NORTHUMBERLAND COUNTY PUBLIC SCHOOLS

EDUCATION TECHNOLOGY PLAN

2019-2025

http://www.nucps.net

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Introduction

This document was developed to outline the current status of technology integration and determine the direction in which Northumberland County will proceed in the future. This plan is also composed of subsections:

- Learning (Enhance Personalized, Equitable Student Learning Experiences with Technology),
- Teaching (Support Innovative Professional Learning with Technology),
- Leadership (Create Cultures of Change through Innovative Leadership Practices), and
- Infrastructure (Secure and Robust Infrastructure).

As rapidly as technology is changing, our Technology Plan will be a dynamic document that can be updated as needed. We invite our Northumberland school personnel to participate in the continual development of our plan by letting us know of good resources to share with our fellow educators. You can email rhall@nucps.net to provide information or links that could be included in the plan.

Educational Technology Planning Committee

Mr. Robert E. Gilbert, Director of Technology
Mr. Mercer Basye, Technologist
Dr. Holly Wargo, Superintendent of Schools
Mrs. Amy Lamb, Assistant Superintendent of Instruction
Dr. Travis Burns, High School Principal
Mrs. Christine Downing, Teacher NES
Mrs. Virginia Mozingo, Para NES
Mr. Gary Dickens, Teacher, NHS
Mr. Jay Lightfoot, Teacher, NHS
Mrs. Melissa Saunders, Teacher, NHS
Ms. Brittney Kanard, Teacher , NMS
Mr. Cory Kocher, Teacher, NMS
Mrs. Rachel Hall, Instructional Technology Resource Teacher

Vision

Northumberland County Public Schools is committed to preparing our young people for further education and employment. We realize that this is a dynamic and complex task, which must reflect the fundamental changes in our society. One such change is the technological revolution that surrounds us today. While we believe that children must demonstrate mastery of basic skills and fundamental processes, we also recognize and embrace technological literacy as an essential “basic” in our children’s preparation. Technological literacy is not merely knowing the tools and basic function of these tools, but rather knowing how to use these tools to solve problems, and to communicate their experiences to others. Our challenge is to be able to utilize the vast online programs and curriculum to ensure that each child can realize the full potential of the technology he or she encounters now and in the future.

Mission

The Technology mission of Northumberland County Public Schools is to integrate technology to:

- Ensure that instructional goals guide all decisions regarding technology integration
- Provide access to secure, state-of-the-art technology for all students and staff
- Restructure the learning environment to reflect a strong interdisciplinary and technology-enriched curriculum while recognizing individual learning styles
- Encourage student-centered learning and problem solving
- Improve staff productivity and self-sufficiency
- Improve efficiency through the use of information management systems
- Encourage effective communication in the learning community
- Encourage ethical and responsible use of information by the learning community
- Provide ongoing professional development which focuses on instructional technology and pedagogy with emphasis on Best Practices
- Provide for current and future technology needs

Overview

The Northumberland County Public Schools Technology Plan has been revised to reflect the goals put forth in the Six-Year Technology Plan for Virginia as well as the goals of Northumberland County Public Schools. This long- range plan should be viewed as the base from which direction emanates as well as a dynamic instrument that must change often to adapt to the rapidly evolving world of technology.

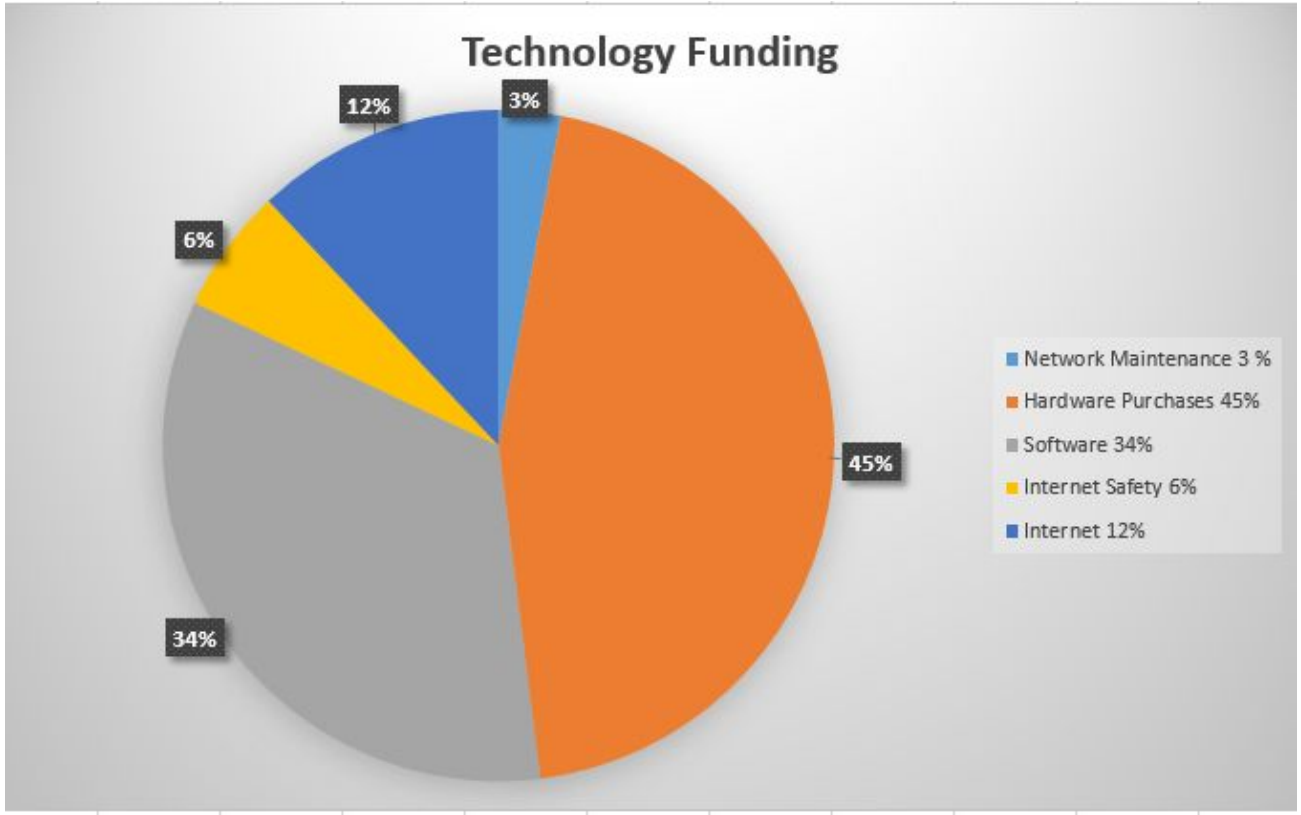
Current Status and Usage of Technology within Northumberland County Public Schools

