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TECHNOLOGY AND LEARNING FOR THE 21st CENTURY



Technology Plan

July 1, 2022 – June 30, 2025

www.nfschools.net

Niagara Falls City School District
Technology Committee
630 66th Street
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Introduction

The Niagara Falls City School District serves 6943 students in 11 schools in the City of Niagara Falls, NY. Eight elementary schools, two preparatory schools, and the state-of-the-art Niagara Falls High School provide instruction from Pre-Kindergarten to Grade 12. The Niagara Falls City School District employs 466 classroom teachers and 124 non-classroom (Librarians, TSA, Technology Integrators, Coaches, Social Workers, School Counselors and Psychologists) teachers. The district also employs 63 teaching assistants that support instructional activities. The district also operates a Community Education Center that serves the community with adult learning programs and Head Start programs. The District administration and staff are committed to educational excellence for the individual, partnership with the community, and life-long learning.

The Niagara Falls City School District (NFCSD) is an urban, ethnically diverse District with 35% African American, 2% Native American, 9% Hispanic, 3% Asian, 15% Multiracial, and 36% Caucasian students. All District schools are eligible for school-wide use of Title I funds. The NFCSD has a poverty rate of 77.8%. This is a high-needs, low-resource District which has, over the past 25 years, seen an increase in its level of student need.

Despite its economic challenges, NFCSD has made notable progress in improving student achievement and motivating students to stay in school and graduate. The 2016 cohort posted a 5-year graduation rate of 70.3%. The 2017 cohort achieved a 4-year graduation of 76.6%. This is a significant increase in the graduation rate of the subsequent graduation cohort without relying on the additional year. The District continues to implement new instructional programs at both the elementary and preparatory level; Journeys for English Language Arts; Investigations for Mathematics and Amplify for English Language Arts beginning in grade 6. Emphasis has been placed on multiple pathways to graduation with a consistent commitment in the use of technology from primary to high school within a developmental appropriate framework.

Foreword

In the global digital economy, technology is rapidly changing how people live and work. The need to harness technology to benefit our nation's schools, communities and, most importantly, our students is paramount.

Preparing students for life in the 21st Century requires the integration of technology into the curriculum and support services of a school system.

Several key building blocks for student achievement in the 21st Century include:

- Focus education technology investment on specific educational objectives;
- Make the development of 21st Century skills a key educational goal;
- Align student assessment with educational objectives and include 21st Century skills;
- Adopt continuous improvement strategies to measure progress and adjust accordingly;
- Increase investment in professional development, especially to promote skills related to remote instruction.
- Ensure equitable access to technology for all students with consideration to socio-economic status, enriched learning, second language learners and assistive / accessibility features.

Scope of Effort

The purpose of the Niagara Falls City School District Technology Plan is to provide a coherent long-range direction for the District as it envisions how technology can enhance the teaching, learning, and support services processes.

The District Technology Committee is charged with the task of periodically updating the District Technology Plan. This effort represents the current version of the school district's Technology Plan originally adopted by the Board of Education in 1992. All stakeholder groups are represented in this process.

Further, the Technology Committee has developed a sustainable process that will provide significant value to ongoing planning and implementation efforts.

Acknowledgements

This report is the result of the efforts during the 2021-2022 school year of the District Technology Committee. The committee met on a bi-monthly basis to not only discuss this plan, but to review all District technology matters. A Sub-committee met routinely to provide continued work on the plan. The District Technology Committee is a standing committee and will continue to meet bi-monthly.

The Plan recommended by the Technology Committee attempts to guide the District for the next three (3) years. Through user surveys, discussions and evaluations, the Plan will be revised as technologies change and as user needs dictate.

The following individuals are gratefully acknowledged as members of the District Technology Committee:

Mark Laurrie - Superintendent of Schools.
Ray Granieri - Administrator for Information Services.
John Briglio - Vice Principal at Gaskill Prep School.
Melissa Cacciatore - Systems Engineer.
Richard Carella - Administrator for Curriculum.
Roger Carroll - District consultant (TEMPs).
Ronni McGrath - Elementary STEM Coordinator.
Nick Ruffolo - Teacher on Special Assignment.
Edward Maynard - Instructional Technology Integrator.
David StOnge - Instructional Technology Integrator.
Alicia Savino - Human Resource Manager.
Edward Ventry - Vice Principal at NFHS.
Phillip Miano - BOCES Tech Integrator.
Deidre Stasiak- BOCES Tech Integrator.
Wendy Tedesco - Central Office.
Marcia Capone - Administrator for Assessment.
Angela Manella - Vice Principal at H.F. Abate Elementary School.
Terence Pratt - Application Specialist.
Dr. Suzanne Wagner - Chair and Professor - CIS - Niagara University.
Kayla Raymond - Niagara University CIS Student Intern.
Chandler Fredrick - Niagara University CIS Student Intern.
Cheryl Meteer - Special Education.
Michelle Okal-Frink - Director of Instructional Technology Reach and Innovation at Erie 1 BOCES
Brendan Stapley - University of Buffalo Center for Assistive Technology.
Jessica Derzins - University of Buffalo Center for Assistive Technology.
Dr. Sharon Ray - University of Buffalo Center for Assistive Technology.
Kimberly Naus - University of Buffalo Center for Assistive Technology.
Erin Brunelle - University of Buffalo Center for Assistive Technology.
District Parent Group - February 2022 meeting.

Executive Summary

The Niagara Falls City School District is committed to promoting and assessing the progress of utilizing technology in all schools and in our community. Over the past decade, focus has been on establishing technology as an integral part of the learning community. In accordance with the previous plan, hardware has been acquired and connectivity to the District network established. Recommendations about the importance of professional development and integrating digital content into the curriculum have been made.

The Technology Committee has sought to answer the questions of how and why technology has created a positive impact on education. The committee has endeavored to synthesize the best classroom practices, analyze existing research, and interview education experts to identify those educational objectives that technology can help achieve for the entire learning community.

The committee's exploration identified several key findings that are reported herein:

- Education technology can improve student achievement;
- Technology has the greatest impact when integrated into the curriculum to achieve clear, measurable educational objectives;
- Assessment of technology must be aligned with educational objectives;
- Measurement and continuous improvement strategies must be widely implemented in schools;

It is believed that this Plan addresses these key findings. Upon approval of the Plan, the Technology Committee will continue to meet to monitor and adjust the Plan as needed over the next three (3) year period.

It is the committee's hope that this Plan inspires students, teachers, administrators, and the community to take decisive action to ensure that technology improves schools and prepares students to succeed in an increasingly competitive global community.

Vision

The Niagara Falls City School District will utilize and integrate technology in an interactive community to be a world-class quality organization.

Mission

The Niagara Falls City School District will continually monitor and adjust its comprehensive long-range Technology Plan for the school district and the community it serves to provide opportunities for all to compete successfully in a world-class environment.

Instructional Technology Smart Goals

The primary goal of the Niagara Falls City School District's Technology Plan is to improve student learning as measured by State and National standards:

- The District will create, maintain and use the NFCSD Teacher K-12 Technology Continuum benchmarks for action steps defined in this goal and other District initiatives.
 - [Technology & Information Services / Technology Plan \(nfschools.net\)](#)
- By June of 2025, all components of Education Law 2d will be completed and in practice.
- By June of 2025, the District's network infrastructure will be in place to support 10 gig ready traffic and additional equipment will be added to provide a 'robust' network environment.

Standards/Benchmarks/Indicators

The District has adopted standards as designed by the NYS K-12 Computer Science and Digital Fluency Standards.

These new standards are a framework for students, educators, administrators, coaches, all educators to rethink education and create innovative learning environments. These standards are helping educators to re-engineer schools and classrooms for digital age learning, no matter where they are on the journey to effective edtech integration.

For additional information see:

- Appendix A.
- Appendix B.
- Technology Assessment of Staff Skill section.
- Standards for Students.
- Benchmarks for Educators.
- Benchmarks for Administrators.

SmartGoal 1

- The District will create, maintain and use the NFCSD Teacher and Administrator K-12 Technology Continuum benchmarks for action steps defined in this goal and other District initiatives.
- See Appendix A for the Teacher Continuum.

SmartGoal 1 Action Steps:

Action Step	Action Step - Category	Action Step description	Responsible Stakeholder	"other"	Month of Completion	Year of Completion	Cost
1	Planning	To ensure the most appropriate tools and course of action used yearly are available to the instructional staff, students, and parents, the NFCSD will conduct annual reviews of Smart Goals, inventory all software, web-based tools, and Assistive Technology resources by type of usage (ENL, SWD, GenEd), user (staff, students and parents) and location (home, school).	Curriculum and instruction leader.	Teacher on Special Assignment, Technology Committee.	06	2025	\$26,880
2	Planning	Create the new NFCSD Technology Continuum and teacher self-evaluation survey in order to provide guidance, support, and determination of competencies of new digital and accessibility techniques.	Curriculum and Instruction leader.	Teacher on Special Assignment, Technology Committee, Technology Integrators, System Engineers	06	2025	\$63,630
3	Planning	Technology Integrators and Instructional Coaches will develop and publish a menu of professional development options twice yearly, including but not limited to those listed below: A. In-	Instructional Technology Coach	Teacher of Special Assignment, Building Administrators, Curriculum Office, University of Buffalo Center for Assistive Technology, Instructional Coaches.	06	2025	\$135, 560

		classroom embedded tech support with scheduling software to promote efficiency. B. Extended school day modules, in-person and remote sessions, scheduled after school hours on designated weekdays, Saturdays and Summer sessions. C. Asynchronous, self-guided modules targeting a variety of skill levels					
4	Planning	The Administrator for Curriculum, Technology Integrators, Instructional Coaches and select District Technology Committee members will create a framework and three- year plan for the adoption and integration of the new New York State Science standards, to include all curriculum areas pre-Kindergarten to grade 12.	Instructional Technology Coach	Instructional Coach, Classroom Teachers, Building Administrators, Information Services	06	2025	\$23,770
5	Professional Development	Technology Integrators and Instructional Coaches will recruit and train key personnel at all elementary schools to plan and implement Parent and Family Technology Engagement activities, to include, but not limited to instructional benefits of technology in Pre-	Instructional Technology Coach	Instructional Coaches, Classroom Teachers, Building Administrators, Information Services	06	2025	\$20,000

		Kindergarten and Kindergarten classrooms, use of District platforms, and internet safety for upper grade pupils and parents.					
6	Professional Development	School Administrators and Technology Integrators will identify Teacher Innovators and create a plan where in pathways for these select staff members are defined to include piloting new software, facilitating professional development under the direction of a technology integrator, and mentoring novice Teachers.	Instructional Technology Coach	Technology Committee, School Administrators, Information Services	06	2025	\$26,010
7	Professional Development	Teachers will receive professional development in collaboration with our University of Buffalo partners in the field of Accessibility Features	Instructional Technology Coach	Teachers, University of Buffalo Center for Assistive Technology	06	2025	\$4,500
8	Evaluation	Administer, evaluate and re-administer Teacher surveys at the beginning, middle and end of the grant cycle to determine growth of proficiencies as measured by the revised NFCSD Teacher continuum benchmarks.	Instructional Technology Coach	Building Principal, System Engineer, Technology Committee	06	2025	\$50,010

SmartGoal 2

By June 2025, all components of Education law 2d will be completed and in practice.

