

Saratoga Union School District EdTech Plan Proposal

July 2017-June 2023

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Table of Contents

1. [Vision/Mission](#)
2. [Committee Members](#)
3. [Needs Assessment/Status Update](#)
4. [Student Outcomes](#)
5. [Teacher Outcomes](#)
6. [Professional Development](#)
7. [Infrastructure/Devices](#)
8. [Budget](#)
9. [Evaluation and Monitoring](#)

1. VISION & MISSION

The creation of the SUSD 2017-2023 Technology Plan was done in coordination with various stakeholders such as students, parents, teachers, administrators, board members, and community members.¹ Throughout the two year process, we always looked at the district strategic plan as our guiding principle. Our focus was on the elements of innovation, professional development, and academics.



2014 – 2017 Saratoga Union School District Strategic Plan

MISSION:

Create an innovative public school system that stimulates intellectual curiosity, providing academic rigor for each and every learner, and instills leadership, responsibility, and global citizenship in a safe and nurturing environment where learners THRIVE.



We gathered feedback through face-to-face meetings and our Brightbytes survey. We utilized the newly released education technology standards for students and teachers by the International Society for Technology in Education² (ISTE). In addition, we will provide professional development for teachers to understand and implement the Substitution, Augmentation, Modification, Redefinition model ([SAMR](https://www.commonsensemedia.org/videos/introduction-to-the-samr-model))³ and project-based learning which relies on technology integration at various levels.

The timeline for this plan is six years, which includes annual progress monitoring, and a more in-depth evaluation/revision at Year 3. We think of this as an ever evolving, flexible plan that will accommodate the needs of students and teachers.

¹ SUSD Tech Plan Committee meetings, 2015-2017

² <https://www.iste.org/standards/standards/iste-standards>, accessed 4/3/17

³ <https://www.commonsensemedia.org/videos/introduction-to-the-samr-model>, accessed 4/4/17

The components of the plan include:

1. Student standards
2. Teacher standards
3. Professional Development
4. Infrastructure
5. Funding
6. Evaluation & Monitoring

Recommendations are provided for each of the components to move SUSD forward as an innovative place for learning. Our six-year plan, outlines the expectations for students and teachers, as well as the the annual goals, performance indicators, and evaluation & monitoring.

This plan is closely aligned to our LCAP Goal 4:

Our district will cultivate innovative and empowered learners through personalized learning, 21st Century Learning Skills (creativity, collaboration, communication, and critical thinking), the infusion of technology, and arts integration across disciplines.

To meet this goal, the following will be implemented:

1. Student and teachers will use innovative tools.
2. We will support STEAM education through research and exploration.
3. We will take steps to attain Common Sense Media Digital Citizenship Certification, and offer opportunities for parent engagement.
4. We will move towards offering personalized learning⁴ to students.
5. We will promote a balanced use of technology.

Timeline of Implementation of Personalized Learning:

As we move towards our goal of offering personalized instruction, teachers will offer increasing opportunities for students to choose their learning objectives and pace. Students will also be able to learn at their own instructional level and increase their abilities to work independently.

Year	Examples
Year 1	<ul style="list-style-type: none">• Teachers set up or improve structures to allow students to work independently.• Teachers use at least one adaptive learning program (e.g., Dreambox, Khan Academy, Raz-Kids) to allow students to work at their own pace and level.• Teachers will offer opportunities to students to use technology at the Substitution stage of the SAMR Model.
Year 2	Will include all Year 1 activities and: <ul style="list-style-type: none">• Teachers will use data from an adaptive learning program to guide their instruction.• Teachers will offer opportunities to students to use technology at the Augmentation stage of the SAMR Model.
Year 3	Will include all Year 1 and Year 2 activities and: <ul style="list-style-type: none">• Teachers will offer opportunities to students to use technology at the Modification stage of the SAMR Model.
Year 4	Will include all Year 1-3 activities.

