



Pathways in Technology Early College High School

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Maryland Pathways in Technology Early College High (P-TECH) Schools Overview

Pathways in Technology Early College High (P-TECH) Schools were developed by IBM to create clear pathways from high school to college and careers for students. In six years or less, students graduate with a high school diploma and a no-cost, two-year Associate of Applied Science (AAS) Degree. Each P-TECH program requires a partnership among a local education agency (LEA), local institution(s) of higher education (IHE), and local employer(s). P-TECH LEA staff collaborate with the Maryland State Department of Education (MSDE), industry partners, and a local institution of higher education to implement an academically rigorous and economically relevant curriculum aligned to workforce needs. The program includes one-on-one mentoring, workplace visits, skills instruction, paid summer internships, and first-in-line consideration for job openings with the school's partnering company.

Currently, P-TECH is implemented in nine high schools in the following LEAs and Baltimore City: Allegany, Baltimore, Harford, Montgomery, and Prince George's. With continued support from Governor Moore and the General Assembly, Maryland is building a strong statewide network of P-TECH stakeholders working together to prepare Maryland students for high-wage, in-demand career opportunities. Table 1 identifies the LEA, institution of higher education, school, career pathway, and industry partner for each P-TECH school.

TABLE 1: P-TECH LOCAL EDUCATION AGENCIES, COMMUNITY COLLEGES, CAREER PATHWAYS, AND INDUSTRY PARTNERS

LEA/ Institution of Higher Education	School	Career Pathway	Industry Partner
Allegany County Public Schools/Allegany College of Maryland	Center for Career and Technical Education (Students attend the Center for CTE during 11 th and 12 th grades. Home high schools are: Allegany High School, Bishop Walsh High School, Fort Hill High School or Mountain Ridge High School)	<ul style="list-style-type: none"> • Information Technology • Cybersecurity 	<ul style="list-style-type: none"> • Allegany College of Maryland • Allegany County IT Department • Allegany County Public Defender’s Office • Allegany County Public Schools • Maryland Business Roundtable • University of Maryland Extension • University of Pittsburg Medical Center Western Maryland (formerly Western MD Health Systems) • Willets Systems, Inc.
Baltimore City Public Schools/Baltimore City Community College	Carver Vocational-Technical High School	<ul style="list-style-type: none"> • Cybersecurity Assurance • Computer Information Systems 	<ul style="list-style-type: none"> • IBM
	Digital Harbor High School (program formerly offered at New Era Academy)	<ul style="list-style-type: none"> • Supply Chain Management 	<ul style="list-style-type: none"> • Baltimore Port Alliance
	Paul Laurence Dunbar High School	<ul style="list-style-type: none"> • Nursing • Respiratory Care • Physical Therapy Assistant • Health Information Technology • Surgical Technology • General Science 	<ul style="list-style-type: none"> • Johns Hopkins Hospital • University of Maryland, Baltimore

LEA/ Institution of Higher Education	School	Career Pathway	Industry Partner
Baltimore County Public Schools/Community College of Baltimore County	Dundalk High School	<ul style="list-style-type: none"> • Engineering Technology 	<ul style="list-style-type: none"> • Whiting-Turner Contracting • KCI Technologies • Stanley Black and Decker • Johnson Controls
	Owings Mills High School	<ul style="list-style-type: none"> • Design, Fabrication, and Advanced Manufacturing 	<ul style="list-style-type: none"> • Becton Dickinson • Direct Dimensions • McCormick & Company • North American Millwright • Potomac Photonics • Strategic Factory
Harford County Public Schools/Harford Community College	Joppatowne High School	<ul style="list-style-type: none"> • Computer Information Systems • Cybersecurity 	<ul style="list-style-type: none"> • U.S. Army Communications-Electronics Command (CECOM) at Aberdeen Proving Ground
Montgomery County Public Schools/Montgomery College	Clarksburg High School	<ul style="list-style-type: none"> • Network and Information Technology 	<ul style="list-style-type: none"> • Daly Computers, Inc. • Information Technology Foundation
Prince George’s County Public Schools/Prince George’s Community College	Frederick Douglass High School	<ul style="list-style-type: none"> • Health Information Management • Hospitality Services Management 	<ul style="list-style-type: none"> • Employ Prince George’s • Luminis • Marriott • MedStar • MGM National Harbor • Prince George’s County Youth/Summer Youth Employment Program • Smart1 Management Solutions • Six Flags

P-TECH Enrollment, Attrition, and Completion Data

MSDE is required to report annually to the Governor and General Assembly on P-TECH implementation as defined in the P-TECH Act of 2017. This report contains data on the progress and outcomes of the P-TECH programs in Maryland.

