

# SCIENCE

*The favorite question of children has always been "why?". We have been born into a fascinating world and have always been curious about why things are the way they are.*

*Science is the study of "why." It teaches students to look at the world with eyes of appreciation. They see that the simplest things are really incredibly complex and valuable. They learn that what they take for granted shouldn't be taken for granted. This appreciation inspires gratitude and a desire to protect and steward the world we have been given. Additionally, the study of science develops valuable skills. It encourages precision and excellence as well as critical and innovative thinking. It develops habits of observing and recording that can be transferred to other areas of life.*

## **ANATOMY & PHYSIOLOGY (Honors)**

1 credit/4.0 weight

This class provides opportunities for students to learn about the structure and functions of cells, tissues, organs and organ systems with emphasis on the human body. Students will learn through case studies, guided inquiry projects, hands on-minds on organ dissections, cells and tissue slide observations as well as research. In addition to learning about the structure and function of the levels of biological organization from the molecular to the organismal level, students will learn how the body transforms energy, maintains homeostasis, and responds to its environment.

## **BIOLOGY**

1 credit/4.0 weight

This course focuses on the relationships between living organisms and their environment. Similarities and differences between all organisms, from simple to complex are examined. Additionally, recent developments in molecular biology and biotechnology are presented. Specific topics and activities include study of population dynamics, online dissection of a plasma membrane, exploration of bioenergetics, examination of the cellular basis of inheritance, application of Mendel's rules, and research of evolution. Learning methodology includes assigned readings, lectures, discussion responses, high-frequency online interaction with classmates, and introspective learning summaries. *(This course is available online through LHSOC.)*

## **BIOLOGY (Honors)**

1 credit/4.5 weight

The biology curriculum is designed to continue student investigations and deepen student understanding of the biological sciences. High school instruction should include concepts introduced in grades K-8 at a more abstract level. In-depth study of the following concepts is included: structure and functions of living organisms, ecosystems, evolution and genetics, and molecular biology. Students in Honors Biology are required to write a research paper. Students are required to take the NC End-of-Course (EOC) test in Biology.

## **CHEMISTRY**

1 credit/4.0 weight

This subject provides a study of matter and the changes that occur in it. Physical and chemical changes are identified. Energy relationships are studied and interpreted. Emphasis is given to interpreting the behavior of atoms and molecules based upon what students observe in the laboratory. Formula and equation writing follows an understanding of the changes that are being described. *(This course is available online through LHSOC.)*

## CHEMISTRY (Honors)

1 credit/4.5 weight

The Chemistry course encourages students to continue their investigations of the structure of matter along with chemical reactions and the conservation of matter and energy in those reactions. Inquiry is applied to the study of the composition, structure, properties and transformation of substances. The course focuses on basic chemical concepts and incorporates investigations to build understanding of these concepts. An overview of basic Organic Chemistry will be incorporated into the curriculum.”

## ENVIRONMENTAL SCIENCE (Honors)

1 credit/4.5 weight

*Prerequisite: Biology*

Learners will study natural and technological systems. The strands and unifying concepts provide a context for teaching content and process skill goals. All goals should focus on the unifying concepts: nature of science, ecological principles, biodiversity, natural resources, environmental quality, and sustaining human societies.

## ENVIRONMENTAL SCIENCE (AP)

1 credit/5.0 weight

*Prerequisite: Successful completion of Algebra I, Biology and Chemistry with a grade of B or higher. Must meet AP course requirements.*

Environmental Science provides an in-depth study of the following concepts: earth systems and resources, the living world, populations, land and water use, energy resources and consumption, pollution, and global change. **This course is rigorous and will require continuous textbook chapter readings, writing, and data analysis.** All laboratory investigations and field work will require satisfactorily-completed written reports. Students are required to take the AP College Board exam in Environmental Science in May. (*Spring Only*)

## PHYSICS (Honors)

1 credit/4.5 weight

*Prerequisite: Biology, Algebra I, Geometry*

Physics is an in-depth and math-based study of the properties and relationships between matter and energy. Major topics of study include forces, motion, gravity, thermal energy, wave energy, including light and sound, and electricity, including its relationship with magnetism. Students enrolling in this course should have a solid grasp of basic Algebra, Geometry, and will be expected to either review or learn and incorporate additional higher-level Math skills like logarithms and Trigonometry. Physics students will be expected to work both effectively and cooperatively in many small-groups labs. In addition, student will be required to create and demonstrate both individual and group projects based on specific concepts.”