⁴ <https://www.iste.org/explore/articledetail?articleid=124>, accessed 4/5/17

Year 5	<p>Will include all Year 1-4 activities and:</p> <ul style="list-style-type: none"> • With guidance from the teacher, students plan and complete a “passion project” on a chosen topic using technology tools of their choice. • Teachers will offer opportunities to students to use technology at the Redefinition stage of the SAMR Model.
Year 6	Will include all Year 1-5 activities related to the SAMR model.

[Top](#)

2. STAKEHOLDERS

Committee Member	Position/Role
Board Members	
Arati Nagaraj	Board Member, 2015-present
Susan Germeraad	Board Member 2015-12/2016
Sophia Kao	Board Member 2017-present
District Office	
Nancy Johnson	Superintendent
Roberta Zarea	Assistant Superintendent of Educational Services
Blanca Herrera	Director of Instructional Technology
Janice Yamamoto	Director of Special Education
Rosanna Jeng	Chief Business Officer
Kym Imai	Director of Human Resources
Harry Dill	Teacher on Special Assignment-Technology
Howard Lorenz	Teacher on Special Assignment-Network
Jennifer Guidry	Instructional Technology Support Specialist
Doris Watson	K-5 Instructional Technology Teacher
Marion Dickel	Teacher on Special Assignment-English Language Arts/English Language Learners
Argonaut Elementary School	
Karen van Putten	Principal, Argonaut Elementary School
Kelly Booth	Teacher
Steve Lam	Parent
Balaji Srinivasan	Parent
Foothill Elementary School	
Joe Bosco	Principal, Foothill Elementary School
Wakana Hirayama	Teacher

Julie Grenier	Parent
Derek Moore	Parent
Saratoga Elementary School	
Brian White	Principal, Saratoga Elementary School
Jon Havens	Teacher
Todd Larraux	Teacher
Megan Lawson	Teacher
Redwood Middle School	
Barbara Neal	Principal, Redwood Middle School
Kim Cunningham	Vice Principal, Redwood Middle School
Megan Birdsong	Librarian
Joni Brown	Library Tech Aide
Jason Robertson	Teacher
Cassie Sprenger	Teacher/Special Ed.
Clay Stephens	Teacher
Jen Vandenberg	Teacher/STA
Parag Mehta	Parent
Balaji Srinivasan	Parent

[Top](#)

