

# ESM Technology Plan: 2018-2022. Table of Contents

*Please Note: this plan is intended to be viewed online due to the many links embedded within it.*

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## Executive Summary

The ESM Technology Integration Investment Plan was developed in alignment with the ESM Strategic Plan, Vision, Mission, Beliefs, individual School Improvement Plans, the District Plan for Children with Disabilities, consultation with the English as a New Language program as well as research and best practices in the instructional technology field.

ESM recognizes and appreciates the students, staff members, parents, community members, and members of higher education who were engaged in the development of this plan. From September 2017 to May 2018, members of the planning committee worked on defining the focus areas, outcomes, student and staff expectations, actions steps, and expected results for each focus area.

The goal of the Technology Integration Investment Plan is to transform the learning process through seamless technology integration, and to continue to support all learners by providing the necessary resources and guidance.

The plan is organized into five major focus areas with identified outcomes, expectations for students and staff, action steps and results. The five focus areas are interdependent:

1. **Technology Learning Competencies**--A set of grade by grade competencies that each student will achieve
2. **Professional Learning**--A plan for providing learning opportunities for staff so that they can implement the plan
3. **Technology Infrastructure to Support Student Learning**--Providing devices, a network, wireless connectivity and high speed internet access to support student learning
4. **IT Support**--A plan for supporting the technology rich environment at ESM Schools
5. **Emerging Technologies**--A structure to stay focused on “what’s next” so that we continue to stay on the cutting edge

## **ESM Vision, Mission & Beliefs**

### **Vision**

The East Syracuse Minoa Central School District will be an exemplary 21st Century learning community whose graduates are prepared to excel in a complex, interconnected, changing world.

### **Mission**

The East Syracuse Minoa Central School District will prepare students for the 21st Century by engaging all learners in meaningful learning experiences that meet the highest educational and ethical standards in a caring, collaborative learning community supported through partnerships with parents and families, businesses, civic organizations, and higher education.

### **Belief Statements**

We believe that:

- Each individual has dignity and worth
- The capacity to learn for each individual is boundless
- Curiosity and exploration stimulate innovation and learning
- High expectations and challenging curriculum lead to greater achievement
- Effort and perseverance are essential to achieve one's personal best
- Positive relationships are fundamental to success and growth
- Collaboration within and among school, families and community partners is essential to meet the needs of each student
- Acceptance and mutual respect encourages students to take the risks necessary for academic and personal growth
- Education prepares students to become productive and responsible citizens who contribute to their communities
- Students need to develop their strengths, confidence and resilience to meet the challenges they will face throughout life

## **Student, Parent, Community and Staff Engagement**

We believe that student, staff, parent and community involvement is a vital part of any district planning. Students, staff, parents, community, business partners and higher education were extensively involved in the development and implementation of our ESM Strategic Plan. In order to develop this plan, we engaged stakeholders at formal meetings and by soliciting participation via email, online surveys, our website, printed ESM bulletins and email communications. All contributions were instrumental in developing this document and we thank them for their assistance.

We utilized technology to develop the plan collaboratively. Participants were able to comment, suggest and edit the document either at in person meetings or remotely. Using Google Docs also allowed a larger group of people to view and comment on the plan as it was developed. Participants also learned what it was like to collaborate using technology. This document is meant to be viewed online as there are many embedded links within it.

This plan was discussed, reviewed and updated with various stakeholders throughout the District during the 2017-2018 school year, including the following:

- Technology Plan Team
- Pre-K-12 Administrators
- Education Program Communications Committee
- Staff Meetings
- Parent/Administrative Leadership Group
- ESM Board of Education

The plan development timeline is located [here](#).

## ESM Technology Plan Team Members

Name	Role	School/Affiliation
Christina Alburnio	Parent	Pine Grove
Kimberly Amendola	Math Teacher	Pine Grove
David Ashley	Technology Teacher	Pine Grove
Greg Avellino	Executive Principal	High School
Thomas Aylsworth	Student	High School
Laurie Cecconi	Teacher Assistant	Fremont
Tammy Ciotti	Elementary Teacher	East Syracuse
Tom Decker	Elementary Music Teacher	Fremont
Josh Deyo	Student	High School
Kay Dimon	Elementary Teacher	Fremont
Robert Duffy	Special Education Teacher	High School
Kathy Ehrlich	Art Teacher	Pine Grove
Kristin Enright	Vice Principal	Pine Grove
Glenn Gesek	Instructional Technology Integration Specialist	Districtwide
Michele Gipe	Director of Teaching & Learning	District Office
Andrew Hayes	Student	High School
Audrey Heller	Art Teacher	High School
Sandy Hough	Elementary Teacher	Minoa
Jeff Huard	Technology Teacher	High School
Sara Hughes	Social Studies Teacher	Pine Grove
Tokinma Killins	Assistant Principal	High School
Tammy Koster	Parent	Fremont
Sue Kowalski	Library Media Specialist	Pine Grove
Peter Logli	Education Consultant	Google

