of experiments in developing models and theories. They make direct observations of physics phenomena and examine the ways in which phenomena that may not be directly observable can be explored including through indirect observations. Students investigate the ways in which forces are involved both in moving objects and in keeping objects stationary.

KEY SKILLS REQUIRED

As for Unit 1 above

Assessed Tasks

Practical work, Topic questions & tests, End of Unit examination