P-TECH ENROLLMENT

Table 2 identifies the LEA, school, and enrollment for the 2023-2024 school year. LEAs submit P-TECH enrollment data to the MSDE P-TECH Fall Enrollment Validation File each year, which is used to verify the annual funding amount of \$750 per enrolled student for each P-TECH school.

IHEs submit student enrollment by course as a part of the annual funding request to MSDE. This is because the amount of P-TECH Supplemental College Funds awarded to IHEs is determined by the number of courses in which students enroll and not the total number of P-TECH students enrolled in college. P-TECH students take multiple postsecondary courses each year. An aggregate enrollment count of P-TECH students in IHEs would not be sufficient to determine the amount of funds required to cover per credit tuition costs and fees. As a result, total IHE enrollment is not included in this report. MSDE is currently developing data collection processes that will allow for aggregate collection of unduplicated postsecondary student count for the next reporting cycle.

TABLE 2: P-TECH ENROLLMENT FOR THE 2023-2024 SCHOOL YEAR

Local Education Agency	School	2023-2024 Enrollment		
		Grade or Year	Enrollment by Grade	Total Enrollment
Allegany County	Center for Career and Technical Education	Grade 9	17	70
		Grade 10	12	
		Grade 11	17	
		Grade 12	12	
		Year 5	10	
		Year 6	*	
Baltimore City	Carver Vocational-Technical High School	Grade 9	51	138
		Grade 10	24	
		Grade 11	16	
		Grade 12	16	
		Year 5	31	

Local Education Agency	School	2023-2024 Enrollment		
		Grade or Year	Enrollment by Grade	Total Enrollment
	Digital Harbor High School (program formerly offered at New Era Academy)	Year 6	*	63
		Grade 9	24	
		Grade 10	*	
		Grade 11	10	
		Grade 12	*	
		Year 5	14	
		Year 6	*	
	Paul Laurence Dunbar High School	Grade 9	62	197
		Grade 10	41	
		Grade 11	28	
		Grade 12	27	
		Year 5	39	
		Year 6	*	
Baltimore County	Dundalk High School	Grade 9	58	180
		Grade 10	46	
		Grade 11	30	
		Grade 12	21	
		Year 5	14	
		Year 6	11	
	Owings Mills High School	Grade 9	30	112
		Grade 10	16	

Local Education Agency	School	2023-2024 Enrollment		
		Grade or Year	Enrollment by Grade	Total Enrollment
		Grade 11	33	
		Grade 12	33	
Harford County	Joppatowne High Schools	Grade 9	33	113
		Grade 10	33	
		Grade 11	30	
		Grade 12	17	
Montgomery County	Clarksburg High School	Grade 9	62	182
		Grade 10	50	
		Grade 11	29	
		Grade 12	41	
Prince George's County	Frederick Douglass High School	Grade 9	60	211
		Grade 10	53	
		Grade 11	57	
		Grade 12	41	
Total Statewide Enrollment				1266

* Data are suppressed with an asterisk (*) when the number of students in the group is less than 10.

P-TECH ATTRITION

ED § 7-1806(a) require MSDE to report the rate of attrition from each P-TECH school by grade and cohort. The attrition rates below describe the number of students that exit P-TECH pathways prior to earning their associate degree. Table 3 identifies Fall 2023 P-TECH attrition rates by grade.

