Digital Transformation Plan

2019-2025

ABINGTON SCHOOL DISTRICT | 970 HIGHLAND AVENUE, ABINGTON, PA 19001

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Setting the Stage

Introduction

In planning for the transition of Abington School District to a One-to-One model of computer integration as well as upgrading of other technologies, an evaluation of current technologies was completed by the Montgomery County Intermediate Unit (MCIU) in March 2019. The MCIU addressed teachers', administrators' and students' perceptions of the current status of technology integration, and projections of anticipated future needs. As a result of the MCIU's evaluation, this Digital Transformation Plan addresses the key findings of the MCIU analysis in relationship to infrastructure, hardware, software, and professional development.

The world of students in the Abington School District is shaped by the following:

- *College and Career Ready means having the technological skills to be marketable in today's society, which is crucial as students change jobs and careers over time and as they compete against others globally.*
- *Today's students are digital natives. They have grown up with digital devices and their brains are wired differently than previous generations, meaning they are more adept at technology-based learning, which is key to keeping them engaged.*

Overarching Goals

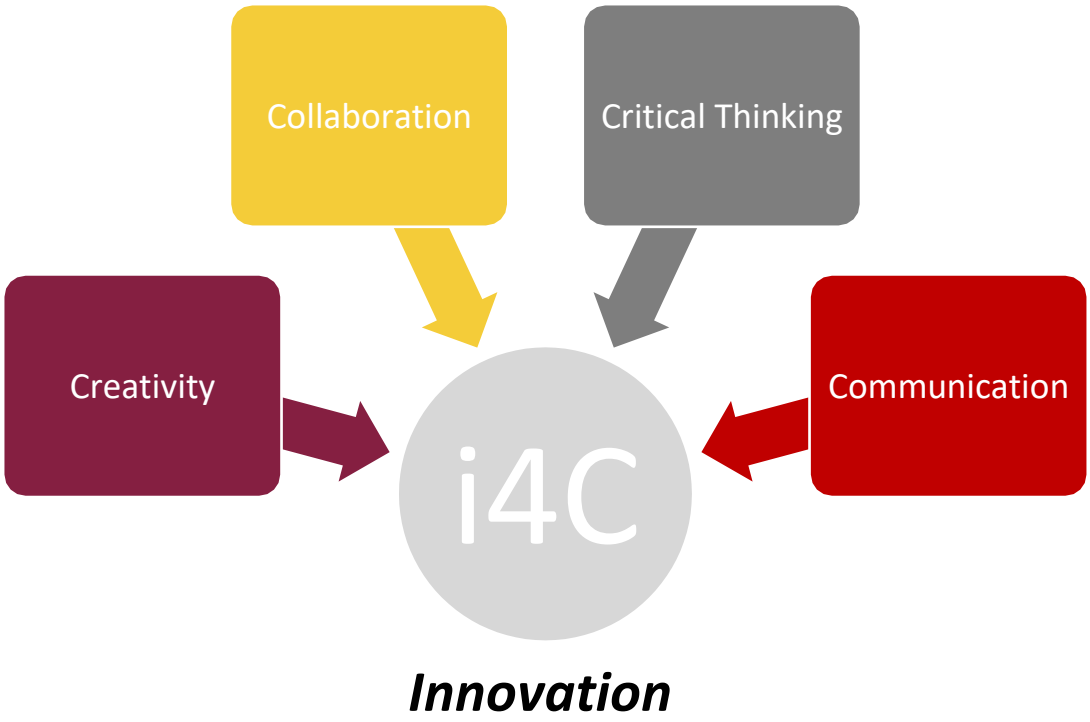
- To ***empower*** teachers with technology, tools, resources and professional development that promote student learning and engagement, flexibility, and creativity for instruction.
- To ***empower*** students by giving them the tools to actively contribute to their own learning experience.
- To ***empower*** parents/guardians by providing resources and learning opportunities for them to be engaged in supporting their students' access to and use of instructional technologies.

i4C - Instructional Vision for Technology Integration

Effective instructional practice entails a central understanding of how to cultivate a dynamic learning environment and classroom culture that makes learning meaningful and relevant. To that end, technology provides the mechanism and tools that enhance, and more readily personalize, the learning experience to create more avenues for a student-centered approach to learning.

Ultimately, by itself, technology does not function as a substitute for effective instruction. However, technology does support increased student engagement through multi-media, instantaneous and increased access to information and resources. Technology can streamline tasks making them more efficient. It can create opportunities for more equitable learning experiences. In addition, technology can facilitate, shape and promote the 4 C's of communication, collaboration, creativity and critical thinking skills in the learning process. And, importantly, the use of technology can increase opportunities for innovative thinking.

The elements of the 4 C's and innovative practices are woven into the fabric of the District's goals as articulated in the District's Comprehensive Plan. The use of technology supports and enhances these goals. The term i4C illustrates the combination of these instructional goals.



Portrait of a Graduate and Technology Knowledge and Skills

The knowledge and skill sets revolving around the students' abilities to successfully navigate and utilize technology for career and college readiness are based upon Digital Literacy and Citizenship and promote students' fluent and agile use of technology in a responsible and safe manner. The knowledge and skill sets, in addition, to technology skills often are foundational in workplace environments and are an increasing part of one's ability to be marketable and successful; therefore, it is incumbent upon the academic program of our schools to promote technology fluency with our students as a shared and valued outcome for Abington School District graduates.

What are the traits we would like to see in a graduate of Abington Senior High School?

- Digital Literacy Skills
  - Effective skills in navigating technology to access information
  - Understanding of digital processes to keep oneself safe in an online environment, including proper use of passwords and maintaining safety with personal information
  - Ability to discern reputable online resources
  - Understanding of different services and technologies available to complete a task and how to find and choose the best tool for the job
- Digital Citizenship Skills
  - Treat others online with respect
  - Anti-bullying skills in an online environment
- Career and College Readiness
  - Understanding of how innovative technologies apply to career pathways

Technology Integration and Teacher Devices

In order to support the Digital Transformation Plan, each teacher will be issued a laptop for the 2019-2020 school year. This will support our vision and the teacher's ability to be fluent in educational technology tools by providing mobile access to instructional materials and resources for student learning.

