Arlington Public Schools

Career & Technical Education

BRIEFING REPORT

NOVEMBER 2020

CAREER & TECHNICAL EDUCATION

The Career and Technical Education (CTE) program in Arlington Public Schools provides students a variety of career pathways which allows them to explore career opportunities while in middle and high school. Our high-quality CTE program provides access and equity for all students. Our industry knowledgeable staff supports student learning through competency-based skills attainment, utilization of industry aligned, state-of-the art equipment (tools & software), and cultivation of partnerships to allow students to build an industry network and secure work-based learning opportunities. Students validate their skills with state-approved industry credentials that evaluate their technical and academic readiness to work within the career pathway that aligns with their career and educational goals.

Career and Technical Education (CTE) is fully aligned with the Profile of a Virginia Graduate as CTE integrates academic and technical skills with workplace skills and career exploration through work-based learning experiences. CTE equips students with portable skills necessary as they transition from academic life to becoming career and community-minded members of society. CTE prepares our future workforce by leveraging their academic and technical skills in the context of hands-on, project-based application.

During the 2019-2020 school year, 54% of middle school students were enrolled in Career and Technical Education (CTE) courses. During the same time period, 40% of comprehensive high school students took a CTE course at their home school while the Career Center served 19% of the high school population. This equated to 59% of all high school students having taken at least one CTE course during the 2019-2020 school year. APS offers CTE classes in the following program areas as identified by the Virginia Department of Education.

CTE PROGRAM AREA OPTIONS IN APS

APS MIDDLE SCHOOLS

- Business and Information Technology (including Computer Science)
- Family and Consumer Science
- Technology Education (including Robotics)

APS COMPREHENSIVE HIGH SCHOOLS

- Business and Information Technology (including Computer Science)
- Family and Consumer Science (including Gourmet Foods/Intro. to Culinary Arts)
- Marketing (including Entrepreneurship & Sports Marketing)
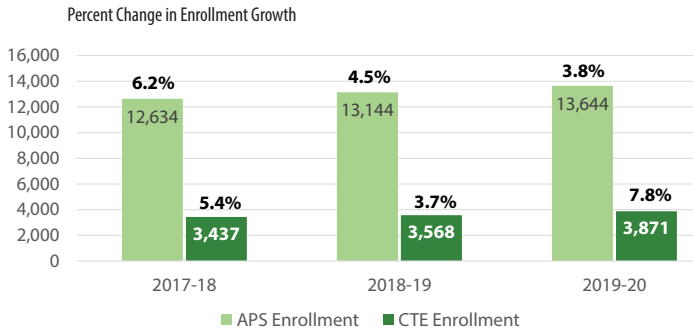- Technology Education

ARLINGTON CAREER CENTER
(program areas and courses are available for all high school students across the district)
- Agriculture Education
- Business and Information Technology (includes Computer Science & Cybersecurity)
- Family & Consumer Science (includes Culinary, Early Childhood & Teachers for Tomorrow)
- Health and Medical Sciences
- Marketing
- Military Science
- Technology Education
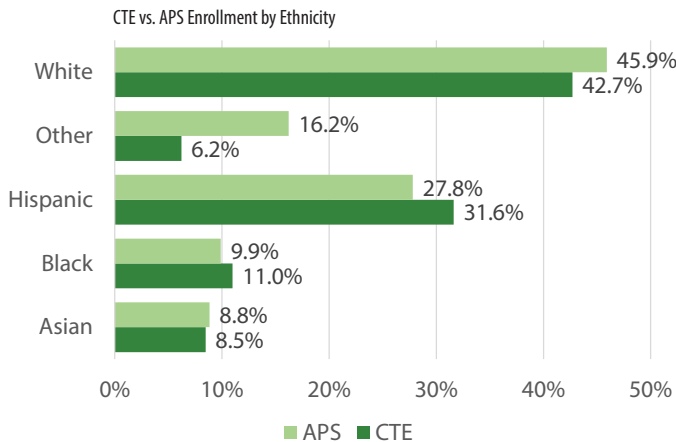- Trades & Industry

DATA THAT PROVIDES INSIGHT

CTE GROWTH TRENDS

In the 2019-20 school year, enrollment in CTE courses outpaced the increase in enrollment of secondary schools within APS. This may be attributed to our continued focus on providing a quality program, increasing course options that align with local industry (particularly in the areas of computer science and cybersecurity), and a renewed interest, nationally, in Career and Technical Education.
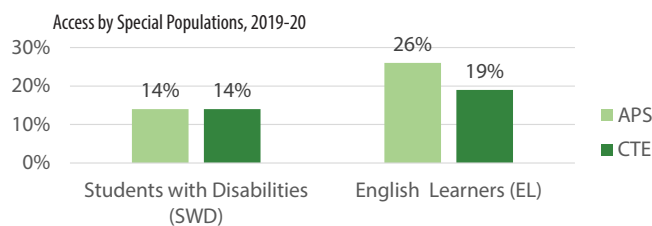
Percent Change in Enrollment Growth

