

DOWNINGTOWN STEM ACADEMY

SCIENCE • TECHNOLOGY • ENGINEERING • MATH

AN INTERNATIONAL BACCALAUREATE WORLD SCHOOL

"#2 BEST HIGH SCHOOL"
U.S. NEWS AND WORLD REPORT BEST HIGH SCHOOLS

"TOP 100 HIGH SCHOOLS IN THE COUNTRY"
NEWSWEEK



STEM ACADEMY

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<https://www.dasds.org/STEM>

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SCHOOL PROFILE 2021 – 2022

"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

The growth of the district's population in the preceding fifteen years forced the School Board to seek out solutions to the overcrowding problem at the two already existing high schools. Considering fiscal responsibility and a national call to increase academic rigor, the School Board voted to renovate the vacant, original Downingtown Junior-Senior High School (circa 1932) in lieu of constructing a third high school.

In 2009, the Downingtown Area Board of Education approved the creation of an innovative magnet school option for 800 Downingtown Area School District students. This school is now known as the Downingtown STEM Academy. The Academy opened its doors in August 2011 and conferred its first class in 2014. The school went through a major renovation in 2020 that will allow for the addition of 200 more students by 2023.

The Academy is an IB World School offering all 889 students the opportunity to earn an IB Diploma. The curriculum offers Science, Technology, Engineering and Mathematics Pathways. Students are engaged in rigorous, challenging academic work that requires a mindset of growth and effort. 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
U.S. History and the World
(traditional and blended options)
Civics and Government
Geometry
(traditional and blended options)
Algebra I
Algebra II
Math Analysis
Advanced Topics in Math
Universal Physics
Biology
Chemistry
(traditional and blended options)
Spanish
French
German

INTERNATIONAL BACCALAUREATE COURSES

English Language A1 (SL/HL)
Modern Language B (SL/HL)
Psychology (SL/HL)
History (SL/HL)
Math Apps. & Interp. (SL/HL)
Math Anlys. & Approaches (SL/HL)
Visual Arts (SL/HL)
Biology (SL/HL)
Chemistry (SL/HL)
Physics (SL/HL)
Environmental Sys. & Soc. (SL)
Sports & Exercise Sci. (SL/HL)
Economics (SL/HL)
Global Politics (SL/HL)
Geography (SL/HL)
Design Technology (SL/HL)
Business & Mgmt. (SL/HL)
Music (SL)
Music Creating (HL)
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 Innovation
and Information Science

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 (DP) is an accredited, rigorous liberal arts curriculum that prepares 11th and 12th grade students for university study. STEM offers 36 IB courses spanning the entire educational core including the arts and music. 90% of all Academy students participate in the IB Diploma Program consisting of six IB courses, Theory of Knowledge (TOK), Extended Essay (EE), and Creativity, Action, and Service (CAS). Students who opt not to participate in the full diploma program are mandated to enroll in at least five IB courses of which they are eligible to receive an IB certificate. To prepare all students for the IB core educational program in the junior and senior years, the Academy offers honors level (pre-diploma) courses for all 9th and 10th graders.

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. Specialty elective courses include Computer Programming, Communications Technology, Engineering, and Recording Studio, as well as performing and studio arts courses such as Concert Choir, Symphony & Chamber Orchestra, and Concert & Marching Band, and Art in the 21st Century.

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 Innovation and Information Science; 2) Academy of Health, Medicine and Biology; 3) Academy of Applied Science and Engineering; 4) Academy of Technology, Media and Communications. Individual pathway courses encompass the following subject areas:

- | | | |
|---------------------|-------------------------------|-----------------------|
| • Health & Medicine | • STEM Inc. | • Information Systems |
| • Biotechnology | • iMedia/Visual Media | • Design Engineering |
| • Global Marketing | • Filmmaking & Broadcast Tech | • Robotics |
| • Finance | • Web & Interactive Design | • Forensics |

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 STEM Practicum is a 21-hour on-site experience with STEM Academy business partners, such as Comcast, Lockheed Martin, Bentley Systems, Sikorsky Aircraft Corporation, and West Pharmaceutical Services to name a few.

GRADING SYSTEM

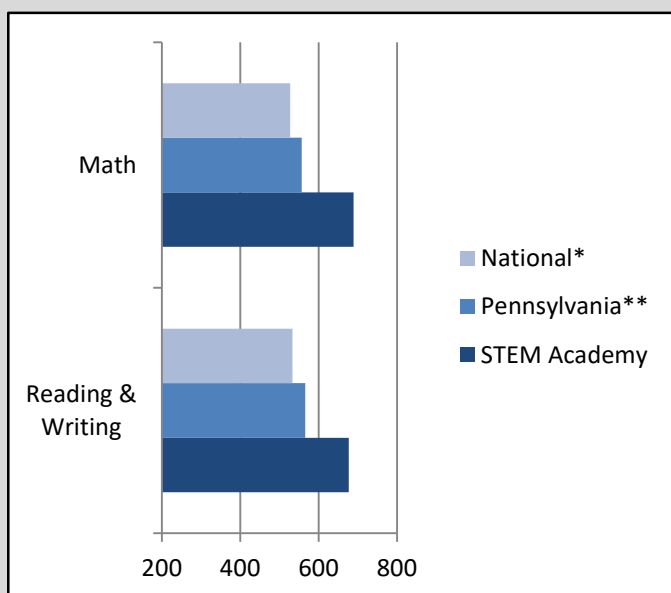
The Downingtown Area School District utilizes a traditional letter grade system. A student's grade point average is calculated on a 4.0 scale. Pre-Diploma, IB, and Career Pathway courses are given additional weight. All Pre-Diploma classes and Standard Level (SL) IB classes earn .5 (Honors) weight, while 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 2021 SAT SCORES BY SUBJECT