Below is a timeline for this implementation.

Year	Device
August 28-29, 2019	Every professional staff member and teacher will receive a laptop to support instruction or job-related technology integration activities. Specific professional development with the new devices is targeted for the August 28 and 29 professional development days.
2019-20	Continued deployment of devices where needed, and continued professional development for technology integration as part of the overall District professional development plan.

Actualizing the Plan

One-to-One Student and Classroom Technology Plan 2019-2025

Estimated Fiscal Considerations for Year One: 2018-2019 (June, 2019)

Item	Destination	Est. QTY	Estimated Cost
Cameras (FFE)	Senior	22	$ 24,200
Desktop Computers	Districtwide	40	$ 27,000
Upgrades (Memory/Windows)	Districtwide	251	$ 12,600
Security Camera Server	Admin (for ASHS)	1	$ 20,000
			$ 83,800

- **Cameras/Security Camera Server - Senior High School:** A new server is needed to accommodate the new and additional cameras at the senior high school in conjunction with the additions and renovations project.
- **Desktop Computers:** This is the replacement of the oldest desktop computers in the district, which are approximately six to eight years old. All of these devices are running Windows 7, an operating system for which support and security updates will be discontinued in January of 2020. At the senior high school, this includes the removal of two fixed computer labs and the reduction of the library desktop computers to eight. At the junior high school, this includes the elimination of lab 324 and the replacement in rooms C100 and C300 of desktops with Chromebooks redeployed from the STEM program.
- **Upgrades to Windows 10:** Desktop computers currently running Windows 7 that are four to five years old need to be upgraded. We will purchase memory and operating system upgrades for these devices in order to keep them in service for a couple more years. We will also be upgrading the memory on existing Windows 10 computers.

Estimated Fiscal Considerations for Year Two: 2019-2020

Item	Destination	Est. QTY	Estimated Cost
Card Access Server	Senior	1	$ 4,000
Content Filter	Districtwide	1	$ 50,000
Chromebooks	Senior- 10	588	$ 191,100
Chromebooks	Senior- 11	530	$ 172,300
Chromebooks	Senior- 12	543	$ 176,500
Chromebooks	SPED 10-12	359	$ 116,700
Interactive Flat Panels	Admin	2	$ 10,000
Interactive Flat Panels	Admin	1	$ 3,500
Interactive Flat Panels	Junior	105	$ 525,000
Interactive Flat Panels (FFE)	Senior	17	$ 51,000
Laptop Computers	Districtwide	740	$ 592,000
Server upgrades	Technology	1	$ 50,000
Telephones/Installation	Districtwide	1	$ 73,200
Televisions (FFE)	Senior	5	$ 5,000
			$ 2,020,300

- **Card Access Server:** This is the server needed to run the new card access system for secure entry into the senior high school.
- **Content Filter:** The new system will allow more comprehensive filtering and tracking whether the client devices are used within or outside the district, including monitoring and alerting of student safety concerns. Classroom management functionality will also be part of this package, allowing for teachers to monitor student devices in class. This system needs to be in place for the implementation of the One-to-One initiative.
- **Chromebooks - Grades Ten through Twelve:** In conjunction with the opening of the new wing in September 2020, all three current senior high school grade levels will be equipped with Chromebooks for the One-to-One Initiative. This will provide optimal mobility and access for all students and a ubiquitous learning environment with cloud-based resources available to them anytime, anywhere. These devices will be equipped with touchscreens and will be smaller, lighter and more appropriate for students to carry with them. The larger, heavier, Chromebooks that were purchased for cart use in these grades will be redeployed for in-school use at other schools.

- **Interactive Flat Panels - Administration:** This will replace the interactive whiteboard and projector in room 221 with an interactive flat panel. An additional interactive flat panel will be installed in the Professional Library to replace the current projector and screen. A third panel with a stand will be purchased for mobile use for meetings and in-service activities. The stand adds an additional cost.
- **Interactive Flat Panels - Junior High School:** All of the classrooms in the district are currently equipped with interactive whiteboards and LCD projectors. The Promethean boards are up to 12 years old, out of production, and no longer available. There is no manufacturer support or replacement parts when they fail. The projectors are up to 15 years old and have lost their brightness and sharpness after so many years of use. When lamps are replaced these projectors can no longer produce a sufficiently bright and clear image. The interactive flat panels provide an easier to use and more engaging experience, with multi-touch capabilities allowing for collaboration and integrated teaching tools. Additionally, they have an integrated processor that allows for use without the interactive display being hardwired to a separately attached computer. This allows the teacher more flexibility and multitasking capabilities as there is no longer a need for a fixed "teacher station" in every classroom. The cost includes the de-installation/remediation of the existing board and projector as well as the installation/mounting of the panel. The same panels will be installed at the senior high school in conjunction with the additions and renovations project.
- **Interactive Flat Panels - Senior High School:** All of the existing and new classrooms at the senior high school will be equipped with interactive flat panels. These panels are needed for this phase of the renovation. The cost includes the panel, mounting bracket and computing device. It does not include de-installation/remediation for existing interactive white boards and projectors as that is being done as part of the renovation.
- **Laptop Computers:** Classroom desktop computers will be removed and instead each teacher will be assigned a laptop to allow for greater mobility and ease of connectivity with the interactive display technologies. Changing from classroom-assigned devices to teacher-assigned devices will allow some desktops that are still fully-functional and not yet due for replacement be reused in the junior high school (room 224), senior high school (rooms 220, 222 and 224), district libraries and the remaining go to other locations for administrative and support staff. Laptops will also be purchased for use in the junior high school STEM classrooms, as Project Lead the Way modules for the Grades 7 and 8 program are not compatible with Chromebooks.