- Northumberland County Public Schools is comprised of one elementary school (k-5), one middle school (6-8), and one high school (9-12). There is a division-wide plan for technology. However, each school will contribute to the technology plan to meet its needs.
- A major achievement in system security was installed in all schools as well as the School Board office — the installation of IBOSS Filter and Antivirus/Intrusion Prevention system — this device has given the Technology Department great control over the system with proactive controls and the release of unwanted spam emails from anything other than the mail server. These systems also keep bandwidth usage down by caching content, delivering it locally. We have installed 2 updated Cisco ASA Firewalls to prevent intrusion.
- All staff members have their own email accounts. We employ Google Apps for Education, using it for email, collaboration and storage.
- All schools currently have direct Internet access through a local area network, via a 1GB Fiber network provided by Windstream, and a 500MB backup provided by Atlantic Broadband providing 1500 MB/sec of bandwidth at all buildings. We have installed a Cisco switching network, replacing all old hardware. It was replaced again recently. We also have installed Cisco Wireless Access points in all of our buildings, with next to no "Dead Spots". We have a guest network, and a data network that requires a secure login. Wireless activity is monitored Daily, and all connected devices pass through our IBoss system.
- The Technology Department continues to prepare/update all computers for Online SOL testing. Online testing now takes place at all schools on wireless laptops and wired PCs.
- Northumberland County has approximately one computer per four students. These computers are a PC platform running Microsoft Windows 7 and 10 operating systems.
- The Division Technology Director is responsible for making technology decisions within the scope of the technology plan. The technology committees at each school devise the technology plan. The Technology Director is responsible for implementing/delegating technology decisions such as teacher training, repair and upgrade of computers, along with purchasing and loading software when necessary.
- Ongoing technology training based on staff needs is offered for all personnel by both Technology staff and our ITRT, with strong emphasis on self- sufficiency.
- Students' technology instruction is individualized based on teacher assessment relative to established criteria. Northumberland County uses Pearson PowerSchool administrative software for administrative and classroom management purposes. We are using the Parent Portal which allows parents to view the progress of their children.

- Technology skills to be attained by students and staff have been established. The Department of Education sets the standards. One component to be considered in future hiring of staff will be their level of technology skills. NCPS will ensure that all teachers have minimum skills and will address any deficiencies.
- Rappahannock Community College and the University of Virginia offer technology training for instructional staff. Staff members offer various face to face courses. Our ITRT (Instructional Technology Resource Teacher) provides school-wide training for staff as well as students, and is also responsible for developing and maintaining an Internet Safety Program in alignment with CIPA guidelines. We are researching other online training as well.
- Computer classes are offered for students at all schools. Microsoft Certifications can be obtained in our CTE Lab.
- Several Career and Technology classes have been added to the middle/high school course offerings. Graphic Arts, Television Production I & II, Computer Information Systems 1 & 2, and Digital Applications may be selected as electives by students interested in these fields.
- Use of Google products such as Google Docs, Forms and Sheets have been adopted by many in the district ensuring data security and confidentiality.

FISCAL PLAN

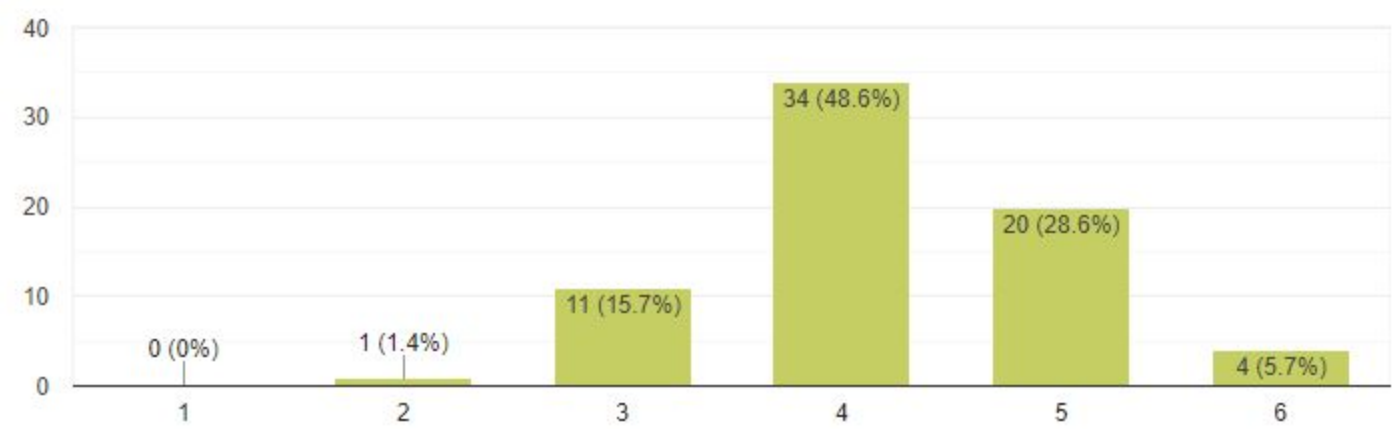
The chart below shows the approximate division of the funding Northumberland County Public Schools receives each year. The purchase of new computers and Network hardware comprises nearly half of our expenditures, with Software at ⅓. Internet Safety devices comprised 6% of the budget. The division will vary from year to year, but this is an average of the last 5 years.



