



Timbersong Academy Course Catalogue

Sciences

Environmental Science: An overview of topics and disciplines needed to understand the environmental issues and challenges of today's world. The course will integrate aspects of biology, earth science, and policy. Specific topics will include preserving biodiversity, nature preserve management, human population growth, energy, pollution, and sustainability.

Biology: A laboratory science course that investigates the relationship between structure and function from molecules to organisms and systems, the interdependence and interactions of biotic and abiotic components of the environment, and mechanisms that maintain continuity and lead to changes in populations over time.

Chemistry: A laboratory science course focused on investigating the composition of matter and the physical and chemical changes it undergoes. Computer-based and traditional laboratory techniques are used to obtain, organize and analyze data. Topics include, but are not limited to: measurement, atomic structure, electron configuration, the periodic table, gas laws, stoichiometry, reactions, kinetics, acids and bases, and nuclear chemistry.

Anatomy and Physiology: Anatomy and Physiology is a laboratory science course that provides of an in-depth study of the different body systems that maintain homeostasis. In this course, students examine each body system from anatomical, physiological, and histological perspectives. Students explore anatomical and physiological concepts through an inquiry-based approach and dissection of preserved specimens.

Physics: Students will study the fundamentals of the physical world of matter, energy, basic mechanics and particle physics. Physics, as the most fundamental of the natural sciences, is quantitative in nature and uses the language of mathematics to describe natural phenomena. Inquiry is applied to the study of matter and energy and their interaction. The topics "uncovered" include conservation of mass and energy, conservation of momentum, waves, and interactions of matter and energy.

English

English 9: English 9 (alternately referred to as English I) is an introduction to high school English. Students read a wide survey of literature and focus on analytical and expressive writing. English 9 works to prepare students for more rigorous reading and writing assignments to ensure success at higher grade levels. The current reading list includes: *Of Mice and Men*, *Daughter of Smoke and Bone*, *The Hunger Games* and *To Kill a Mockingbird*.



English 10: English 10 (alternately referred to as English II) is a course focused on engaging students with reading, writing, speaking and listening, language, and exploring literary genres and elements from key text of the 20th century. Students learn how to carefully read, interpret, and analyze literature and nonfiction works of cultural or historical significance appropriate to grade 10. The current reading list includes: *Into the Wild*, *Death of a Salesman*, *Animal Farm*, and essays by Emerson and Whitman.

English 11: English 11 (alternately referred to as English III) is an exploration of American literary tradition. Students will begin ACT/SAT prep as well as furthering their understanding of MLA format and research/analysis based writing. The current reading list includes: *Black Like Me*, *The Crucible*, *The Minister's Black Veil*, *Divergent*, *The Name of The Wind*, *The Great Gatsby*, *Steelheart*.

English 12: English 12 (alternately referred to as English IV) is an exploration of great literature from around the world including the work of British Authors. English 12 is designed for high school seniors on the verge of entering college. Heavily discussion and writing based, Seniors at Timbersong are expected to be familiar and comfortable with MLA format, and prepared to read and write analytically. The current reading list includes: *The Things They Carried*, *Rita Hayworth and The Shawshank Redemption*, *The Grapes of Wrath*, *The Tempest*, *Beowulf*, *Simple as Snow*.

Social Science

World History: World History is a core curriculum course focusing on the themes of world evolution and culture. Using geography, environmental factors, primary and secondary sources, and critical thinking skills students will trace the key characteristics that have created successful civilizations over time.

US History: United States History is a core curriculum course examining the U.S. from pre-Columbus times to the end of the Cold War. Throughout the course students analyze primary source materials, engage in historical simulations, and evaluate cause and effect.

Civics: Civics is a core curriculum course analyzing the beginnings, current, and future stages of American Government and citizenship. Principles of economics are introduced throughout the course as they are related to government, fiscal responsibility, and financial literacy, students are engaged in class discussions and debates regarding the structure of American government and society, and the importance of good stewardship.

Mathematics

Algebra I: Elaborations on algebraic concepts specifically preparing the student to analyze, set up, and solve real life problems. Topics include polynomials, basic functions, open sentences, radical expressions, quadratics and basic probability.



Geometry: High school geometry is designed as a survey of fundamental concepts as they relate to our understanding of shapes and objects in space and describing them with precise mathematical logic. Concepts to be covered, among others, include: geometric constructions (the process of precisely creating geometric figures with formal rules), geometric transformations informed by the laws of construction, *congruence* and *similarity* in geometric figures, and a survey of elementary concepts of right triangle trigonometry and circles. Throughout the course, we will explore these ideas in the Euclidean plane both abstractly and specifically.

Algebra II: In Algebra II, students are exposed to expansions on the core ideas set forth in Algebra I with alignment to the CCSSM, including integration of spiraled concepts that connect to related standards. The primary areas of focus include: operations and problem solving with complex equations and formulas; translating problem situations between written, graphical, numeric and algebraic forms; algebraic inequalities and linear programming.

Discrete Mathematics: Discrete Mathematics is a capstone math course that is focused on emphasizing applications of mathematics spanning several non-analytic fields. Concept from voting theory, networking theory, consumer finance, data analysis, and statistics are intertwined into a course designed to provide students with a solid foundation of applied mathematical fields with a focus on computation and problem solving.

Pre-Calculus: Preparation for college level Math courses including advanced treatment of functions, graphic models, matrices, and trigonometric concepts.

Calculus: Introduction to limits, theorems, and solutions of differential and integral Calculus.

Electives

Studio Art: In this class students will learn the basics of drawing, painting, collage, and other 2-d media. Working within the framework of the elements of art and principles of design, students will hone their skills and explore their individual creativity. We will look at several artists' works in terms of their historical context and meaning. Through research and play, students will develop their own personal aesthetic and experience the joy of making art.

Music Appreciation: In this class students will explore all genres of music to gain an understanding of both the musical as well as historical significance of each genre. Students will also learn key elements of the creative, production, and business aspects of the music industry through projects and simulations.

World Language: Timbersong Academy utilizes Rosetta Stone's online classroom for all of our world language needs. Rosetta Stone® provides documentation regarding state and national standards to ensure credit transfer.