- **Server Upgrades:** Our current server chassis will be 12 years old and will have been out of production for three years by this time. To begin transitioning to the newer generation of equipment we will purchase a new chassis and two blade servers (while maintaining the old system as long as feasible).
- **Telephones:** The Toshiba premise-based telephone switch is out of production and additional licensing is no longer available. The system will be replaced with a cloud-based system providing access via an Internet based service. This is consistent with the current trends in telecommunications and provides the most flexible, dynamic solution that is easier to manage, upgrade and change. The investment model for this type of system replaces the periodic large investments in on-premise hardware with a much smaller investment to purchase only the network-based handsets, along with a monthly fee for service on each phone. Integrated messaging will also be implemented, integrating voicemail with electronic mail and allowing users to more easily access their messages. The first-year cost is for telephones plus one-time installation/configuration costs.
- **Televisions - Senior High School:** Plans call for televisions in certain public spaces at the senior high school for informational displays.
- **Funding Note:** Where applicable, the district shall seek reimbursement for certain purchases from programs such as E-Rate and ACCESS.

Estimated Fiscal Considerations for Year Three: 2020-2021

Item	Destination	Est. QTY	Estimated Cost
Cameras (FFE)	Senior High	88	$ 96,800
Chromebooks	Junior- 7	642	$ 208,700
Chromebooks	Junior- 8	612	$ 198,900
Chromebooks	Junior- 9	606	$ 197,000
Chromebooks	SPED 7-9	370	$ 120,300
Desktop Computers	Districtwide	20	$ 13,500
Interactive Flat Panels (FFE)	Senior High	108	$ 324,000
Interactive Flat Panels	Elementary	125	$ 625,000
Laptop Computers	Districtwide	10	$ 8,000
Televisions (FFE)	Senior High	10	$ 10,000
Wireless Upgrade	Junior High	130	$ 104,000
Content Filter	Districtwide	1	$ 50,000
Network & Internet Redundancy	Districtwide	1	$ 55,000
			$ 2,011,200

- **Security Cameras - Senior High:** Additional security cameras for the new wing.
- **Chromebooks - Grades Seven through Nine:** This equips all three current junior high grade levels with Chromebooks for the One-to-One Initiative.
- **Desktop and Laptop Computers:** This represents the cost of continuing the systematic periodic replacement of devices based on diminished functionality and performance.
- **Interactive Flat Panels - Senior High:** These are the panels needed to equip the instructional areas in the new wing, as well as other renovated areas.
- **Interactive Flat Panels - Elementary Schools:** This will replace 50% of the classroom projectors and interactive whiteboards in the elementary schools with interactive flat panels. This replacement will be made districtwide by grade level and content area, to maintain programmatic consistency and equity.
- **Televisions - Senior High:** This is the remainder of the televisions for public spaces at the senior high for informational displays, in addition to four for monitoring of the security camera system.
- **Wireless Upgrade - Junior High:** This is the replacement of the wireless access points at the junior high school, which will be approximately six years old. The newer access points have updated technologies with greater capacity, which is needed to fully support the One-to-One Initiative being introduced.

- **Content Filter:** This is an annual renewal of the filtering and classroom management system implemented in 2019-2020.
- **Network & Internet Redundancy:** This will add additional hardware for redundant network and internet connectivity at Highland, McKinley, Overlook, Roslyn, Rydal, Willow Hill, and the transportation building. These are the buildings that are "off campus" and rely on wide-area network infrastructure. As our reliance on the cloud for additional services increases, this will help ensure communications and connectivity are not interrupted.
- **Funding Note:** Where applicable, the district shall seek reimbursement for certain purchases from programs such as E-Rate and ACCESS.

Estimated Fiscal Considerations for Year Four: 2021-2022

Item	Destination	Est. QTY	Estimated Cost
Cameras (FFE)	Senior High	33	$ 36,300
Chromebooks	Elem: 4	573	$ 186,200
Chromebooks	Elem: 5	621	$ 201,800
Chromebooks	Elem: 6	644	$ 209,300
Chromebooks	SPED 4-6	102	$ 33,200
Desktop Computers	Districtwide	30	$ 20,300
Interactive Flat Panels	Elementary	125	$ 625,000
Interactive Flat Panels (FFE)	Senior High	47	$ 141,000
Laptop Computers	Districtwide	40	$ 32,000
Innovation Incubator	Senior High	1	$ 100,000
Content Filter	Districtwide	1	$ 50,000
Network & Internet Redundancy	Districtwide (Renewal)	1	$ 13,000
Wireless Upgrade	CB	75	$ 60,000
			$ 1,708,100

- **Cameras - Senior High School:** Replacement security cameras for renovated areas.
- **Chromebooks - Grades Four through Six:** This equips grades four through six with Chromebooks for the One-to-One Initiative. Existing Chromebooks in these grades will be redeployed for in-school use in lower grades.
- **Desktop and Laptop Computers:** This represents the cost of continuing the systematic periodic replacement of devices based on diminished functionality and performance.
- **Interactive Flat Panels - Elementary Schools:** This will replace 50% of the classroom projectors and interactive whiteboards in the elementary schools with interactive flat panels for the reasons discussed previously. This replacement will be made districtwide by grade level and content area, to maintain programmatic consistency and equity.
- **Interactive Flat Panels - Senior High School:** These are the panels needed to equip the remaining renovated instructional areas throughout the school.
- **Innovation Incubator - Senior High:** This is for the additional equipment needed for this area, such as 3-D printers, multimedia studio equipment, augmented reality equipment, etc.
- **Content Filter:** This is an annual renewal of the filtering and classroom management system implemented in 2019-2020.
- **Network & Internet Redundancy:** This is an annual renewal of the maintenance and support for this system, which was implemented in 2020-2021.
- **Wireless Upgrade - Copper Beech:** This is the replacement of the wireless access points at Copper Beech, which will be an average of six years old. The newer access

points have updated technologies with greater capacity, which is needed to fully support the One-to-One Initiative being introduced.

- **Funding Note:** Where applicable, the district shall seek reimbursement for certain purchases from programs such as E-Rate and ACCESS.

