



PHYSICAL SCIENCE

Full Year 1 credit Grade 7

This course focuses on the study of structure, organization, and classification of matter and its properties. It also looks at the interactions of matter and energy, the interrelationships of motion, forces, work, power, machines, and energy. The course emphasizes problem solving using creativity, logic, and concept development. In addition, students are introduced to and develop laboratory skills in class.

LIFE SCIENCE

Full Year 1 credit Grade 8

This course introduces the basic concepts in life science including cells and their components, organization and classification of organisms, and animal diversity and interaction. The course contains both concrete and abstract concept development and problem solving methods. Hands on experience, laboratory safety, and the basics of dissection are also taught in this course.

EARTH SCIENCE HONORS

Full Year 1 credit Grade 9

This course goes beyond the basics required by the New York State Regents curriculum for Earth Science. It provides for a deeper investigation of all topics and units. Topics include, but are not limited to, measuring the earth, earth motions, energy, seasons, weather, water, energy and climate, erosion and deposition, and geologic history. Laboratory component is required.

EARTH SCIENCE

Full Year 1 credit Grades 8-9

This course follows the New York State Regents curriculum for Earth Science. Topics include, but are not limited to, measuring the earth, earth motions, energy, seasons, weather, water, energy and climate, erosion and deposition, and geologic history. Laboratory component is required.

Prerequisite: Department recommendation required for all eighth grade students

BIOLOGY HONORS

Full Year 1 credit Grades 9-10

The course focuses on the study of living systems, maintenance in plants and animals, reproduction and development, modern genetics, evolution, and ecology. In addition to the NYS Regents curriculum, this honors-level course provides students with a deeper understanding and study of basic biological principles. Laboratory component required.

BIOLOGY

Full Year 1 credit Grade 10

This course is designed to provide a broad understanding of the basic principles of biology. The course consists of the study of living systems, maintenance in plants and animals, reproduction and development, modern genetics, evolution, and ecology. The Regents syllabus is followed. Laboratory component required.

CHEMISTRY HONORS

Full Year	1 credit	Grades 10-11
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Chemistry is concerned with the nature of matter and its interaction with energy at the atomic and molecular levels. The course includes intense study of chemistry gas laws, matter and energy, atomic and molecular structure, bonding, kinetics, equilibrium, acids and bases, redox and electrochemistry, and organic chemistry. Laboratory component required. In addition to all Regents labs, students are required to complete many supplemental lab experiments.

CHEMISTRY

Full Year	1 credit	Grade 11
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Chemistry is concerned with the nature of matter and its interaction with energy at the atomic and molecular levels. The course includes units on the math of chemistry gas laws, matter and energy, atomic and molecular structure, bonding, kinetics, equilibrium, acids and bases, redox and electrochemistry, and organic chemistry. Laboratory component required.



PHYSICS HONORS

Full Year	1 credit	Grades 11-12
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Physics is concerned with the interaction of matter and energy on vast scales ranging from the subatomic to the astronomical. Topics include mechanics, energy, electricity and magnetism, and wave phenomena. This course covers the same topics as Regents physics in greater depth. In addition, the course requires higher-level math and problem solving skills. This honors level course is recommended for qualified students considering careers in science or engineering fields. Laboratory component required.



PHYSICS

Full Year	1 credit	Grade 12
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Physics involves the study of the workings of the physical world. In this course students will be involved in the hands on, qualitative, and mathematical study of the physical world and how matter and energy interact in that world. The course of study will involve topics in mechanics, waves and sound, electricity and magnetism, light, atomic and nuclear physics. There is a separate lab period for this course.

ANATOMY & PHYSIOLOGY

Full Year	1 credit	Grades 11-12
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This is an introductory level course in human anatomy and physiology. The human digestive, circulatory, respiratory, excretory, musculoskeletal, nervous, reproductive, and endocrine systems will be studied in detail during the first semester. The second semester will be devoted to a practical laboratory examination of the same organ systems. The dissection of a large, mammalian model, such as a cat, will be required. This is a valuable course for those students interested in pursuing further studies in the life sciences.

ADVANCED PLACEMENT (AP) BIOLOGY

Full Year	1 credit	Grade 12
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An extensive overview of key biological topics including molecular, organismal, and population biology. Laboratories follow course content with specific work on osmosis and diffusion, enzymes, respiration, plant and animal physiology, DNA, and population genetics. Students will be prepared for and take the Advanced Placement examination in biology at the end of this course. Laboratory component required.

ADVANCED PLACEMENT (AP) CHEMISTRY

Full Year	1 credit	Grade 12
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The course topics are similar to Regents chemistry, but at a level appropriate to freshman college students including atomic structure, stoichiometry, aqueous solution chemistry, molecular geometry and bonding, kinetics, thermodynamics, equilibria, electrochemistry, and nuclear chemistry. Students will be prepared for and take the Advanced Placement examination in chemistry at the end of this course. Laboratory component required.

ADVANCED PLACEMENT (AP) PHYSICS

Full Year	1 credit	Grade 12
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Topics studied are appropriate to an algebra/trigonometry based college physics course. They include Newtonian Mechanics, thermal physics, electricity, magnetism, waves, optics, atomic physics, and nuclear physics. Students will be prepared to take the Advanced Placement examination in physics-B (trigonometry based physics) at the end of this course. Laboratory component required.

