

# BGE 3rd Year

**Department:** Science

**BGE Course:** Physics

## Brief Description of Course:

In S3, pupils will develop their skills, knowledge and understanding of Physics by taking part in a range of experiments and practical activities. They will build upon previous learning in S1 and S2 by completing the relevant level 4 experiences and outcomes of the Broad General Education. To prepare learners for the senior phase, some elements of the National courses will also be covered. The course consists of the following topics:

**Astronomy and Space** – Learners will discover how space exploration has greatly increased our understanding of the Universe and how our knowledge of the Universe has evolved over time. Pupils will use real NASA data to estimate the number of objects in space.

**Waves and Sound** – Pupils will learn about the properties of waves and develop their knowledge of electromagnetic radiation and its use in a wide range of applications in industry, medicine, and telecommunications. By recording and analyzing various sounds, they will investigate how sound signals can be manipulated in sound engineering.

**Electricity and Electronics** - Pupils will learn about the relationship between electricity and magnetism, the characteristics of simple electrical circuits and the properties of input and output electronic devices. Learners will also investigate the use of electronic systems to provide practical solutions to real-life problems.

**Properties of Matter** – By carrying out a range of practical activities, pupils will investigate temperature, pressure and volume to develop an understanding of the kinetic theory of gases. The knowledge gained will be applied in a practical investigation.

**Forces and Motion** - This topic is concerned with measurements and calculations of the speed and acceleration of objects, developing an understanding of the forces that cause motion and applying this knowledge in a variety of situations including road transport and space travel. Video analysis software will be used to display and analyse the motion of objects.

## Transition from BGE to Senior Phase:

The decision about which level pupils pursue in S4 will be taken at the end of S3 on the basis of all of the assessment information available including class tests, homework marks, end of year examination, practical skills and work ethic. The majority of pupils will be presented for National 5 Physics, although a small number of pupils may be recommended to follow the National 4 course with a view to completing National 5 Physics or Practical Electronics in S5.

## Assessment Strategies:

Pupils will be assessed to determine their knowledge, understanding and problem solving skills by a variety of methods including class tests at the end of each topic, formal homework throughout the year and a more extensive examination at the end of S3. Pupils' skills will be assessed in a series of practical investigations at the end of each topic.

## Pupil Commitment:

Pupils are expected to take greater responsibility for their own learning by carrying out regular revision of notes at home, completing weekly homework and submitting formal homework exercises when required to do so. Opportunities will also be provided for pupils to perform practical activities, carry out research and present their findings on various applications and topics in Physics.