Year	APS Enrollment	CTE Enrollment
2017-18	12,634 (6.2%)	3,437 (5.4%)
2018-19	13,144 (4.5%)	3,568 (3.7%)
2019-20	13,644 (3.8%)	3,871 (7.8%)

EQUITY OF ACCESS

Career and Technical Education is committed to ensuring equitable access to all students. In comparing the enrollment data by ethnicity, CTE enrollment closely mirrors that of Arlington Public Schools.

CTE vs. APS Enrollment by Ethnicity

Ethnicity	APS	CTE
White	45.9%	42.7%
Other	16.2%	6.2%
Hispanic	27.8%	31.6%
Black	9.9%	11.0%
Asian	8.8%	8.5%

ACCESS BY SPECIAL POPULATIONS

In the 2019-20 school year, students with disabilities represented between 12-14% of the total Arlington Public Schools population while English Learners represented 26% of the Arlington Public Schools population. The enrollment in Career and Technical Education courses among students with disabilities and English Learners was 14% and 19% respectively during the 2019-20 school year.

Access by Special Populations, 2019-20

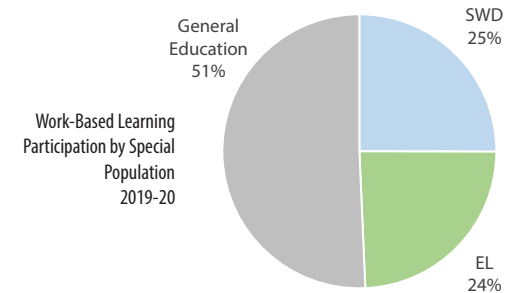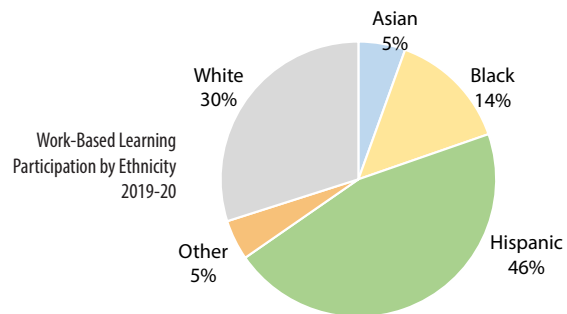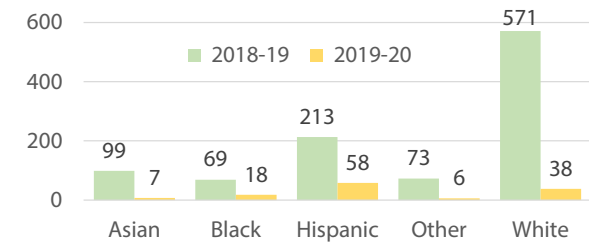|	APS	CTE
Students with Disabilities (SWD)	14%	14%
English Learners (EL)	26%	19%

WORK-BASED LEARNING OPPORTUNITIES

Work-Based Learning consists of school-coordinated workplace experiences that allow students to explore career pathways and career clusters as they identify career goals and/or interests. Work-based learning experiences are integrated with instruction, and are performed in partnership with local businesses and organizations to ensure students have the technical skills needed to support the industry or business partner with whom they are working. In July 2020, the Virginia Department of Education released its updated Work-Based Learning Guide, which specifies the approved work-based learning experiences and provides grade-level recommendations. The work-based learning experiences are:

- Job Shadowing
- Service Learning
- Mentoring
- Externship
- School-Based Enterprise
- Internship
- Entrepreneurship
- Clinical Experience
- Cooperative Education
- Youth Registered Apprenticeship
- Apprenticeship

Career and Technical Education works to secure work-based learning opportunities for all eligible students. Most work-based learning experiences take place in the spring; the closure of schools in March 2020, due to the COVID-19 pandemic, meant only students already in fully remote experiences were able to partake in work-based learning in 2019-20.