SmartGoal 2 Action Steps:

Action Step	Action Step - Category	Action Step description	Responsible Stakeholder	"other"	Month of Completion	Year of Completion	Cost
1	Data Privacy	Participation in the Erie 1 BOCES District Privacy Officer and Enhanced Cyber Security services	Director of Technology	Erie 1 BOCES, District Network Techs	06	2025	\$14,500
2	Data Privacy	Monthly review of Education Law 2d regulatory and practical components.	Director of Technology	Central Office Committee, Erie 1 BOCES	06	2025	\$2,250
3	Data Privacy	Quarterly staff phishing exercises.	Director of Technology	District Staff, Internal Audit partners, Erie 1 BOCES	06	2025	\$4,000
4	Cybersecurity	Network Penetration testing.	Director of Technology	District Techs, Internal Audit partners, Erie 1 BOCES	06	2025	\$14,000

SmartGoal 3

By June of 2025, the District's network infrastructure will be in place to support 10 gig ready traffic and additional equipment will be added to provide a 'robust' network environment.

SmartGoal 3 Action Steps:

Action Step	Action Step - Category	Action Step description	Responsible Stakeholder	"other"	Month of Completion	Year of Completion	Cost
1	Infrastructure	Installation of Erate eligible network equipment – switches, cables, modules and associated equipment.	Director of Technology	Erie 1 BOCES, District Network Techs	06	2023	\$600,000.
2	Infrastructure	Installation of wireless access points and associated equipment.	Director of Technology	Erie 1 BOCES, District Network Techs	06	2023	\$600,000
3	Infrastructure	Installation of Erate eligible network equipment – switches, cables, modules and associated equipment. *Note – complete 10 gig upgrades	Director of Technology	Erie 1 BOCES, District Network Techs	06	2024	\$600,000
4	Learning Spaces	Elementary Classroom laptop refresh	Director of Technology	Erie 1 BOCES, District Network Techs	06	2024	\$2,481,558
5	Learning Spaces	Classroom Interactive Board Replacement	Director of Technology	Technology Committee, District AV and network Techs, Vendor support.	08	2023	\$3,700,00

Performance Indicators for Administrators

Technology Standards: An Overview

Administrators will be using the new NFCSD K-12 Teacher and Administrator Technology Continuum as benchmark standards in their role of leadership in enhancing learning and school operations using technology. The continuum utilizes pre-determined benchmarks that will define the most vital technology skills empowering an administrator to create and manage a technology-enriched environment for the benefit of students and staff. This concept also blends well with the District culture of widespread technology use to communicate, assess, and increase productivity.

For additional information see Appendix A.

Performance Indicators for Educators

Technology Standards: An Overview

Teachers will also be using the new NFCSD K-12 Teacher and Administrator Technology Continuum (see Appendix A) as benchmark standards in their role of promoting sound technological skills to promote learning with their students. The continuum is designed to serve as a guide to professional educators in a shared vision for technology use to support new modes of teaching and learning. They also point to the District culture of technology use to communicate, to obtain data to measure progress, and to better serve our customers – our students. The continuum benchmarks are for all educators as an ongoing practice in teaching, productivity, and professional growth. This is not a model that incorporates a “technology instructor” to work with students. It is expected that the lead educator will develop the necessary technology skills and understanding to provide guidance and create activities necessary for students to meet the new NYS K-12 Computer Science and Digital Fluency Standards outlined in the following section.

For additional information see Appendix A.

Performance Indicators for Students

Technology Standards: An Overview

The students' level of technology competence will be measured using the new NYS K-12 Computer Science and Digital Fluency Standards. These new standards (outlined below) are designed to serve as a guide to students and educators. They point the way to meeting technology standards set by New York State and by the Niagara Falls Board of Education. The term technology is to be interpreted in a very broad sense. It is not limited to computers. The term includes digital cameras, interactive devices, CAD systems, robotics, web tools, collaborative techniques, etc.

For additional information see Appendix B.

CURRICULUM

The District's curriculum activities are aligned with segments of the NYS approved Instructional Technology Plan Smart Goal #1 and associated content within this plan.

In addition, from a metric or quantitative perspective, the District is expecting the following advancement of acquired Teacher benchmarks as defined in the NFCSD Teacher's and Administrator's Continuum:

By June of 2025, district general education teachers will show growth of 20% in technology proficiency within the NFCSD's Teacher and Administrative Continuum benchmarks (Levels 1A, 1B, 1C, 1D, 2A, 2B, 2C, 3A, 3B and one benchmark from the 3D offerings).

By June of 2025, district assistive or special education teachers will show growth of 20% in technology proficiency within the NFCSD's Teacher and Administrative Continuum benchmarks (Levels 1A, 1B, 1C, 1D, 2A, 2B, 2C, 3A, 3B, 3C and one benchmark from the 3D offerings).

The following action steps will be used as fundamental backend work, foundation work for curriculum activities and to support professional development:

- The Technology Committee will conduct a yearly review of software / web based digital resources and tools to ensure the most appropriate tools are available to instructional staff and students.
- The Technology Committee, which includes Technology Integrators, will review and update the NFCSD Teacher's and Administrator's Continuum.
- District Administrative staff will create, administer, and evaluate teacher self-evaluation surveys at regular and defined school year times to determine level of proficiencies.
- Using the above data and analytics, provide all necessary instructional technology tools, support and resources to teachers so they can continually present the most efficient curriculum learning experiences to students.

For additional information:

- Instructional Technology Plan.

Technology Integration and Delivery

The Niagara Falls City School District's Instructional Technology Plan includes multiple components which enhance the educational experience for students, parents, teachers and community members. The NFCSD's philosophy is, "Learning For All...Whatever It Takes." To that end, four interrelated initiatives will support learners at all levels. The adoption and use of software which removes barriers to, and accelerates learning, is a District priority. An assistive technology evaluation will be developed to assess students' needs and identify appropriate technology-based tools and interventions. Classroom instruction will continue to be augmented with virtual field trips, video conferencing, and digital media production. Parent outreach efforts will increase, so that all parents and guardians may access available District programs and resources designed to help children and families succeed academically and socially. Finally, a recent Gallop poll on technology use in education concluded that, "without teacher support, technology uptake in education won't be fully realized." The NFCSD Instructional Technology plan addressed these needs by hiring two full-time Technology Integrators to assist in day-to-day technology use and the learning and implementation of new skills. The NFCSD also addresses teacher needs by calling for the adoption of both Learning Management System and Data Dashboard, so that all instructors may deliver, monitor, and assess high quality, technology integrated instruction within and beyond the classroom.

MONITORING AND EVALUATION

The Niagara Falls City School District will continue to use technology which will both sustain and support ongoing academic standards attainment as well as performance improvement for students.

NWEA Measures of Academic progress is an adaptive assessment tool which identifies students' instructional levels in both reading and math. The data reports are analyzed, and instructional practice adjusted to meet student needs. In addition, NWEA results are linked to Kahn Academy which provides online tutorials and assessments. NWEA is administered up to three times a year. Moby Max provides instruction and support in math as well as NWEA MAP Math Accelerator which provides these connections will also continue to be used with at least 30 minutes a week frequency in selected grades.

Other technology assessment tools and support come AIMSweb Plus, and eDoctrina which provide a platform to assess students through either customized assessment or from a question bank which includes New York State released questions, and eDoctrina developed questions and released Regent's exam questions.

The Basc-3 mental health on-line assessment provides data reports which identify students who are at risk in relation to their mental and emotional health. This provides valuable data so that faculty and staff can provide needed support for students who are experiencing trauma which ultimately impedes academic achievement. Online assessment resources, except for eDoctrina are based on specific classroom and grade level needs are administered two to three times a year. Instructional technology resources with integrated assessment modules are used at least once a week or as determined by individual student and classroom need.

Finally, both teachers and administrators will be given the Niagara Falls City School District developed Technology continuum survey which will be administered yearly to both monitor and measure progress. The results of this survey will be used to determine professional development needs within the district.

PROFESSIONAL DEVELOPMENT

The Niagara Falls City School District will offer annually a minimum of 36 hours of professional development opportunities, varying levels of rigor and via multiple delivery models, to all instructional staff.