Estimated Fiscal Considerations for Year Five: 2022-2023

Item	Destination	Est. QTY	Estimated Cost
Chromebooks	Senior-9	658	$ 213,900
Chromebooks	Senior-10	661	$ 214,800
Chromebooks	Senior-11	596	$ 193,700
Chromebooks	Senior-12	611	$ 198,600
Chromebooks	SPED 9-12	538	$ 174,900
Desktop Computers	Districtwide	170	$ 114,800
Infrastructure Upgrades	Districtwide	1	$ 100,000
Laptop Computers	Districtwide	25	$ 20,000
Content Filter	Districtwide	1	$ 50,000
Network & Internet Redundancy	Districtwide (Renewal)	1	$ 13,000
Wireless Upgrade	HI/MK/OV/RO/RY/WH	255	$ 204,000
			$ 1,497,700

- **Chromebooks - Grades Nine through Twelve:** This represents a new cycle of Year Two in which grades 10-12 were equipped with student Chromebooks. Those Chromebooks, which will have three-year warranty coverage, will be replaced after three years of use so that the One-to-One Initiative will always have one to three year-old devices with full warranty coverage. Additionally, the grade 9 Chromebooks will be replaced at this time to align the replacement cycle with the new senior high school grade span configuration. The Chromebooks being replaced will be re-deployed for in-school use in grades K-3.
- **Desktop and Laptop Computers:** This represents the cost of continuing the systematic periodic replacement of devices based on diminished functionality and performance.
- **Infrastructure Upgrades:** This is an estimate of the cost of upgrade and expansion of the server, storage, network and backup systems.
- **Content Filter:** This is an annual renewal of the filtering and classroom management system implemented in 2019-2020.
- **Network & Internet Redundancy:** This is an annual renewal of the maintenance and support for this system, which was implemented in 2020-2021.
- **Wireless Upgrade - Remaining Elementary Schools:** This is the replacement of the wireless access points at the rest of the elementary schools which will be an average of seven years old. The newer access points have updated technologies with greater capacity, which is needed to fully support the One-to-One Initiative.
- **Funding Note:** Where applicable, the district shall seek reimbursement for certain purchases from programs such as E-Rate and ACCESS.

Estimated Fiscal Considerations for Year Six: 2023-2024

Item	Destination	Est. QTY	Estimated Cost
Chromebooks	Middle-6	667	$ 216,800
Chromebooks	Middle-7	697	$ 226,500
Chromebooks	Middle-8	665	$ 216,100
Chromebooks	SPED 6-8	303	$ 98,500
Desktop Computers	Districtwide	105	$ 70,900
Infrastructure Upgrades	Districtwide	1	$ 100,000
Laptop Computers	Districtwide	350	$ 280,000
Content Filter	Districtwide	1	$ 50,000
Network & Internet Redundancy	Districtwide	1	$ 13,000
Wireless Upgrade	Admin/Transportation	30	$ 24,000
			$ 1,295,800

- **Chromebooks:** This represents a new cycle of Year Three in which grades 7-9 were equipped with student Chromebooks. Those Chromebooks, which will have 3-year warranty coverage, will be replaced after three years of use so that the One-to-One Initiative will always have one to three year-old devices with full warranty coverage. Additionally, the grade 6 Chromebooks will be replaced at this time to align the replacement cycle with the new middle school grade span configuration. The Chromebooks being replaced will be re-deployed for in-school use in grades K-3.
- **Desktop and Laptop Computers:** This represents the cost of continuing the systematic periodic replacement of devices based on diminished functionality and performance.
- **Infrastructure Upgrades:** This is an estimate of the cost of upgrade and expansion of the server, storage, network and backup systems.
- **Content Filter:** This is an annual renewal of the filtering and classroom management system implemented in 2019-2020.
- **Network & Internet Redundancy:** This is an annual renewal of the maintenance and support for this system, which was implemented in 2020-2021.
- **Wireless Upgrade - Administration Building and Transportation:** This is the replacement of the wireless access points at the Administration building and transportation building which will be an average of eight years old.
- **Funding Note:** Where applicable, the district shall seek reimbursement for certain purchases from programs such as E-Rate and ACCESS.

Estimated Fiscal Considerations for Year Seven: 2024-2025

Item	Destination	Est. QTY	Estimated Cost
Chromebooks	4th Grade	594	$ 193,100
Chromebooks	5th Grade	644	$ 209,300
Chromebooks	SPED 4-5	71	$ 23,100
Desktop Computers	Districtwide	155	$ 104,600
Infrastructure Upgrades	Districtwide	1	$ 100,000
Laptop Computers	Districtwide	400	$ 320,000
Content Filter	Districtwide	1	$ 50,000
Network & Internet Redundancy	Districtwide (Renewal)	1	$ 13,000
			$ 1,013,100

- **Chromebooks:** This represents a new cycle of Year Four in which grades 4-6 were equipped with student Chromebooks. As grade 6 Chromebooks will be replaced in 2023-2024 to align the replacement cycle with the new middle school grade span configuration, only grades 4-5 Chromebooks will be replaced in this fiscal year. Those Chromebooks, which will have 3-year warranty coverage, will be replaced after three years of use so that the One-to-One Initiative will always have one to three year-old devices with full warranty coverage. The devices being replaced will be re-deployed for in-school use in grades K-3.
- **Desktop and Laptop Computers:** This represents the cost of continuing the systematic periodic replacement of devices based on diminished functionality and performance.
- **Infrastructure Upgrades:** This is an estimate of the cost of upgrade and expansion of the server, storage, network and backup systems.
- **Content Filter:** This is an annual renewal of the filtering and classroom management system implemented in 2019-2020.
- **Network & Internet Redundancy:** This will be an annual renewal of the maintenance and support for this system, which was implemented in 2020-2021.
- **Funding Note:** Where applicable, the district shall seek reimbursement for certain purchases from programs such as E-Rate and ACCESS.

