



12th Grade Student Profile

ENGLISH

Throughout the year, the student will learn and demonstrate:

LISTENING/SPEAKING

- Listen critically to gain information and supporting evidence
- Understand a spoken message and interpret speaker's messages, purposes, and perspectives
- Use appropriate conventions of oral language to communicate effectively
- Adapt verbal/nonverbal strategies to accommodate listener and occasion

READING

- Understand/analyze and critically evaluate all written texts and visual representations
- Develop extensive vocabulary through reading and systematic word study
- Use reference materials and electronic media to determine precise meanings and usage of words
- Analyze analogies, homonymns, synonymns/antonymns, and connotation/denotation
- Analyze main ideas and supporting details
- Respond to literary works and draw inferences using elements of the text as support
- Analyze literary elements, forms, terms, and text structures
- Recognition/interpretation of poetic elements and the effect of sound on meaning in a poem
- Analyze the possible influences of the historical context on a literary work
- Analyze the characteristics of text, including structure, word choice, and intended audience
- Evaluate the credibility of information sources to determine the writer's motives
- Analysis of nonfiction texts and visual representations to determine the main idea
- Understand and interpret visual representations through an analysis of relationships, ideas, and cultures shown in various media
- Distinguish the purposes of various media forms identifying bias and other persuasive techniques

WRITING

- Selects and uses writing process to compose original text
- Create effective compositions for specific purposes, demonstrating command of writing/grammar/usage/conventions/spelling
- Evaluates their own writing and writing of others for both mechanics and content

VIEWING/REPRESENTING

- Understand and interpret visual messages and media.
- Analyze and critique the significance of media.
- Deconstruct media to get the message's main idea
- Produce visual representation that communicates with others.

MATHEMATICS

In 12th grade your child will be given the opportunity to learn:

DESCRIBE, DEFINE, AND TRANSLATE FUNCTIONS

- Describe parent functions symbolically and graphically, including $y=x^n$, $y=\ln x$, $y=$, $y=e^x$, $y=ax$, etc.
- Determine domain and range of these functions
- Describe symmetry of graphs of odd and even functions
- Recognize and use connections among significant points of a function (roots, maximum points, minimum points)
- Investigate continuity, end behavior, vertical and horizontal asymptotes, and limits and connect these characteristics to a graph of a function

SYMBOLIC REPRESENTATIONS OF FUNCTIONS AND OPERATIONS OF FUNCTIONS

- Apply basic transformations to parent functions
- Perform operations including composition functions, find inverses, and describe the results verbally, numerically, symbolically, and graphically
- Investigate identities graphically and verify them symbolically including logs, trig identities, and exponential properties
- Use logarithmic, exponential, and trigonometric functions to model real life data
- Use properties of functions to analyze and solve problems
- Use Law of Sines, Law of Cosines, and area formulas to solve problems
- Represent patterns using arithmetic and geometric sequences and series and use them to solve problems
- Describe limits of sequences and apply their properties to investigate convergent and divergent series
- Apply sequences and series to solve problems including sums and binomial expansion
- Use conic sections to model motion
- Use conic sections to describe the reflective properties of light and sound
- Convert between parametric and rectangular forms of functions
- Use parametric functions to simulate problems involving motion
- Use vectors to model situations defined by magnitude and direction
- Analyze and solve vector problems generated by real-life situations

SOCIAL STUDIES

In the 12th grade US Government and Economics, your teenager will learn:

HISTORY

- Identify major eras, significance of various dates, individuals, and events in US History
- Understand the emergence of the U.S. as a world power
- Recognizes the significance of national and international decisions and conflicts from World War II and the Cold War to the present on the U.S.

GEOGRAPHY

- Explain the effects of political, economic, and social developments of the US
- Use geographic tools to collect, analyze, and interpret data
- Understand the effects of migration and immigration on American Society
- Analyze population growth and voting patterns of the US

ECONOMICS

- Understand why various sections of the U.S. developed different patterns of economic activity
- Identify the economic forces in US History and how governments have responded
- Understand the significant economic developments between World War I and World War II, specifically the Great Depression and the New Deal programs and their effects on our governments
- Origins, development, and regulation of the free enterprise in the US

GOVERNMENT

- Understand the structure of the US Constitution and other historic documents in our history
- Recognize the foundations and beliefs of our representative government
- Identify major political parties and special interest groups
- Explain the process of electing public officials
- Understand the impact of landmark Supreme Court cases and their decisions
- Describe the similarities of Federal, State, and Local governments

CITIZENSHIP

- Understand the rights and responsibilities of citizens of the US
- Recognize the importance of the expression of different points of view and effective leadership in our representative democracy

CULTURE

- Understands how people from various groups, including racial, ethnic, and religious groups, contribute to life in the US and our national identity
- Identify the major reform and third party movements throughout US History

SCIENCE, TECHNOLOGY, AND SOCIETY

- Describe the impact of major scientific and mathematical discoveries and technological innovations on life in the US

SOCIAL STUDIES SKILLS

- Apply age-appropriate critical-thinking skills, communicate effectively, and use problem-solving and decision-making processes.

SCIENCE

12th grade students will learn:

LAB INVESTIGATION AND SAFETY

- Laboratory investigation and safety training in the use of lab equipment
- Wise choices in the conservation, and disposal or recycling of materials.

SCIENTIFIC INQUIRY

- The scientific method during field and laboratory investigation
- To collect and make measurements with precision
- To organize, analyze, evaluate, make inferences and communicate valid conclusions

CRITICAL THINKING AND PROBLEM SOLVING

- To use critical thinking and scientific problem solving to make informed decisions
- To analyze, review, and critique scientific explanations, including hypotheses and theories as to their strengths and weakness using scientific evidence and information

LAWS GOVERNING MOTION

- Examples of uniform and accelerated motion including linear, projectiles, and circular
- To develop and interpret a free-body diagram for force analyze
- Physical system and recognizes that energy and momentum are conserved
- To interpret evidence for the work - energy theorem and observe examples of kinetic and potential energy
- To calculate the mechanical energy and momentum in a physical system such as billiards, cars, and trains

FORCES IN NATURE

- To identify the influence of mass and distance on gravitational forces
- To describe the historical development of the concepts of gravitational, electrical, and magnetic force

LAWS OF THERMODYNAMICS

- How to analyze and explain everyday examples that illustrate the laws of thermodynamics
- To evaluate different methods of heat energy transfer that results in an increasing amount of disorder

CHARACTERISTICS AND BEHAVIOR OF WAVES

- How to examine and describe a variety of waves propagated in various types of media and describe wave characteristics such as velocity, frequency, amplitude, and behaviors such as reflection, refraction, and interference

QUANTUM PHYSICS

- How to describe the photoelectric effect

- To explain the line spectra from different gas-discharge tubes

NUCLEAR PHYSICS

- To calculate the half-life of radioactive isotopes