

# Science Courses

All science courses address the Creekside High School's Expected School Learning Results (ESLRs) with an emphasis on *Effective Communicators, Strategic Thinkers & Contributing 21<sup>st</sup> Century Citizens*.

## Biology A/B

Biology is a laboratory science course designed to provide students an understanding of organisms and an in depth background in cellular biology, biochemistry, genetics, biotechnology, evolution, biodiversity, ecology, and human biology.

### Course Goals and Objectives

- ✓ Students demonstrate the use of the scientific method.
- ✓ Students identify the structures and functions of a cell
- ✓ Students recognize that cells are the basis of biological organization
- ✓ Students describe cellular activities such as metabolic processes and cell division
- ✓ Students identify the chemical nature of carbohydrates, fats, proteins, DNA and RNA molecules.
- ✓ Students understand how heredity and environment determine individual makeup
- ✓ Students apply the principles of Mendel's Law
- ✓ Students examine representative animals with their basic phyla
- ✓ Students recognize the importance of a taxonomic scheme for organization
- ✓ Students identify bacterial shapes and distinguish them from viruses
- ✓ Students recognize the significance and economic importance of plants for humans
- ✓ Students identify structures and functions of flowers, stems, leaves and roots
- ✓ Students explain the fundamentals in the processes of photosynthesis and the carbon, nitrogen and water cycles
- ✓ Students examine the structure and function of various systems of organisms between lower and higher forms of animal and plant life

## Scientific Investigations: Introduction to Forensic Science

Scientific Investigations is designed to support students interested in pursuing careers in science by utilizing the inquiry process including techniques and strategies to solve complex problems.

### Course Goals and Objectives

- ✓ Students develop/apply skills in gathering, organizing and communicating information by the Scientific Method
- ✓ Students prove and disprove hypotheses
- ✓ Students interpret physical evidence (i.e., hair, fingernails, fingerprints, etc.)
- ✓ Students analyze principles of physics (i.e., trajectory, speed, velocity, direction, etc.)

## Physical Science

Physical Science is designed to help students observe, experiment, form hypotheses, collect and verify data, and apply research methods.

### Course Goals and Objectives

- ✓ Students use the scientific method to solve problems.
- ✓ Students use critical thinking skills.
- ✓ Students work with mass and volume.
- ✓ Students identify atoms, compounds, and elements.

## Earth Science

Earth Science is designed to help students understand the planet Earth. Topics include: diversity of the universe, composition of the earth, changing earth, earth's past, and earth's future.

### Course Goals and Objectives

- ✓ Students describe stars
- ✓ Students describe the relationship between the earth and its seasons

**Note:** See *Science Content Standards for California Public School, Kindergarten through Grade Twelve* for course Guidelines and Goals.