



Pittsford Schools

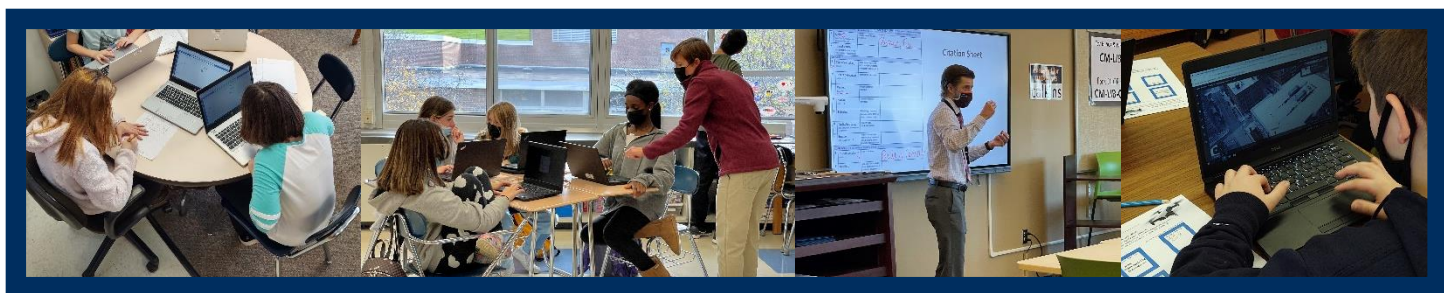
TECH QUEST 9



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Acknowledgements

Tech Quest 9 represents the work of committee members from many stakeholder groups. In numerous collaborative meetings, members of our District Technology Management Committee and our planning committee for Tech Quest 9 exchanged thoughts, shared research, and developed this document.

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Executive Summary

Tech Quest 9 is a three-year plan (2022-2026) for integrating current and emerging technologies into the instructional program. This revised volume supersedes volumes 1 through 8 dating back to 1994.

During the spring of 2021, the District Technology Management Committee began the process for creating Tech Quest 9. The results of this survey, along with other resources, were used to construct Tech Quest 9. In addition to the District Technology Management Committee and the planning committee for Tech Quest 9, the following stakeholder groups were consulted: Central Instruction Team, Standards Leaders, and building technology management committees.

The District Technology Management Committee, in consultation with other stakeholders, will assess progress toward the goals throughout the next three years.

Purpose

Tech Quest 9 provides leadership, management, and support systems that sustain the hardware and software necessary to enhance learning and instruction. In addition, this plan satisfies requirements outlined by Federal Government E-Rate funding. Tech Quest 9 addresses the critical components needed to integrate technology into all curricular areas:

- Articulate a vision for technology throughout the District
- Develop clear, measurable goals coupled with attainable objectives
- Identify technological strengths and weaknesses through a needs assessment
- Provide professional development in the use of technology for teaching and learning
- Offer student-centered approaches to learning
- Supply quality hardware, software applications, and telecommunications networks
- Provide technical and instructional assistance for maintaining and using technology resources
- Form community partnerships to access expertise, support, and real-life interactions
- Sustain financial support for technology use
- Create and sustain systems that provide real-time access to student data
- Develop guidelines to support learning environments

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Core Beliefs

Pittsford Central School District Vision Statement:

Where we want our District to be:

Pittsford Central School District will be the leader in realizing the promise of public education. We will design a transformational partnership among students, families, professionals, and community, based upon a new definition of success for all:

Our students will navigate a journey of self-discovery, leading them to overcome obstacles, pursue balance and wellness, and personalize their education. They will recognize challenges as opportunities for learning and accomplishment. They will have the skills and competence necessary to understand and thrive in a diverse, global society. During and after their time with us, they will be independent, healthy, resilient, and compassionate contributors to our community and beyond.

Our staff will model the joy of learning. The environment of support and collegiality will make our district a magnet for passionate educators. Instead of categorizing students to fit into current structures, we will design systems to meet student needs.

Our families and community will be welcomed and engaged in educational experiences that dissolve the lines between business, society, and schools. Students will not only view adults as resources, but will themselves be recognized as resources to our community, matching their interests with opportunities to create solutions for real needs.

When this vision is realized, every Pittsford student will have access to personalized opportunities, and acquire skills necessary to meet their potential and fulfill their dreams.

Pittsford Central School District Mission Statement:

The Pittsford Central School District community works collaboratively to inspire and prepare our students to be their best, do their best, and make a difference in the lives of others.