The following action steps will be presented to all instructional staff:

- Technology Integrators and Instructional Coaches will develop and publish a menu of professional development options twice yearly, including but not limited to those listed below:
 - In-classroom co-teaching tech support with scheduling software to promote efficient scheduling.
 - Outside of the school day modules, in person and remote, scheduled after school hours on designated weekdays, Saturdays, and summer.
 - Asynchronous, self-guided modules targeting a variety of skills.
- Using results from the staff self-assessment of personal proficiency based on the NFCSD Teachers and Administrator's K-12 Technology Continuum, technology integrators will create multiple workshop outlines which address skills within each level of the continuum. Workshop outlines must:
 - Address each sublevel of the continuum.
 - Include sessions which address navigation and use of district adopted software and digital curriculum products.
 - Be scheduled at least once each semester in one or more of the delivery modules described above.
- The administrator for curriculum, technology integrators, instructional coaches and select Technology Committee members will create a Framework and three year plan for adoption and integration of the new NYS Computer Science Standards, to include all curriculum areas Pre-Kindergarten to Grade 12.
- Technology integrators and instructional coaches will recruit and train key personnel at all elementary schools to plan and implement Parent and Family Technology Engagement activities to include, but not limited to:
 - The instructional benefits of technology in Pre-Kindergarten and Kindergarten classrooms.
 - Use of District platforms.
 - Internet safety for upper grade pupils and parents.
- School administrators and technology integrators will identify Teacher Innovators, defined in level 3D of the NFCSD Teacher's and Administrator's K-12 Technology Continuum and create a plan wherein pathways for these select staff members are defined, to include:
 - Piloting new software.
 - Facilitating professional development under the direction of a technology integrator
 - Mentoring novice teachers.
- Teachers will receive professional development from our University of Buffalo partners in the fields of Assistive Technology and Accessibility Features.

Supporting Resources

The Niagara Falls City School District provides a variety of experts in technology integration. These facilitators have in-depth knowledge of not only District curriculum, but also pedagogy and best practices.

- District Technology Integrators:

Niagara Falls City Schools recognizes the need for individual attention when planning and delivering lessons utilizing new technologies. While traditional full-group professional development sessions work for some, most people need more assistance when direct implementation is occurring. The multifaceted use of an in-district Technology Integrator includes:

- Embedded professional development during the school day – much like the current coaching model already in place. Technology Integrators can be utilized as an in-classroom support system or teaching model when implementing new skills or strategies. Upon teacher request, embedded professional development may also occur during a teacher’s planning period in order to improve efficiency and assist in future lessons where technology will play an important factor. Finally, embedded professional development gives the teacher a better sense of security and the likelihood of full implementation rises dramatically.
- Technology Integrators may deliver district-wide PD in all aspects of Office 365, newly adopted software, various approved websites, and other interactive pieces that may elevate student engagement. These professional development sessions can be done both in-person and via webinar.
- The Technology Integrators may also be utilized in the summer to conduct professional development sessions for teachers, administrators, and staff. Grant work, curriculum development, the upkeep of various components of the district website, support staff training, and deliver training during new teacher orientation.

- WNYRIC--CSLO/Model Schools Staff Development

The Niagara Falls City School District participates in the Common Set of Learning Objectives and Model Schools service through the Western New York Regional Information Center. This service will engage teachers and Technology Integrators in high quality staff development through classroom practices which integrates the new NYS K-12 Computer Science and Digital Fluency Standards, assessments, and technology to support raise student achievement.

Each school is provided with 4 days of on-site/in-District full day, half day and after school staff development, for a total of 44 days for the District. Opportunities through CSLO/Models Schools are a wide variety of face-to-face and online professional development opportunities in the areas of curriculum, assessment, instruction and technology infusion. Also through this service, the District has a .6 FTE Coordinator who provides 102 days of continuous support to teachers and administrators through technology integration.

- Teacher Resource Center (TRC)

The Teacher Resource Center plans and delivers professional learning to support the integration of technology into teachers' content and instructional strategies with the goal of seamless use of multiple technologies and the Internet in instruction. The TRC coordinates technology training for both designated District professional development days and for after school trainings through workshops, study groups, and webinars. The progression of training leads participants from the initial stage of the mechanics of using equipment through collaborative activity and lesson planning to the final level of integration of the technology into the daily classroom functions. The TRC also capitalizes on the work of the NYS Teacher Centers Technology Committee the private partnerships for training and services that they have established with Verizon, Intel (TEACH), SAS Curriculum Pathways, and many other vendors / pilots offered to New York State. Lastly, the NYSTCs are also providing training (both direct and train the trainer) for the new Computer Science standards.

- Instructional Coaches

Instructional Coaches also offer another opportunity for technology training and support directly to teachers in their classrooms. Instructional Coaches are among the first to receive training in new technology initiatives and they, in turn, offer that training and support to classroom teachers. This occurs during District professional development days, though grade level meetings, and in individual support of teachers within their schools.

- Technology in Education Mentor Program (TEMPs)

The Technology Mentors provide customized website support to Teachers. They also assist with webinar information shares, sit on the Technology Committee and offer some classroom software support. Unique to the TEMP support is their ability to meet with teachers anytime, anywhere. Training may include webinars, Technology Study Groups, Cyber Cafes and Technology Coaching Sessions.

Opportunities for Professional Learning in Technology

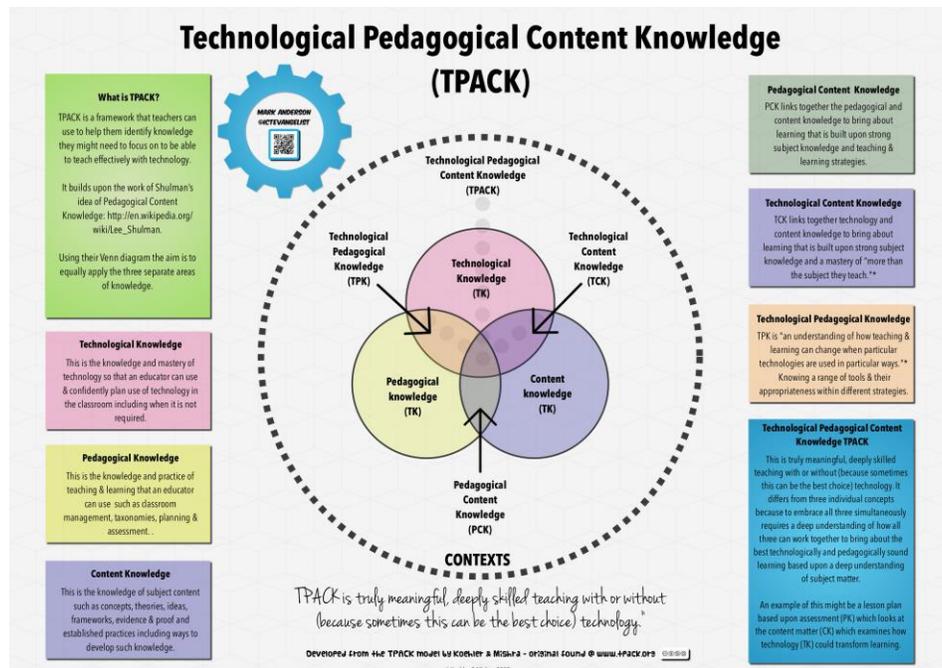
- District professional development days

Varying levels of staff skills are identified through multiple surveys that occur throughout the year. Based on survey results, teachers are grouped according to skill level so that facilitators may better meet their needs. Teachers will also be asked to take an annual survey to determine growth. Based on those results, staff development will be differentiated and focused on any gaps or needs. The importance is placed on continual growth and not necessarily the skill level of the teacher.

T-Pack

What Is TPACK Theory and How Can It Be Used in the Classroom?

- We discuss a lot of ways to use technology in the classroom. As teachers, we feel a push to incorporate technology into our classrooms because of the new outcomes that demand it. The TPACK model gives us a new framework for the integration of technology in education and how we can structure our classrooms to provide the best educational experience for students while incorporating technology.
- TPACK stands for Technological Pedagogical Content Knowledge. It is a theory that was developed to explain the set of knowledge that teachers need to teach their students a subject, teach effectively, and use technology.



Other Supporting Resources

When appropriate, the District also provides hardware, software, and support for daily instructional usage.

Printed manuals and documentation are provided occasionally, but adherence to "green" conscientiousness is always a consideration.

The Niagara Falls City School District website (<http://www.nfcschools.net>) provides informational resources through the Teacher Resource Center, Technology Resources for Teachers, Technology and Information Systems, Teacher Mentor Program and other web pages.

The district is currently piloting Canvas as a potential district wide Learning Management System to provide a variety of instructional resources, including a matrix tool to house curriculum.

The NFCSD collaborates with Niagara University in the preparation of new teachers. This collaboration extends to the use of technology. This has become particularly useful with the addition of SMART Board technology in the classroom.

Technology Assessment of Staff Skills

During this plan cycle, the District will administer a teacher/administrator self-assessment survey to gauge technology skills against the newly created NFCSD Teacher and Administrator Technology Continuum in order to steer professional development toward a more common goal of technology effectiveness.

For additional information:

- See Appendix C.
- Smart Goal #1.

Parental Communications and Community Relations

Strategies to promote parental involvement and to increase communication with parents and community, including a description of how parents and community will be informed of the technology to be used with students.

District will:

- Support and encourage technology use throughout the community.
- Use technology as a communication tool with staff, students, parents, support personnel, and community.
- Store and manage electronic information for use by staff, students, parents, support personnel, and community.
- Provide current technology tools and software to facilitate and enhance learning and support services. This includes resources for home based learning.
- Provide continuous funding for the upgrading of and access to emerging technologies as appropriate.
- Establish District guidelines and policies for the use of telecommunications, multimedia, electronic databases, and other electronic media.
- Recruit parents and the community to be a part of school and District decision making committees and meetings. Ensure they have the resources to make effective decisions.
- Inform parents and the community of professional development training sessions.
- Provide laptops and Internet access for home use.
- Provide remote learning instructional tools.