Adam Manchester	Student	High School
Timothy Patterson	BOCES Instructional Technology Integration Specialist	CNYRIC Districtwide
Lindsey Pavia	Parent	High School, Pine Grove, Park Hill
Brianna Putman-Hurlbut	Parent	Fremont, Park Hill
Krystina Race	Elementary Teacher	East Syracuse
Suzette Roberts	Parent	East Syracuse
Christine Rossignol	Elementary Teacher	Fremont
Jean Schoff	English Teacher	Pine Grove
Adam Shatraw	Music Teacher	High School
Kimberly Staniec-Pinkerton	Instructional Specialist for Special Education	Park Hill
Donna Stensland	Pre-Kindergarten Teacher	Park Hill
Thomas Sweeney	Elementary Teacher	Woodland
Cori Tackman	Parent	East Syracuse
Gina Terzini	Principal	Woodland
Erin VanMarter	Parent	East Syracuse
Denys Vasylevskyy	Network Administrator	Districtwide
Jess Ward	Parent	High School, Pine Grove, Park Hill
Rebecca Wenner	Instructional Technology Integration Specialist	Districtwide
Loral Wilson	Parent	High School, Pine Grove

## Technology Vision

The East Syracuse Minoa Central School District's shared vision is to prepare our students to excel in a complex, interconnected, changing world. As we continue our journey, we recognize the major shifts of the past five decades from an industrial economy to a knowledge-information age to a technological-digital world. As we reflect on these transitions in the history of our country and our world, we embrace the transformation needed in our educational system to support learning through the integration of technology that will stimulate inquiry, critical thinking, problem-solving, collaboration, communication, creativity and innovation in our classrooms. Our focus is on learning and the importance of technology integration, and about what ESM students and staff will do with technology to deepen and demonstrate their learning as well as collaborate with others and present their learning as global citizens.

Collectively, we seek to empower both students and staff by providing the necessary resources and guidance as we strengthen teaching to continuously improve student learning. Our students and staff have embraced the digital age, which is demonstrated in Pre-K-12 classrooms across the District, as students use technology, not simply for the sake of using it, but to extend and enhance their learning.

It is our belief that the plan outlined on the following pages will guide the integration of technology in supporting student learning and will transform their learning.

# Focus Area 1: Essential Student Technology

## Learning Competencies

### Outcome

**Students will master district identified grade level technology learning competencies by June, 2021.**

### Background

Student technology learning competencies drive the vision and development of the whole technology plan, so it is the first focus area. By maintaining student technology learning competencies, organized by grade level, we will know what systems to put in place, what equipment to purchase and maintain, and what professional learning is required for staff to enable staff and student success.

### Student Technology Learning Competencies

Technology literacy is the ability to responsibly use appropriate technology to communicate, solve problems, and access, manage, integrate, evaluate, and create information to improve learning in all subject areas and to acquire lifelong knowledge and skills.

The ESM School District Technology Learning Competencies for Pre-K-12 are aligned with the [Common Core State Standards \(CCSS\)](#), the [Framework for the 21<sup>st</sup> Century Learning](#), and the International Society for Technology in Education (ISTE) Standards for [teachers](#), [students](#) and [administrators](#).

The Technology Learning Competencies are intended to provide ESM staff with a specific set of learning expectations to integrate technology use and enhance student learning.

The [ESM Technology Competencies for Students](#) (use link to view when online) contains a grade by grade listing of expected student competencies along with aligned tools and strategies to implement them. These tools and strategies should



not be viewed as a checklist where teachers are required to work down the whole list. Rather, they are a menu of possible ways to give students access to the competencies given the diversity of curriculum, grade levels, classrooms, and child development.

### **Expectations for Students and Adults**

**Students:** Students will develop their skills with technology through the use of the grade level-specific technology learning competencies and International Society for Technology in Education (ISTE) Student Standards.

**Adults:** Teachers will become proficient with district identified technology tools and facilitate student learning to achieve grade level technology learning competencies.

### **Action Steps and Details: [\(Focus Area 1 Status Summary\)](#)**

*2018-2019*

1) Implement the 2018-2021 International Society for Technology in Education (ISTE) [Student Technology Competencies](#) through focused and targeted professional learning opportunities.

Detail: This plan contains an updated version of student technology competencies. The [ISTE Student Standards](#) form the basis and we have added relevant strategies and ideas for and by teachers to draw upon.

