

DOWNINGTOWN S.T.E.M. ACADEMY

SCIENCE • TECHNOLOGY • ENGINEERING • MATH

#1 RANKED HIGH SCHOOL IN THE COMMONWEALTH
FOR THE SECOND YEAR IN A ROW
ACCORDING TO PENNSYLVANIA SCHOOL PERFORMANCE PROFILE

AN INTERNATIONAL BACCALAUREATE WORLD SCHOOL



STEM Academy
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[Visit our website!](#)

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Superintendent of Schools

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Headmaster

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Dean of Curriculum & Instruction

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CEEB Code: 391-036

SCHOOL PROFILE 2014 – 2015

“EFFORT CREATES INTELLIGENCE”

DISTRICT MISSION

The mission of the Downingtown Area School District, proud of our tradition of excellence, is to educate all students to meet the challenges of a global society by providing an individually responsive learning environment characterized by outstanding academic and personal achievement in partnership with family, students, and community.

THE COMMUNITY AND DISTRICT HIGH SCHOOLS

Located in Chester County, Pennsylvania, Downingtown Area School District is a suburban residential community with a thriving business district. An abundance of new housing developments has caused a significant increase in school district enrollment. Currently, the District serves nearly 12,000 students and has three high schools: Downingtown High School–East Campus, Downingtown High School–West Campus, and the Downingtown STEM Academy. The East and West high school campuses offer traditional high school programs and curricula. The Academy features a project and inquiry-based learning environment which focuses on science, technology, engineering and mathematics (STEM).

THE STEM ACADEMY

With a current enrollment of 800 students, 200 in each of grades 9, 10, 11, and 12, the STEM Academy opened its doors in 2011. A district magnet school, the Academy is designed to attract academically diverse students with significant interest in the STEM fields. A one-to-one laptop initiative and Apple Distinguished school, the Academy offers an academically challenging program of study that exposes students to a variety of science and technology courses and employs the International Baccalaureate (IB) curriculum. In addition to various learning opportunities in the classroom, the Academy also facilitates STEM related career exploration for all students through its community partnerships.

The Board of School Directors provides oversight of the Academy. An advisory board comprised of area business and industry professionals helps steer Academy initiatives and programs, including internships and other field experiences.

PRE-DIPLOMA/HONORS COURSES

World Literature
American Literature
International Studies
Civics and Government
Algebra I
Geometry
Algebra II
Math Analysis
Universal Physics
Biology
Chemistry
Spanish (IV)
French (IV)
German (IV)

INTERNATIONAL BACCALAUREATE COURSES

English Language A1 (SL/HL)
Modern Language B (SL/HL)
Psychology (SL)
History Route 2 (SL/HL)
Mathematics (SL/HL)
Math Studies (SL)
Visual Arts (SL/HL)
Biology (SL/HL)
Chemistry (SL/HL)
Physics (SL/HL)
Economics (SL)
Design Technology (SL/HL)
Business and Mgmt. (SL)
Music Group Performance (SL)
Music Solo Performance (SL/HL)
Music Creating (SL)
Theory of Knowledge (SL)

CAREER PATHWAYS

Academy of Health, Medicine, and Biology

Academy of Applied Science and Engineering

Academy of Technology, Media, and Communications

Academy of Corporate and Mathematical Innovation

ADMISSIONS CRITERIA

Eighth grade students residing in the Downingtown Area School district are eligible for admission to the Academy provided they have earned a “C” average in all core classes in 6th, 7th, and 8th grades, and submitted the Academy’s application, which includes three essays and a teacher recommendation. All Academy applications are triple blind scored by a team of school district professionals. Each year, approximately 200 students are offered admission out of the 450 that apply.

ACADEMY CURRICULUM

The International Baccalaureate (IB) Diploma Program is a rigorous liberal arts curriculum that prepares 11th and 12th grade students for university study. STEM Academy students largely participate in the full IB Diploma Program, which consists of six IB courses, the Theory of Knowledge course, the Extended Essay, and Creativity, Action, and Service (CAS). STEM Academy students not participating in the full diploma program are typically enrolled in at least five IB courses for which they are eligible to receive an IB certificate. To prepare students for the International Baccalaureate Program, the STEM Academy offers “Pre-Diploma” classes for all 9th and 10th grade students.