Pittsford Central School District Core Values:

- Student Centered
- Supportive Environment for All
- Continuous Improvement
- Progressive
- Collaborative

Technology Vision Statement:

Pittsford Schools will promote the ethical and responsible use of technology to maximize the academic performance and personal development of all members of the learning community.

Technology Mission Statement:

Pittsford Schools successfully integrates technology into the educational program to provide students with the knowledge and skills required for lifelong learning and for productive participation in society.

Technology Belief Statements:

We believe:

- Thoughtful integration of technology promotes critical and creative thinking, innovation, and academic excellence.
- Our learning community must use existing technology while exploring and evaluating the use of emerging technologies to provide a rich and rigorous learning environment for all students.
- Technology-rich learning environments empower educators to engage, motivate, and meet the diverse needs of all learners.
- Students and staff can effectively collaborate with others to exchange ideas, develop new understandings, and create original works using a variety of technologies.
- By selecting and applying the appropriate digital tools to effectively access, evaluate and use information, students can communicate, solve authentic problems, and create new understandings.
- Our learning community must learn to use technology legally, ethically, and responsibly in our interconnected digital world.

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Technology Goals

Instructional Goal

Facilitate and inspire student learning, creativity, and innovation.

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

Systematic Improvement Goal

Continuously improve organizational efficiency through planning for and management of technology resources.

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Instructional Goal and Objectives

Instructional Goal:

Facilitate and inspire student learning and creativity.

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

Instructional Objectives:

- Equip staff and students with the knowledge and skills needed to use technology legally, ethically, and responsibly, including the protection of intellectual rights and property.
- Provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners.
- Design authentic learning activities that align with content area standards, NYS CS & DF standards, and use digital tools and resources to maximize learning.
- Students communicate and express themselves clearly and creatively for a variety of purposes using the tools, styles, and formats appropriate to their goals.
- Use technology to design and implement a variety of formative and summative assessments that accommodate learner needs, provide timely feedback to students, and inform instruction.
- Support the process for the collection and analysis of data, interpreting results, and sharing the findings at all levels of the organization to improve student learning.
- Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use, and trouble-shoot current technologies, and are able to transfer their knowledge.
- Create experiences for learners to make positive, socially responsible contributions, and exhibit empathetic behavior online that builds relationships and community.
- Allocate time, resources, and access to ensure ongoing professional growth in educational technology.
- Stay abreast of educational research and emerging trends regarding effective use of technology.

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Equip staff and students with the knowledge and skills needed to use technology legally, ethically, and responsibly, including the protection of intellectual rights and property.	Determine how this objective best fits in each curriculum area/grade level K-12	2022-ongoing	<ul style="list-style-type: none">• Targeted professional development• Curriculum is aligned with NYS CS & DF Standards• Embedded throughout district assessments• Technology use is in alignment with the district academic honesty policy and code of conduct• Students have an understanding of the EIN and adhere to its parameters
	Embed the knowledge and skills across the K-12 curriculum	2023-2025	
	Provide teachers with resources and ongoing training	2022-ongoing	

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners.	Research current and emerging technologies in relation to the PCSD environment	2022-ongoing	<ul style="list-style-type: none"> • Technology that allows for flexible use of space • Increased maker spaces K-12, either as fixed or mobile spaces • Additional authentic learning opportunities (PBL) • Teachers are integrating available technology throughout learning experiences • See an increase in digital resources, where appropriate, in instruction and assessments
	Develop a 1-1 initiative	2022-2024	
	Implement a 1-1 initiative at the secondary level	2022-2025	
	Implement a 1-1 initiative at the elementary level	2023-2026	
	Evaluate current learning environments	2022-ongoing	
	Align environments to curricular outcomes by providing diverse learning experiences in order to be flexible and nimble	2022-ongoing	
	Partner with industry leaders (business partnerships, higher education, community members) to research and implement real-world learning environments and applications	2022 – ongoing	
	Utilize current staff and provide additional staff to implement and support technology integration, PCSD's Next Generation Skills and the NYS CS & DF Standards	2022-ongoing	