TABLE 3: P-TECH ATTRITION FOR FALL 2023

P-TECH Reporting Requirements	Allegany County Public Schools	Baltimore City Public Schools			Baltimore County Public Schools		Harford County Public Schools	Montgomery County Public Schools	Prince George's County Public Schools
	Center for Career and Technical Education	Carver	Dunbar	Digital Harbor ¹	Dundalk	Owings Mills	Joppatowne	Clarksburg	Frederick Douglass
Total Number of Students Enrolled in each P-TECH School	70	138	197	63	180	112	113	182	211
Grade 9 Attrition Rate	+9%	56%	42%	+33%	12%	50%	11%	24%	9%
Grade 10 Attrition Rate	29%	52%	32%	29%	29%	+18%	+7%	41%	10%
Grade 11 Attrition Rate	14%	0%	0%	25%	43%	+22%	32%	12%	2%

¹Program formally offered at New Era Academy.

P-TECH COMPLETION DATA

ED § 7-1806(a) require MSDE to report the total number of students who have graduated from the program and the percentage of completion rates. Table 4 identifies P-TECH completion data for the 2022-2023 school year. Graduation data is not reported for Owings Mills High School in Baltimore County and Joppatowne High School in Harford County because there were no seniors enrolled in the 2022-2023 school year. As a result, only enrollment data are reported for the 2022-2023 school year for those schools with graduating seniors.

TABLE 4: P-TECH COMPLETION DATA FOR THE 2022-2023 SCHOOL YEAR

P-TECH Reporting Requirements	Allegany County Public Schools	Baltimore City Public Schools			Baltimore County Public Schools		Harford County Public Schools	Montgomery County Public Schools	Prince George's County Public Schools
	Center for Career and Technical Education	Carver	Dunbar	New Era Academy ¹	Dundalk	Owings Mills	Joppatowne	Clarksburg	Frederick Douglass
Total Number of Students Enrolled in each P-TECH School at end of school year	81	149	212	44	122	89	95	195	201
High School 4-year Graduation Rate: <i>Diploma Only</i>	81	113	207	38	122	89	95	185	194
Number of P-TECH students on track for P-TECH completion (associate's degree and high school diploma) in 4 years	17	11	16	*	*	46	41	185	194
Number of P-TECH students on track for a P-TECH completion in 5 years	38	24	28	*	51	28	21	*	*
Number of P-TECH students on track for P-TECH completion in 6 years	21	58	34	18	69	15	33	*	*
Number of P-TECH student internship placements	27	11	*	*	19	*	*	19	38
Number of P-TECH students in each P-TECH school who receive paid internships	27	*	*	*	19	*	*	15	35
Number of Post-graduates Employed	10	*	14	*	*	N/A ³	N/A ³	*	*
Number of Post-graduates Employed by Industry Partner	*	*	*	*	*	N/A ³	N/A ³	*	*

	Allegany County Public Schools	Baltimore City Public Schools			Baltimore County Public Schools		Harford County Public Schools	Montgomery County Public Schools	Prince George's County Public Schools
		Carver	Dunbar	New Era Academy ¹	Dundalk	Owings Mills			
P-TECH Reporting Requirements	Center for Career and Technical Education								
Number of Post-graduates enrolled in 4-year institution of higher education	*	*	*	*	*	N/A ³	N/A ³	*	37

¹Program transferred to Digital Harbor High School beginning in school year 2023-2024.

²Students continued to years 5 and 6, therefore, there were no graduates for this P-TECH site during the 2022-2023 school year.

³No grade 12 students enrolled during the 2022-2023 school year.

Data are suppressed with an asterisk () when the number of students in the group is less than 10.

P-TECH Performance and Support Services

PERFORMANCE ON FEDERAL AND STATE ASSESSMENTS

ED § 7-1806(a) require MSDE to report student performance on federal and state assessments. The Every Student Succeeds Act (ESSA) requires that states administer annual statewide assessments to all students in English Language Arts/Literacy and Mathematics in grades 3-8 and once in high school, as well as in science once in each grade span (3-5, 6-8 and high school), and annual English language proficiency assessments in grades K-12 for all English learners. In addition to these federally mandated assessments, Maryland State law (Md. Ed. Art §7-203) requires a social studies assessment once in the middle school grade band (which will be administered in Grade 8) and the High School Assessment in American Government.

