



Course Descriptions

Timbersong Academy at Bat Cave provides a unique classroom environment, and offers a wide variety of courses offerings and varied instruction for students. Our staff use diverse teaching styles to provide the most effective instruction for our students with different learning styles. The following is a description of each department's courses:

SCIENCE DEPARTMENT

Earth/Environmental Science: This course is designed to be a study of the Earth and Space from their formation to the present. The course content focuses on geology, weather, climate, biogeochemical cycles and space and how life on Earth creates changes in the atmosphere, which in turn, affects conditions for life on Earth. This course will also provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving or preventing them. This class will follow the Next Generation of Science Standards of Space Systems, History of Earth, Earth's Systems, Weather and Climate, and Human Sustainability.

Environmental Science: This course is intended to further explore the designs and patterns of our planet. This course covers such areas as the origin, history, and structure of the earth. It also covers forces that cause change on the earth and features of the earth including the crust, water, atmosphere, weather, and climate. Earth and Environmental Science wraps up with astronomy and a study of all the planets, the solar system, and galaxies. The course strives to teach that each feature of the earth interacts with the others in many critical ways, and the study of these relationships is important to humanity.

Biology: Biology is the study of the living world, including microscopic organisms, fungi, plants, and animals. In this class, we will explore the functions and processes of cells, tissues, organs, and systems within various species of living organisms and the roles and interdependencies of organisms within populations, communities, ecosystems, and the biosphere. Students work with concepts, principles, and theories of the living environment using scientific processes. This class will follow the Next Generation of Science Standards of Matter and Energy in Ecosystems, Interdependent Relationships in Ecosystems, and Inheritance and Variation of Traits.

Chemistry: A laboratory science course focused on investigating the composition of matter and the physical and chemical changes it undergoes. I might also mention that students will be studying the fundamental structure of atoms; the way atoms combine to form compounds, and the interactions between matter and energy.

Physics: This course is an inquiry-based science class in which students will study the foundational concepts and equations of 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 kinematics (motion), dynamics (forces), momentum, energy, electricity and magnetism, waves and the electromagnetic spectrum, and current science news. 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.

AP Environmental Science (instruction: online/labs: hands-on and teacher led): This is a laboratory and field-based course designed to provide students with the content and skills needed to understand the various interrelationships in the natural world, to identify and analyze environmental problems, and to propose and examine solutions to these problems. Since this is an online course the laboratory and field-based activities will be done virtually and via experiments that students can easily perform at home with common materials. The course is intended to be the equivalent of a one-semester college ecology course, which is taught over an entire year in high school. The course encompasses human population dynamics, interrelationships in nature, energy flow, resources, environmental quality, human impact on environmental systems, and environmental law.

ENGLISH DEPARTMENT

English I/II (9th/10th): This course provides students with the opportunity to read a wide survey of literature and focus on analytical and expressive writing. They will also explore culturally diverse texts and rhetorical writing. Students will be encouraged to read outside their cultural comfort zone and be able to write analytically about their literary experience. Students will begin their mastery of MLA format in this course and begin to learn about research based writing. The current reading list includes: *Of Mice and Men*, *Catcher in the Rye*, *Absolutely True Diary of a Part-time Indian*, *The Book Thief*, *Lord of the Flies*, *Romeo & Juliet*, *To Kill a Mockingbird*, a number of poems and a number of short stories.

English III/IV (11th/12th): Throughout this course, students will engage in an extensive study of famous works of literature to understand the ways in which institutional, cultural, economic, and social power structures create human identity and limit individuality. Through this study, students will gain a deeper understanding of both implicit and explicit themes and motifs in Western literature, and work to understand how literature demonstrates the zeitgeist of the time period in which it is created. Furthermore, this course is designed to help students hone their global, economic, and media literacy skills. At a time in their lives where teenagers are working to discover their own identity, they should be able to relate to the individuals in each of the works we will study. The current reading list includes: *The Crucible*, *1984*, *Frankenstein*, *The Jungle*, *And the Mountains Echoed*, *The Picture of Dorian Gray*, a number of essays and short stories. In addition to critically reading a number of novels, students will spend an entire unit fully designated to writing a number of essays and a lengthier research paper. This will further their skill-set and experience in MLA format and higher level writing.

SOCIAL SCIENCE DEPARTMENT

World History: World History is a writing intensive 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 writing intensive core curriculum course following the evolution of human events in American History. Through the use of primary and secondary sources, individualized research, and writing assessments

Civics: Economics and Government: Civics is a writing intensive core curriculum course analyzing the beginnings, current, and future stages of American Government and Citizenship. Students are engaged in class discussions and debates regarding the structure of American government and society, and the importance of good stewardship.

Psychology (elective - online): This course introduces high school students to the study of psychology and helps them master fundamental concepts in research, theory, and human behavior. Students analyze human growth, learning, personality, and behavior from the perspective of major theories within psychology, including the biological, psychosocial, and cognitive perspectives. From a psychological point of view, students investigate the nature of being human as they build a comprehensive understanding of traditional psychological concepts and contemporary perspectives in the field.

MATHEMATICS DEPARTMENT

Pre-Algebra: General overview of basic mathematical concepts including exponents, fractions, decimals, ratios, and percents. Also, an introduction to algebraic concepts including solving for variables in equalities and inequalities, graphing, equations involving integers, and geometry concepts.

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: Introduction to geometric concepts including terminology, proofs, congruent triangles, quadrilaterals, similarity, right triangles, circles, polygons, area, and volume.

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.

Trigonometry/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.

Probability and Statistics: This course was designed to help students master the basic principles of statistics in order to understand variability in data and apply these concepts to understand probability and improve ability in making informed decisions. As students study they develop their skills in analysis and critical thinking as they apply these principles to a variety of real world scenarios.

ELECTIVES

World Languages: Timbersong Academy utilizes Powerspeak (Middlebury Interactive) via the Edgenuity online platform. Courses available are Spanish I to III, French I to III, German I and II, and Chinese I and II.

Painting I: In this class, students will learn the basics of the visual arts form of painting. 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.

Applied Music I: In this course, students will explore different types of music as well as improve their skills in guitar or keyboard through instruction. Participants will have the opportunity to perform at a number of events in the Timbersong student band.

Many other electives are offered via Edgenuity (online):

available courses are listed on pages 3-5 of this document

<http://www.edgenuity.com/course-lists/Edgenuity-North-Carolina-Course-List.pdf>

OTHER COURSES

Every student will earn credit for the following courses:

- **Health**
- **Physical Education**
- **Life Skills I**