Technology Use Survey Results

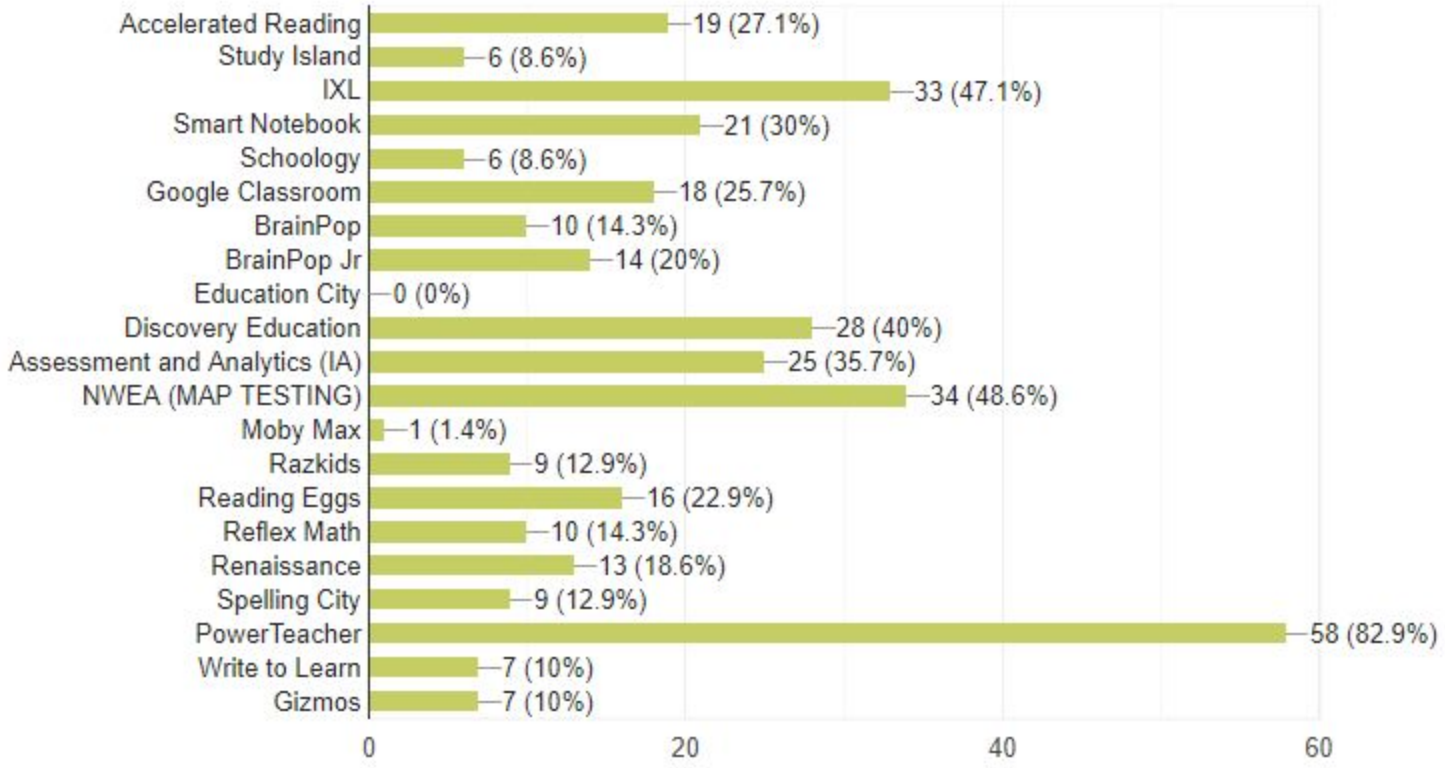
How would you rate your overall skill in using educational technology?

70 responses



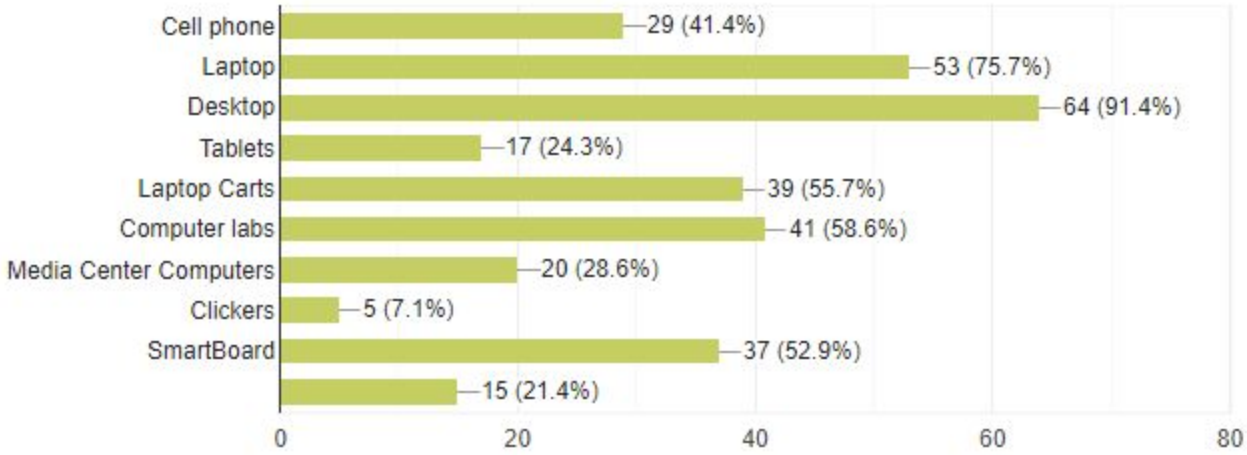
Please identify which of the following educational software YOU CURRENTLY USE in teaching. Mark all that apply.

70 responses



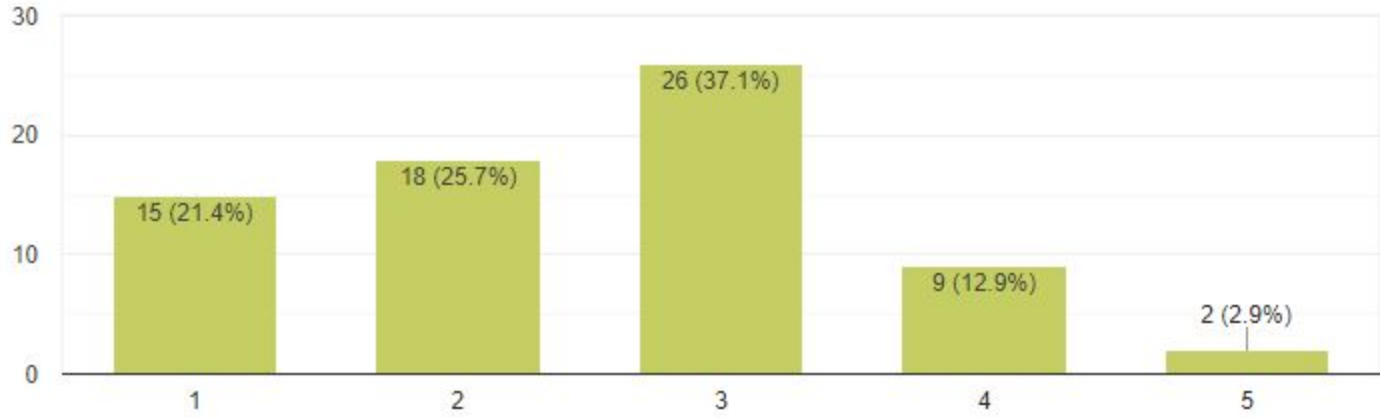
Please identify which of the following technology devices YOU CURRENTLY USE in teaching. Mark all that apply.