Maryland administers all required state assessments as part of the Maryland Comprehensive Assessment Program (MCAP). Table 5 identifies how P-TECH students performed on federal and state assessments for the 2021-2022 academic year. Table 6 identifies the number of students at each P-TECH school who have an IEP plan, 504 plan or are English language learners for the 2022-2023 academic year.

TABLE 5: STUDENT PERFORMANCE ON FEDERAL AND STATE ASSESSMENTS FOR THE 2021-2022 SCHOOL YEAR

P-TECH Reporting Requirements	Allegany County Public Schools	Baltimore City Public Schools			Baltimore County Public Schools		Harford County Public Schools	Montgomery County Public Schools	Prince George's County Public Schools
	Center for Career and Technical Education	Carver	Dunbar	New Era Academy ¹	Dundalk	Owings Mills	Joppatowne	Clarksburg	Frederick Douglass
Number of students who took <u>English Language Arts</u> Assessment	24	58	92	12	85	55	56	105	97
How P-TECH students performed on federal and state assessments (Percent Proficient)- <u>English Language Arts</u>	58%	12%	36%	8%	24%	15%	61%	81%	78%
Number of students who took <u>Mathematics</u> Assessment	44	*	*	*	*	*	*	71	100
How P-TECH students performed on federal and state assessments (Percent Proficient)- <u>Mathematics</u>	23%	≤5%	≤5%	≤5%	≤5%	≤5%	≤5%	14%	12%
Number of students who took <u>High School Life Science</u> Assessment	29	*	61	*	74	33	33	67	101
How P-TECH students	17%	≤5%	7%	≤5%	14%	12%	45%	36%	17%

P-TECH Reporting Requirements	Allegany County Public Schools	Baltimore City Public Schools			Baltimore County Public Schools		Harford County Public Schools	Montgomery County Public Schools	Prince George's County Public Schools
	Center for Career and Technical Education	Carver	Dunbar	New Era Academy ¹	Dundalk	Owings Mills	Joppatowne	Clarksburg	Frederick Douglass
performed on federal and state assessments (Percent Proficient)- <u>High School Life Science</u>									
Number of students who took <u>(American Government)</u> Assessment	21	23	24	*	38	31	32	*	*
How P-TECH students performed on federal and state assessments (Percent Proficient)- <u>American Government</u>	86%	26%	67%	*	37%	58%	91%	≥95%	≥95%

¹Program transferred to Digital Harbor High School beginning in school year 2023-2024.

* Data are suppressed when the number of students tested is less than 10 and/or proficiency levels are less than or equal to 5% or greater than or equal to 95%.

TABLE 6: NUMBER OF STUDENTS AT EACH P-TECH SCHOOL WHO HAVE AN IEP PLAN, 504 PLAN OR ARE ENGLISH LANGAUGE LEARNERS FOR THE 2022-2023 SCHOOL YEAR

P-TECH Reporting Requirements	Allegany County Public Schools	Baltimore City Public Schools			Baltimore County Public Schools		Harford County Public Schools	Montgomery County Public Schools	Prince George's County Public Schools
	Center for Career and Technical Education	Carver	Dunbar	New Era Academy ¹	Dundalk	Owings Mills	Joppatowne	Clarksburg	Frederick Douglass
Total Number of Students Enrolled in each P-TECH School	80	151	209	41	167	87	90	187	202
Number of P-TECH students who have an IEP Plan	*	33	*	10	12	11	*	*	*
Number of P-TECH students who have a 504 Plan	*	*	13	*	*	*	*	11	*
Number of P-TECH students who are English Language Learners	*	*	*	*	11	*	*	*	*
Percentage of P-TECH students who meet the Free and Reduced Meal Plan Income criteria	54%	77%	72%	68%	59%	64%	50%	29%	31%

¹Program transferred to Digital Harbor High School beginning in school year 2023-2024.

*Data are suppressed when the number of students in the group is less than 10 and/or the group percentage is less than or equal to 5% or greater than or equal to 95%.