Teachers will:

- Use technology as a communication tool with staff, students, parents, and the community.
- Attempt to foster relationships with students' families.
- Keep families informed of their children's progress and needs in each subject.
- Continually evaluate student progress and provide remediation when necessary (RTIM and RTI response to intervention).
- Provide home learning materials in all applicable subjects, electronically whenever possible.
- Explain approach to teaching, expectations, and grading to students and their families.
- Encourage partnerships/internships with community based business/government agencies.
- Provide a timely update of assessment information for parents to view on the parent portal.
- Show continued growth of the Teacher Continuum skill sets.

Parents/Communities will:

- As best possible, have access to electronic information about their children, school, and available resources.
- Have opportunities to receive assistance in learning ways to use technology.
- Use existing technology to enhance home/school communications.
- Share in the responsibility of monitoring and enforcing the District's Acceptable Use Policy.
- Share in the responsibility for the care and use of all District equipment.

How the educational technology plan will be disseminated to the community.

- The District provides written communications on a school and District-wide level that identifies components of the Technology Plan.
- A link to the Technology Plan is provided on the District website.
- The Technology Plan is available on several electronic platforms.
- The Technology Plan and its components are available for distribution at Parent/Teacher conferences.
- The Technology Plan is available to community partners and can be reviewed upon request.
- The school based Parent Education Group (PEG) plan and facilitate education meetings to discuss and educate parents on matters such as the Technology Plan.
- The District Parent Committee (DPC) plans and facilitates education meetings to discuss and educate parents on matters such as the Technology Plan. Members of this committee turn-key this information back to their home schools.

Additional communication with parents might include:

- Superintendent driven webinars;
- Routine, almost daily, YouTube post information shares.
- District supported web site:
<http://www.nfschools.net/site/Default.aspx?PageType=1&SiteID=1&ChannelID=1198&DirectoryType=6>
- Additional, relevant web sites;
- Printed materials;
- Internet tools;
- Multimedia;
- Voice mail;
- Teacher created web pages;
- Teacher meetings – Parent/Teacher conferences;
- E-mail;
- Discussion groups;
- Traditional mailings;
- Homework networks;
- Automated school dialer;
- Newsletters - District (Our Schools) and school based;
- District calendar;
- PowerSchool parent portal;
- Office 365;
- Remote learning tools.

Parents and other community members are represented with involvement, contributions to the planning stages, the implementation, and the ongoing assessment of the Technology Plan.

Collaboration

The Niagara Falls City School District will continue to engage local organizations to establish collaborations to gather, build and present information to the Niagara Falls City School District and the community. The goal is to build an environment whereby lifelong community learning and student achievement is attainable.

These organizations have provided donations for instructional / STEM related activities, professional support/training for teachers, visited classrooms as guest speakers and assisted with classroom activities:

- Niagara University.
- Tech Academy and Tech Buffalo (M&T).
- University of Buffalo Center for Assistive Technology.
- SUNY Polytechnic Institute.
- Microsoft Community.
- Niagara County Community College.
- New York State Power Authority.
- Niagara Falls Memorial Hospital.
- University at Buffalo Institute on Trauma and Trauma-Informed Care
- National Federation for Just Communities of Western New York
- Niagara Alliance for Restorative Practice
- The Teacher Resource Center capitalizes on:
 - The work of the NYS Teacher Centers Technology Committee.
 - Private partnerships for training and services with Verizon, Intel (TEACH), SAS Curriculum Pathways., and many other vendors / pilots offered to New York State.
- Vendor (many) based support for all levels of District functions.

This collaboration is ongoing to continually provide relevant and current classroom appropriate activities.

These partnerships will provide our parents, students, staff, faculty, administrators, and paraprofessionals many avenues to be autonomous, lifelong learners.

Instructional and District Software

To encourage common understandings, sharing of files and data, and to maximize in-service training, the District has standardized software in many areas. All software additions are to be approved by the Technology Committee based on academic and technology standards, school need, and funding.

See Appendix D for a list of approved Instructional software.

See Appendix E for a list of approved District software.

Additional Resources and Support

See Appendix F.

Infrastructure - Equipment - Hardware

Infrastructure Needs/Technical Specifications and Design/Increase Access

The recommended standards and models have been described by the Niagara Falls City School District Technology Committee to ensure that newly purchased equipment is compatible with other District equipment. The Technology Committee has decided to standardize the District with an IBM, Windows, and PC compatible platform. In some cases, equipment is required to be part of the BOCES COSER to be eligible for aid. Since technology is improving so quickly, these standard configurations are reviewed and refined on a regular basis.

Distribution of Classroom Equipment

Since all the schools in the District have a high poverty population, the District has adopted a practice to fully equip classrooms, sometime more than a 1:1 ratio. This ensures that all of our students have access to the same level of technology. The technology in the District is substantial because it is believed that technology can be the equalizer for students. The following configurations are to serve as a guide to providing equity in classroom technology throughout the District. The District Technology Committee recommends a basic configuration based on the vision, mission, and goals of the District's Technology Plan and the cost of providing such services. Within these parameters, individual schools, through their quality or technology teams, can fine-tune the technology placed in the school to meet student and staff needs.

The Niagara Falls School District also supports technology integration through an automated library system, virtual learning and video conferencing /webinar locations, and multimedia networks in each school.

See Appendix G.

Equipment / Hardware Inventory

See Appendix H.

Equipment / Hardware Replacement and Maintenance History

See Appendix I.

Equipment / Hardware Timeline for Replacement

See Appendix J.

Coordination of Resources

Funding for technology in the Niagara Falls City School District comes from a variety of funding sources.

The Niagara Falls City School District consistently applies for grant funding for technology services, when available.

Technology Resource	Funding Source
IS Salaries	General Fund
Professional Development	Grants WNYRIC O/N BOCES BOCES cross contracts NYSTL PD General Fund Vendor partnerships
Hardware Procurement	WNYRIC General Fund NYSTL hardware Erate
Software Services	General Fund WNYRIC BOCES cross contracts NYSTL software
On-line Services	WNYRIC O/N BOCES BOCES cross contracts
Library Automation	WNYRIC O/N BOCES
Hardware Maintenance	WNYRIC General Fund
LAN and WAN Services	WNYRIC General Fund
Broadband	WNYRIC Erate
Telephone Services	General Fund Moving to WNYRIC in 2023.

District Policy

Staff / Students Acceptable Use Policy (AUP) for District Computer Systems:

<http://www.nfschools.net/site/handlers/filedownload.ashx?moduleinstanceid=7438&dataid=6820&FileName=6410.pdf>

Social Media Policy:

<http://www.nfschools.net/site/handlers/filedownload.ashx?moduleinstanceid=7438&dataid=6822&FileName=6412.pdf>

Parents' Bill of Rights:

<https://www.nfschools.net/Page/3782>

Other Board Approved Policies use the following link:

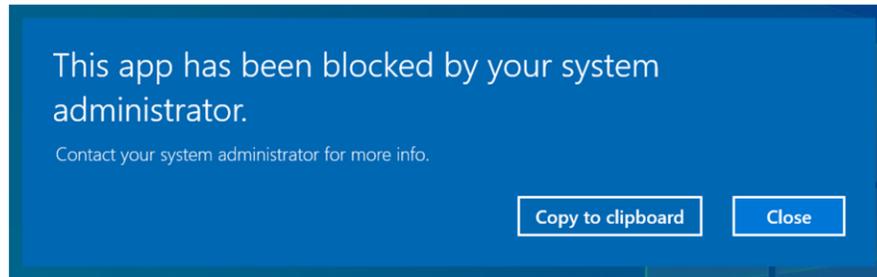
<https://notes1.nfschools.net/nfbocepolicy.nsf>

- 5672 Information Security Breach and Notification.
- 5673 Employee Personal Identifying Information.
- 5674 Data Networks and Security Access.
- 5675 Student Grading Information Systems.
- 5676 Privacy and Security for Students Data and Teacher and Principal Data.
- 7243 Student Data Breach.
- 8271 Children's Internet Protection Act: Internet Content Filtering/Safety Policy.

Education Law 2-d

Practical Exercises:

- Continually identify and update any older device operating systems or older Windows 10 operating system builds.
- Developed and employee a district wide, school based, device imaging plan to ensure computers and laptops have the most current OS builds and security software in place. All classroom devices imaged before the start of each school year.
- System Access Credential Reviews:
 - Monthly board approved personnel reports define system disables and adds.
 - Periodic HRO termination lists for system disable reviews.
 - Yearly AUP affirmation to identify any employees that have left the District.
 - Periodic review of system access *rights* to PowerSchool Management System and nVision.
- Using *App locker* process to white list apps that are allowed to run in District. Will exclude the ability of running harmful instances of software – Trojan virus, etc.:



- Development tools for non-IS staff are disabled.
- Continue to partner with Erie 1 to make sure firewalls and other security measures are operating as needed.
- Safeguard entry to wireless access.
 - Production, BYOD, and Guest access defined with unique security credentials and permissions.
 - All other access (Vendor based) completely separate from production operation.
- Purchase and employ Enhanced Security software (Fortinet):
 - Enhanced firewall, spam, and other typical Erie 1 security measures.
 - Monthly review of vulnerability reports by Tech AS.
 - Routine notifications of phishing and other embedded email threats sent to all staff.
- All Internet traffic is monitored by content filtering software:
- Microsoft Outlook email security features:
 - Notification of sensitive information embedded in District sent emails.
 - Required approvals before identified emails can proceed thru delivery channels.
- Routine, mostly monthly, network server updates.
- Continually update technology / network devices and equipment.
- Daily verification of off-site data backups.
- Technology Committee approved software to offer a secure highway of software in alignment with Education Law 2d contracts:
 - All technology resources must first have Technology Committee approval:
 - Appropriateness of use and need.
 - Required resources in place.
 - Review of PII and APPR use and Education Law 2d contract(s).
 - Strongly discourage click-wrap agreements.
- Periodic network penetration tests performed.