Classes are offered in the context of a modified block schedule. STEM Academy students earn approximately 6-7 credits each year. Special opportunities for students include participation in the Academy’s intensive career pathways program, college/university dual enrollment opportunities, and field study experiences.

CAREER PATHWAYS PROGRAM

The STEM Academy provides opportunities for students during the junior and senior years to explore a specific career area of interest through course work, trips, speakers, research and university-based activities. The four career academies, offered by the Academy, largely reflect STEM fields and culminate in an individualized capstone activity, or STEM Practicum. The following Academies are available to students: 1) Academy of Corporate and Mathematical Innovation; 2) Academy of Health, Medicine and Biology 3) Academy of Applied Science and Engineering; 4) Academy of Technology, Media and Communications.

The STEM Practicum is the culmination of students’ work and experiences in their STEM Pathways at the Academy, further developing their critical thinking and practical work skills. The practicum also provides them with the opportunity to make informed decisions regarding their future career choices. The practicum includes a Career Exploration, Independent Research Project or STEM related College Course. The Career Exploration is a 21 hour on-site experience with STEM Academy business partners.



GRADING SYSTEM

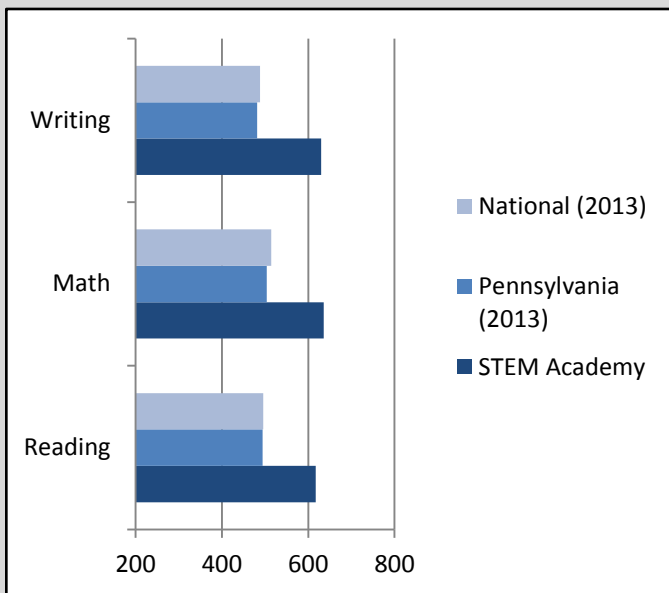
The Downingtown Area School District utilizes a traditional letter grade system. A student's grade point average is calculated on a 4.0 scale. Pre-Diploma, IB, and Career Pathway courses are given additional weight. All Pre-Diploma classes and Standard Level (SL) IB classes earn .5 (Honors) weight, while Higher Level (HL) IB classes earn 1.0 weight. Classes associated with the career pathways program receive .5 weight. In an effort to stress the importance of the International Baccalaureate's focus on assessment through internal and external assessments, students' course grades at the Academy are solely determined by assessments and are not based on activities, homework, or other classroom assignments.

Grade	Standard Course	Honors/Pre-Diploma Course/IB SL Course/Career Pathway Course	IB HL Course
A (90-100%)	4	4.5	5.0
B (80-89%)	3	3.5	4.0
C (70-79%)	2	2.5	3.0
D (60-69%)	1	1.5	2.0
F (30-59%)	0	0	0

THE STEM ACADEMY DOES NOT REPORT CLASS RANK.