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Design authentic learning activities that align with content area standards, NYS CS & DF standards, and use digital tools and resources to maximize learning.	Embed NYS Computer Science and Digital Fluency Standards in curriculum writing	2023-ongoing	<ul style="list-style-type: none"> • Instructional content and strategies that are vertically aligned with increasing complexity and are consistent across grade bands • Balanced integration of technology in content delivery and student demonstration • Student experiences are shared with authentic audiences, both within and outside of the district • NYS CS & DF standards are included in lesson plans • Include ITT in curriculum writing to assist with implementation of NYS CS & DF
	Provide authentic learning opportunities K-12	2022-ongoing	
	Identify instructional resources necessary for the task in collaboration with DSLT and ITT	2022-ongoing	
	Research and evaluate technology integration models	2022-2023	
	Provide professional development around technology integration models	2023-2026	

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Students communicate and express themselves clearly and creatively for a variety of purposes using the tools, styles, and formats appropriate to their goals.	Provide training for students and staff	2022-ongoing	<ul style="list-style-type: none">• Classroom observation, student work, and teacher rubrics will clearly demonstrate students' ability to communicate clearly, express themselves creatively, and choose the appropriate tools to meet their learning goals• Students are able to explain their reason for choosing the tools, styles, and formats for the particular goal
	Provide equitable access to and use of technology for students across the district	2022-ongoing	
	Continuous research on resources that would be effective for learning experiences	2022-ongoing	
	Student outcomes demonstrate acquisition of technology skills in alignment with NYS CS & DF Standards	2022-ongoing	

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Use technology to design and implement a variety of formative and summative assessments that accommodate learner needs, provide timely feedback to students, and inform instruction.	Research developmentally appropriate assessment options	2022-ongoing	<ul style="list-style-type: none"> • Student work submitted and assessed using technology • Increase in on-line student reflection pertaining to their own growth • Attendance level of PD • Professional development are differentiated based on (i.e. grade level release days, conference days) on district initiatives and need • All teachers are using platforms designated by the district, to allow for equitable learning environments
	Provide professional development, in alignment with district initiatives, with on-going training and support	2022-ongoing	
	Provide professional development around innovative practices, with on-going training and support		
	Work with DSLT to use technology for a variety of assessments K-12	2022-ongoing	
	Create opportunities to share innovative technology practices across the district	2022-ongoing	
	Monitor NYS computer based testing grades 3-8 decisions	2022-ongoing	

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Support the process for the collection and analysis of data, interpreting results, and sharing the findings at all levels of the organization to improve student learning.	Educate staff on formative and summative assessment tools	2022-ongoing	<ul style="list-style-type: none"> • Increase in PD opportunities focusing on technological assessment practices and data analysis • Data collection results will indicate current usage of formative and summative assessment tools • Data collection results indicate increase in usage of formative and summative assessment tools to collect data
	Conduct a baseline survey about teacher usage of formative and summative assessment tools	2024	
	Educate staff on how to use tools to analyze data and use it to inform instructional practices	2022-ongoing	
	Educate staff on the appropriate use of the data team for help with collecting, interpreting, and analyzing data	2022-ongoing	

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use, and troubleshoot current technologies, and are able to transfer their knowledge.	Create a continuum of essential technology skills K-12 aligned with NYS CS & DF Standards	2023-ongoing	<ul style="list-style-type: none">•The continuum and NYS CS & DF Standards are used as guiding documents in all curricular projects•Technology skills are a part of curriculum writing and new course proposal forms•High percentage of mastery success on benchmark assessments
	Integrate the technology skills into curriculum writing	2022-ongoing	
	Embed essential technology skills into instruction and assessments.	2022-ongoing	

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Create experiences for learners to make positive, socially responsible contributions, and exhibit empathetic behavior online that builds relationships and community.	Utilize online communities within instruction when appropriate	2022-ongoing	<ul style="list-style-type: none"> • Increase utilization of online tools for collaboration and communication • Observe appropriate use of Seesaw, Teams and other district approved tools • Develop and provide professional development opportunities • NYS SEL Benchmarks are incorporated into student learning experiences • NYS CS & DF Digital Use Standards are incorporated into student learning experiences
	Teach and promote positive, empathetic online behaviors	2022-ongoing	
	Create opportunities for students to interact in a healthy, positive online environment	2022-ongoing	
	Provide professional development related to the NYS CS & DF Digital Use Standards and their relation to the NYS SEL Benchmarks	2022-ongoing	