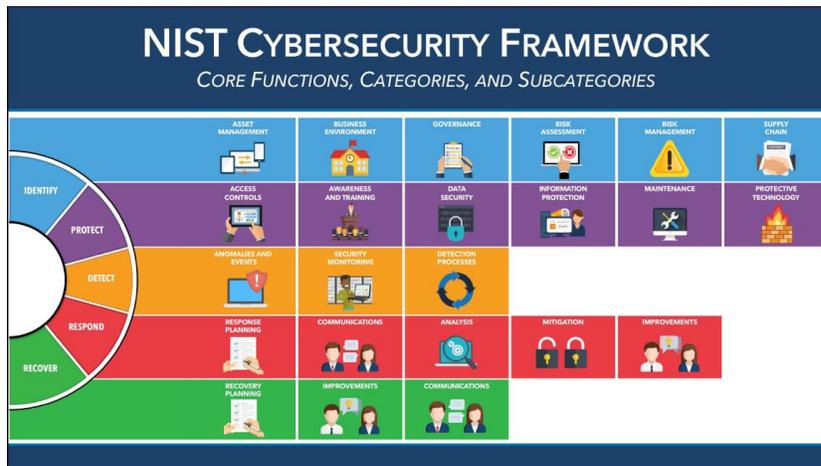
- Periodic employee phishing test exercises.

Regulatory Practices:

- Disaster Recovery document current and updated when necessary.
- Cybersecurity insurance add-on in place.
- Content consistently added to Education Law 2d categories:

PROJECT MANAGEMENT TOOL				
RESOURCE DEVELOPED BY:  Use the chart below to identify a potential educational agency timeline for completing the Education Law 2-d requirements . While all of the requirements impact educational agencies' daily practice, shading is used to highlight areas that require formal ongoing work and maintenance.				
CATEGORIES	TASK	REG PART	TIMELINE	COMPLETE
PROTECTION OF PERSONALLY IDENTIFIABLE INFORMATION	Guidelines for Personally Identifiable Information Utilization Defined and Communicated to all Staff	121.2 121.5 121.7		<input type="checkbox"/>
BILL OF RIGHTS FOR DATA PRIVACY AND SECURITY	Parents' Bill of Rights Published on District Website	121.3		<input type="checkbox"/>
	Supplemental Information Related to Third-Party Contracts Published on District Website			<input type="checkbox"/>
DATA SECURITY AND PRIVACY POLICY	Data Security and Privacy Policy Adopted	121.5	By July 1, 2020	<input type="checkbox"/>
NIST CYBERSECURITY FRAMEWORK	NIST CSF Aligned 2019-2020 Current Profile Developed	121.5		<input type="checkbox"/>
	NIST CSF Aligned Profile and Action Plan Developed and Maintained			<input type="checkbox"/>
THIRD-PARTY CONTRACTS	Inventory of Third-Party Contracts Developed and Maintained	121.2 121.3 121.6		<input type="checkbox"/>
	Terms and Conditions Negotiated into Contracts with Third-Party Contractors	121.9 121.10		<input type="checkbox"/>
ANNUAL EMPLOYEE TRAINING	Employee Training Implemented	121.5 121.7		<input type="checkbox"/>
UNAUTHORIZED DISCLOSURE COMPLAINT PROCEDURES	Complaint Procedures Defined	121.4		<input type="checkbox"/>
	Breach, Unauthorized Release, and Complaint Log Maintained			<input type="checkbox"/>
INCIDENT REPORTING AND NOTIFICATION	Incident Reporting and Notification Procedures and Forms Developed	121.10		<input type="checkbox"/>
DATA PROTECTION OFFICER	Data Protection Officer Appointed	121.8		<input type="checkbox"/>

- Protection of PII and APPR information:
 - See appendix K.
- Bill of Rights for Data Privacy and Security:
 - See Policy section.
- Data Security and Privacy policies:
 - Policy 5676 – Data Security and Privacy Policy:
 - See Policy section.
 - Policy 5674 – Data Networks and Security Access:
 - See Policy section.
- NIST Cybersecurity Framework:
 - Development of the following framework items – always in process:



- Third-party contracts:
 - Appendix D and E.
- Annual employee training:
 - New-employee semi-annual training.
 - NYSIR all employee annual online training.
- Unauthorized disclosure compliant notification:
 - [Unauthorized Disclosure Complaint Form \(office.com\)](#)
 - Appendix L.
- Incident Reporting and Notification:
 - See Policy section.
- Data Protection Officer:
 - Ray Granieri – Administrator for Information Services.
 - Member of BOCES (Erie 1) DPO service.

For additional information, see Smart Goals #2 and #3 in this plan for further depth and information on work related to Network security and maintaining a robust Technology based environment.

Instructional Technology Plan:

- Use this link:
 - [Technology & Information Services / Technology Plan \(nfschools.net\)](#)

Disaster Recovery Plan:

- Updated 10/2022.

Appendix A

NFCSD Teacher and Administrator K-12 Technology Continuum.

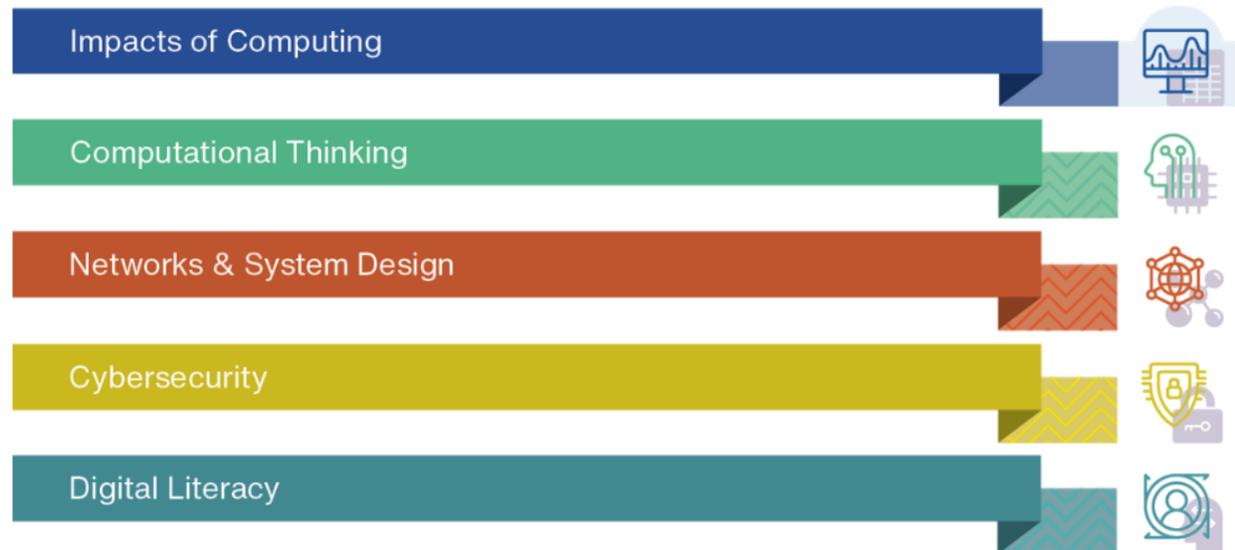
NFCSD TEACHER'S & ADMINISTRATOR'S K-12 TECHNOLOGY CONTINUUM

	<p>LEVEL 1A: Learning Management System: (Microsoft Teams) 1A.1 - Teachers can access Office 365 and the various products to complete the following skills: 1A.1.a - Save and share documents, spreadsheets, Forms, and presentations via OneDrive 1A.1.b - Access email and communication systems (post, chat, and video conference) 1A.1.c - Teachers can utilize online booking software to schedule PD and parent conferences</p> <p>LEVEL 1B: Accessing Core Digital Resources 1B.1 - Teachers can access Education Law 2D compliant and district approved digital resources (Ex Clever, Investigations, Amplify, Castle Learning, NewsEla, Nearpod) – Click HERE to view all resources 1B.2 – Teachers can access the new NYS Computer Science and Digital Fluency Learning Standards K-12 found HERE</p> <p>LEVEL 1C: Assigning and Assessing Core Digital Resources 1C.1 - Teachers can assign and assess student work using Ed Education Law 2D compliant software 1C.2 - Teachers can access data from digital resources to guide instruction 1C.3 – Teachers can assign and assess integrated NYS Computer Science and Digital Fluency Learning Standards K-12 activities directly into their curriculum (Ex Digital Citizenship Nearpod and Cyber Securities Lessons)</p> <p>LEVEL 1D: Accessibility Features 1D.1 – Teachers can list at least 5 accessibility features that will support curricular access 1D.2 – Teachers can access and utilize at least 5 accessibility features (i.e., Dictate, Immersive reader,)</p>
	<p>LEVEL 2A: Learning Management System: (Microsoft Teams) 2A.1 - Teachers can schedule, attend, conduct, and record virtual meetings for remote classes satisfying the Digital Literacy and Digital Use Standard (K-12 DL.2) of the NYS Computer Science and Digital Fluency Learning Standard – (Ex Synchronous Lessons, Live Meetings, Chat discussions, Posts within the LMS, and supported digital resources) 2A.2 - Teachers can schedule and evaluate assignments in Teams 2A.3 - Teachers can alter the settings and management of Teams (Ex. Add channels, tabs, files, student access, etc) 2A.4 - Teachers can screencast and post lessons with Stream or other screen capturing software</p> <p>LEVEL 2B: Webpage Design: 2B.1 - Teachers can create and maintain a district webpage to ensure a digital presence using high end apps such as embed codes, accordion filing systems, and live documents</p> <p>LEVEL 2C: Accessibility Features 2C.1 – Teachers can match a specific accessibility feature to a learning need of a student, for at least 5 accessibility features</p>
	<p>LEVEL 3A: Core Digital Resources: 3A.1 - Teachers can integrate district approved core digital resources within a Microsoft Teams - Click HERE to view all resources</p> <p>LEVEL 3B: Learning Management System: (Microsoft Teams) 3B.1 - Teachers can build and share rubrics for grading satisfying Standard DL.4 of the NYS Computer Standards 3B.2 - Teachers can integrate outside programs (Ex Nearpod, Flipgrid, Lumio) into assignments 3B.3 - Teachers can utilize and integrate OneNote Class Notebooks into assignments and classroom rituals</p> <p>LEVEL 3C: Accessibility Features 3C.1 – Teachers can use accessibility features in a new way 3C.2 - Teachers will utilize district approved accessibility features that were not part of any training</p> <p>LEVEL 3D: Future Software 3D.1 - Teachers can utilize eDoctrina to access teacher dashboard information such as assessment data 3D.2 - Teachers can conduct classes using Augmented and Virtual Reality devices/software 3D.3 - Teachers can collect, evaluate, and analyze data from multiple sources to develop computational artifacts (Ex Using Excel spreadsheets to create graphs from data sets, analyzing data sets from integrated LMS apps to monitor student mental health) 3D.4 – Once teachers have successfully completed all above standards, they will be recognized as a Teacher Innovator 3D.4.a – Teachers can begin piloting the next generation software and web-based products 3D.4.b – Teachers can effectively utilize Efficiency Delivery Systems (Ex Multicasting)</p>