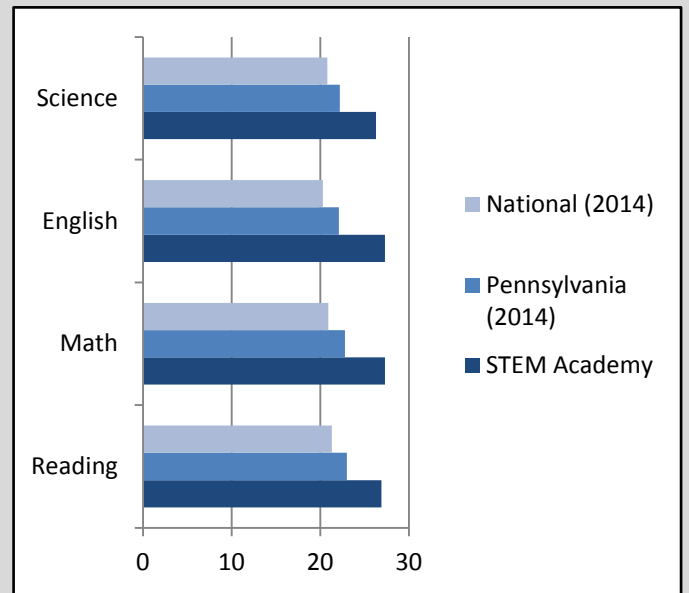
STANDARDIZED TEST SCORES

CLASS OF 2014 SAT SCORES BY SUBJECT



Average based on highest score per section, per student.

CLASS OF 2014 ACT SCORES BY SUBJECT

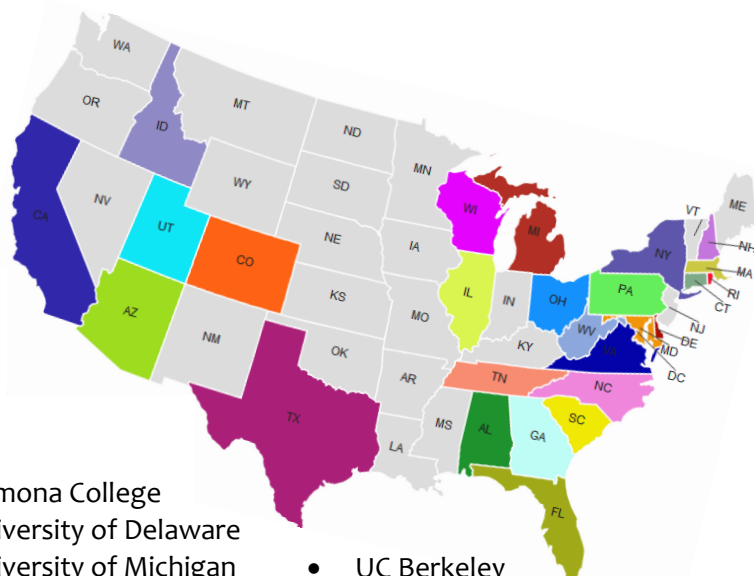


Average based on highest score per section, per student.

COLLEGE PLACEMENT

In 2014, 100% of graduates from the Downingtown STEM Academy chose to continue their education at four-year institutions. This school year, the STEM Academy anticipates that 100% of its graduates will choose to pursue higher education as well.

Last school year, the class of 2014 submitted a total of 1,352 college applications, both here in the U.S. and abroad. Each student submitted an average of 7.7 applications, and the entire class was accepted to a little over 180 colleges across 25 states, including various public, private, and state-related institutions. Some examples of these institutions include:



- University of Pennsylvania
- Brown University
- Cornell University
- Carnegie Mellon University
- Georgia Institute of Technology
- Dartmouth University
- Duke University
- George Washington University
- Villanova University
- Washington University of St. Louis
- Pomona College
- University of Delaware
- University of Michigan
- Boston College
- Wake Forest University
- Case Western University
- Purdue University
- University of Texas
- University of Miami
- UNC Chapel Hill
- UC Berkeley
- Penn State University
- Temple University
- Swarthmore College
- Brigham Young University
- College of William and Mary
- United States Air Force Academy
- United States Naval Academy

NATIONAL MERIT SCHOLARSHIP PROGRAM

2014 National Merit Recognition	
# of National Merit Finalists	# of National Merit Commended Students
9	17

2014 INTERNATIONAL BACCALAUREATE PROGRAM SUMMARY

173 members of the Class of 2014 sat for over 4,000 hours of exams in May 2014, after successfully completing two years of IB coursework. As a whole, the class completed 1,332 exams and 70% of diploma candidates successfully received the prestigious International Baccalaureate Diploma – an honor shared with only 135,000 other students in the world, across 141 countries. Furthermore, 78% of the subject area tests received a score of 4 or better. This is higher than the international average.

145 students completed the Extended Essay – an independent, self-directed piece of research, culminating in a 4,000-word paper submitted to content area experts across the world for review. These students also completed over 26,000 hours of Creativity, Action, and Service (CAS) hours, an IB Diploma Program requirement that stresses the importance of life outside the world of scholarship, providing a refreshing counterbalance to academic studies.