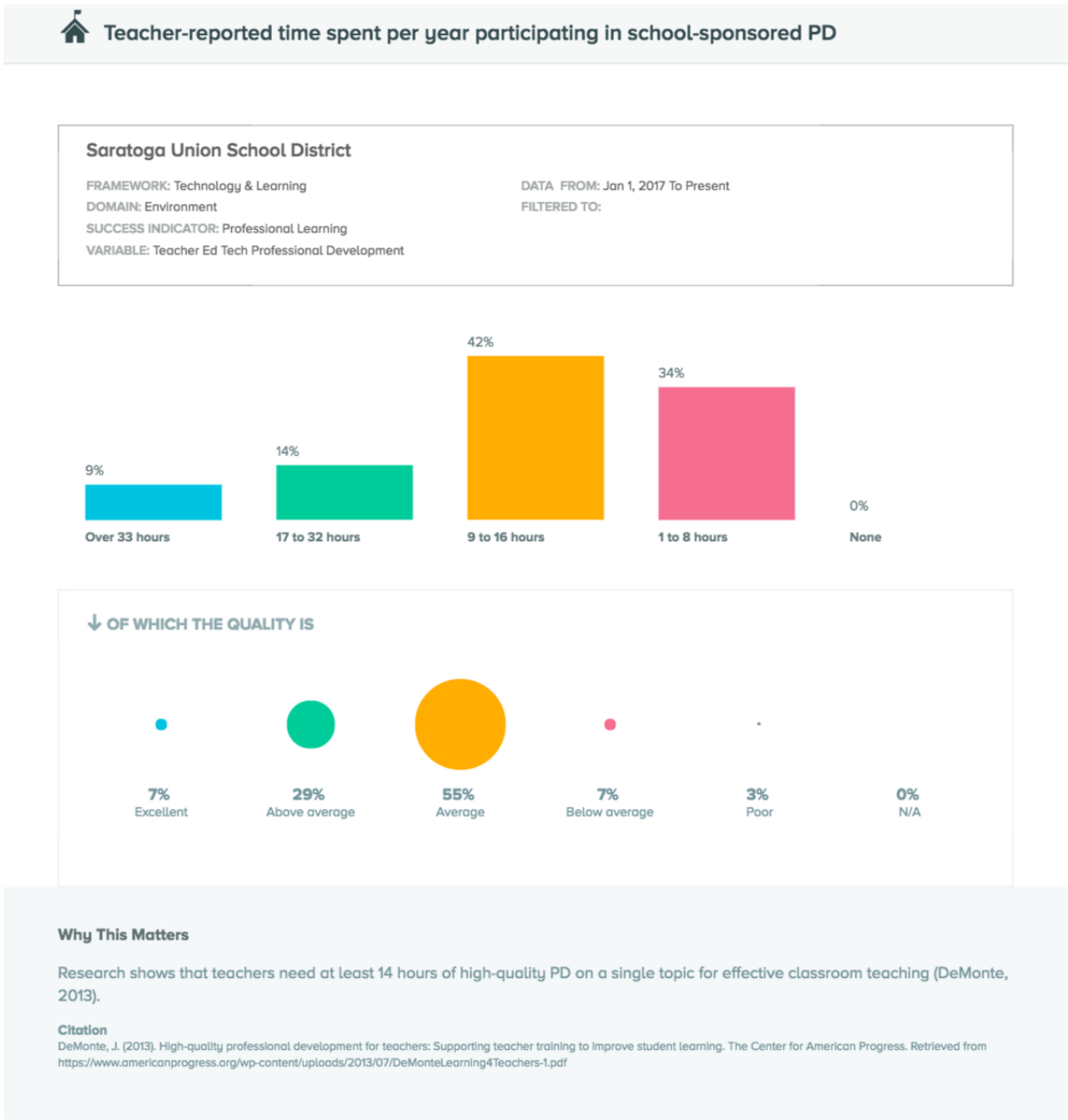
3. NEEDS ASSESSMENT

A. Brightbytes Survey

In our effort to be responsive to the needs of teachers, students and parents, we gathered feedback through our annual BrightBytes survey for two years. We have reviewed the results and used the data to determine our next steps. Our recommendations in this tech plan are reflective of this information.

Our focus areas and data points include the following:

- Professional Development as of January 1, 2017



- Use of Technology by Students as of January 1, 2017



Teachers ask students to receive feedback from others in the classroom

Saratoga Union School District

FRAMEWORK: Technology & Learning

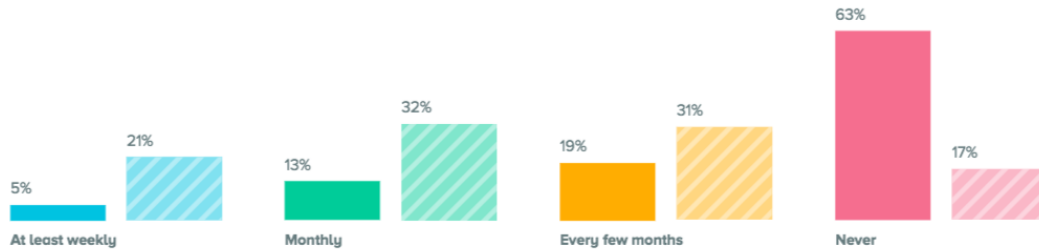
DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Communication

DATA FROM: Jan 1, 2017 To Present

FILTERED TO:



COMPARE

Teachers
Solids

Students
Stripes



Why This Matters

Students in one study agreed that the "diversity and creativity" offered by working in peer groups far outweighed that which is attainable when working alone (Chao & Lo, 2011).