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Allocate time, resources, and access to ensure ongoing professional growth in educational technology.	Provide on-going training and support	2022-ongoing	<ul style="list-style-type: none"> • Offer professional development courses through the Teacher Center • Offer on-going support to teachers and staff to implement technology integration from instructional technology teams • Observe teachers utilizing technology resources in the classroom • Teachers accessing and utilizing the exemplar repository • Develop and distribute a technology needs assessment • Faster and more efficient response rate to customer needs throughout the district
	Provide technology resources with support in implementation	2022-ongoing	
	Create exemplar repository for teachers to access	2024-ongoing	
	Create a subcommittee to determine and define what is an exemplar technology learning experience	2023-ongoing	
	Assess the needs of the district	2022-2023 (and then periodic checks)	
	Address the need for additional technicians and instructional technology team members	2022-ongoing	

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Action Plans: Instructional Objectives

Objective	Action Steps	Timeline	Indicators
Stay abreast of educational research and emerging trends regarding effective use of technology.	Keep current on educational technology through online tools, conferences, professional journals, and other educational opportunities	2022-ongoing	<ul style="list-style-type: none"> • Increase in teacher led technology opportunities (collegial circles, “appy” hours, etc.) • Increase in thoughtful technology integration in classrooms • Properly funded, stable technology budget that supports Tech Quest 9 • Increase in teachers trying new technology to enhance learning within district established guidelines or procedures
	Develop guidelines and procedures (e.g. Ed Law 2D, software approval) to support the implementation of technology into the educational program	2022-ongoing	
	Advocate and develop guidelines, programs, and funding to support the implementation of technology into the educational program	2022-ongoing	

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Systematic Improvement Goal and Objectives

Systematic Improvement Goal:

Continuously improve organizational efficiency through planning for and management of technology resources.

Systematic Improvement Objectives:

- Maintain a healthy refresh cycle for equipment.
- Protecting personally identifiable data (PII) and promoting a NIST-based cybersecurity posture.
- Improve efficiencies using digital copiers, networked printers, and cloud-based solutions.
- Improve and enhance physical security features throughout the district.
- Evaluate the process for the identification and selection of instructional technology.
- Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals.
- Evaluate current Building Technology Management Committee structure and charge.
- Develop and implement a 1-1 device initiative throughout the district as appropriate.

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Action Plans: Systemic Improvement Objectives

Objective	Action Steps	Timeline	Indicators
Maintain a healthy refresh cycle for equipment.	Evaluate and replace, repurpose, eliminate, or maintain devices on a yearly basis	2022-ongoing	<ul style="list-style-type: none">District level records of hardware
	Identify appropriate refresh rate for infrastructure, user devices, and peripherals	2022-ongoing	
	Maintain appropriate refresh cycle for infrastructure, user devices, and peripherals	2022-ongoing	

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Action Plans: Systemic Improvement Objectives

Objective	Action Steps	Timeline	Indicators
Protecting personally identifiable data (PII) and promoting a NIST-based cybersecurity posture.	Identify: inventory data, maintain contracts with vendors, and establish controls	2022-ongoing	<ul style="list-style-type: none"> • Maintaining a data inventory using Cymetric • Conduct monthly scans and annual audits using NESSUS and third party auditors • Reports from SOPHOS • Multifactor authentication completion • Upgraded backup hardware and software • Establishment of new VLANs for productivity systems • Track the use and storage of personally identifiable information using Varonis • Alerts and reports from the SIEM • Reduced reporting of unsafe online behaviors from our stakeholders using Palo Alto software • Presentations to all stakeholders in all departments on cybersecurity and data protection best practices; mandatory GCN module • BOE approved policies and regulations • Updated Disaster Recovery Plan, Backup Plan, and Incident Response Plan
	Protect: Regularly perform security risk audits, and manage threats /vulnerabilities	2022-ongoing	
	Protect: Implement end point protection that includes EDR	2022-ongoing	
	Protect: Implement multifactor authentication for file systems and student information system	2022-ongoing	
	Protect: Encrypt sensitive files	2022-ongoing	
	Protect: Network segmentation of data systems versus productivity systems	2022-ongoing	
	Protect: Anomaly detection	2022-ongoing	
	Detect: Partner with a third party like Sedara to use SIEM monitoring software	2022-ongoing	
	Respond: Collaborate with Chief Information Officer and Human Resources to educate stakeholders on best practices regarding cybersecurity and data protection	2022-ongoing	
	Respond: Review and update current policies and procedures regarding data and network protection and management	2022-ongoing	
	Recover: Update Disaster Recovery Plan, Backup Plan, and Incident Response Plan	2022-ongoing	

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Action Plans: Systemic Improvement Objectives