We have also adopted ISTE's [Standards for Teachers](#) and ISTE's [Standards for Administrators](#).

2) Add competencies as a resource to each grade level and/or subject's curriculum on the district's web based curriculum mapping tool, [Atlas Rubicon](#).

Detail: For easy reference by teachers and for accountability purposes, the ISTE [Student Technology Competencies](#) will be available to all grade levels.

### *2019-2020*

- 1) Implement the 2018-2021 ISTE [Student Technology Competencies](#) through focused and targeted professional learning opportunities.
- 2) Review and update student competencies based on input and feedback from teaching staff.

Detail: We will perform interim assessments with staff to make judgements about the alignment of the competencies and student skill levels. Based on student and staff feedback we will modify student competencies as needed throughout the plan.

- 3) Review the alignment of the Student Technology Competencies with curriculum by grade level and subject to ensure that students are experiencing opportunities to develop these skills.

Detail: Atlas Rubicon is currently planned to become the district home for curriculum mapping. As the rollout plan continues, teachers will begin including team and individual lessons and strategies to teach critical concepts. Those lessons and strategies should include ideas, tools, and strategies which incorporate technology.

### *2020-2021*

- 1) Implement the 2018-2021 ISTE [Student Technology Competencies](#) through focused and targeted professional learning opportunities.
- 2) Develop the 2021-2024 Technology Plan.

### **Results by June, 2021**

- Students will demonstrate mastery of the grade level-specific technology competencies as evidenced by their work and/or assessments
- Teachers will make regular use of the competencies in lesson design and classroom activities and have the skills to implement them
- Atlas Rubicon will have links and integration strategies embedded within it

## Focus Area 2: Professional Learning

### Outcome

By June, 2021 all staff will have the skills and knowledge they need to integrate technology into daily educational activities to directly improve teaching and learning outcomes. There will continue to be opportunities to focus on “modification” and “redefinition” of technology integration from the SAMR Model where applicable, in alignment with the student technology competencies.

### Background

Professional Learning (PL) helps teachers continually strengthen their practice to better meet the learning needs of all students.

We are committed to providing multiple options for staff to gain the skills and competencies they need to design, implement and assess learning experiences to engage students and improve learning.

The traditional classroom based model of professional learning continues to be valuable, but there are many other models that work as well. Flipped PL, webinars, document based learning, and mentoring provide options for different kinds of learners.

In addition, we will continue to focus on the [SAMR](#) model of technology integration created by [Dr. Ruben Puentedura](#). SAMR stands for:

- **Substitution**--technology acts as a direct tool substitute, with no functional change
- **Augmentation**--technology acts as a direct tool substitute, with functional improvement
- **Modification**--technology allows for significant task redesign
- **Redefinition**--technology allows for creation of new tasks previously inconceivable

The model indicates that the power of integration is gained through focusing integration efforts on modification and redefinition of learning tasks. By doing so,

student learning becomes more student centered as opposed to teacher centered, as well as more engaging and rigorous. The table below provides a more detailed explanation with learning examples from Dr. Puentedura.

Level	Definition	Examples	Functional Change
<b>Substitution</b>	Computer technology is used to perform the same task as was done before the use of computers.	Students print out worksheet, finish it, pass it in.	No functional change in teaching and learning. There may well be times when this is the appropriate level of work as there is no real gain to be had from computer technology. One needs to decide computer use based on any other possible benefits. This area tends to be teacher centric where the instructor is guiding all aspects of a lesson.
<b>Augmentation</b>	Computer Technology offers an effective tool to perform common tasks.	Students take a quiz using a Google Form instead of using pencil and paper.	There is some functional benefit here in that paper is being saved. In addition, students and teacher can receive almost immediate feedback on student level of understanding of material. This level starts to move along the teacher / student centric continuum. The impact of immediate feedback is that students may begin to become more engaged in learning.
Level	Definition	Examples	Functional Change
<b>Modification</b>	This is the first step over the line between enhancing the traditional goings-on of the classroom and transforming the classroom. Common classroom tasks are being accomplished through the use of	Students are asked to write an essay around the theme "And This I Believe...". An audio recording of the essay is made along with an original musical soundtrack. The recording will be played in front of	There is significant functional change in the classroom. While all students are learning similar writing skills, the reality of an authentic audience gives each student a personal stake in the quality of the work. Computer technology is necessary for this classroom to function allowing peer and teacher feedback, easy rewriting, and audio recording. Questions about writing skills increasingly come from the students themselves.

	computer technology.	an authentic audience such as parents or college admission counselors.	
<b>Redefinition</b>	Computer technology allows for new tasks that were previously inconceivable.	A classroom is asked to create a documentary video answering an essential question related to important concepts. Teams of students take on different subtopics and collaborate to create one final product. Teams are expected to contact outside sources for information.	At this level, common classroom tasks and computer technology exist not as ends but as supports for student centered learning. Students learn content and skills in support of important concepts as they pursue the challenge of creating a professional quality video. Collaboration becomes necessary and technology allows such communication to occur. Questions and discussion are increasingly student generated.