70 responses



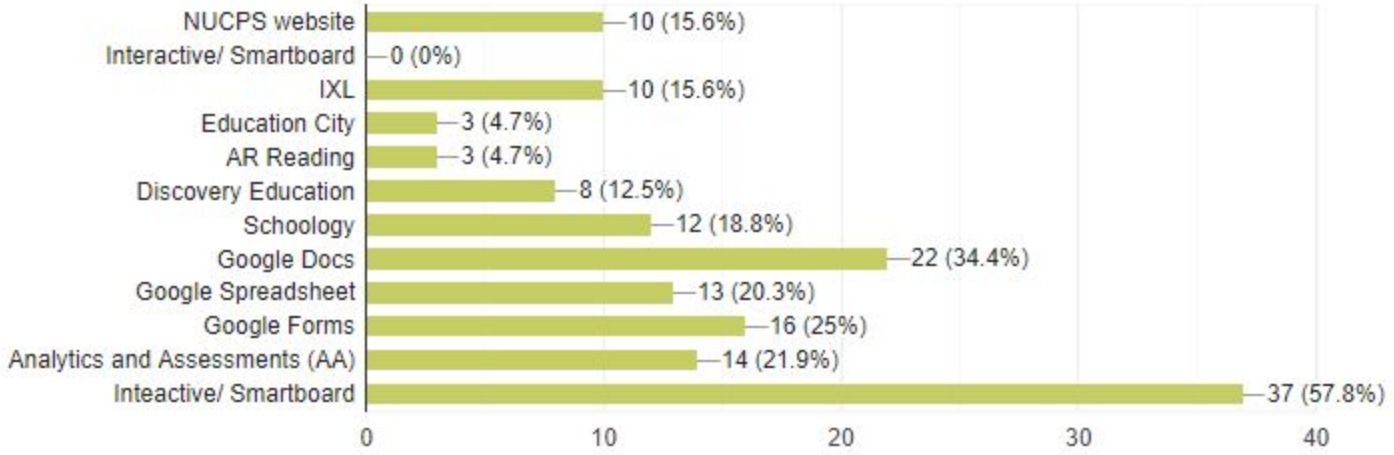
By law, the school system is required to have filters to protect students from inappropriate material on the internet. NCPS uses IBOSS which has proven to be very effective. The unintended consequences of this filter are the blocking of educational sites teachers need to use on a daily basis. Please indicate the degree to which this has impaired your instruction.

70 responses



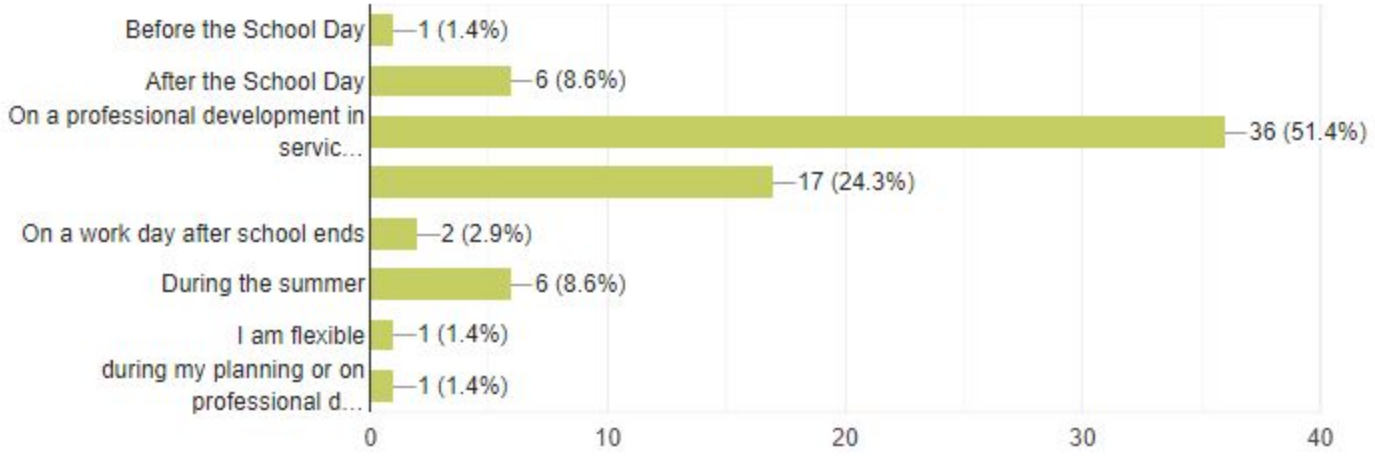
Most teachers are interested in learning how to integrate technology into their instruction, the learning process , and student products. However, finding time to work in professional development is the challenge. IF there were a way to have bimonthly training, please select the educational technology which you would most like to learn. Select your top choices.

64 responses



The issue of WHEN to have professional development is always a question. Please check the choices you feel best suit your schedule.

70 responses



State Goals and Local Goals

Learning:

State Goal 1:

Promote and support student personalized, deeper learning experiences to demonstrate workplace readiness by creatively solving complex problems, thinking critically, collaborating, communicating and demonstrating responsible citizenship.

NCPS Objective	Evidence	Action (What action will be taken?)
1.1 Students will develop deeper learning skills by leveraging technology as a resource or tool.	* ITRT work together to research and suggest digital resources for students and work with curriculum teams to create digital resources to support instruction. *Survey students and teachers to analyze the use of technology based resources.	
1.2 Educators will leverage current and emerging technologies to increase opportunities for students to follow personalized learning pathways.	*Provide virtual learning tools that deliver multiple pathways for learning through blended and fully online models in ways that increase quality of education and equity for students.	Personalized learning pathways are provided through the use of LMS systems, apps and web resources for enrichment, remediation, and differentiation. Secondary students are offered opportunities in online & virtual courses.
1.3 Students will apply technology effectively to support the	Provide technology and computer science cross-curricular connections starting in the	*Student products include evidence of proficiency of the 5Cs:

construction and application of content knowledge and skills	elementary grades and across all disciplines to promote meaningful, real world applications of knowledge and skills and promote deeper learning opportunities aligned to the Virginia Standards of Learning.	critical thinking, collaboration, communication, creativity, and citizenship. * Schools will offer students the opportunity to engage in meaningful, real world applications, including the creation of new STEM labs and coding
	Prepare our students for a participatory culture by providing resources related to Internet safety, digital citizenship skills, and student awareness of and skill for personal and data privacy.	*All students are expected to comply with the division's Acceptable Use Policy, which is also modeled by teachers during instruction. *ITRTs, library media specialists, technology resource assistants, and teachers provide lessons in digital citizenship, internet safety, and promote the responsible use of the internet.
1.4 Students will demonstrate mastery in a variety of ways, including the use of technology through the creation of digital artifacts.	NCPS implemented a 1:1 relationship of online devices to students.	Increase student access to digital learning opportunities that promote the 5c's: critical thinking, collaboration, communication, creativity, and citizenship.
1.5 Educators will expose all students to career and college opportunities	Promote in-school and out-of-school technology-based learning opportunities	Collect information on the number of students enrolled in advanced

including those in the technical fields to promote workplace and college readiness through advanced coursework, mentorships, and internships.	along with planning, exposure, career exploration, and building professional relationships.	coursework, internships, and mentorships or receiving industry certifications.

Teaching:

State Goal 2.:

Promote and support current and emerging technology-based resources that support educators in developing and employing innovative strategies and practices to support student-centric learning models to increase quality of education and equity for students.

NCPS Objective	Evidence	Action (What action will be taken?)
2.1 Educators support personalized, deeper learning experiences, for students, that are enhanced through appropriate and meaningful technology integration.	NCPS will provide both in person and digital professional development trainings that promote the use of technology to show teachers and administrators strategies for personalizing learning and providing deeper learning experiences for students	NCPS offers numerous in person and online professional development opportunities for teachers including RCC recertification classes, school-based technology trainings, online training modules, Teaching & Learning Summit, and opportunities to attend professional conferences and trainings.
	NCPS Technology Department will work collaboratively with teacher and technology stakeholders to create instructional resources that can be used by educators to support innovative learning experiences	ITRTs will support teachers by providing an instructional technology website, curriculum resource websites, collaborative lesson planning, instructional documents and presentations, and training to building level technology representatives and library media specialists.
	NCPS Technology Department will coordinate and collaborate partnerships with professional	ITRTs connect with other professionals across the state in order to build professional learning networks through

	organizations and local school divisions to align agency professional learning goals to ensure targeted and strategic professional learning experiences in the area of instructional technology for teachers statewide.	the use of social media, being a member of organizations like VSTE and attending professional conferences.
2.2 Educators utilize the instructional technology resource teacher model to support student engagement through technology in the classroom.	ITRTs offer professional development and resources in order to promote the use of instructional technology across the division.	Record of professional development calendar and attendance.
	Teachers utilize the ITRTs as a resource for instructional support and co-teaching in order to integrate the effective use of technology in instruction.	ITRT documentation of instructional support and co teaching experiences.
2.3 Through the use of technology supports (learning and/or content management systems, student information systems, adaptive technologies) educators will monitor students' progress to personalize learning and inform instructional practices.	Utilize technology supports (MAP, PowerTest Analytics, Echo, etc.) to monitor student progress and personalize learning.	Teacher lesson plans show differentiated instruction to meet individual student needs.
	Promote in-school and out-of-school technology-based learning opportunities (such as pursuit of industry certifications, professional licenses, and dual enrollment courses)	Data is collected on the number of students enrolled in advanced coursework, internships, and mentorships.

	along with career exploration, exposure, and planning opportunities.	
2.4 Educators understand how to enhance performance-based and alternative assessments through the intentional integration of technology.	Provide information about assistive technology availability and uses through the Training and Technical Assistance Centers (TTAC)	Assistive technologies are available where necessary for students with disabilities.
	Support instruction in the development of rubrics and other evaluation tools for use with performance-based assessment that integrate technology.	ITRT will partner with division-wide curriculum teams to encourage intentional integration of technology and use of rubrics to use with performance based assessments.

Leadership:

State Goal 3:

Promote leadership that supports deeper learning experiences for students and innovative instructional practices by educators through the use of technology.

NCPS Objective	Evidence	Action (What action will be taken?)
3.1 Educational leaders develop a vision for teaching and learning that includes the appropriate use of technology.	Provide and model professional learning regarding educational technology leadership, research, and innovations in education.	*NCPS partners with educational leaders to stay current with emerging technologies and best instructional strategies. *Utilize opportunities such as new teacher orientation, professional

		development, online resources (software and hardware), and ITRT support *NCPS establishes relationships with community partners and educational vendors.
	Promote the effective and efficient use of Instructional Technology Resource Teachers.	ITRTs model, train, plan and co-teach
3.2 Educational leaders are able to communicate and guide the implementation of division and school goals for teaching and learning that integrate technology and promote innovation.	Support and encourage new technology initiatives	NCPS provides opportunities (e.g. pilot projects, requirement waivers, resources, etc.), for schools to implement and evaluate new technologies and instructional approaches.
3.3 Educational leaders model tolerance for risk and experimentation and create a culture of trust and innovation.	Administrators encourage and assist with the implementation of new technology initiatives.	Survey of staff includes responses related to new technology initiatives
3.4 Educational Leaders support, secure and advocate for resources to sustain technology initiatives and goals including those designed to support personalized learning environments.	Administrators encourage teachers to facilitate data driven methods and increased use of technology in order to personalize learning in the classroom.	*Administrators evaluate teacher lesson plans and provide feedback and methods for incorporating personalized learning. *Teachers submit technology help tickets in order to collaborate with ITRTs and learn new ways to personalize learning in the classroom.

3.5 Educational Leaders promote the use of a variety of innovative instructional strategies and practices developed with current and emerging technology-based resources to support the innovative instructional approaches in the classroom	Promote use of new resources, effective instructional practices, and the continuous development of professional learning networks through the enhanced use of social networking tools.	ITRTs suggest and share resources continuously to expand professional learning networks.
	Promote and provide professional learning opportunities regarding educational technology leadership, research, and innovations in education.	Rappahannock Community College Recertification Classes; School-based technology trainings; online training modules; Teaching & Learning Summit; opportunities to attend professional conferences and trainings
3.6 Educational leaders possess the capability to efficiently and effectively use technology in the performance of job duties (data-driven decision making, educator evaluations, communications, and more).	Provide support for administrators to use technology tools proficiently.	NCPS Technology department provides a strong instructional and support staff to assist administrators.
	Provide data from multiple sources to improve educational outcomes, including Powerschool, MAP, and electronic sources.	Administrators and teachers use data to drive instruction.
3.7 Technology is included in technical assistance and school improvement resources provided by to educational leaders based upon school and school division needs	Support the role of technology in the statewide system to collect, monitor, and report achievement to inform	*Provide data from multiple sources to improve educational outcomes, including Powerschool, MAP, and electronic sources.

as determined by criteria such as Accreditation Matrix Performance Levels.	practices surrounding continuous improvement efforts	*****Provide communication on the continued Board of Education work in support of the Profile of a Virginia Graduate, Accreditation Matrix, and the College, Career, and Civic Readiness Index.