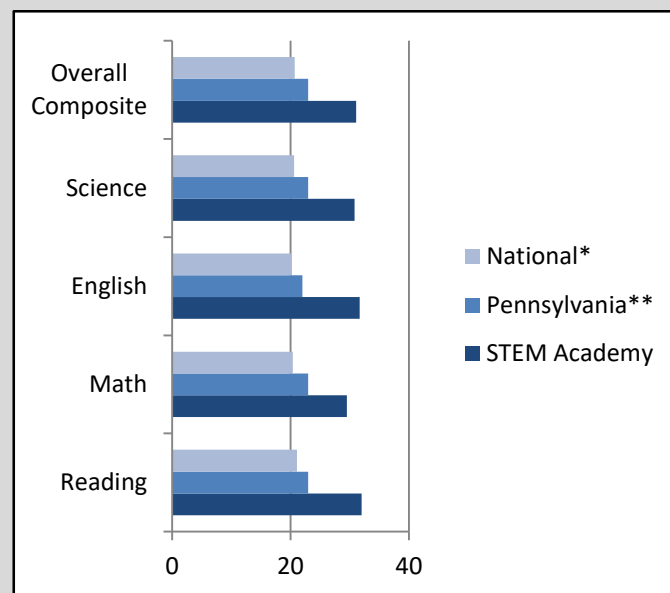


Average based on highest score per section, per student.

** Based on 2021 SAT Suite Annual Report*

***Based on 2021 SAT Suite Annual Report Pennsylvania*

CLASS OF 2021 ACT SCORES BY SUBJECT



Average based on highest score per section, per student.

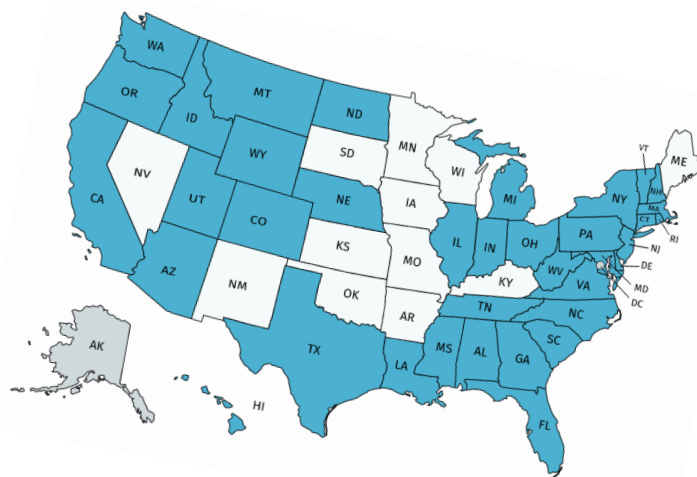
** National Norms for ACT Test Scores (2020-2021)*

*** Condition of College and Career Readiness 2019*

COLLEGE PLACEMENT

In 2021, 98% of graduates from the Downingtown STEM Academy chose to continue their education at two and four-year institutions. This school year, the STEM Academy anticipates that 100% of its graduates will choose to pursue higher education.

Last school year, the class of 2021 submitted a total of 1,956 college applications, both here in the U.S. and abroad. Each student submitted an average of 11 applications, and the entire class was accepted to 495 colleges across our country and beyond, including various public, private, and state-related institutions. Below is a list of some institutions our students have attended since 2014:



- University of Pennsylvania
- Stanford University
- Brown University
- Cornell University
- Carnegie Mellon University
- Georgia Institute of Technology
- Dartmouth University
- Duke University
- George Washington University
- Villanova University
- Washington Univ. of St. Louis
- Massachusetts Inst. of Tech.
- Swarthmore College
- Pomona College
- Stanford University
- University of Michigan
- Boston College
- Wake Forest University
- Case Western University
- Purdue University
- University of Texas
- University of Miami
- UNC Chapel Hill
- University of Chicago
- Davidson College
- UC Berkeley
- Penn State University
- University of Pittsburgh
- Temple University
- College of William and Mary
- United States Air Force Academy
- United States Naval Academy
- American University of Paris (FR)
- University of Toronto (CAN)
- University of Queensland (AUS)
- University of Winchester (ENG)

NATIONAL MERIT SCHOLARSHIP PROGRAM

2021 National Merit Recognition	
National Merit Finalists	13
National Merit Commended Students	22

2021 INTERNATIONAL BACCALAUREATE PROGRAM SUMMARY

182 members of the Class of 2021 successfully completed all the assessment components required by the International Baccalaureate Diploma Program. As a whole, the class completed over 1,200 IB diploma courses and 87.8% of diploma candidates successfully received the prestigious International Baccalaureate Diploma – an honor shared with only 95,000 other students in the world, across 141 countries. Furthermore, 100% of students received at least one overall score of 4 in a subject area; an achievement more impressive in light of the COVID-19 pandemic and our transition to remote learning.

156 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 28,000 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.