From <https://sites.google.com/a/msad60.org/technology-is-learning/samr-model>

## Expectations for Students and Adults

### Students:

- Adopt and implement new technologies in their learning
- Provide teachers with ideas on how learning targets can be met and on what tools, strategies and skills would help them learn better
- Access tools and resources to demonstrate learning in a variety of ways
- Develop digital citizenship skills and demonstrate responsible use of technology as a creative tool that positively impacts learning

## Adults:

- Facilitate and inspire student learning and creativity through the use of technology tools, resources, and instructional strategies
- Use students as resources for adult learning
- Design and develop digital age learning experiences and assessments
- Model digital age work and learning
- Promote and model digital citizenship and responsibility
- Engage in professional growth and leadership

## Action Steps: ([Focus Area 2 Status Summary](#))

*2018-2021*

1) Focus on the [SAMR Model](#) for highly effective technology integration professional learning. Develop differentiated professional learning offerings for technology integration and align it with professional learning plans and budget.

Tasks for this action step include:

- Work with staff to help them assess their technology use along the SAMR continuum
- In all PL offerings, help staff plan technology integration that focuses on “modification” and “redefinition”
- Focus on the needs of Special Education and English-language learners as their needs will differ

2) Implement PL aligned with priorities in the ESM Strategic plan, this plan and ISTE Standards for [Teachers](#) and [Administrators](#).

Detail: As part of the overall ESM Professional Development Plan, we will offer professional learning opportunities that align with individual needs of teachers and administrators and the priorities of the technology plan.

We will offer professional learning opportunities through:

Job-embedded modeling and support	Informal Peer Mentoring
Peer sharing	New teacher induction
In-person workshops	Superintendent’s conference days
Flipped workshops	Learning clubs
Webinars	PLCs
In-person small group settings	Summer PL workshops
Web-based resource collections	Summer Leadership Institute for Administrators
Model teaching by Instructional Technology Integration Specialists	Pre-K-12 Administrative Meetings
BOCES offerings	School staff meetings

3) All School Improvement Plans (SIPs) will include technology integration goals as part of their SIP for the year, utilizing the SAMR model and including the needs of Special Education students, as well as English-Language Learners.

Tasks include

- Reinforcing the SAMR model with all staff and and District Leadership
- Including technology integration goals in school improvement plans

*2020-2021*

1) Develop the 2021-2024 Technology Plan, including the professional learning section.

## **Results by June, 2021**

- All instructional and administrative staff will have the skills and knowledge to implement or observe lessons utilizing the SAMR model
- All instructional staff will demonstrate the skills, knowledge and behaviors of digital age professionals to facilitate student learning aligned with ESM student learning competencies and ISTE [Teacher](#) Standards
- All instructional and administrative staff will participate in professional learning opportunities that align with their needs
- During each of the plan years, all School Improvement Plans will have technology goals, including a focus on the needs of Special Education Students and English-Language Learners



## **Focus Area 3: Technology Equipment and Infrastructure to Support Student Learning**

### **Outcome**

**From September 2018 through June 2021, all students and staff will have a computing device available to them and a networking infrastructure to support anytime, anywhere, collaborative and transformative learning.**

Background: Equipment and infrastructure can be broken into three broad areas:

- **Devices:**
  - ESM has a 1 to 1 computing environment for all students and staff
  - Students generally use Chromebooks and iPads
  - PreK and elementary teachers have access to Chromebooks as well as a teacher PC in their classroom/work location
  - Middle and high school teachers have Chromebooks assigned to them since their classrooms are often used by other teachers
  - K-2 classrooms have a mix of older iPads and newer Chromebooks
  - K-5 classrooms, including special areas, are scheduled for Promethean replacement in 2018
  - K-8 Chromebooks will be replaced in 2019-2020
  - 9-12 Chromebooks will be replaced in 2020-2021
  
- **Network/Servers/Wireless:**
  - The network installed in July 2015 is due to be upgraded in July 2020
  - The wireless network installed in July 2016 is due to be replaced in July 2021. We have full coverage in all spaces in district buildings.
  - Internet access needs have increased every year for the last six years. Bandwidth needs will increase as online content continues to grow richer
  
- **Storage:**
  - Our server and data storage environment was replaced in July 2014 and is due to be replaced in July 2019. ESM maintains 33 servers in

our virtual server environment with 10 terabytes of in-house data storage.