P-TECH Funding

ED § 7-1806(a) require MSDE to report the total amount of funds distributed to each P-TECH school, an accounting of each P-TECH school's expenditures, whether all funds distributed were spent, and the base and supplemental costs of operating a P-TECH school. P-TECH supplemental school grants are provided annually from MSDE to LEAs with P-TECH programs. LEAs are awarded \$750 per student based on data submitted in the October P-TECH Fall Validation Enrollment File. LEAs must match 100% of supplemental school grant funds. MSDE awards P-TECH supplemental college grants to IHEs. The supplemental college grant equals tuition and mandatory fees for courses enrolled by P-TECH students, who often enroll in multiple college courses.

- Table 7 identifies the P-TECH supplemental school grants disbursed and the percentage of funds spent during the 2022-2023 academic year.
- Table 8 identifies the P-TECH supplemental college grants disbursed and the percentage of funds spent during the 2022-2023 academic year.

- Table 9 identifies the total costs per student including locally matched funds for the 2022-2023 academic year.

TABLE 7: SCHOOL YEAR 2022-2023 P-TECH SUPPLEMENTAL SCHOOL GRANTS

Local Education Agency	School	FY 2023 Student Enrollment	Supplemental School Grant Amount	Expenditures	Total Percentage of Funds Spent
Allegany County Public Schools	Center for Career and Technical Education	80	\$60,000	\$52,753.42	88%
Baltimore City Public School System	Carver Vocational-Technical High School	151	\$113,250	\$83,334	74%
	New Era Academy ¹	41	\$30,750	\$11,413	37%
	Paul Laurence Dunbar High School	209	\$156,750	\$132,747	85%
Baltimore County Public Schools	Dundalk High School	167	\$125,250	\$109,220.74	87%
	Owings Mills High School	87	\$65,250	\$57,631.82	88%
Harford County Public Schools	Joppatowne High School	90	\$71,250	\$67,500	100%
Montgomery County Public Schools	Clarksburg High School	187	\$140,250	\$140,250	100%
Prince George’s County Public Schools	Frederick Douglass High School	202	\$151,500	\$86,524.50	57%
Total		1,214	\$914,250	\$741,374.48	81%

¹Program transferred to Digital Harbor High School beginning in school year 2023-2024.

TABLE 8: SCHOOL YEAR 2022-2023 P-TECH SUPPLEMENTAL COLLEGE GRANTS

Institution of Higher Education	Supplemental College Grant Amount	Expenditures	Total Percentage of Funds Spent
Allegany College of Maryland	\$52,658	\$52,658	100%
Baltimore City Community College	\$179,244	\$179,244	100%
Community College of Baltimore County	\$83,999	\$82,128	98%
Harford Community College	\$31,385	\$31,385	100%

Institution of Higher Education	Supplemental College Grant Amount	Expenditures	Total Percentage of Funds Spent
Montgomery College	\$90,207.25	\$89,276.55	99%
Prince George's Community College	\$207,525.50	\$166,114.38	80%
Total	\$645,018.75	\$600,805.43	93%

TABLE 9: SCHOOL YEAR 2022-2023 P-TECH BASE COSTS PER STUDENT

Local Education Agency	FY 2023 Student Enrollment	Supplemental School Grants	LEA Local Funding Match	Supplemental College Grants	Total Cost Per Student (includes local and state funds)
Allegany County Public Schools	80	\$60,000	\$60,000	\$52,658	\$2,158.23
Baltimore City Public School System	401	\$300,750	\$300,750	\$179,244	\$1,946.99
Baltimore County Public Schools	254	\$190,500	\$190,500	\$83,999	\$1,830.70
Harford County Public Schools	90	\$67,500	\$67,500	\$31,385	\$1,848.72
Montgomery County Public Schools	187	\$140,250	\$140,250	\$90,207.25	\$1,982.39
Prince George's County Public Schools	202	\$151,500	\$151,500	\$207,526	\$2,527.36
Total	1214	\$910,500	\$910,500	\$645,019.25	\$2,031.32