Infrastructure:

State Goal 4 :

Promote and support a secure and robust technology infrastructure to support access, adequacy, and equity.

NCPS Objective	Evidence	Action (What action will be taken?)
4.1 Students, educators, and leaders have equitable access to secure and robust networks that provide high quality, reliable access to the Internet and other networks.	Utilize programs (such as e-Rate) to maximize resources available to students, educators, and school leaders.	All Northumberland County Schools wired and wireless equipment exceeds minimum requirements set by SETDA standards.
	Facilitate the implementation of a 10 Gigabytes wide area network and internet connectivity.	Upgrading network connectivity to 10 GBs will exceed the demand of connectivity needs with the usage of devices on the rise every year.
	Work with communities for robust and sustainable networks in and out of school and district buildings.	Northumberland County Schools investigates strategies and partnerships with local internet providers to continue to seek ways to extend broadband access to the student population.
4.2 Schools and the school division use best practices that comply with federal, state, and industry guidelines and recommendations to minimize network threats and vulnerabilities and protect educational data.	Continuously review and update policies and procedures regarding the handling of educational data.	By continuously updating policies, NCPS will have a good base for educating staff.

	Continuously educate staff on the use of email and how to address unknown emails.	*Email is the number one delivery vehicle for most malware and viruses, with proper education, FCPS will greatly reduce the risk of infections. *NCPS simulates email threats and monitors staff responses.
4.3 Students, educators, and leaders have equitable access to computing devices and other digital resources, including assistive technologies.	Work with district on achieving a 1:1 initiative for all students.	* By 2023-2024 NCPS will be 1:1 student to device ratio, which will allow all students daily access to a device. * Individual student device assignment will permit, with proper policies in place, a take home procedure for student use off campus
	Ensure that assistive technology services and devices are implemented in accordance with the Individuals with Disabilities Education Act (IDEA).	* Existing division technology is accessible to all students * Comparable technologies are available where necessary for students with disabilities.
4.4 School division has access to technical and human resources that enable the effective evaluation of infrastructure costs and other considerations necessary for high quality and reliable access to the Internet and other networks used by students, educators, and leaders in innovative ways	NCPS evaluates multiple solutions and gathers input from multiple stakeholders before purchasing and implementing solutions.	NCPS implements the most cost effective solution that meets our expectations.

STUDENT INTERNET ACCEPTABLE USE POLICY (Policy GAB/IIBEA-E2)

In compliance with Code of Virginia § 22.170.2, Northumberland County Public Schools recognizes that the Internet is a valuable educational tool and student access to the schools' computer network is consistent with the goal of promoting excellence in education. The learning community supports the school system's vision of providing an environment to enable our students to become technologically literate and lifelong learners. The Northumberland County School Board, administrators, teachers, and members of the community have equipped the schools with state of the art technology to help make the digital divide between rural communities and their urban and suburban counterparts a thing of the past. Access to high speed internet in the schools was made possible by the support of the community. As a result, the opportunities for resource sharing, collaboration, communication, intellectual challenges, critical thinking, and creative growth will be greatly improved. Along with the privilege of computer access, staff members and students are expected to demonstrate safety, ethics, and respect while using school computers, software, hardware, terminals, printers, servers, and any internal or external network.

Internet safety education will be integrated into the content areas in Pre-K to Grade 12. Age-appropriate lessons that focus on safety, security, and ethics will be embedded in the curricula. Students also will be taught how to discern the validity of internet sources, understand copyright laws, and explore legal issues related to internet use. The school's internet security filters restrict most access to social networking sites and inappropriate material. The school system takes a **no tolerance** approach to accessing inappropriate material. Proper precautions should be taken by students when using the internet, and they will be made aware of the appropriate steps to take if they encounter a problem. Students are expected to honor the Acceptable Use Policy (AUP) or they may lose the privilege of internet access.

Freedom of speech and access to information will be honored. During school, teachers of students will guide students toward appropriate materials. The following are not permitted on any district computer, district network, or the Internet:

- Sending, receiving, or displaying offensive messages, images, or materials
- Using obscene language
- Harassing, insulting, or attacking others (cyber bullying)
- Damaging computers, computer systems, mobile technology or computer networks
- Violating copyright laws
- Using another's password
- Trespassing in another person's folder, work, or files
- Intentionally wasting limited resources
- Using school resources and accounts to access services requiring payment
- Employing the network for commercial purposes
- Damaging hardware or software
- Misusing hardware or software
- Downloading programs using school computers
- Student communication with other Internet users via email, chat rooms, forums, or other types of interactive communication

- Copying commercial software in violation of copyright laws and removing it from school property installing, copying, or running software not provided and authorized by NCPS .
- Bypassing system security features (VPN)
- Possession or use of utilities designed to bypass security systems (i.e. anonymous proxy server) or gain unauthorized access

The items above should not be considered comprehensive. Other inappropriate actions not listed also may be considered unacceptable use of electronic communications. Disciplinary action may range from a reprimand to expulsion by school authorities and may be subject to local, state, federal, and international law. Violations may result in a loss of access as well as other disciplinary or legal action.

We, the undersigned, have read, understand, and agree to abide by the Acceptable Use Policy for Northumberland County Public Schools. Please sign and return to school.

Student: _____ Parent/Guardian: _____

Date: _____ Date: _____

File: GAB-E1/IIBEA-E1

INTERNET ACCEPTABLE USE POLICY FOR STAFF MEMBERS

In compliance with Code of Virginia § 22.170.2, Northumberland County Public Schools recognized that the Internet is a valuable educational tool and student access to the schools' computer network is consistent with the goal of promoting excellence in education. The learning community supports the school system's vision of providing an environment to enable our students to become technologically literate and life-lone learners. The Northumberland County School Board, administrators, teachers, and members of the community have equipped the schools with state of the art technology to help make the digital divide between rural communities and their urban and suburban counterparts a thing of the past. Access to high speed internet in the schools was made possible by the support of the community. As a result, the opportunities for resource sharing, collaboration, communication, intellectual challenges, critical thinking, and creative growth will be greatly improved. Along with the privilege of computer access, staff members are expected to demonstrate safety, ethics, and respect while using school computers, software, hardware, terminals, printers, servers, and any internal or external network.