Work-Based Learning Enrollment by Ethnicity, 2018-19 vs. 2019-20

Ethnicity	2018-19	2019-20
Asian	99	7
Black	69	18
Hispanic	213	58
Other	73	6
White	571	38

Work-Based Learning Participation by Ethnicity 2019-20

Ethnicity	Percent
Asian	5%
Black	14%
Hispanic	46%
Other	5%
White	30%

Work-Based Learning Participation by Special Population 2019-20

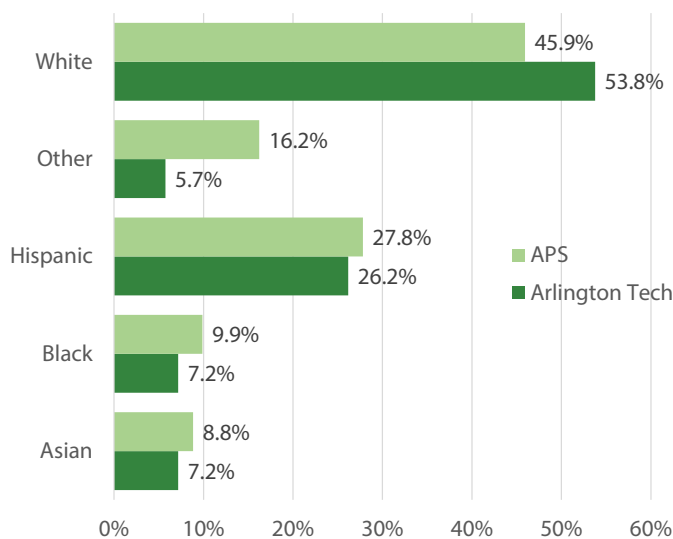| Population	Percent
General Education	51%
SWD	25%
EL	24%

It is important to note that we are currently unable to disaggregate CTE work-based learning experiences from other, non CTE work-based experiences. See recommendations section for details.

ARLINGTON TECH AT THE CAREER CENTER

Arlington Tech is a rigorous, project-based learning, high school program that prepares students to succeed in college and in the workplace through collaborative problem solving. Arlington Tech students learn how to effectively apply their interdisciplinary academic knowledge with skills developed in their CTE classes. Projects serve to integrate these classes and provide hands-on, work-based learning opportunities in which students put theory into action and use critical thinking skills to solve relevant local and global problems in real time. Arlington Tech started in the 2016-17 school year and had their first graduating class in 2020.

The enrollment at Arlington Tech has continued to steadily increase over the past four years. While there has been an increase in the number of Black and Hispanic students, we recognize the need to continue outreach among these populations to ensure they are aware that Arlington Tech is an option. We also continue to work to ensure barriers to access are mitigated. Feedback from students that leave the program often surrounds the inability to get to sports practices and other after-school activities at the same time as their peers. An additional barrier is that, due to the small population size of Arlington Tech in comparison to comprehensive high school population size, only a limited number of courses and levels are available. While course offerings will continue to increase as the program continues to expand, even at full capacity, staffing allocations will need to be reconsidered in order to provide comprehensive opportunities. We are confident with continued, targeted outreach, as Arlington Tech continues to grow, its ethnicity breakdown will continue to evolve to more closely mirror the overall ethnic demographics in APS.

population at Arlington Tech. English Learners represent 24% of the population at Arlington Tech. In Arlington Public Schools, the entire EL subcategory (ELP 1-6) represents 26% of the population.

Arlington Tech Enrollment Growth by Ethnicity

CTE COMPLETERS

A CTE **completer** is a student who has met the requirements for a CTE concentration by completing a course sequence and all requirements for high school graduation, or an approved alternative. A CTE **finisher** is a student that has met the requirements for a CTE concentration by completing a course sequence but has not graduated high school.

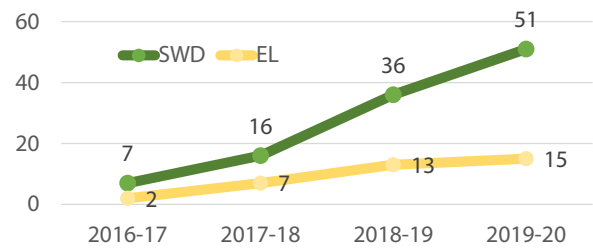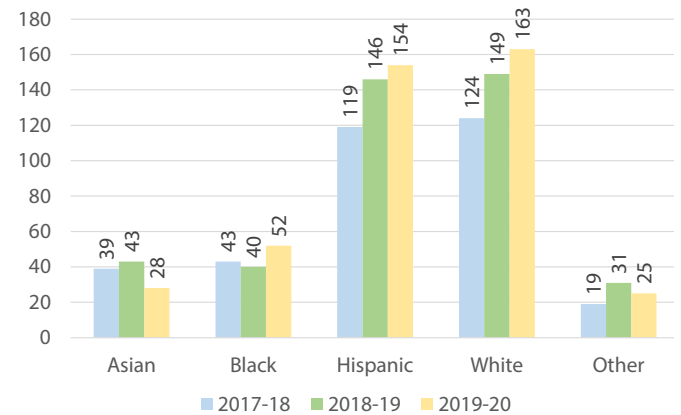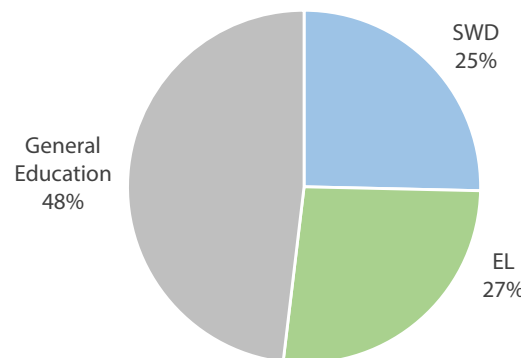CTE Completers by Ethnicity, 2017-20