Appendix B

Computer Science and Digital Fluency Learning Standards

The New York State K12 Computer Science and Digital Fluency Learning Standards were adopted by the Board of Regents in December 2020. The new standards focus on five key concepts:



Each concept contains two or more sub-concepts and within the sub-concepts are a number of standards. The standards are grouped into grade-bands: K-1, 2-3, 4-6, 7-8, and 9-12. Instruction in the standards must be implemented so as to allow students to achieve the applicable standards by the end of the band.

Implementation Timeline

The timeline for implementation of the new Computer Science and Digital Fluency Standards allows for time for teachers to become familiar with the new standards.

Dates	Phase	Activities
Dec. 2020 – June 2022	Awareness-Building	<ul style="list-style-type: none">• Roll-out and building awareness of the new standards and timeline for implementation
July 2022 – Aug. 2023	Capacity-Building	<ul style="list-style-type: none">• Focus on curriculum development, resource acquisition, professional development
Sept. 2023 – Aug. 2024	Initial Implementation	<ul style="list-style-type: none">• All credit-bearing Computer Science courses will be aligned with NYS CS&DF Standards.• Continued capacity building.
September 2024	Full Implementation	<ul style="list-style-type: none">• CS&DF Standards implemented in all grade bands K-12

- | | | | |
|--|----|----|----|
| | 3* | 2* | 1* |
| 12. I can list at least 5 special needs accessibility features that will support curricular access. | 3* | 2* | 1* |
| 13. I can access and utilize at least 5 accessibility features (i.e. Dictate, Immersive reader) | 3* | 2* | 1* |
| 14. I can schedule virtual meetings for remote classes. | 3* | 2* | 1* |
| 15. I can attend and participate within a virtual meeting. | 3* | 2* | 1* |
| 16. I can conduct and record virtual meetings for remote classes. | 3* | 2* | 1* |
| 17. I can schedule and evaluate assignments in Teams. | 3* | 2* | 1* |
| 18. I can alter the settings and management of Teams (Ex. Add channels, tabs, files, student access, etc) | 3* | 2* | 1* |
| 19. I can screencast and post lessons with Stream or other screen capturing software. | 3* | 2* | 1* |
| 20. I can create and maintain a district webpage to ensure a digital presence using high end apps such as embed codes, accordion filing systems, and live documents. | 3* | 2* | 1* |
| 21. I can match at least 5 specific accessibility feature to a learning need of a student. | 3* | 2* | 1* |
| 22. I can integrate district approved core digital resources within a Microsoft Team (i.e. Amplify, Foundations, Investigations, etc). | 3* | 2* | 1* |
| 23. I can build and share rubrics for grading within the district Learning Management System (Teams). | 3* | 2* | 1* |
| 24. I can integrate outside programs (Ex Nearpod, Flipgrid, Lumio) into assignments. | 3* | 2* | 1* |
| 25. I can utilize and integrate OneNote Class Notebooks into assignments and classroom rituals. | 3* | 2* | 1* |
| 26. I can use accessibility features in a new way. | 3* | 2* | 1* |
| 27. I can utilize district approved accessibility features that were not part of any training. | | | |

Appendix D

Niagara Falls City Schools
Instructional / Classroom Technology Tools 2022-2025

[NF Technology Software Chart.docx \(live.com\)](#)

Appendix E

Niagara Falls City Schools
District Technology Tools 2022-2025

[District Software Chart.docx \(live.com\)](#)

Appendix F

Administrative and Support

Administrative and support staff have access to either a desktop computer or a laptop configured with the appropriate access to District software resources. All staff utilizes the District fiber optic network and associated file and print servers. As of 2022, all internal network traffic can flow at 10 gig.

Central office administrators and selected District personnel have been assigned a cell phone, based on need. Building custodians, family support personnel, and some senior maintenance workers have access to cell phones. The maintenance department uses cell technology for communication via a radio only mode. Senior (supervisory) staff members have telephone capability.

Internet, Office 365 and E-mail

All staff has access to the content filtered Internet and Outlook e-mail.

All staff have access to office 365 and its collaborative features.

Students also have access to content filtered Internet.

Telephone Service

Telephone service in the District is provided through an Avaya PBX system, and Call Pilot is the voice messaging system used. Local and long-distance service is provided. Currently non-classroom locations use VoIP.

As of July 1st, 2022, Meridian IT will be replacing Ronco for service and maintenance.

Beginning at the start of the calendar 2023 school year, the District will be moving to a Cisco, IP based telephone system that will be supported by Erie 1 BOCES. 90% of District telephones will be IP based.

District Network

The entire District is connected using a broadband fiber optic network. Cisco switches and routers are primarily used throughout the District. The District receives its broadband connection from the Western New York Regional Information Center (WNYRIC). All file servers and print services are performed through the District network, and service for these devices is purchased through the WNYRIC. The District now has wireless capabilities throughout all of its campuses. This also includes BYOD and Guest wireless services. Upgrades for the wireless environment are in progress. Internal traffic can flow to 10 gig.

Technology Support Structure

The District has a tiered approach to technology support. The District utilizes a Helpdesk tool (Incident IQ) to collect and disseminate work to the various levels of technicians. Information Services staff monitors and disseminates the helpdesk "tickets."

The District employs eight Technology Associates that are available to classroom teachers for assistance in using technology in the classroom. This staff is mostly assigned to Elementary schools.

The District employs five network technicians who are responsible for maintaining network infrastructure and equipment. They are assisted by three FTE BOCES technicians for the repair and configuration of classroom equipment. One .5 FTE BOCES employee assists with high-end network and software configuration work.

The District has two systems engineers that are responsible for the Student Information System and the creation of reports for assessment and other student reporting, as required by the New York State Education Department. They also provide technical configuration and support various applications used by the District.

Two Application Specialists assist in District software use and configuration. This includes any associated operations based work.

Classroom technology integration assistance is handled internal by two District Classroom Technology Integrators. .6 FTE Technology Integrator from BOCES assists with this work. The District also uses the services of TEMPs LLC for website maintenance and webinar based information shares.

Appendix G

Instructional Staff

- All Instructional staff and most supporting staff have a District owned laptop.
- Each laptop is set up with school-appropriate software, network card, e-mail, and Internet connections.

Core Classrooms (K thru 12 classrooms)

- 1:1 computing in all elementary classrooms.
- High School and Prep school have 30 laptop stocked carts – more than 1:1.
- All schools have carts for special use.
- Laptops are configured for district and non-district instructional use as well as on-line NY State assessments.
- In-class and/or school- wide printing capability via the network.
- Telecommunications capability including network access, library research, and the Internet.
- Interactive board and software.
- Audio Enhancement system – redcat.
- On-demand streaming via laptop feed and media center.
- Office 365 Team shares for morning and other programs.

PK3 and PK4 Classrooms

- 7 laptops per classroom for PK4.
- Teacher iPad minis for PK3 and PK4.
- In-class and/or school- wide printing capability via the network.
- Telecommunications capability including network access, library research, and the Internet.
- Interactive board and software.
- Audio Enhancement system – redcat.
- On-demand streaming via laptop feed and media center.
- Office 365 Team shares for morning and other programs.

Students Requiring Assistive Technologies

- 1:1 computing in all classrooms for instructional education and for the KITE assessment.
- In-class and/or school- wide printing capability via the network.
- Telecommunications capability including network access, library research, and the Internet.
- Interactive boards and software.
- On-demand streaming via laptop feed and media center.
- Speech to text on laptops for students who have difficulty writing.
- Copy and paste articles into the Immersive reader – students to be read to.
- Text to speech – reads for student.
- Red cat audio enhancer for students with Auditory processing and hearing needs.
- PECS for students with communication needs. Mainly for the autism program.
- GO talks for communication needs.
- I pads with apps.
- Specialized apps – Lamp and Snap Core Plus.

- Fidgets – ADHD for autism.
- Enlarged text for vision.
- Office 365 Team shares for morning and other programs.

Exploratory/Special Areas Classes (music, art, physical ed., speech, ESL, library)

Each of these classrooms will have the telecommunications, research, and printing capabilities of the core classrooms. Based on academic and technology standards, curriculum, and special needs, the following modifications have been recommended:

Music:

- Electronic keyboard
- Laser printer
- Finale software
- Microphones
- Headphones
- iMacs

Art:

- Scanner
- Color inkjet printer
- Digital camera
- Digital video camera
- Adobe creative suite
- iMacs

Media:

- Laser printer
- Final Cut Pro and Apple motion software
- Microphones
- Headphones
- iMacs
- Video cameras.
- Sound boards.

Animation:

- Lenovo L15 high end laptops.
- Laser printer
- Toon Boom Harmony software
- Headphones
- Drawing tablets.

