

## **Academics**

### **Curriculum**

One of the distinguishing characteristics of the Academy's curriculum is that all students take the same sequence of courses. Each subsequent year of learning is built upon the foundation laid in the prior years. For this reason, the Academy accepts students only at the 6th and 7th grade level.

Because the curriculum is built on the belief that understanding grows from exposure to ideas and concepts developed over time, subjects are taught over a multi-year timeframe. For example, students take biology every year from 6th through 12th grade, gradually progressing in their understanding from simple to more complex concepts in a linear progression. The courses will emphasize theory and will be designed to move from general concepts to concrete ones.

By integrating Art, Literature, and History, the Humanities curriculum enables a deeper understanding of world cultures and their inter-relationships. The study of World History begins with the Ancient World and progresses to Modern Times over the multi-year course of study. In parallel, students study the art and literature of the period which they are studying. For example, while studying Ancient Greece in History, students read classics such as *The Odyssey* and study Hellenistic Art. The multi-year approach applies to the Math and Science curricula as well. In Math, students study algebra and geometry in parallel in each year of school. In Science, students study Biology in each of 6 years, Chemistry and Physics in each of 5 years, and Computer Science in each of 6 years. This approach offers much more depth in each subject than is typical of most public high schools.

In addition to providing instruction in academic subjects, the Academy encourages discussion of broader topics. Thus, the homeroom teacher is responsible for facilitating weekly class discussions of topics related to the students' experience of the Academy. This enables students' concerns about the social environment to surface and be addressed. It also encourages students to develop the ability to listen to others and to articulate their own feelings and opinions.

### **Building and Measuring Success**

A key underpinning of academic success at the Academy is the placement system. Students are assigned to levels (advanced, intermediate, learner) based on their performance on Math and English placement exams. Thus, instruction can match the level of the individual learner proceeding at a slower or faster pace as appropriate. Students who demonstrate an ability to move more quickly or a need for more support may be reassigned during the school year based upon their actual performance.

The international diversity of the faculty nourishes a deep understanding and respect for instructional methods used abroad to give students an advantage in today's global economy. In several subject areas, instruction occurs at two academic levels so that children who require additional support may receive it. In addition, a Learning Center provides tutoring and special services to students who require additional support.

Student progress is monitored using faculty assessment as well as standardized tests (Massachusetts Comprehensive Assessment of Students, Terra Nova, SAT).

\Grade Subject\	6	7	8	9	10	11	12
Mathematics	<u>Pre-Algebra Introduction to Geometry</u>	<u>Algebra Euclidean Geometry</u>	<u>Algebra-2 Euclidean Geometry</u>	Pre-Calculus Euclidean Geometry	Trigonometry, Pre-Calculus, Calculus, 3-D Geometry	Advanced Calculus, 3-D Geometry	Optional Math-Physics-Technology specialization including research projects
Computer Science & Technology	<u>Introduction to algorithms, Word processing, Internet, email</u>	<u>LOGO, Basics of Computer Architecture</u>	<u>Algorithms Robotics &amp; Eng Design</u>	Assembly, Logic Programming, Networks	Systematic learning of algorithms; C++ and Java Computer Languages; Engineering Technologies		
Physics		<u>Intro to Physics</u>	<u>Heat and Energy; Electricity, Magnetism</u>	Mechanics	Molecular physics, thermodynamics, electro-magnetism	Oscillations and Waves; Modern Physics	
Chemistry		<u>General Chemistry 1</u>	<u>General Chemistry 2</u>	<u>General Chemistry 3</u>	<u>Organic Chemistry</u>	<u>Kinetics, Electro-chemistry</u>	Optional Biology-Chemistry specialization on including research projects
Biology	<u>Introduction to Biology</u>	<u>Genetics, Botany</u>	<u>Zoology, Ecology</u>	<u>Evolution of Life</u>	<u>Human Anatomy and Physiology</u>	<u>Advanced Placement Biology</u>	
Earth &	<u>Intro to</u>		<u>Intro to</u>				

<u>Space Science</u>	<u>Earth &amp; Space Science</u>		<u>Earth &amp; Space Science, Geology</u>					
<u>World Geography</u>	<u>World Geography</u> <u>Africa, Asia, Europe</u>	<u>World Geography</u> <u>Oceania, South America</u>	<u>Americas, Australia, Antarctica</u> <u>Geology and Global Environment</u>		<u>World economic &amp; political geography</u>			
<u>World and American History</u>	Systematic study of World history from Pre-historic people and ancient civilizations, through the Middle Ages, to Modern times, with U.S. History included.							
	<u>Ancient civilizations to about 330 B.C.E.</u>	<u>Hellenism and the rise of Rome</u>	<u>World History, 500- 1600</u>	<u>Systematic study of World and U.S. history, 1600-1800</u>	<u>Systematic study of World and U.S. 19th century history</u>	<u>Systematic study of World and U.S. history since 1900</u>	Optional Humanities specialization including research projects	
<u>Foreign Languages</u>	Currently, a choice of <u>French</u> , <u>Spanish</u> , or <u>Latin</u> . Possible future offerings include Portuguese, Russian, Chinese, and Hebrew.							
<u>English Language</u>	Vocabulary, grammar, spelling, punctuation, creative writing, editing, rhetoric.							
	<u>Structure and origins of modern English</u>	<u>Descriptive writing, persuasive essay</u>	<u>Speech writing and delivery; Media Analysis</u>	<u>Creative and expository writing; logical argument and textual evidence</u>	<u>Literature and linguistic analysis, creative writing</u>	<u>Contemporary English, business writing, college applications</u>		
<u>World Literature</u>	World literature written about or written during each historic period encountered in other courses.							

	<u>Literature of ancient civilizations</u> <u>Myths</u> <u>Homer</u> <u>Sophocles</u>	<u>Literature of Greece and Rome</u>	<u>Literature of Middle Ages:</u> <u>Chaucer:</u> <u>the Renaissance</u> <u>expansion</u>	Systematic study of world and U.S. 18th century literature	Systematic study of World and U.S. 19th century Literature	Systematic study of World and U.S. literature since 1900	
<u>Fine Arts &amp; Art History</u>	Study of the fine arts, including music, painting, and pottery. History of World Arts corresponding to each historic period.						
	<u>Art of ancient civilizations</u>	<u>Art of Greece and Rome</u>	<u>Art of Middle Ages</u>	Systematic study of world and U.S. 18th century art	Systematic study of World and U.S. 19th century art	Systematic study of World and U.S. art since 1900	
<u>Health</u>		<u>Health</u>					
<u>P.E.</u>	Various indoor and outdoor sports activities to include team sports (basketball, volleyball, soccer), cross-country skiing, etc.						