APS vs. Arlington Tech Enrollment by Ethnicity 2019-2020

As the overall population of Arlington Tech has increased, so has the enrollment of students with disabilities and English Learners increased. During the 2019-20 school year, students with disabilities comprised 12-14% of the population district-wide, while students with disabilities comprised 25% of the

CTE Completers by Special Populations 2019-20

MOVING FORWARD

The following recommendations and objectives are from our office evaluation and will guide our work during the 2020-2021 school year:

RECOMMENDATION #1

Explore and utilize opportunities within APS to increase awareness of and participation in CTE to include:
- Communicate the value of CTE pathways with students, parents, counselors, and other stakeholders.
- Increase the number of work-based learning (WBL) opportunities available to students by leveraging current partnerships and developing new partnerships with local businesses and industries not currently involved in WBL.
- Systematize the WBL opportunities so students and businesses have a single portal by which to access information and offer work-based learning experiences.
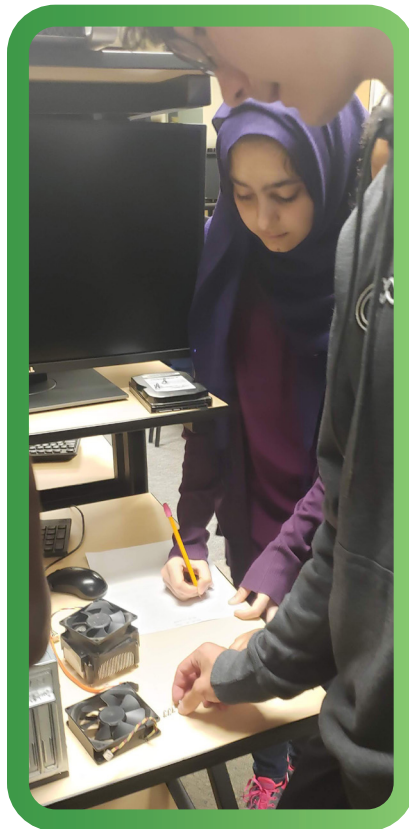- Support the hiring of the Partnership Coordinator.

RECOMMENDATION #2

- Align CTE course offerings with local job openings, required skills, and required certifications.
- Evaluate three CTE pathways, as part of the ongoing process, to determine areas of strengths and opportunities within the course offerings and the alignment to industry.
- Finalize a process to evaluate courses and pathways to ensure APS provides a high-quality CTE experience for its students.

RECOMMENDATION #3

Clarify goals related to CTAE data in order to:
- Develop processes for data collection and reporting to support:
  - Monitoring requirements
  - Implementation and expansion of CTAE programs
  - Data analysis related to program and student progress
- Continue to work with IS to systematize the CTE reports including
  - Disaggregating CTE work-based learning opportunities from other work-based opportunities
  - Developing reports within the data warehouse that will allow trends across CTE programs and years to be used for data analysis
  - Data relevant to all stakeholders, including industry and business partners

GRADUATE PROFILE

Arlington Tech, 2020

Louisville University, Class of 2024

Ms. Mackenzie "Mac" Allen was in the inaugural class of Arlington Tech. She graduated in the spring of 2020 with an advanced high school diploma and a General Studies certificate from Northern Virginia Community College. Ms. Allen experienced engineering as a freshman as part of the foundational courses at Arlington Tech and continued her Career and Technical Education throughout her four years. She is a program completer in both engineering and electricity. The industry credentials Mac secured as part of her CTE education are: Workplace Readiness for the Commonwealth, OSHA 10 safety card, and the RBT fiberoptic certificate. Additionally, Ms. Allen participated in SkillsUSA—a Career and Technical Student Organization (CTSO)—and competed in the electrical events at both the regional and state levels, winning a silver medal in Electrical Construction Wiring and Technical Achievement Awards in both Electricity 1 & 2 events. As a senior, Ms. Allen had a year-long, work-based experience. For her Arlington Tech Capstone experience, Ms. Allen interned at two partner organizations. She split her time between a local engineering firm and an electrical contractor where she was a paid electrician's assistant. Ms. Allen is enrolled at Louisville University majoring in electrical engineering.