- During the last technology plan, we shifted many resources to the cloud. Not only are many of these resources free or low cost, but they also allow the District to reduce investment in high powered computers and locally installed software. More importantly, by having software and storage “in the cloud” our students and staff have access to their data from anywhere. During this plan’s lifecycle we will investigate what else can be moved to the cloud.

## **Expectations for Students and Adults**

### **Students:**

- Use technology to maximize learning in alignment with their personalized learning plans and IEPs
- Collaborate with the district in exploring and implementing new technologies that could enhance learning through focus groups and the district technology committee

### **Adults:**

- Plan for and implement equipment and infrastructure purchases in alignment with the essential competencies
- Continue to shift our infrastructure to the cloud
- Plan for and replace equipment and infrastructure to maintain an “anytime/anywhere” computing environment and model it with students

## **Action Steps: ([Focus Area 3 Status Summary](#))**

*2018-2019*

- 1) Research replacement Chromebooks. K-8 will need to be replaced by September 2019 and high school by September 2020.

Detail: Chromebook devices have changed since we began using them. Touch screens, tablet type Chromebooks and Android OS will all need to be reviewed as part of the next wave of purchases.

2) Investigate abandoning iPads except for specific uses (Special Education, ELL) due to the device cost and maintenance needs.

Detail: iPads were the first mobile device and widely adopted 8-9 years ago in many school districts. Since then, inexpensive Chromebooks have become predominant and provide not only a lower purchase cost (\$220 for a Chromebook vs \$600 for an iPad) but also no device maintenance.

We still have older iPads and we will begin to receive requests for replacements. We will need to investigate the desirability of declaring our “device strategies” to provide transparency.

3) Maintain technology “forecast/look ahead” document to plan long term technology initiatives.

Detail: Since a technology plan is three years in duration, some technology assets will be deployed after this plan’s timeframe. We will continue to maintain a technology forecast document to keep longer term action plans in mind.

This document is meant to be a forecast, and will be adjusted as goals, technologies and budgets change. See the [Technology History/Look Ahead](#) document for more information.

- Assess and document current status of technology in use at ESM (district as well as student and staff owned)
- Maintain a long term document that shows all review/replacement cycles for installed technologies
- Use this document in planning for this Technology Integration Investment Plan as well as in future versions
- Plan for budgets after Smart Schools funds are spent

4) Survey students about what we are doing well and what we could be doing better to support them with digital tools at ESM.

5) Analyze and support the shift to digital curriculum materials.

Detail: Traditional curriculum materials have consisted of printed textbooks and supplementary materials. As Internet usage has increased in schools, more and more teachers have embraced using online resources. Textbook companies have made the switch as well, offering their materials in an online format. This aligns well with our goal of having an anytime, anywhere environment.

The shift to digital curriculum materials must be supported by our adopted devices, since it will replace the textbook as the “portal” to materials. Tasks include:

- Review school districts that have transitioned to digital curriculum materials
- Collaborate with Curriculum Office to identify and implement next steps in the transition to digital curriculum materials
- Implement digital curriculum materials as appropriate, with a focus on the needs of Students with Disabilities and English Language Learners
- Assess implementation and adjust as needed

6) Develop plan for server replacement/outsourcing for July 2019.

Detail: Our server environment will need to be replaced in 2019. We are hoping to move to a virtual environment with Google/BOCES to save costs and time. This move will be investigated and reviewed for 2019

2019-2020

1) Develop a standard model for makerspaces in ESM’s schools.

Detail: [Makerspaces](#) are rooms equipped with various technology and other equipment and supplies where students can experiment, prototype, design, create and collaborate on projects. Makerspaces generally include 3D printers and other tools that take projects from being an idea to a physical object. Teachers and other professionals provide support and coaching but peer support is a major part of any makerspace as well. Tasks for completing this action step include

- Visit regional makerspaces to generate ideas for planning
- Develop an upgrade plan
- Review and assess implementation

2) Review each of the previous year action plans and update as necessary.

*2020-2021*

- 1) Develop the 2021-2024 Technology Plan.
- 2) Develop plan to replace wireless network by July 2021.
- 3) Develop replacement plan for network infrastructure by July 2020.

### **Results by June, 2021**

- Identified replacement plan for student computing devices
- Declared device strategies to staff to make clear what we will buy and provide for different learning environments, and what is abandoned and no longer supported
- Current [technology forecast/look ahead](#) document for planning focuses
- Makerspace model developed and rolled out
- Up to date survey of student input on possible tech plan changes
- Support shift to digital curriculum changes as appropriate
- Defined plan to replace or outsource server environment

## **Focus Area 4: IT Support**

### **Outcome**

**ESM will have adequate support staff for all its technology so that installation, repair and research for technology is completed in accordance with an ESM Service Level Agreement (SLA).**

Background: A service level agreement is used in many organizations to document the level and quality of service that is provided to customers. In a school district the customers are students and staff, and the provider is the IT department. With an SLA both groups have the same expectations with regard to scope, speed and quality of work.

