

## SPECIFIC COURSE INFORMATION



### **GEOPHYSICAL SCIENCE HONORS and GEOPHYSICAL SCIENCE CP**

This course focuses on understanding the Earth as a number of interrelated systems, integrating content and processes from traditional Earth Science and the physical sciences. The content, ideas, and activities within this course curriculum will be implemented using a hands-on/minds-on approach. The dynamics of the Earth system and the relationships among its many subsystems are investigated through field experiences, lab experiences and data collection, which incorporates a multi-sensory approach for each student. Physical science concepts necessary for the understanding of nature are taught through a study of the Earth's subsystem in which they operate.

**Prerequisite for Honors: B or better in Algebra 1 & teacher recommendation.**

**Prerequisite for CP: None**

### **FOUNDATIONS of INTEGRATED SCIENCE**

The focus, content, ideas and activities for geophysical foundations are the same as for Geophysical Science CP. In this course, however, the physics concepts and laws requiring mathematically rigorous calculations are taught more descriptively than algebraically. Other modifications are made in instructional strategies to accommodate individual learning styles.

**Prerequisite: None**



### **BIOLOGY HONORS and BIOLOGY CP**

Biology focuses on the diversity, complexity, and interdependence of life on Earth. Students will develop an understanding of how organisms evolve, reproduce, and adapt to their environments. This will include an exploration of how to relate the structure and function of molecules to their role in cell biology and metabolism. Further understanding of the evolution and reproduction will be explored through the science of genetics. Knowledge of biodiversity and adaptation will be illustrated through the science of ecology. This course was developed for the students interested in pursuing a biological/science career. These students are mandated to take the New Jersey Biology End-of-Course Assessment at the end of the course.

**Prerequisite for Honors: B or in both 8th grade Science & Algebra 1 & teacher recommendation.**

**Prerequisite for CP: B or in both 8th grade Science & Math & teacher recommendation.**

### **Additional Information:**

- The 8th grade professional teaching staff will provide you a recommendation for placement of your child into the 9th grade science curricula. Please consider the recommendation carefully. The teachers know and understand the different course levels and have knowledge of the students as learners.
- The recommended science curriculum that will meet the needs of **most** students follows the following sequence: Geophysical Science (9), Biology (10), Chemistry (11), and Physics (12).

### **FREQUENTLY ASKED QUESTIONS**

#### **1. If a student starts in one course level, will that student be able to move into a different level?**

*Yes, a typical student who elects to take CP level Geophysical Science can move into Biology Honors as a 10<sup>th</sup> grade student or a student who starts in Biology Honors or Geophysical Science Honors may decide that 10<sup>th</sup> grade CP science is more appropriate based upon interest after experiencing a full year of high school science.*

#### **2. Does a student who is interested in a career medicine need to start out in Biology Honors?**

*Absolutely not. Geophysical Science is NOT a replacement course for Biology Honors. A student must have biology in order to graduate from KHS.*

#### **3. Is there a benefit to starting out in Biology vs. Geophysical Science?**

*No. Nearly everything we do each day is connected in some way to Earth: to its land, oceans, atmosphere, plants, and animals. The National Research Council's National Science Education Standards and the National Science Teachers Association agree that Earth science should be included as part of the science curriculum at all grade levels and offered as a core credit science course in high school. Additionally, because this course also introduces a great deal of physics it supports the 'physics-first' movement. The physics-first curriculum fosters coherence in education, allowing students to build upon what they already know in biology and chemistry and lays a foundation for higher-level physics. Furthermore, the End-of-Course Biology Assessment is a high stakes high school graduation test that may put unnecessary pressure on a 9th grade student.*



# **Kinnelon Public Schools**

## **Making the Right Choice for 9th Grade Science**



**Noreen LaFergola**  
Secondary Supervisor for Science & Technology

Phone 973-838-1418 ext. 123  
email: LafergolaN@kinnelon.org

**Diane DiGiuseppe**  
Director of Curriculum & Instruction

Phone: 973-838-1418 ext. 103  
email: DigiuseppeD@kinnelon.org

# Kinnelon High School

# Science Overview

The New Jersey Core Curriculum Content



Standards for Science reflect the belief that all students can and must learn science to assume their role as concerned citizens, equipped with necessary information and decision-making skills.

The need for scientific literacy

in today's increasingly technological world, for fundamental reforms in how science is taught, and for established standards in science education are by now well known and documented. Presidential appeals for excellence, combined with expressions of concern from science educators, have led to national, state, and local initiatives.

The State of New Jersey Department of Education has replaced the High School Proficiency Assessment in Science (HSPA – Science) with the first of several proposed End-of-Course (EOC) Assessments. This EOC will assess knowledge and understanding in the biological and environmental sciences.

Our recommendation is that most students will be best prepared for the State EOC Assessment by selecting Geophysical Science in grade 9 and Biology in grade 10. By following this sequence, students may then take Chemistry in grade 11 and Physics in grade 12. This sequence will prepare students in all of the core

Disciplines and address all of the New Jersey Core Curriculum Content Standards in science and provide an impressive record of lab sciences for college admissions officers to consider.

### 9th Grade Courses Available:

- Geophysical Science College Prep
- Geophysical Science Honors
- Biology College Prep
- Biology Honors
- Foundations of Integrated Science

### THE STUDENT WORKING AT THE COLLEGE PREP LEVEL:

The CP level classes are designed for the college-bound student.

- This student is considered to be a solid, motivated college bound individual.
- He/she will complete assignments with attention to thoroughness and timeliness.
- Challenging course work will be presented at a steady rate allowing for review of previously learned material in various subject areas.
- Pursuit of more in depth individual studies will be encouraged.
- This student will display acceptable standards of mastery in the essential skills of reading, writing, and speaking.
- Lastly, this solid foundation of learning and achievement will allow the student to maintain an academic record that will support application to competitive colleges throughout the country.



### THE STUDENT WORKING AT THE HONORS LEVEL:

The Honors level classes are designed for the **well-motivated** college-bound student.

- The honors level student will be self-motivated and highly committed, demonstrated by intellectual curiosity, often

### HONORS CONTINUED:

spending many hours beyond the normal school day engaged in assignment preparation, study, extended learning opportunities and working independently.



- Mastery and application of the skills of written expression, public speaking and the continuum of knowledge, relating to how information is connected from one discipline to another, is expected.
- There is an assumption that students working at this level shall advance on the continuum leading to higher sequences, thereby stretching to reach further self-improvement opportunities.
- Lastly, the maintenance of an academic record that would support application to some of the finest, most competitive colleges in the country is expected.

### THE STUDENT WORKING AT THE FOUNDATIONS OR 'C' LEVEL:

This Foundations level classes are designed for the student who with consistent personal effort augmented by professional support, may pursue the college or post-high school educational experience with success.

- He/she may be considered academically at-risk due to subject-specific or learning-specific deficits, necessitating close monitoring and after school support in order to overcome deficits and to improve and master critical skills.
- While this student may be working beneath his/her level of ability due to immaturity or developmental interference, he/she may maintain an academic record that would allow application to carefully selected colleges throughout the country.