Citation

Chao, Y.C.J., & Lo, H.C. (2011). Students' perceptions of wiki-based collaborative writing for learners of English as a foreign language. *Interactive Learning Environments*, 19(4), 395-411.



Teachers ask students to collaborate online with classmates

Saratoga Union School District

FRAMEWORK: Technology & Learning

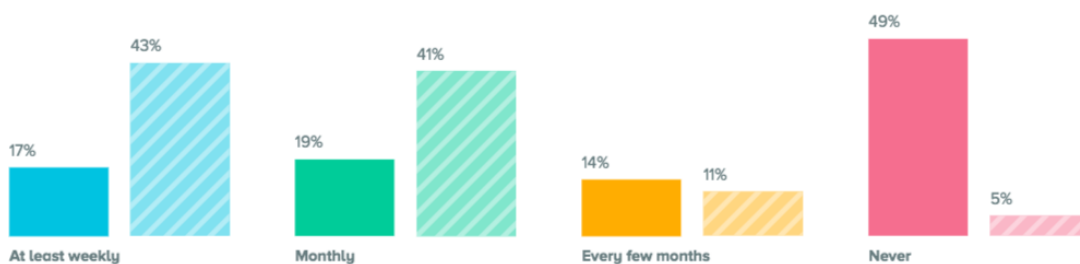
DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Collaboration

DATA FROM: Jan 1, 2017 To Present

FILTERED TO:



COMPARE

Teachers
Solids

Students
Stripes



Why This Matters

Opportunities to collaborate digitally foster better teamwork skills (Purcell et al., 2013).

Citation

Purcell, K., Buchanan, J., & Friedrich, L. (2013). *The impact of digital tools on student writing and how writing is taught in schools*. Retrieved from <http://www.pewinternet.org/2013/07/16/the-impact-of-digital-tools-on-student-writing-and-how-writing-is-taught-in-schools/>



Teachers ask students to create and upload art, music, movies, or webcasts

Saratoga Union School District

FRAMEWORK: Technology & Learning

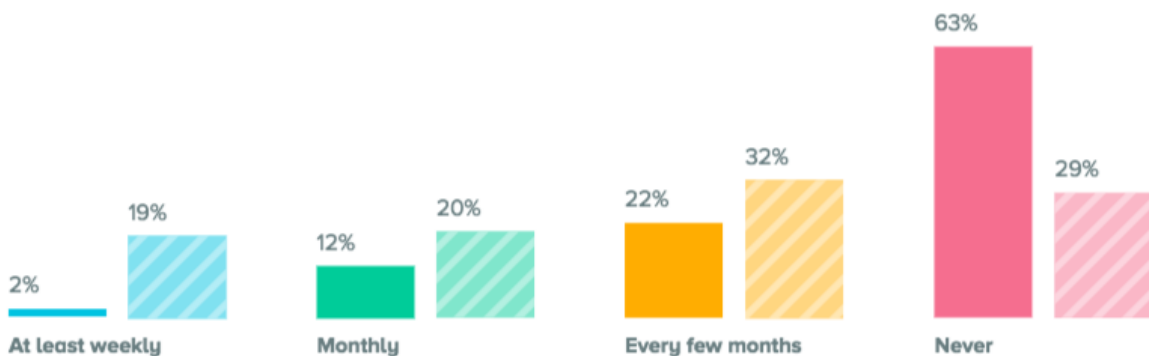
DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Creativity

DATA FROM: Jan 1, 2017 To Present

FILTERED TO:



COMPARE

Teachers
Solids

Students
Stripes



Why This Matters

In an increasingly automated world, skills such as creativity, synthesis, and problem solving will be in great demand in the workplace (Pew Research Center, 2014).