Estimated Expenditure Summary 2018-2025

YEAR	AMOUNT	MAJOR COMPONENTS
2018-2019	$83,800	251 upgrades, 40 desktops, security camera server, 22 cameras (ASHS)
2019-2020	$2,020,300	740 teacher laptops, 125 flat panels (AJHS/ASHS) 2,020 Chromebooks (grades 10-12) Telephone system upgrade, blade server chassis
2020-2021	$2,011,200	233 flat panels (part of ASHS /grades 4-6), 88 security cameras (ASHS) 2,230 Chromebooks (grades 7-9), wireless upgrade (AJHS)
2021-2022	$1,708,100	Specialty technology for ASHS (Innovation Incubator) 172 flat panels (part of ASHS /grades K-3), 33 security cameras (ASHS) 1,940 Chromebooks (grades 4-6), wireless upgrade (CB)
2022-2023	$1,497,700	170 desktops, infrastructure upgrades 3,064 Chromebooks (grades 9-12), wireless upgrade (all other elem.)
2023-2024	$1,295,800	105 desktops, 350 laptops, infrastructure upgrades 2,332 Chromebooks (grades 6-8), wireless upgrade (Admin/Trans)
2024-2025	$1,013,100	155 desktops, 400 laptops, infrastructure upgrades 1,309 Chromebooks (grades 4-5)
TOTAL	**$9,630,000**	

Estimated Expenditure Forecast 2025-2032

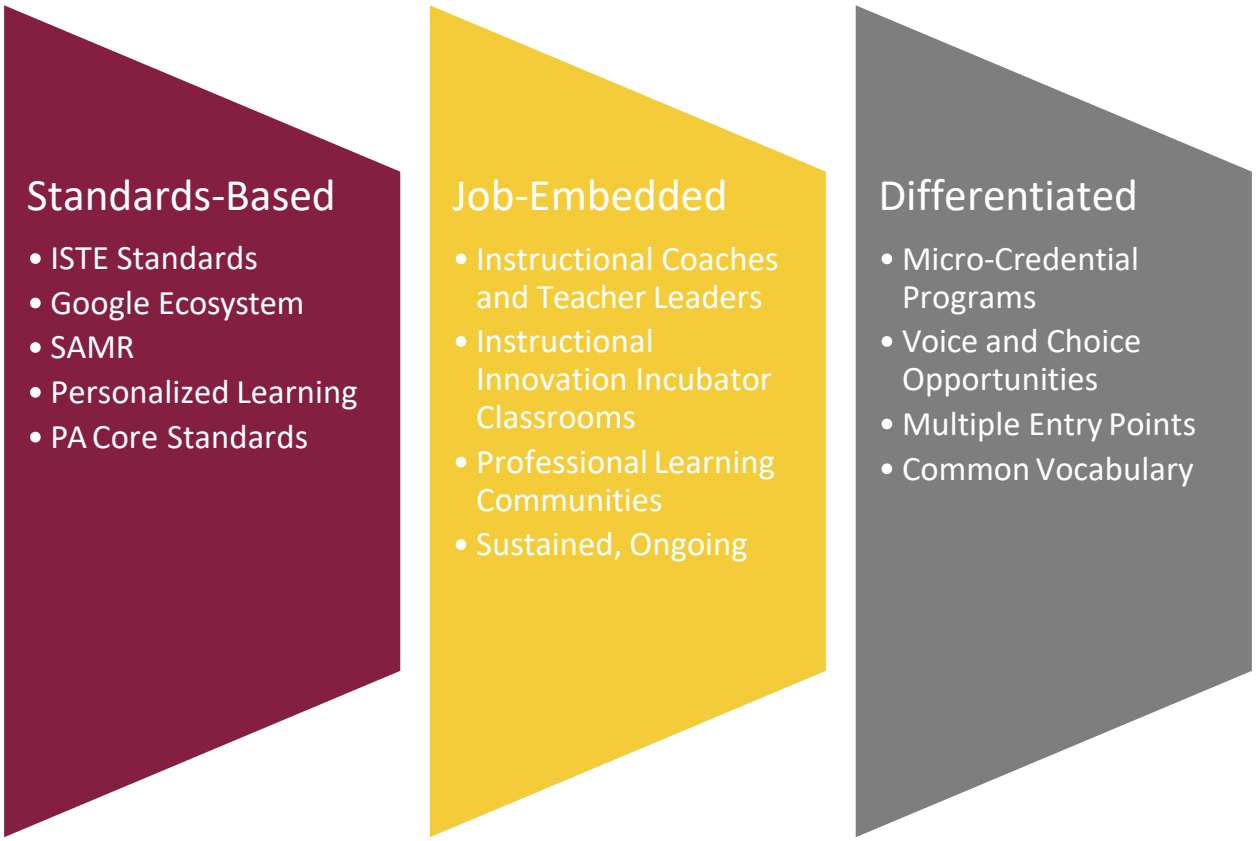
The following information is not part of the detailed budget and timeline of this plan. These major expenditures are listed for reference only to assist in budget planning and the formation of the next detailed technology plan. Chromebook quantities are estimates based upon enrollment projections.

YEAR	AMOUNT	MAJOR COMPONENTS
2025-2026	$1,435,300	Chromebooks (grades 9-12), partial wireless upgrade (ASHS)
2026-2027	$1,160,900	Chromebooks (grades 6-8), partial wireless upgrade (ASHS)
2027-2028	$1,001,200	Chromebooks (grades 4-5), laptops, wireless upgrade (AJHS)
2028-2029	$1,692,300	Chromebooks (grades 9-12), laptops, wireless upgrade (CB)
2029-2030	$1,270,900	Chromebooks (grades 6-8), desktops, laptops, wireless upgrade (elem)
2030-2031	$1,188,300	Chromebooks (grades 4-5), desktops, wireless upgrade (elem/Admin)
2031-2032	$1,704,700	Chromebooks (grades 9-12) and desktops
TOTAL	**$9,453,600**	

Note: Classroom technology (interactive flat panel or next generation) is anticipated to be due for replacement beginning in the 2031-2032 school year. This replacement process is expected to last for three to four years as a phase-in project in a manner similar to initial implementation. Costs for this replacement are not included in the above estimated expenditure forecast.