Internet safety education will be integrated into the content areas in kindergarten to 12th grade. Age appropriate lessons that focus on safety, security, and ethics will be imbedded in the curricula. Students will also be taught how to discern the validity of internet sources, understand copyright laws, and explore legal issues related to internet use. The school's internet security filters restrict most access to social networking sites and inappropriate material. However, you may possible come across material of adult content. The school system takes a **no tolerance** approach to accessing such material. Proper precautions should be taken by staff when using the internet and they will be made aware of the appropriate steps to take if they encounter a problem. To be permitted to access to sites blocked by the filter, staff members will adhere to regulations regarding the Freedom of Information Act as stated by the library of Virginia. Staff members are expected to honor the Acceptable Use Policy (AUP) or they may lose the privilege of internet access.

Within reason, freedom of speech and access to information will be honored. The following are not permitted on any district computer, district network, or the Internet:

- Sending, receiving, or displaying offensive messages, images, or materials
- Using obscene language
- Harassing, insulting, or attacking others (cyber-bullying)
- Damaging computers, computer systems, or computer networks
- Violating copyright laws
- Using another's password
- Trespassing in another person's folder, work, or files
- Intentionally wasting limited resources
- Using school resources and accounts to access services requiring payment (unless appropriate form has been completed and

approved)
- Employing the network for commercial purposes
- Damaging hardware or software
- Misusing hardware or software
- Downloading programs using school computers
- No children or students are permitted to use staff accounts to access the internet

 NORTHUMBERLAND COUNTY SCHOOLS

The items above should not be considered comprehensive. Other inappropriate actions not listed may also be considered unacceptable use of electronic communications. Disciplinary action may range from a reprimand to dismissal by school authorities and may be subject to local, state, federal, and international law. Violations may result in a loss of access as well as other disciplinary or legal action.

Listed below are the roles and responsibilities for division personnel (including but not limited to): • **Administrators** – monitor teachers' inclusion of internet safety in their lesson plans, secure the passwords and access to student data, and inform community stakeholders about internet safety policy
- **Teachers** – include internet safety in lesson plans, monitor student internet use, submit the appropriate forms when requesting access to sites blocked by the filter and using the school credit card online, be cognizant of students who have and have not signed the AUP
- **Library Media Specialist** – be knowledgeable about current copyright laws regarding internet resources, familiar with appropriate resource sites, act as a resource for teachers prior to students' research, monitor student internet use, and submit appropriate forms when requesting access to sites blocked by the filter and using the school credit card online
- **Instructional Technology Resource Teacher** – update AUP yearly, help teachers integrate technology and internet safety into their curricula, work with TC to access sites blocked by filter, secure the passwords and access to student data, work with administrators and community stakeholders to promote internet safety, coordinate Internet Safety Committee to write the curriculum for the division
- **Building Resource Officer** – be cognizant of possible cyber bullying situations, act as a resource to teachers regarding legal issues about internet use
- **Technology Coordinator** – monitor and filter division internet, make an annual report about security, make recommendations for upgrades when appropriate, report violations of AUP to the superintendent, create and maintain passwords to secure access to the division's network
- **Guidance Counselors** – secure the passwords and access to student data, be familiar with appropriate online resources to assist

students with counseling issues, college applications, and SAT registration, be cognizant of possible cyber bullying situations

- **Testing Director/SASI Coordinator** – to create and maintain passwords to secure restricted access to student data
- **Designated Person at each School** – maintain a current list of students and staff who have and have not signed the AUP, update the list annually, supply the current list to appropriate staff when requested to do so

I have read, understand, and agree to abide by the Acceptable Use Policy for Northumberland County Public Schools. Please sign and return to school.

Staff Member _____ Date _____ Other _____ Role

_____

Approved: July 20, 2009
Revised: February 11, 2013

2017 Computer Science Standards of Learning

Kindergarten

The kindergarten standards place emphasis on developing awareness of computing and computing devices by gathering and organizing data, by sorting or step-by-step. Students will use accurate terminology to identify components and describe their purposes. Students will also be introduced to communication, security, and responsible computing behaviors. The use of technology will be an integral part of successful acquisition of skills in all content areas.

Click here for more information

Click here for the Curriculum Guide

Grade One

The first grade standards place emphasis on developing organizational skills, such as classifying based on common attributes, completing a pattern, or explaining processes step-by-step. Students will use accurate terminology to identify components and describe their purposes. Students will also be able to describe to communication, security, and responsible computing behaviors. The use of technology will be an integral part of successful acquisition of skills in all content areas.

Click here for more information

Click here for the Curriculum Guide

Grade Two

The standards for second grade place an emphasis on creating models of physical objects or processes to demonstrate relationships. Second grade standards build on students' skills in constructing programs and utilizing algorithms. The accurate use of terminology as well as the responsible use of technology will continue to be built upon. The foundational understanding of computing and the use of technology will be an integral component of successful acquisition of skills across content areas.

Click here for more information

Click here for the Curriculum Guide

Grade Three

The standards for third grade place an emphasis on decomposing larger problems and utilizing the iterative design process to develop a plan to construct and execute programs. Students in third grade are introduced to using computing systems to model attributes and behaviors associated with a concept. The accurate use of terminology as well as the responsible use of technology will continue to be built upon. The foundational understanding of computing and the use of technology will be an integral component of successful acquisition of skills across content areas.

Click here for more information

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Grade Four

The fourth-grade standards place emphasis on constructing programs and utilizing algorithms to accomplish a task. Students continue to decompose larger problems into smaller tasks. In fourth grade, students begin to think about the impacts of computing and computing devices. The accurate use of terminology as well as the responsible use of technology will continue to be built upon. The foundational understanding of computing and the use of technology will be an integral component of successful acquisition of skills across content areas.

Click here for more information

Click here for the Curriculum Guide

Grade Five

The fifth-grade standards place emphasis on constructing programs and utilizing algorithms to accomplish a task. Students continue to decompose larger problems into smaller tasks and recognize the impacts of computing and computing devices. Students in fifth grade model how computing

systems work. The accurate use of terminology as well as the responsible use of technology will continue to be built upon. The foundational understanding of computing and the use of technology will be an integral component of successful acquisition of skills across content areas.