### **Expectations for Students and Adults**

#### **Students:**

- Provide suggestions and ideas about improving the IT support and installation process
- Use equipment responsibly and in a way that minimizes the need for repairs and downtime
- Assist ESM in student led IT support structures (iStaff)

#### **Staff:**

- Provide suggestions and ideas about improving the IT support and installation process
- Educate students in the proper use of technology so as to minimize downtime of technology assets

## **Action Steps**

*2018-2019:* ([Focus Area 4 Status Summary](#))

- 1) Create a Service Level Agreement with ESM students, staff, parents and administration for repairs and new technology implementations.
- 2) Create staffing recommendations, aligned to the equipment and infrastructure plan, for development of the 2019-2020 budget.
- 3) Review staffing each year during the budget cycle in light of changes to support needs.
- 4) Engage students at all levels to assist with technology support and deployment. Analyze and communicate IT internship/IT support opportunities for students.

Detail: Students can provide a wealth of technology support. At Pine Grove Middle School, students participate in iStaff, a group of students who assist teachers in troubleshooting and “how to” type of support. We would like to increase this type of support because it provides a service learning opportunity for our students, as well as helping the District. Specific tasks include:

- Create a student technology support model to provide support for District owned or personal equipment
- Identify areas students could provide support for, while keeping security in mind. Also determine whether their support could count for credit, service hours, etc.
- Provide professional learning opportunities for students and staff as needed

*2019-2020*

- 1) Review each of the previous year action plans and update as necessary.

*2020-2021*

1) Develop the 2021-2024 Technology Plan.

**Results by June, 2021**

- Service Level Agreement (SLA) developed for ESM Schools
- Staffing in place during each plan year to implement the SLA
- Student led helpdesk model at the high school and possibly elementary level



## Focus Area 5: Emerging Technologies

### Outcome

**ESM will keep a focus on emerging technologies as an ongoing part of the technology committee's work. This planning involves reviewing, testing and either implementing or abandoning new technologies.**

Background: Technology never stands still. It continues to change and make improvements. This focus area will help us keep our plan future focused and evolving.

### Expectations for Students and Adults

#### Students:

- Provide ideas and technologies for review by the district technology committee
- Pilot promising tech and provide feedback

#### Staff:

- Provide ideas and technologies for review by the district technology committee
- Pilot promising tech and provide feedback

### Action Steps

2018-2019: ([Focus Area 5 Status Summary](#))

1) Create a structure to find, investigate and adopt/abandon new technologies.

Detail: Since technology is always changing, we need a way to stay current on promising educational technologies by crowd-sourcing ideas from students, staff and experts.

2) Investigate Virtual Reality (VR) and Augmented Reality (AR) and their applicability to ESM.

Detail: VR and AR continue to be a part of the [Horizon Report](#) as emerging technologies. We will look at the value of VR and HR and decide if we should incorporate it into our environment.

3) Investigate adding additional courses at the middle or high school level in coding, as well as elementary clubs.

Detail: We currently offer one course: C++. We will review what the other commonly taught programming languages are and implement a plan to offer them.

4) Digital portfolios (samples of student work: writing samples, artwork, etc.---well rounded picture of their learning)--investigate what we are currently doing and how we can improve.

### **Results by June, 2021**

- A process to collect and investigate new technologies to see their applicability in our educational environment
- VR and AR capabilities will be investigated and adopted or abandoned
- Expanded computer science classes offered throughout the District

# iTLC

## Instructional Technology Leadership Committee

In order to keep the plan on track and current, our Instructional Technology Leadership Committee (iTLC) will continue to lead, monitor, review progress and provide feedback on a regular basis. Members will represent all District program areas. The team will:

- Stay current with technology trends
- Review, monitor, and provide feedback on plan implementation
- Recommend changes to action steps to achieve the stated outcomes
- Provide ongoing feedback on professional learning needs and offerings
- Develop future action steps
- Communicate the plan's status to stakeholders, including an ongoing "Focus Area Implementation Status" review
- Begin development of 2021-2024 District Technology Plan in May, 2020

Through an ongoing planning structure, we will provide an environment that provides students and staff with the tools and knowledge to enhance their learning.