Creating Learning Pathways

Professional Development Plan for Technology Integration 2019-23



Timeline and Description

2019-20	Objectives:
	• Align technology integration professional development with District Comprehensive Plan, with specific emphasis on the 4 C's – Creativity, Communication, Critical Thinking and Collaboration.
	• Develop baseline competencies in Technology Integration Training through standards such as Google's Educator Level I Certificate.
	  ○ Apply G-Suite applications for classroom instruction.
	  ○ Map out competencies and learning objectives.
	  ○ Enhance integration of Google Classroom as part of the Google Ecosystem.
	  ○ Provide ongoing training and support through Kiker Learning, a National Google Education Partner.
	• Align ISTE standards and student expectations of digital literacy for technology integration with professional development.
	• Use SAMR (Substitution, Augmentation, Modification, Redefinition) as a tool for reflection regarding technology integration and instructional practice.
	  ○ Develop portfolio of classroom evidence that illustrates being a reflective practitioner of technology integration practices.
	  ○ Align supervision and evaluation with District professional development plan to support continuous feedback on professional development needs.

	• Deploy a Learning Pathways Professional Development model and possible micro-credentialing program that is differentiated with multiple entry points and modes for learning. • Develop common language with technology and instructional practice. • Build Teacher Leadership Capacity with Digital Learning through multiple and ongoing training opportunities throughout the school year. • Implement Model Classrooms or "Instructional Innovation Incubator" Centers throughout the District, which will employ a "Test Kitchen" concept. Target to develop one in each elementary building and two to three at each secondary building. • Implement Instructional Coaching program to provide job embedded professional development through the use of Title 2 funding or other available funding sources. • Provide new technology training on the implementation of interactive classroom panels as well as other new technology platforms and programs. • Develop and deploy a YouTube channel or similar type of program of district professional development opportunities for professional and support staff Timeline: • May 2019 - Visit Google Headquarters in NYC • June 2019 - ISTE Conference, Philadelphia, PA August 2019 – Technology Integration Leadership Training with Central Admin and Building Leadership • August 2019 - Opening Convocation with Staff – Technology Integration Training • November 2019 – Professional Development Day – Technology Integration Training • October 2019, January 2020 and May 2020 - Teacher Leader Technology Integration Trainings • February 2020 – Professional Development Day – Technology Integration Training • May 2020 – AEA Collaboratively Developed Professional Development Day – Technology Integration (Pending agreement with AEA)
2020-21	Objectives: • Align technology integration professional development with District Comprehensive Plan, with specific emphasis on the 4 C's – Creativity, Communication, Critical Thinking and Collaboration. • Develop baseline competencies in Technology Integration Training through standards such as Google's Educator Level 2 Certificate. o Map out competencies and learning objectives based upon continued assessments of needs and Google Level 2 based competencies o Integrate Google Classroom as part of the Google Ecosystem for productivity and learning. • Continue to build common language with technology and instructional practice. • Continue to grow Teacher Leadership Capacity with multiple and ongoing training opportunities throughout the school year. • Continue to develop and support Model Classrooms or "Instructional Innovation Incubator" Centers throughout the District. • Continue work with SAMR as a tool for reflection for technology integration o Continue to develop a portfolio of teacher work as evidence of their own learning and growth • Continue work with the Learning Pathways development and possible micro-credentialing program to address overall professional development needs for technology integration.

	• Continue job embedded PD/ Instructional Coaching with instructional coach(es) • Maintain philosophy of continuous and ongoing trainings for both professional and support staff in technology
2021-22	Objectives: • Align technology integration professional development with District Comprehensive Plan, with specific emphasis on the 4 C's – Creativity, Communication, Critical Thinking and Collaboration. • Address competencies built upon the Google Educator Certification Programs Level 1 and 2 and the core components of a Personalized Learning Model. (A Personalized Learning Model supports use of technology and instruction to enhance lesson development with the core competencies of learner profiles, learning pathways and proficiency-based progress.) • Reinforce the use common language with technology and instructional practice. • Support Teacher Leadership through multiple and ongoing training opportunities throughout the school year. • Implement Model Classrooms or "Instructional Innovation Incubator" Centers throughout district which will employ a "Test Kitchen" concept. Target to develop one in each elementary building and two to three at each secondary building. • Continue the Learning Pathways development as part of the overall professional development needs for technology integration. • Continue Job Embedded PD/ Instructional Coaching.
2022-23	Objectives: • Align technology integration professional development with District Comprehensive Plan, with specific emphasis on the 4 C's – Creativity, Communication, Critical Thinking and Collaboration. • Continue work with the Learning Pathways development and process as part of the overall professional development needs for technology integration. • Continue to reinforce common language with technology and instructional practice. • Continue to grow and expand Teacher Leadership through multiple and ongoing training opportunities throughout the school year. • Implement Model Classrooms or "Instructional Innovation Incubator" Centers throughout district. • Continue professional development for Personalized Learning. • Continue Job Embedded PD/ Instructional Coaching.

In order for a technology integration plan to be optimally effective, the following components should be included: (1) explicit understanding of competencies and technical skill sets, (2) instruction that is continuous with multiple entry points for learning and engagement, (3) ability to participate in job-embedded professional development opportunities, and (4) the cultivation of a community of learners for professionals.

Standards-Based Learning Pathways

The competencies, skill sets and knowledge teachers will need for instruction in a digital environment will encompass a number of national and state standards. By using these well-established standards, the learning program for educators will continue to be enriched with high levels of rigor and expectation. Among the standards used in the professional development program will be the following:

- ISTE (International Society for Technology in Education)
- Google Certified Educator, Levels 1 and 2
- SAMR (Substitution, Augmentation, Modification and Redefinition)
- PA Core Standards

Google for Education Teacher Certification Programs

The following information comes from Google Education's Teacher Center. For the upcoming two school years of 2019-20 and 2020-21, the focus for training will be to complete a modified Google Education Certification program, based upon a developed list of competencies. However, teachers who want to enrich their own level of experience and understanding in G-Suite are welcome to complete the entirety of the credentials through Google Education.