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Grade Six

The sixth-grade standards emphasize constructing programs and utilizing algorithms to accomplish a task. Students continue to decompose larger problems into smaller tasks and recognize the impacts of computing and computing devices. Students in sixth grade begin to understand the means of storing data as representations of real world phenomena. The accurate use of terminology as well as the responsible use of technology will continue to be built upon. The foundational understanding of computing and the use of technology will be an integral component of successful acquisition of skills across content areas.

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Grade Seven

The seventh-grade standards emphasize constructing programs and utilizing algorithms to accomplish a task. Students continue to decompose larger problems into smaller tasks and recognize the impacts of computing and computing devices. Students in seventh grade explore processing data as well as its transmission over networks. The accurate use of terminology as well as the responsible use of technology will continue to be built upon. The foundational understanding of computing and the use of technology will be an integral component of successful acquisition of skills across content areas.

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Grade Eight

The eighth-grade standards emphasize constructing programs and utilizing algorithms to accomplish a task. Students continue to decompose larger problems into smaller tasks and recognize the impacts of computing and computing devices. Students in eighth grade continue to work with data including how it can be vulnerable and how it can be protected. The accurate use of terminology as well as the responsible use of technology will continue to be built upon. The foundational understanding of computing and the use of technology will be an integral component of successful acquisition of skills across content areas.

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Annual Review Process

The Division's Technology Plan is reviewed annually to determine if adjustments need to be made in any areas due to changes in available technology or division goals to meet our objectives. We will do the same with the plan alignment beginning with the summer of 2019. An evaluation of evidence page is included to articulate the findings of the review.

Evaluation of Evidence

Enhance Personalized, Equitable Student Learning Experiences with Technology					
	2019	**2020**	**2021**	**2022**	**2023**
ITRT work together to research and suggest digital resources for students and work with curriculum teams to create digital resources to support instruction.					
Survey students and teachers to analyze the use of technology based resources.					
Personalized learning pathways are provided through the use of Schoology,Google Classroom, apps and web resources for enrichment, remediation, and differentiation. Secondary students are offered opportunities in New Tech, online & virtual courses.					

Student products include evidence of proficiency of the 6Cs: critical thinking, collaboration, communication, creativity, and citizenship.					
Schools will offer students the opportunity to engage in meaningful, real world applications, including the creation of new STEAM labs and coding.					
All students are expected to comply with the division's Acceptable Use Policy, which is also modeled by teachers during instruction.					
ITRTs, library media specialists, technology resource assistants, and teachers provide lessons in digital citizenship, internet safety, and promote the responsible use of the internet.					
Increase student access to digital learning opportunities that promote the 5c's: critical thinking, collaboration, communication, creativity, and citizenship.					
Collect information on the number of students enrolled in advanced coursework, internships, and mentorships or receiving industry certifications.					

Support Innovative Professional Learning with Technology					
	2018	**2019**	**2020**	**2021**	**2022**

Northumberland County Public Schools offers numerous in person and online professional development opportunities for teachers including VA Western Community College recertification classes, school-based technology trainings, online training modules, Teaching & Learning Summit, and opportunities to attend professional conferences and trainings.					
ITRTs will support teachers by providing an instructional technology website, curriculum resource websites, collaborative lesson planning, instructional documents and presentations, and training to building level technology representatives and library media specialists.					
FCPS will create and implement a new TSIP plan that correlates to revised Technology Standards for Personnel.					
ITRTs connect with other professionals across the state in order to build professional learning networks through the use of social media, being a member of organizations like VSTE and attending professional conferences.					
Record of professional development calendar and attendance.					
ITRT documentation of instructional support and co teaching experiences.					
Teacher lesson plans show differentiated instruction to meet individual student needs.					
Data is collected on the number of students enrolled in advanced coursework, internships, and mentorships.					

Assistive technologies are available where necessary for students with disabilities.					
ITRT will partner with division-wide curriculum teams to encourage intentional integration of technology and use of rubrics to use with performance based assessments.					

Create Cultures of Change through Innovative Leadership Practices

	2018	2019	2020	2021	2022
NCPS partners with educational leaders to stay current with emerging technologies and best instructional strategies.					
Utilize opportunities such as new teacher orientation, professional development, online resources (software and hardware), and ITRT support					
NCPS establishes relationships with community partners and educational vendors.					
ITRTs model, train, plan and co-teach.					
NCPS provides opportunities (e.g. pilot projects, requirement waivers, resources, etc.), for schools to implement and evaluate new technologies and instructional approaches.					
Survey of staff includes responses related to new technology initiatives.					

Administrators evaluate teacher lesson plans and provide feedback and methods for incorporating personalized learning.					
Teachers submit technology help tickets in order to collaborate with ITRTs and learn new ways to personalize learning in the classroom.					
ITRTs suggest and share resources continuously to expand professional learning networks					
Rappahannock Community College Recertification Classes; School-based technology trainings; online training modules; Teaching & Learning Summit; opportunities to attend professional conferences and trainings					
NCPS Technology department provides a strong instructional and support staff to assist administrators.					
Administrators and teachers use data to drive instruction.					
Provide data from multiple sources to improve educational outcomes, including Powerschool, MAP, and electronic sources.					
Provide communication on the continued Board of Education work in support of the Profile of a Virginia Graduate, Accreditation Matrix, and the College, Career, and Civic Readiness Index.					

Secure and Robust Infrastructure

	2018	2019	2020	2021	2022

All Northumberland County Schools wired and wireless equipment exceeds minimum requirements set by SETDA standards.					
Upgrading network connectivity to 10 GBs will exceed the demand of connectivity needs with the usage of devices on the rise every year.					
Northumberland County Schools investigates strategies and partnerships with local internet providers to continue to seek ways to extend broadband access to the student population.					
By continuously updating policies, NCPS will have a good base for educating staff.					
Email is the number one delivery vehicle for most malware and viruses, with proper education, FCPS will greatly reduce the risk of infections.					
NCPS simulates email threats and monitors staff responses.					
By 2023-2024 NCPS will be 1:1 student to device ratio, which will allow all students daily access to a device.					
Individual student device assignment will permit, with proper policies in place, a take home procedure for student use off campus.					
Existing division technology is accessible to all students.					
Comparable technologies are available where necessary for students with disabilities.					

NCPS implements the most cost effective solution that meets our expectations.					