## Technology Plan Implementation Status

**Focus Area 1 Status: Student Technology Learning Competencies** [\(back to Focus Area 1\)](#)

### Outcome

**Students will master district identified grade level technology learning competencies by June, 2021.**

Year	Action Step	Status
2018-2019	1) Implement the 2018-2021 International Society for Technology in Education (ISTE) <a href="#">Student Technology Competencies</a> through focused and targeted professional learning opportunities.	
2018-2019	2) Add competencies as a resource to each grade level and/or subject's curriculum on the district's web based curriculum mapping tool, <a href="#">Atlas Rubicon</a> .	
2019-2020	1) Implement the 2018-2021 ISTE <a href="#">Student Technology Competencies</a> through focused and targeted professional learning opportunities.	
2020-2021	1) Develop the 2021-2024 Technology Plan.	

### Results by June, 2021

- Students will demonstrate mastery of the grade level specific technology competencies as evidenced by their work and/or assessments
- Teachers will make regular use of the competencies and have the skills to implement any area because they have the necessary skills to do so
- Atlas Rubicon will have links and integration strategies embedded within it

## Technology Plan Implementation Status

**Focus Area 2 Status: Professional Learning** ([back to Focus Area 2](#))

### Outcome

**By June, 2021 all staff will have the skills and knowledge they need to integrate technology into teaching and learning. There will continue to be a focus on modification and redefinition of technology integration from the SAMR Model, in alignment with the student technology competencies.**

Year	Action Step	Status
2018-2021	<p><i>2018-2021</i></p> <p>1) Focus on the <a href="#">SAMR Model</a> for highly effective technology integration professional learning. Develop differentiated professional learning offerings for technology integration and align it with professional learning plans and budget.</p> <p>Tasks for this action step include:</p> <ul style="list-style-type: none"> <li>● Work with staff to help them assess their technology use along the SAMR continuum</li> <li>● In all PL offerings, help staff plan technology integration that focuses on modification and redefinition</li> <li>● Focus on the needs of Special Education and English-Language Learners as their needs may differ</li> </ul>	
	<p>2) Implement PL aligned with priorities in the ESM Strategic plan, this plan and ISTE Standards for <a href="#">Teachers</a> and <a href="#">Administrators</a>.</p>	
	<p>3) All School Improvement Plans (SIPs) will include technology integration goals as part of their SIP for the year, utilizing the SAMR model and including the needs of Special Education students as well as English-Language Learners.</p>	

	<p>Tasks include</p> <ul style="list-style-type: none"> <li>● Reinforcing the SAMR model with all staff and and District Leadership</li> <li>● Including technology integration goals in school improvement plans</li> </ul>	
2020-2021	1) Develop the 2021-2024 Technology Plan, including the professional learning section.	

**Results by June, 2021**

- All instructional and administrative staff will have the skills and knowledge to implement or observe lessons utilizing the SAMR model
- All instructional staff will demonstrate the skills, knowledge and behaviors of digital age professionals to facilitate student learning aligned with ESM student learning competencies and ISTE [Teacher](#) Standards
- All instructional and administrative staff will participate in professional learning opportunities that align with their needs
- During each of the plan years, all School Improvement Plans will have technology goals, including a focus on the needs of Special Education Students and English-Language Learners

## Technology Plan Implementation Status

### Focus Area 3 Status: Technology Infrastructure to Support Student Learning.

[\(back to Focus Area 3\)](#)

#### Outcome

**From September 2018 through June 2021, all students and staff will have a computing device available to them, and a networking infrastructure to support anytime, anywhere, collaborative and transformative learning.**

Year	Action Step	Status
2018-2019	1) Research replacement Chromebooks. K-8 will need to be replaced by September 2019 and high school by September 2020.	
	2) Investigate abandoning iPads except for specific uses (Special Education, ELL) due to the device cost and maintenance needs.	
	3) Maintain technology “forecast/look ahead” document to plan long term technology initiatives.	
	4) Survey students about what we are doing well and what we could be doing better to support them with digital tools at ESM.	
	5) Analyze and support the shift to digital curriculum materials.	
	6) Develop plan for server replacement/outsourcing for July 2019.	
2019-2020	1) Develop a standard model for makerspaces in ESM’s schools.	

	2) Review each of the previous year action plans and update as necessary.	
2020-2021	1) Develop the 2021-2024 Technology Plan.	
	2) Develop plan to replace wireless network by July 2021.	
	3) Develop replacement plan for network infrastructure by July 2020.	