Google Certified Educator: Designed for educators and classroom teachers who wish to demonstrate proficiency in using Google for Education tools. The Level 1 status indicates that an educator is able to successfully implement G Suite for Education into their teaching practice in order to enhance teaching and learning. The Level 2 status indicates that an educator is able to successfully integrate a wider range of Google for Education tools and other technologies in order to transform their teaching practice.

Google for Education Certified Trainer: Google for Education Certified Trainers are passionate and driven education professionals with a desire to help others transform classrooms with technology. Whether you are a school's go-to technologist, a stellar classroom teacher or an enterprising consultant, anyone is welcome to apply for membership in the program.

Google for Education Certified Innovator: Designed for education thought-leaders who create new and innovative projects using Google for Education tools.

From: https://teachercenter.withgoogle.com/

Job-Embedded Learning Pathways

Instructional Innovation Incubator Classrooms

As an extension of the 2016 to 2019 classroom technology integration program, and by developing students' access to digital curriculum and learning resources to increase student achievement and propel students into 21st century learning, there will be classrooms known as Instructional Innovation Incubator Classroom sites. These model classrooms will provide:

- A "Test Kitchen" approach to trying out new strategies, hardware and software.
- Demonstration lessons to showcase these innovative instructional practices with colleagues.
- Support to students and parents through tools and resources for technology use at school and home
- Students with knowledge of essential digital literacy skills for selecting and using technology for learning
- Instruction in the 4 C's through interdisciplinary approaches that develop student leadership, collaboration through digital communication and meaningful learning opportunities
- Professional development through classroom visits where colleagues will be able to view strategies in action and practice.

Requirements/Training for Instructional Incubator Classroom teachers will include the following:

- Participate in the Google and Technology Integration trainings
- Complete Micro-credentialing or Digital Badging programs, such as the Google Certification Level 1 and 2. (See https://teachercenter.withgoogle.com/training)
- Use of Google Classroom or other Learning Management Systems
- Use of VR/AR-Google Expedition
- Provide Demo lessons/peer observation
- Model strategies such as Flipped Classrooms, Hybrid Learning and other Blended Classroom structures.

Instructional Coach Positions

Using Title 2 funds or other available funding sources in 2019-20, there will one or two instructional coach(es) who will be focused on technology integration professional development. The position will be directly under the supervision of the Director of Teaching and Learning, with the individual:

- Developing face-to-face, hybrid and blended learning experiences to promote best practices with instruction and technology integration practices.
- Leading job-embedded professional development opportunities such as demonstration lessons and coordinating classroom visitations with the Instructional Innovation Incubation Classrooms.
- Supporting the One-to-One efforts in the buildings through professional development.
- Developing online and video resources for technology integration and other instructional practices for teachers, support staff and parents/guardians.

Differentiated Learning Pathways

As part of the overall District professional development plan, the learning experiences and opportunities for educators and other staff members will be based upon the following differentiated strategies:

- Using multiple entry points
- Building common vocabulary
- Facilitating micro-credentialing programs

Impacting Instruction

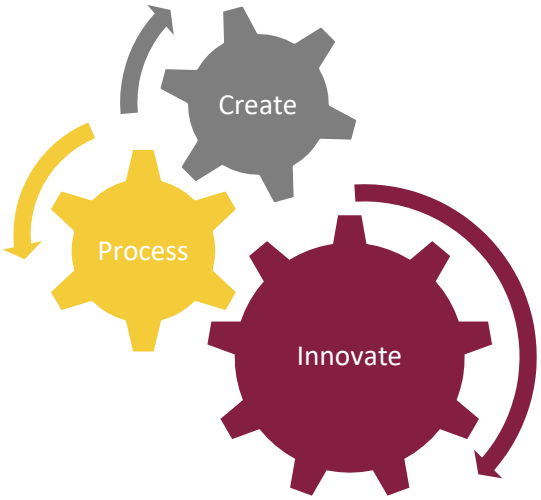
Using technology as a tool for instructional practice will impact instruction in a number of ways. As part of the overall Digital Transformation Initiative, the District will be implementing Innovation Incubators, Augmented and Virtual Reality resources, and a Learning Management System.

Innovation Incubators – Tools to Support Instruction and Learning

An Innovation Incubator is a collaborative work space for making, learning, exploring and sharing that uses a variety tools. These spaces can be located in a specific room or location, or they may be mobile units. For the purposes of strengthening access to Innovation Incubator items and alignment to current curriculum, mobile centers will be developed and implemented in the following timeline.

- 2019-20
  - One mobile Innovation Incubator center per elementary and secondary building.
- 2020-21
  - The addition of a second mobile Innovation Incubator at the secondary levels.

In order for a mobile Innovation Incubators to be fully engaging and effective, we will be aligning learning objectives for use of the mobile units with current curriculum in STEAM content areas. Integration of the use of these units with current curriculum project-based learning will maximize student engagement and critical thinking skills in a hands-on approach. In addition, there will be Makerspace Centers developed as part of specific programs at the Junior and the Senior High School.



Parent/Guardian Support for the One-to-One Program

Parent Support Programs

Programs will need to be implemented throughout implementation of this plan to support parents/guardians as students embark on new learning experiences through a One-to-One Initiative. As collaborative partners in a student's learning experience, parents play a pivotal role in supporting students through their K-12 education careers. The District will develop a program to provide opportunities for parents/guardians to understand Google Classroom/ G-Suite applications, which will be the primary productivity tools for student learning in the classroom. In addition, parents/guardians will receive support in understanding how to work with the digital learner through an understanding of the curriculum resources available for students. Also, resources such as a YouTube Channel or similar platform for parents/guardians will be developed to provide continuous support.

TASK	DESCRIPTION
Assess Parents/Guardians on Technology Needs	Survey parents/guardians on what their needs will be in relationship to the student learning experience in a One-to-One environment. Work with established network of parent groups such as the PTO/PTA groups.
Deploy Parent/Guardian Professional Information Program	Instructional Coaches will develop and implement parent/guardian workshops and online videos to support families in understanding and learning applications used by students (such as G-Suite). An online library of materials and resources will be developed with visual elements (video and screen snapshots) on the district website for all grade levels. Instructional Coaches will work with principals and members of the Teaching and Learning Department to help develop appropriate family programming and resources.