Robotics:

- Lenovo L15 high end laptops.
- Laser printer
- Vex software
- Web cameras

PTech (Solidworks & CADD):

- Lenovo P350 high end desktops.
- Lenovo T24 monitors.
- Laser printer
- Solidworks client and cloud based software

Physical Education

- iPads at some schools.
- Printer in each school physical education office

Library

- Workstations for research / project work
- Printers, black and white and color
- Library Automation is accomplished using Follett services and is acquired through the WNYRIC
- Electronic Reference: Databases and Encyclopedias
- Library Automation: OneSearch® and Webpath Express®

Student/Staff Resource Rooms

- Lab setting based on school need

To extend the technology capabilities of the schools, the District will place at least one of the following peripheral devices in each school appropriate to grade level and curriculum:

- Digital camera
- LCD projector
- Scanner
- Portable Interactive board
- Shutter or active 3D glasses
- 3D Projector in the STEM classroom
- 3D printers
- Digital microscopes
- Scientific probeware
- Graphing calculators
- Various technical resources to support exploration of coding and robotics in the STEM classrooms.
- Portable Distance Learning cart (virtual field trips) in the STEM classroom

Appendix H – continuous updates

Hardware Inventory

Gaskill

		# of Devices
Computer Monitors	In Service	7
	In Storage	4
Desktops	In Service	16
	In Storage	7
Document Cameras	In Service	19
Interactive Boards / Smart Boards	In Service	41
Laptops / Notebooks	In Repair	119
	In Service	1,178
	In Storage	468
	Ready for Home Deployment	2
	Teacher Device	48
Laser Printers	In Service	51
	In Storage	1
Projectors	In Service	13
Tablets	Administrative Devices	1
	In Service	1

Administration Office

		# of Devices
Computer Monitors	In Service	58
	In Storage	8
Computer Peripherals	In Service	3
Desk Phones	In Service	1
Desktops	In Service	199
	In Storage	14
Device Carts	In Service	1
Document Scanners	In Service	1
Inkjet Printers	In Service	2
Laptops / Notebooks	Administrative Devices	3
	In Repair	436
	In Service	75
	In Storage	34
	Teacher Device	35
Laser Printers	In Repair	1
	In Service	54
	In Storage	4
Multi-Function Printers	In Service	4
	In Storage	1
Projectors	In Service	2
Servers	In Service	5
Tablets	Administrative Devices	3
	In Service	6
	In Storage	5

Cataract

		# of Devices
Computer Monitors	In Service	15
Desktops	In Service	19
Document Cameras	In Service	26
Interactive Boards / Smart Boards	In Service	28
Laptops / Notebooks	Administrative Devices	7
	Broken	1
	In Repair	17
	In Service	546
	In Storage	27
	Ready for Home Deployment	17
	Teacher Device	51
Laser Printers	In Service	34

Projectors	In Service	15
Tablets	Teacher Device	3

Niagara Falls High School

		# of Devices
Computer Monitors	In Service	403
	In Storage	7
Desktops	In Service	388
	In Storage	12
Document Cameras	In Service	95
Inkjet Printers	In Service	1
Interactive Boards / Smart Boards	In Service	101
Laptops / Notebooks	Administrative Devices	50
	In Repair	117
	In Service	3,164
	In Storage	2,095
	Ready for Home Deployment	451
	Teacher Device	135
Laser Printers	In Service	200
	In Storage	5
Projectors	In Service	68
Servers	In Service	3
Tablets	Administrative Devices	3
	Classroom sets	25
	In Service	1
	Teacher Device	1

Bloneva Bond Elementary School

		# of Devices
Computer Monitors	In Service	28
	In Storage	12
Desktops	In Service	30
	In Storage	23
Document Cameras	In Service	36
Interactive Boards / Smart Boards	In Service	32
Laptops / Notebooks	Administrative Devices	2
	In Repair	8
	In Service	493
	In Storage	66
	Ready for Home Deployment	17
	Teacher Device	42
Laser Printers	In Service	52
Projectors	In Service	13
Tablets	In Service	1
	Teacher Device	7
TVs	In Service	39

79th Street School

		# of Devices
Computer Monitors	In Service	10
Desktops	In Service	10
	In Storage	4
Document Cameras	In Service	24
	In Storage	1
Interactive Boards / Smart Boards	In Service	24
Laptops / Notebooks	Administrative Devices	3
	In Repair	24
	In Service	410
	In Storage	45
	Ready for Home Deployment	18
	Teacher Device	33
Laser Printers	In Service	27
	In Storage	1
Projectors	In Service	21
Tablets	Teacher Device	3
TVs	In Service	1

Kalfas

		# of Devices
Computer Monitors	In Service	8
Desktops	In Service	16
Document Cameras	In Service	18
Laptops / Notebooks	Administrative Devices	2
	In Repair	10
	In Service	354
	In Storage	9
	Ready for Home Deployment	14
	Teacher Device	38
Laser Printers	In Service	26
Projectors	In Service	8
Tablets	Teacher Device	4

Abate

		# of Devices
Computer Monitors	In Service	20
Desktops	In Service	58
	In Storage	7
Document Cameras	In Service	44
Interactive Boards / Smart Boards	In Service	48
Laptops / Notebooks	Administrative Devices	5
	In Repair	68
	In Service	785
	In Storage	82
	Ready for Home Deployment	14
	Teacher Device	66
Laser Printers	In Service	62
Projectors	In Service	45
Tablets	Classroom sets	19
	In Service	1
	Teacher Device	29

LaSalle

		# of Devices
Computer Monitors	In Service	49
	In Storage	2
Desktops	In Service	27
	In Storage	8
Document Cameras	In Service	16
Interactive Boards / Smart Boards	In Service	42
Laptops / Notebooks	Administrative Devices	1
	Broken	1
	In Repair	1
	In Service	1,074
	In Storage	202
	Ready for Home Deployment	11
	Teacher Device	50
Laser Printers	In Service	47
	In Storage	4
Projectors	In Service	31

Hyde Park

		# of Devices
Computer Monitors	In Service	12
	In Storage	1
Desktops	In Service	22
	In Storage	3
Document Cameras	In Service	25
Interactive Boards / Smart Boards	In Service	24
Laptops / Notebooks	Administrative Devices	1
	In Service	512
	In Storage	35
	Ready for Home Deployment	20
	Teacher Device	34
Laser Printers	In Service	40
Multi-Function Printers	In Service	2
Projectors	In Service	22
Tablets	Teacher Device	2
TVs	In Service	1

Maple

		# of Devices
Computer Monitors	In Service	12
Desktops	In Service	15
	In Storage	5
Document Cameras	In Service	15
	In Storage	1
Interactive Boards / Smart Boards	In Service	16
Laptops / Notebooks	Administrative Devices	1
	In Repair	1
	In Service	393
	In Storage	28
	Ready for Home Deployment	20
	Teacher Device	32
Laser Printers	In Service	21
Projectors	In Service	7
Tablets	Teacher Device	3

GJMann

		# of Devices
Computer Monitors	In Service	12
Desktops	In Service	17
	In Storage	2
Document Cameras	In Service	2
Interactive Boards / Smart Boards	In Service	26
Laptops / Notebooks	Administrative Devices	5
	In Repair	4
	In Service	471
	In Storage	39
	Ready for Home Deployment	19
	Teacher Device	27
Laser Printers	In Service	35
Projectors	In Service	8
Tablets	Teacher Device	2

Surplus

		# of Devices
Computer Monitors	In Service	5
Copiers	In Service	1
Desktops	In Service	6
Document Cameras	In Service	19
Electronics	In Service	1
Interactive Boards / Smart Boards	In Service	3
Laptops / Notebooks	In Repair	12
	In Service	15
	In Storage	1
Laser Printers	In Service	10
Projectors	In Service	21
Tablets	In Service	1
TVs	In Service	9

DiFrancesco Center

		# of Devices
Computer Monitors	In Storage	55
Desktops	In Storage	49
Laptops / Notebooks	In Storage	32
	Ready for Home Deployment	3
Laser Printers	In Storage	9
Tablets	In Storage	10

Barn

		# of Devices
Computer Monitors	In Service	2
Desktops	In Service	3
Laser Printers	In Service	1

Community Education Building

		# of Devices
Desktops	In Service	37
	In Storage	1
Laptops / Notebooks	In Storage	7
Laser Printers	In Service	8
Multi-Function Printers	In Service	1

Recycled Inventory

		# of Devices
Laptops / Notebooks	In Storage	3

NFHS Athletic Fields

		# of Devices
Laptops / Notebooks	In Service	1

TOTAL Inventory

		# of Devices
Computer Monitors	In Service	641
	In Storage	89
Computer Peripherals	In Service	3
Copiers	In Service	1
Desk Phones	In Service	1
Desktops	In Service	863
	In Storage	135
Device Carts	In Service	1
Document Cameras	In Service	339
	In Storage	2
Document Scanners	In Service	1
Electronics	In Service	1
Inkjet Printers	In Service	3
Interactive Boards / Smart Boards	In Service	385
Laptops / Notebooks	Administrative Devices	80
	Broken	2
	In Repair	817
	In Service	9,471
	In Storage	3,173
	Ready for Home Deployment	606
	Teacher Device	591
Laser Printers	In Repair	1
	In Service	668
	In Storage	24
Multi-Function Printers	In Service	7
	In Storage	1
Projectors	In Service	274
Servers	In Service	8
Tablets	Administrative Devices	7
	Classroom sets	44
	In Service	11
	In Storage	15
	Teacher Device	54

TVs	In Service	50
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Appendix I

Replacement History and Maintenance Cycle

The District Technology Committee has identified a set of projects that will allow the District to meet the goals and objectives of this plan. The committee recognizes that the Technology Plan currently in place outlines a replacement and upgrade cycle. The Committee continues this process. The Committee also recognizes that as technology advances, new initiatives will need to be undertaken by the District. Those already identified have been added to the timeline.

