

Science Curriculum - Grade 12

LIFE SCIENCE CONTENT

Anatomy & Physiology/Health Occupations

- Students will explore systems of the human body, learning through lecture, demonstration, laboratory experience, projects and independent research.
- Students will be taught certificate courses in CPR and First Aid.
- Awareness of the vast number of career opportunities and the requirements for them will be a part of this study.

Biology (Advanced)

- Juniors and seniors with a strong interest and demonstrated ability in science and sophomores, who have completed Chemistry 010 with a B+ or better grade, emphasizes molecular and cellular biology.
- Significant class time is spent on lab activities as well as individual and class projects.

Environmental Science

- The study of local ecosystems with that of current environmental issues.
- Human use and misuse of the environment is emphasized. Topics range from tree identification, soil ecology, water quality, and mammal tracking to habitat destruction, human population growth, global warming and solid waste issues.
- All students plan an active roll on ConVal's recycling program.
- Frequent trips outdoors, even in cold weather, should be expected.

Environmental Science (Advanced)

- The same content area as above but assumes a higher level of academic skills and performance. Grading places greater emphasis on individual projects.
- Students are also required to keep a nature journal and should expect nightly homework assignments

EARTH/SPACE SCIENCE CONTENT

Oceanography

- This course stresses physical, chemical, geological, biological and ecological aspects of the world's oceans.
- Oceanography is the scientific study of all aspects of the oceans, their boundaries and contents, involving the largest environment on earth.
- By studying this massive area, we hope to answer about weather, energy, mineral resources, environment, food and our origin and to learn about our connection to all things in the sea.
- Some dissection should be expected.

Oceanography (Advanced)

- The same content area above but assumes a higher level of lab and thinking skills.
- Good reading and writing skills are helpful, and nightly homework should be expected.
- Dissection is an integral part of the course.

PHYSICAL SCIENCE CONTENT

Chemistry

- College prep chemistry as an experimental science emphasizes math application and laboratory activities.
- Students are introduced to quantitative concepts of chemistry and are encouraged to inquire and make accurate observations and valid conclusions.
- Emphasis is on scientific method and appropriate application of inquiry, observations, and inference to solve problems.

Chemistry (Advanced)

- College survey course, emphasizing theory and concepts, is designed for students with strong interest in chemistry.
- Students are prepared for the required AP exam, which provides possibility of college credit.
- Laboratory exercises and demonstrations supplement the lecture portion of the course.

Physics

- A Conceptual Physics course requiring working skills in Algebra, Geometry, and Trigonometry.
- The fundamentals of motion, force, energy, work and physical properties of matter including inertia, momentum, gravitational attraction, and specific heat are covered.
- Independent research, formal laboratory reports, and Investigative Challenges are assigned on a regular basis.
- This is suggested for college bound students NOT planning to major in Science or Technology.

Physics (Advanced)

- Advanced Placement level of physics intended for college bound students planning to major in Science or Technology.
- Successful completion of Integrated Mathematics III is a requirement with either Topics in Mathematics or Pre-calculus Mathematics 012 recommended
- This Physics program will provide in depth treatment of motion, force, work, energy, momentum, fluid mechanics, thermodynamics, wave mechanics, sound, light electrostatics, electricity and electronics.