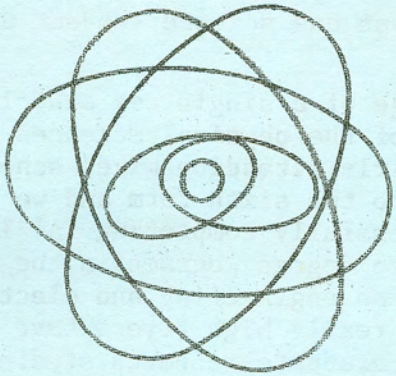
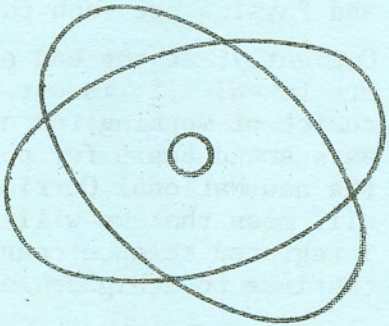
St. Elphin's School



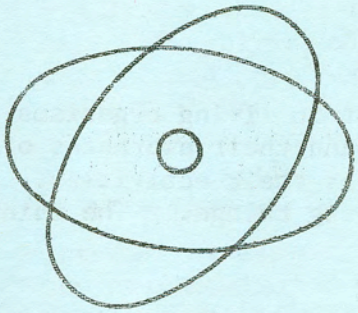
Physics

Chemistry

SCIENCE



Biology



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SCIENCE AT ST. ELPHIN'S

The importance of science has long been recognised at St. Elphin's where all our pupils study the sciences for at least three years in the secondary school and have been encouraged to continue with at least one science subject up to 'O' level or G.C.S.E.

One recognised advantage of a single sex school like ours is the increased take up of the physical sciences (chemistry and physics) compared to girls attending mixed schools. This advantage continues into the sixth form and we have many examples of girls successfully completing 'A' level courses and gaining admission to degree courses in the pure sciences, applied sciences and also engineering and electronics and medical courses. The really high flyers have continued successfully into post graduate research studies.

In Upper Three (1st Form) we teach a General Science course designed to give a wide range of experience of handling apparatus and learning investigative techniques. In Lower Four (2nd Form) the syllabus is split into Physical Science and Biology and in Upper Four (3rd Form) Chemistry, Biology and Physics are each taught by experienced, specialist staff.

Currently, at the end of the third year, options for G.C.S.E. are taken. It is our intention to continue to offer the choice of working for all three sciences as separate subjects as a sound basis for possible 'A' levels. The influence of the new National Curriculum, in which science is a core subject will mean that we will probably offer, as an alternative, an integrated science course for those girls who do not wish to continue to a higher level.

G.C.S.E. Biology (M.E.G.).

The course aims to develop girls' interest in living organisms, their understanding of their own bodies, and their awareness of their environment and how it is affected by their activities. Its emphasis is on the functioning of living things. The main areas of study are:

1. Diversity of living organisms. 5%

2. Relationships between organisms and with their environment. 25%
3. Organization and maintenance of the individual. 45%
4. Development of organisms and continuity of life (including genetics). 25%

Development of practical scientific skills forms an important part of the work and towards the end of the course assessments are made of the girls' ability to:

1. Follow instructions.
2. Handle apparatus and materials.
3. Observe and measure.
4. Record and communicate.
5. Interpret data.
6. Design an experiment of their own to solve a problem.

We start G.C.S.E. work in the Upper Fourth year to allow for full coverage of the syllabus. The Lower Fourth do an introductory course covering characteristics of living organisms, cells and a study of a variety of animals and plants.

G.C.S.E. Chemistry

Salter's G.C.S.E. chemistry is a 3 year course developed by The University of York. The course begins in the Upper Fourth year where it provides a sample of the work involved before the girls choose their options at the end of that year. Salter's chemistry is perhaps unique in that the focus of the study of chemistry has been directed at the relevance of chemistry in a modern advanced society. Rather than being simply a course of academic study the subject is explored in terms of applying what is discovered in the laboratory to current and possible future industrial, environmental, economic and social problems. The main input to progress is the nature and scope of the practical investigative work performed by the individual girls. Continuous assessment over a range of skills ensures that girls are made aware of their successes.

Internal assessment covers practical skills developed during the course, project work, communication and information handling skills as well as the ability to analyse problems and /

synthesise the means of solving the problem. A maximum of 40% of the total marks can be attained by pupils before the two written examination papers are taken.

The majority of girls usually decide to study Salter's chemistry, the initial results have well exceeded expectations. Girls who have remained at St.Elphin's to continue their study of chemistry at advanced level have experienced few difficulties in adjusting to the differences in approach and knowledge profile.

G.C.S.E. Physics

In a modern, technologically based society an understanding of the principles and applications of physics is essential. Throughout the course the emphasis is increasingly on applications and the social, economic and environmental implications. Skills in observation, experimentation and interpretation are developed together with the ability to express generalisations as mathematical and qualitative models.

Coursework makes an important contribution (20%) to the final grade and is assessed on the practical work conducted in the laboratory.

Observation, manipulation, design, planning, recording and reporting are all assessed.

The content of the course is demanding and forms a good foundation for further study.