In the years from 1999 to 2017 technology improvement has been focused on:

- Installation of the infrastructure to support a connected District environment
- Installation of a fiber optic network and school connections which was completed in 2002
- Deployment of student laptops
- Equipping teachers with laptops for classroom and home use
- Deployment of classroom equipment to change the platform from Apple to an IBM compatible platform
- Deployment of improved Internet service as well as content filtering in compliance with CIPA (Children’s Internet Protection Act).
- Employment of procedures and process to ensure the effective use of the technology already deployed
- Definition of software standards that support the key technology indicators depicted for each educational level
- Continuation of the development of Data Warehouse templates and tools to support reporting requirements throughout the District
- Upgrade to the network switches and routing to facilitate higher band width.
- Implementation of Curriculum Matrix Tool integrated with NY Learns.
- Teachers were trained in NY Learns and creating web pages.
- Installation of whiteboards in all District classrooms. Teachers received appropriate software for interactive whiteboards. Software has free upgrades. 2007-09
- Installation of classroom audio enhancement systems for all classrooms. 2007-09
- Conversion of District business software to Finance Manager in 2007-08.
- Conversion of District school information software to PowerSchool in 2009-10.
- Centralization of security system was installed and consolidated in 2009-10.
- Distance learning classroom technology was completed in 2015.
- Science, Technology, Engineering and Mathematics (STEM) classrooms were added throughout the District in 2015.
- 1:1 computing completed in the classrooms for elementary classrooms in 2015.
- The telephone system was upgraded and VoIP was installed in the administrative areas in 2015.
- Wireless technology exists on all District campuses – completed in 2015.
- Security systems were added and enhanced – completed in 2015.
- 1:1 computing in the classrooms was implemented for secondary schools in 2016.
- Security systems (public address system, cameras, facility management systems and school access controls) will be replaced and enhanced as part of the Phase II Smart Schools Bond Act. Currently waiting for NYS approval - in the final review stage.
- School year 2017 2018:
 - High speed office copiers were replaced at District locations.
 - Special purpose printers were purchased for District use.
 - Network switch refresh.

- Wireless controller upgrades.
- AV equipment refreshes.
- Performing Arts Center hardware upgrades.
- **School year 2018 2019:**
 - Student laptop (Lenovo 11e) refresh at Maple and Mann elementary schools.
 - Central Office production high speed printer replacement.
 - Student laptop (Lenovo 11e) refresh for grades 3 thru 6, sic elementary schools.
 - High speed office copiers were replaced at District locations.
 - Network server (for student data) was replaced.
 - Wireless Access Point pilot / upgrade at 79th Street School.
 - AV equipment refreshes.
 - Virtual Reality cart and associated equipment purchase.
 - IMac and iPad purchases for Media and STEM students.
- **School year 2019 2020:**
 - Network Server Refresh.
 - Administrator laptop (X1) refresh.
 - Student laptop (Lenovo 11e) refresh for grades PK thru 2.
 - Network server refresh.
 - Wireless controller appliance purchase to accommodate configuration updates.
 - AV equipment refreshes.
 - PAC controller upgrades.
 - STEM WozU kits.
 - Virtual Reality cart and associated equipment purchase.
 - Graphing calculators for Prep and HS students.
- **School year 2020 2021:**
 - Classroom printer refresh.
 - GBIC broadband upgrade (Road to 10g project).
 - Hardware purchases (screens) to accommodate remote instruction.
 - Network core replacement (Road to 10g project).
 - Network equipment to accommodate live-streaming and remote activities.
 - Network programmable switches to accommodate multicast laptop imaging.
 - Dedicated trunk to accommodate multicast laptop imaging.
 - AV equipment refreshes.
 - Student headphone purchases.
 - Student laptop accessories – carry cases, power, etc.
- **School year 2021 2022:**
 - Fiber replacement within buildings. SSBA support. (Road to 10g project).
 - High speed office copiers were replaced at District locations.
 - Student laptop (Lenovo 11e) refresh for grades 7 thru 12.
 - Instructional staff laptop (Lenovo 14) refresh.
 - Specialized laptop (Lenovo 15) purchased for high end work (Robotics, Animation)
 - Administration printer purchase.
 - Network switches and associated equipment purchases (Road to 10g project).
 - Classroom printer refresh.
 - Special purpose printers were purchased for District use.
 - Network server upgrades (Road to 10g project).
 - Clerical computer refresh, including remote capabilities.
 - Final network switches and associated equipment purchases (Road to 10g project).
 - Management servers for new security camera system.
 - Security camera replacements at NFHS, LPS and GPS. SSBA support.

- Purchase, not implementation, of new Telephone system. Erie 1 BOCES support.
- AV equipment refreshes.
- Student headphone purchase.
- iMac purchase for Media students.
- **Moving forward:**
 - Interactive Board replacements. 9 Manufacturers, 4 resellers, under review.
 - Wireless Access Points and Controller replacements.
 - Access Controls system replacement.
 - Student laptop refreshes – after device reviews.
 - Assistive Technology purchases – driven by the Instructional Technology Plan.
 - iSeries upgrade to Power 10 System.
 - Continued high speed printer refreshes.
 - Continued administration, clerical and classroom printer refreshes.
 - Continues AV equipment refreshes.
 - Fiber replacement – outside buildings.
 - District projector upgrades.

Appendix J

Timeline for Replacement

- School year 2022 2023:
 - Investigate options for a grades PK – 2 student laptop purchase.
 - High speed office copier refreshes.
 - Printer purchases.
 - Investigate Assistive and Accessibility Feature device purchases.

- School year 2023 2024:
 - Investigate options for an Administrator laptop purchase.
 - High speed office copier refreshes.
 - Printer purchases.
 - Investigate Assistive and Accessibility Feature device purchases.

- School year 2024 2025:
 - Investigate options for an Administrator laptop purchase.
 - Investigate options for a grades 3 –6 student laptop purchase.
 - High speed office copier refreshes.
 - Printer purchases.
 - Investigate Assistive and Accessibility Feature device purchases.

Appendix K

Education Law 2d - The Protection of Personally Identifiable Information

DATA PROTECTION REMINDERS

E-MAIL PRACTICES



Exercise caution before clicking on a link in an e-mail or opening an attachment.

- Annual NYSIR Phishing Training.
- District Wide notification of Phishing attempts which also reinforces these thoughts:

Phishing e-mails are one of the most common, and effective, methods cyber attackers will use to gain access to secure information.

1. Exercise **CAUTION** before **SENDING SENSITIVE INFORMATION** through email.
2. Exercise **CAUTION** before **CLICKING ON A LINK** in an e-mail or **OPENING AN ATTACHMENT**.
3. **REPORT SUSPICIOUS EMAILS** to your IT Department.
4. If you fall victim, **REPORT INCIDENTS** to your IT Department immediately.

- Reflect on what you are sending and to whom.
- New practices coming with Outlook / Exchange:
 - Additional measures to handle password missteps – disabling phone apps +.
 - Scripts enabled to monitor for compromised email accounts to push a password reset.
 - Data Loss Prevention (DLP) to redirect sent emails that contain personal information to a moderator for approval.

DATA PROTECTION REMINDERS

WORKSTATION PRACTICES



Lock workstations when leaving them unattended.

- Enforce computer locks – possibly every 5 minutes.
- Mitigate internal system attacks:
 - Teacher and gradebook.
 - Student and content filtering.
 - Email sends.
 - Document or system access.
 - Staff.
- Mitigate remote, working or learning at home system attacks.
 - Unattended access to critical information:

DATA PROTECTION REMINDERS

PASSWORD PRACTICES



**Establish strong passwords.
Do not write down passwords
and leave in an easily
accessible location.**

- 2018 Bonadio Assessment:
 - Network and Powerschool 12 characters + other requirements.
 - Vendor software following new password guidelines.
- Multi-factor Authorization coming soon – entry to network or other critical systems will require a code sent to another device for a secondary entry to critical systems.
- Do not make this easy – NO yellow sticky on screen.

DATA PROTECTION REMINDERS

DATA HANDLING PRACTICES



Use appropriate tools when handling data. Never send sensitive information through unencrypted email.

- Not always technical in nature:
 - Coach roster with PII hanging in baseball dugout.
 - Inter-office mail.
 - Secure printers.
- Use password protected OneDrive links to send information:
 - Beginning of the end for email.
 - Retrieval of information with a change of link password.
 - Interactive document changes.

DATA PROTECTION REMINDERS

PRIVACY PRACTICES



Do not establish accounts for students to access online resources without consulting with administration.

- NO click-wrap agreements.
- ALL new Technology related initiatives to the Technology Committee for discussion and approval related activities.

Appendix L – unauthorized disclosure process:

https://forms.office.com/Pages/ResponsePage.aspx?id=Jy5iWkdgp0OKoxUXopcvhEd4yCvuTBROgdDtkiWh6lUQtdLWUpCSk...

Unauthorized Disclosure Complaint Form

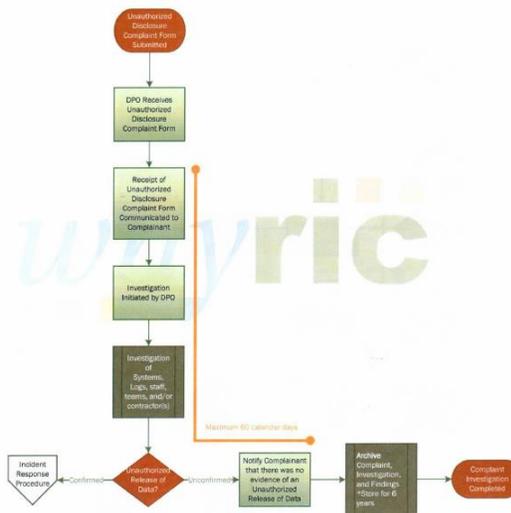
The survey will take approximately 6 minutes to complete.
Parents, eligible students (students who are at least 18 years of age or attending a postsecondary institution at any age), principals, teachers, and employees of an educational agency may file a complaint about a possible breach or improper disclosure of student data and/or protected teacher or principal data.

* Required

Contact Information

1. First Name *

Unauthorized Disclosure Complaint Procedure



Reporting Incident Response Procedure

