Curricular Area: Science **Course Title:** Physics Higher

Course Description

The study of Physics reinforces and extends the knowledge and understanding of the concepts of Physics, developing problem solving and practical skills.

The course has three units

- **Our Dynamic Universe:** motion – equations and graphs, forces, energy and power, collisions, explosions and impulse, gravitation, special relativity, the expanding universe
- **Particles and Waves:** the standard model, forces on charged particles, nuclear reactions, wave particle duality, interference and diffraction, refraction of light, spectra
- **Electricity:** monitoring and measuring a.c., current, potential difference, power and resistance, electrical sources and internal resistance, capacitors, conductors, semiconductors and insulators, p-n junctions

Entry requirements

National 5 Physics, grade A or B **AND** National 5 Maths, grade A or B

Presentation level

Students may be either presented for the 3 units at SCQF level 6 or for the final Higher exam

Assessment

Students who are working towards achieving SCQF level 6 Physics will sit Key Area assessments, testing their ability to recall knowledge related to key areas of content and successfully perform solving problem skills.
Students who are working towards passing the final Higher Physics exam will sit more demanding assessments with questions that test the application of their knowledge to new situations. All students will be applying skills of scientific enquiry throughout the course.
There is an Assignment (worth 20% of the final mark) and an exam, both of which are externally marked. During the Assignment, students will carry out an experiment and do some research into a relevant topic in Physics and compare their results to published data on the same theme. The student then present their findings in a written report The majority of the marks will be awarded for applying scientific inquiry and analytical thinking skills. There will also be a prelim exam.

Home Study Expectations

Students are issued with home study every week. Home Study tasks will vary and could include research, consolidation of learning, practicing data handling skills or extended pieces of writing. Students will be also be expected to spend 60 minutes each week reading over their notes.

Possible next level of study

Higher Physics ⟹ Advanced Higher Physics

Wider Achievement Opportunities

Students have many opportunities to explore and develop their investigative and practical skills in Physics. The ability to write extended pieces of text to express scientific ideas and knowledge are also developed. Numeracy skills are consolidated.

Possible career path

The study of Physics at this level provides a good grounding for many careers. Without physicists many of the things we take for granted would just not exist e.g. mobile phones, mp3 players, computers, lasers and techniques used in medicine. Many types of engineering e.g. aeronautical, electrical, civil or mechanical, research in laboratories or the natural environment, geologist, medical physicist, food related careers, meteorology, and education.

For more information see http://www.physics.org/careers.asp?contentid=381