Family Communication

The district will publicize information on the One-to-One Initiative on a variety of sites including the district website, social media and communications through the Student Information System. This will provide details on the program including goals, logistics, procedures, costs, responsibilities and training/orientation opportunities. Presentations may also be made at Parent Council/PTA/PTO meetings.

Considerations for One-to-One Implementation

Policies, Processes and Practice

Board Policies and Superintendent's Administrative Procedures (SAP)

All relevant existing Board policies and SAPs will be identified and revised as necessary to reflect the procedures, guidelines and responsibilities of a One-to-One Initiative, including appropriate network usage, online behavior and care of and responsibility for district equipment. A new SAP specific to the One-to-One Initiative will also be developed. Provisions will be included for alternate assignments and methods to be employed for students whose parents/guardians choose to opt out of the One-to-One Initiative for any reason.

Migration to the Cloud

Migrating staff email to the cloud-based G-Suite platform will provide greater ease of access, mobility and integration into a unified platform. Using G-suite will also provide seamless integration with the Google Classroom environment as well as ease management and reduce ongoing resource costs for local storage, server software and maintenance. The need for staff to use the Virtual Private Network for access of files while out of district will be eliminated. We will provide Gmail accounts to all students for the 2019-2020 school year. We will migrate staff e-mail to G-Suite during 2020-2021 school year. Staff will be required to exclusively use district-provided accounts for all communication with students.

Filtering

The district will implement filtering and monitoring software that will be in effect when devices are used both within and outside the schools. This software will provide enhanced tracking capabilities to show records of student use. Appropriate use expectations and consequences will be effect whenever District-owned devices are used, regardless of location.

Home Connectivity

Households with students participating in the One-to-One Initiative are requested to provide wireless Internet at home whenever possible. The District will provide information on other ways to obtain access, such as through public libraries, public hotspots and reduced cost programs such as the Comcast Internet Essentials program. The District will explore possible grants or partnerships with the Abington Educational Foundation or other organizations to provide wireless hotspots for economically disadvantaged families. The District will also look at expanding wireless access within and adjacent to the schools to provide connectivity to those without home access.

Device Management Processes

Technical Support of Technology Devices

The District will be responsible for supervising and providing appropriate technical support for all district technology systems, equipment and software, including the One-to-One Initiative. There will continue to be one designated technician assigned for overall technical support at each of the secondary school, with the addition of one technician to be implemented in conjunction with the One-to-One Initiative to provide full-time support for the large number of student devices. In addition, secondary school-based student technology teams will be formed under the supervision of the school principal and administrative team. They will work with the Technology department to provide frontline support in usability and basic troubleshooting issues for the One-to-One devices.

Warranty of Student Devices

All take-home One-to-One devices will be purchased with a 3-year warranty covering all mechanical failure and accidental damage. Such warranty will not cover theft or loss. A standard, heavy-duty case will be provided by the warranty provider. The device must be kept in the case at all times for the coverage to remain in effect.

Mechanical Failure

In the event of mechanical failure at the secondary level, students are to report such failure as soon as possible to the student technology team. These teams will be formed in each school, with the senior high school team functioning as part of the Pathway model. If the student team members are not able to rectify the problem and determine that the device needs repair or reconfiguration, they will issue the user a replacement device and turn the failing device over to the Technology department for repair or remediation. At the elementary level, students report mechanical failure to their classroom teachers. Classroom teachers will issue the user a replacement device and turn the failing device over to the Technology department for repair or remediation.

Accidental Damage

In the event of accidental damage students are to follow the same procedure as with mechanical failure. Note that accidental damage warranties typically do not cover cases of repeated damage or damage that appears to be intentional. The accidental damage insurance will not cover damage due to negligence, improper care, usage or storage of the device, or failure to use the provided protective case. The District will pursue reimbursement of the full replacement cost of the device from the parents/guardians.

Theft or Loss

Students and parents/guardians will be required to sign a financial responsibility form in order to be issued a Chromebook and participate in the take-home One-to-One Initiative. The District will not be liable in the event of theft or loss and will pursue reimbursement of the full replacement cost of the device from parents/guardians. In event of a theft it will be incumbent upon parents/guardians to determine whether such loss is covered by their insurance coverage and/or whether a police report is appropriate.

Replacement Cycle

In order to maintain up-to-date, functional and efficient technology, it is important to include planned periodic equipment refreshes based on best practices and device life expectancies. The Montgomery County Intermediate Unit, in their April 15, 2019 Technology Evaluation Report, as referred as a summary of the evaluation of the District's Instructional Technology practices, recommends a replacement cycle of four years for Chromebooks and laptops and five to six years for desktop computers. Other sources recommend more aggressive systematic replacement of devices every three to five years. For example, the Gartner Group in an April, 2018 report recommends a four to five year replacement cycle for desktops and two to four years for laptops. Factors cited for these cycles include hardware failure rate, ability to support complex computing needs and ability to support required software loaded. In light of budget considerations, our plan includes an ongoing replacement cycle of laptop computers every four to five years and desktop computers every five to six years. The Chromebooks will be used in the take-home One-to-One Initiative for three years (during the duration of the mechanical failure and accidental damage warranty coverage) before being replaced. Chromebooks retired from the take-home One-to-One Initiative will continue to be used for one to two additional years for the in-school program in grades K-3. The interactive flat panels are expected to be considered for replacement after approximately 10 years. This is based on previous experience with interactive devices and the introduction of new and better technologies. However, the interactive flat panels' functionality should significantly exceed this cycle.

Review and Revision

With rapid changes in technology and educational applications, it is important for any long-range plan to include provision for periodic review and revision. This plan will be reviewed by the District on an annual basis at a minimum, and adjusted or updated where necessary. While the basic tenets, strategies, philosophies and educational goals and general overall budget will remain constant, the plan is subject to modification to respond to changing technologies and needs.