### Results by June, 2021

- Identified replacement plan for student computing devices
- Declared device strategies to staff to make clear what we will buy and provide for different learning environments, and what is “abandoned” and no longer supported
- Current [technology forecast/look ahead](#) document for planning focuses
- Makerspace model developed and roll out
- Up to date survey of student input on possible tech plan changes
- Support of the shift to digital curriculum changes as appropriate
- Defined plan to replace or outsource server environment



## Technology Plan Implementation Status

**Focus Area 4 Status: IT Support** ([back to Focus Area 4](#))

### Outcome

**ESM will have adequate support staff for all its technology so that installation, repair and research for technology is completed in accordance with an ESM Service Level Agreement (SLA).**

Year	Action Step	Status
<i>2018-2019</i>	1) Create a Service Level Agreement with ESM students, staff, parents and administration for repairs and new technology implementations.	
	2) Create staffing recommendations, aligned to the equipment and infrastructure plan, for development of the 2019-2020 budget.	
	3) Review staffing each year during the budget cycle in light of changes to support needs.	
	4) Engage students at all levels to assist with technology support and deployment. Analyze and communicate IT internship/IT support opportunities for students.	
<i>2019-2020</i>	1) Review each of the previous year action plans and update as necessary.	
<i>2020-2021</i>	1) Develop the 2021-2024 Technology Plan.	

### Results by June, 2021

- Service Level Agreement (SLA) developed for ESM Schools

- Staffing in place during each plan year to implement the SLA
- Student led helpdesk model at the high school and possibly elementary level

## Technology Plan Implementation Status

### Focus Area 5 Status: Emerging Technologies [\(back to Focus Area 5\)](#)

#### Outcome

**ESM will keep a focus on emerging technologies as an ongoing part of the technology committee’s work. This planning involves reviewing, testing and either implementing or abandoning new technologies.**

Year	Action Step	Status
<i>2018-2019</i>	1) Create a structure to find, investigate and adopt/abandon new technologies.	
	2) Investigate Virtual Reality (VR) and Augmented Reality (AR) and their applicability to ESM.	
	3) Investigate adding additional courses at the middle or high school level in coding, as well as, elementary clubs.	
	4) Digital portfolios (samples of student work: writing samples, artwork, etc---well rounded picture of their learning)--investigate what we are currently doing and how we can improve.	

#### Results by June, 2021

- A process to collect and investigate new technologies to see their applicability in our educational environment
- VR and AR capabilities will be investigated and adopted or abandoned

- Expanded computer science classes offered throughout the District

## Resources Used in Plan Development

Committee members reviewed many resources to help in their planning. Some of the major ones are listed for reference, but their own research, professional networking and experience also assisted us as we developed the plan.

If you are reading this as a digital document, items in blue are links to the source material.

<a href="#">ESM Strategic Plan (9/2017)</a>	<a href="#">ESM Professional Development Plan (6/2017)</a>
ESM School Improvement Plans (8/2017)	<a href="#">ESM District Plan for Children with Disabilities (1/2017)</a>
<a href="#">Horizon Report K-12, 2017 Edition</a>	<a href="#">NY State Smart Schools Commission Report</a>
<a href="#">ESM Technology History and Look Ahead/Forecast</a>	SAMR Model (substitution, augmentation, modification, redefinition) of technology use
<a href="#">Google For Education Pilot Guide</a>	Beyond the Buzz: <a href="#">Technology Insight</a> , CNYRIC (12/2015)
ISTE Technology Standards: <ul style="list-style-type: none"> <li>● <a href="#">Students</a></li> <li>● <a href="#">Teachers</a></li> <li>● <a href="#">Administrators</a></li> </ul>	<a href="#">Michigan Integrated Technology Competencies for Students (MITECS)</a>

<p>Liverpool, NY Schools K-12 Technology Skills</p>	<p><a href="#">TPACK</a> Framework for Technology Integration</p>
<p>Beyond the Buzz: <a href="#">An Administrator's Guide to 1 to 1 Computing</a>, CNYRIC (12/2017)</p>	<p>Beyond the Buzz: <a href="#">The New Era of Technology Integration</a>, CNYRIC (12/2015)</p>
<p>School District Technology Plans:</p> <ul style="list-style-type: none"> <li>● <a href="#">ESM 2014-2018 Technology Plan</a></li> <li>● <a href="#">Bangor, ME</a></li> <li>● Kent, WA <a href="#">1 to 1 Plan</a></li> <li>● <a href="#">Dansville, NY</a></li> <li>● <a href="#">Coxsackie-Athens, NY</a></li> <li>● <a href="#">Fayetteville-Manlius, NY</a></li> <li>● <a href="#">Lafayette, CA</a></li> <li>● <a href="#">Scarsdale, NY</a></li> <li>● <a href="#">Williamsville, NY</a></li> <li>● <a href="#">Hampton, VA</a></li> </ul>	<p><a href="#">NYSED 2017 Policy Brief on Assistive Technology for Students with Disabilities</a></p>
<p><a href="#">CDW-G</a></p>	<p><a href="#">Technology Enhanced Instruction for English as a Second Language (ESL) and Bilingual Education</a></p>