Objective	Action Steps	Timeline	Indicators
Improve efficiencies using digital copiers, networked printers, and cloud-based solutions.	Needs assessment regarding usage and systematic placement of printers and copiers	2022-2023	<ul style="list-style-type: none"> • Based on data, more efficient placement of copiers and printers • Teacher center course offerings • Data on staff participation in technology professional development • Reduction of printed materials • Increase in cloud-based storage • Usage of copiers increases but printer usage decreases • Increase in student use of their school email address for school purposes • Staff will utilize cloud-based solutions in an effective manner to communicate
	Provide professional development with a focus on cloud-based solutions that move away from paper-based classrooms	2022-2025	
	Implement a 1-1 initiative to allow for cloud-based solutions	2022-2025	
	Communicate relevant information and ideas effectively to the PCSD community using a variety of digital age media and formats	2022-ongoing	

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Action Plans: Systemic Improvement Objectives

Objective	Action Steps	Timeline	Indicators
Improve and enhance security features throughout the district.	Conduct monthly vulnerability scanning of district technology security systems and patch as needed	2022-ongoing	<ul style="list-style-type: none"> • Monthly Nessus scans • Upgrade cameras throughout the district where needed • Install additional security cameras where deemed necessary and appropriate • Patch security systems that have high and critical vulnerabilities • Adjust and expand our current ID system throughout the district. • Continue to partner with local law enforcement officials
	Provide additional cameras and upgrade current cameras and software to locations as necessary	2022-ongoing	
	Review our current ID system to include additional door lock features	2022-2025	
	Utilize third party auditors and engineers to help with the needs assessment	2022-ongoing	

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Action Plans: Systemic Improvement Objectives

Objective	Action Steps	Timeline	Indicator
Evaluate the process for the identification and selection of instructional technology.	Update current Ed Law 2D process for evaluating software and app request	2022-2023	<ul style="list-style-type: none"> • Updated software and hardware acquisition forms to include transparency for the requester • Updated app approval process • Published list of approved software shared with stakeholders • Documented partnerships with stakeholders to develop and implement technology pilots • Building technology chairs will bring back feedback to DTMC regarding approval process
	Update current software and hardware acquisition process	2022-2023	
	Review current app approval process	2022-2023	
	District-wide software review with Standards Leaders to determine software usage and curricular relevance	2022-ongoing	
	Encourage the evaluation of new technologies for their potential to improve student learning	2022-ongoing	
	Educate stakeholders on new approval process for software/hardware/app acquisition	2023-2024	

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Action Plans: Systemic Improvement Objectives

Objective	Action Steps	Timeline	Indicators
Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals.	Recommend to Human Resources changes to the interview questions and researching of the candidate's digital footprint	2022-2023	<ul style="list-style-type: none">• Provide to Human Resources potential interview questions that would demonstrate proficiency in technology• Work with the Induction Planning Committee to increase technology instruction for new hires
	Recommend an increase in technology instruction for new hires at induction	2022-2023	

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Action Plans: Systemic Improvement Objectives

Objective	Action Steps	Timeline	Indicators
Evaluate current Building Technology Management Committee structure and charge.	Review current Technology Chair job description as defined by Human Resources	2022-2023	<ul style="list-style-type: none"> • Recommended changes to job description sent to Human Resources • Building committees develop and monitor goals and indicators of success • Utilize evaluation for building tech committee • DTMC Charter shared with building level stakeholders • Agendas and minutes will be shared with all building level stakeholders
	Develop a clear definition of what is the purpose of Technology Management at building level	2022-2023	
	Develop building-wide goals, indicators of success, and timeline based on Tech Quest 9	2022-2023	
	Review and critique current evaluation for building technology management	2022-2023	

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Action Plans: Systemic Improvement Objectives

Objective	Action Steps	Timeline	Indicators
Develop and implement a 1-1 device initiative throughout the district as appropriate.	Develop and implement a student 1-1 device initiative	2022-2025	<ul style="list-style-type: none"> • We will be 1-1 in the appropriate grade levels • Increase in teacher-led technology opportunities (collegial circles, workshops, etc.) showcasing best instructional practices in a 1-1 environment • Staff and students are accessing and utilizing the district provided resources • Systems are in place that will support a 1-1 environment such as device insurance plan, student help desk, and student and staff training on best practice.
	Provide ongoing professional development opportunities for staff on best instructional practices in a 1-1 environment	2022 ongoing	
	Evaluate the 1-1 initiative and brainstorm ways to improve upon systems and structures	2022 - ongoing	

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