

WHAT TO EXPECT IN Eleventh Grade

MATH

Students in 11th grade study ideas discovered by classical mathematicians that address topics of Precalculus. Descartes' study of geometry, particularly the vector model, will inform the development and study of the Real and Complex number systems. Ideas from Ptolemy and Copernicus help us to introduce Trigonometry. Conic sections are discussed using theorems from Apollonius, including tangent functions which open the way to the concept of the derivative. Likewise, as a precursor to the integral, Archimedes' quadrature of the parabola will be investigated. In addition, "binomial expansion theorem and the various summation formulas are discovered for future work on the derivative and integral."

Topics include:

- Composite, Inverse, and Rational functions
- Trigonometric Identities
- Conic Sections
- Vector addition, subtraction, multiplication, and proportionality
- Introduction of the Euler plane
- Permutations, Combinations, and Sequences
- Matrices

SCIENCE

Because God is the creator of the entire universe, nature is governed by physical laws that are consistent, orderly, mathematical, and in accordance with God's wisdom. Chemistry is the study of the elements God used in creation and how they work. Students will learn how elements combine to form mixtures and compounds, what the properties of these substances are, and the chemical processes involved in their function.

Topics include:

- Atoms and Molecules
- Matter, Volume, and Mass
- Metric and US Customary Measurement and Conversion
- Scientific Notation, Isotopes, Density
- The Periodic Table and Laws
- Chemical Bonding
- Molecular Theory and Metallic Bonding
- Chemical Reactions and Stoichiometry
- Kinetic Theory and States of Matter
- Solubility
- Acids and Bases

LANGUAGES

Eleventh grade students will continue their foreign language studies by choosing language electives such as Advanced Latin, Advanced Greek, or Introductory Spanish/French. Each course will immerse students in the grammar, literature, and culture surrounding the language they are studying. This endeavor helps students to see how God has revealed Himself and His truth in various cultures and through various people who may be different from us, but whom are made in the image of God just as we are. Learning classical and modern languages prepares our students to engage with the people around them for the sake of the Gospel.

ENRICHMENT / SPECIALS

- Daily convocation
- Fine Arts offerings include Chorale, Strings, Theater, Art, Photography, and Design Media.
- Health offerings include Health, Physical Education, and Athletics.
- Elective offerings include Mock Trial, Debate, Yearbook, and World Language.
- As part of our Rhetoric Student Life, students will participate in our mentoring program, Rhetoric Seminar, service projects and class trips.



HERITAGE
CLASSICAL ACADEMY

RHETORIC AND WRITING

In 11th grade, HCA students begin to put into practice all they have been learning about rhetoric and composition throughout their education. Students will continue working through the “Writing and Rhetoric” curriculum by studying formal Thesis writing and the winsome communication of well-crafted arguments. We believe this is a worthy endeavor as “the thesis essay and the thesis speech are, with little competition, two of the best ways to train our young people in civil communication and principled critical thinking.” This study in theses writing will also help prepare our students for their year-long Senior Thesis project.

HUMANITIES V

HCA’s Humanities curriculum is a robust, cross-curricular course covering history, literature, and composition that enters our Logic and Rhetoric students into the Great Conversation. Here students listen as the greatest minds in Western history detail and debate the nature of God, man, meaning, and salvation. Spanning from creation to Christ and from Christ to today, students engage firsthand with primary texts, the very texts that have shaped the world in which we live.

By providing a cumulative, chronological narrative of Western civilization, students are filled with a scope that allows for perspective. What is worthwhile? What is true, good, and beautiful? Since Christ is the Author, Sustainer, and Purpose of all things, history is the Christian’s playground. Spanning from creation to Christ and from Christ to today, students engage first hand with primary texts, the very texts that have shaped the world in which we live.

HUMANITIES V: LITERATURE

Our 11th grade Literature course “focuses on great works of theology and literature of the medieval world, beginning with the works of St. Augustine and ending in the Reformation era.” Students will study architecture, music, the dramatic arts, the natural sciences, economics, and mathematics of the Middle Ages in light of the truth of Scripture.

Works include:

- *Plato’s Republic*
 - *The Canterbury Tales*
 - *1 & 2 Corinthians*
 - *The Consolation of Philosophy*
 - *Divine Comedy: Inferno*
 - *Divine Comedy: Paradise*
 - *Divine Comedy: Purgatory*
 - *Fierce Wars and Faithful Loves (The Faerie Queene)*
 - *Summa Theologica*
 - *Martin Luther: Selections from His Writings*
 - *Romeo and Juliet*
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HUMANITIES V: HISTORY

“Our Humanities V curriculum focuses on the impact of Christ’s life, death, resurrection, and ascension throughout the Middle Ages and into the Reformation. How does the church develop and decline? Where do the sacred and secular meet? What does it mean to live out faith in a sin-filled world? Students will dive into these discussions and more as they sift truth from lies, goodness from filth, and beauty from mere appearances.

Works include:

- *The Prince*
- *Two Lives of Charlemagne*
- *William of Malmesbury’s Chronicles of the Kings of England*
- *City of God*
- *The Lives of Thomas Becket*
- *The Praise of Folly*