Citation

Pew Research Center. (2014). *AI, robotics, and the future of jobs*. Retrieved from <http://www.pewinternet.org/files/2014/08/Future-of-AI-Robotics-and-Jobs.pdf>



Teachers ask students to collect and analyze data

Saratoga Union School District

FRAMEWORK: Technology & Learning

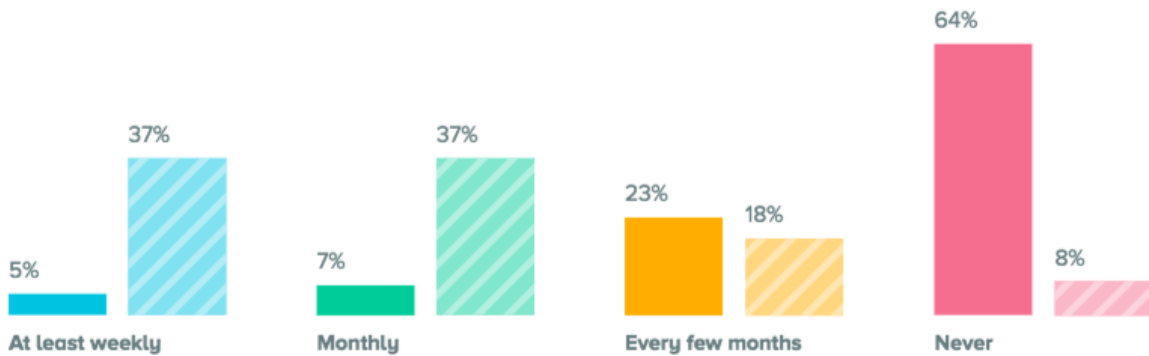
DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Critical Thinking

DATA FROM: Jan 1, 2017 To Present

FILTERED TO:



COMPARE

Teachers
Solids

Students
Stripes



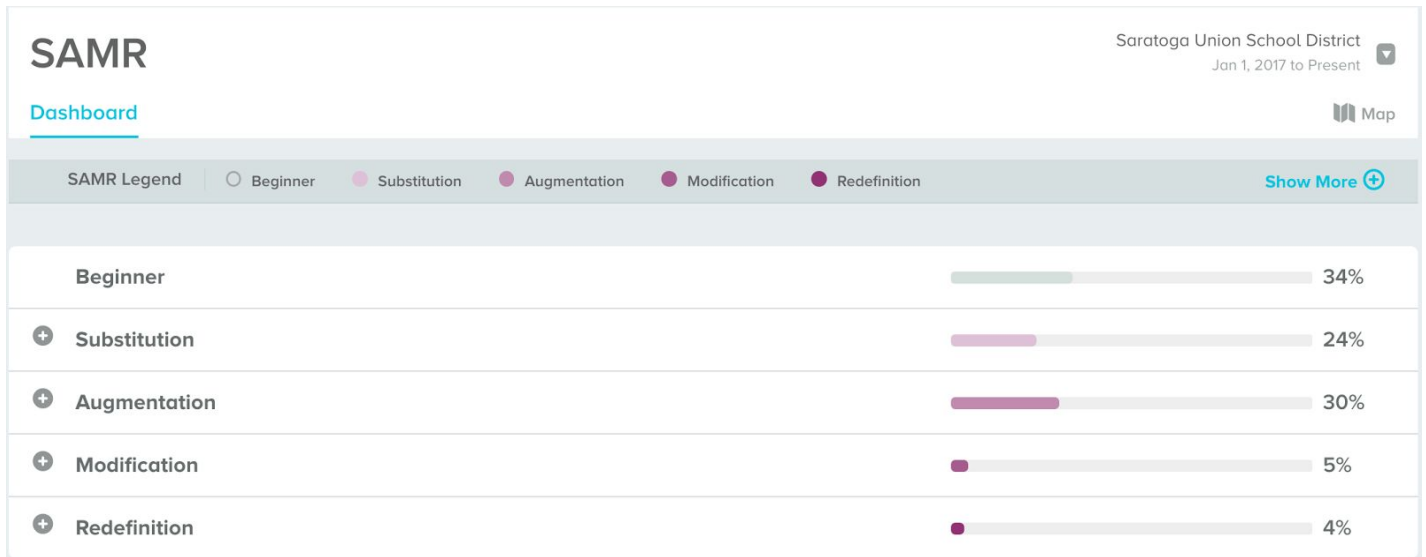
Why This Matters

“Providing opportunities for students to design and implement their own investigations” can be challenging, but it offers student an opportunity to take part in what is done in the world beyond the classroom walls (Dorph et al., 2011).

Citation

Dorph, R., Shields, P., Tiffany-Morales, J., Hartry, A., & McCaffrey, T. (2011). High hopes—few opportunities: The status of elementary science education in California. Sacramento, CA: The Center for the Future of Teaching and Learning at WestEd. Retrieved from <http://www.lawrencehallofscience.org/sites/lawrencehallofscience.org/files/user-jnoe/ScienceFullReportweb.pdf>

- **SAMR Progress as of January 1, 2017**



- **Parent Beliefs as of January 1, 2017**

 **"Technology use in class can enhance student learning."**

Saratoga Union School District

FRAMEWORK: Technology & Learning

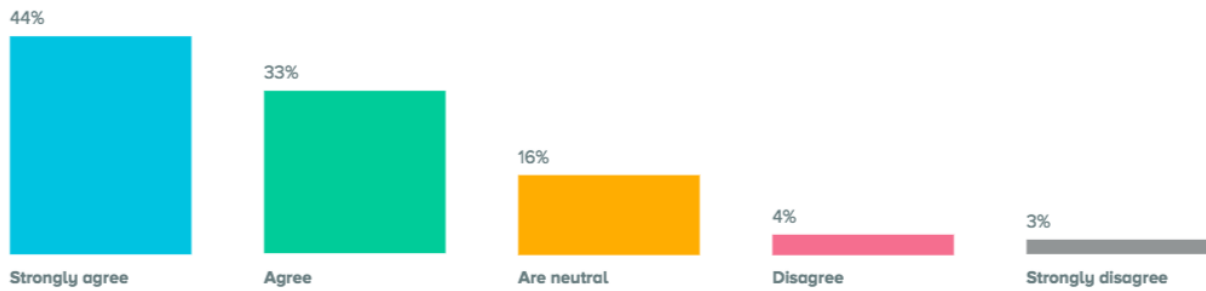
DOMAIN: Environment

SUCCESS INDICATOR: Parents

VARIABLE: Parent Beliefs About Technology Use For Learning

DATA FROM: Jan 1, 2017 To Present

FILTERED TO:



B. Implementation of Technology Compared to LCAP & Previous Tech Plan Recommendations

We have made strides in providing devices for students and instructional staff. Our ratio of devices to students is approximately 1:2. All of our instructional staff now have laptops.

a. Student Devices

Description	2013-2014	2016-2017
Classroom Devices (Chromebooks + Desktops)	350	1532
iPads	60	113
School Labs (Desktops)	170	108
School Labs (Laptops)	N/A	62

b. Instructional Staff Devices

Description	2013-2014	2016-2017
Laptops	60	127
iPads	122	127
Document Cameras	84	127
Projectors or TV	64	127
AppleTV	53	127

c. Professional Development

Description	2013-2014	2016-2017
G Suite Professional Development (3 year plan)	N/A	All teachers participated
Mini-MERIT	N/A	8/2016: 7 teachers participated 6/2017: 18 teachers projected to participate
G Suite Summit	N/A	1/2017: 9 teachers and 1 administrator participated

d. Instructional Technology Support

Description	2013-2014	2016-2017
IT Support Specialist	N/A	In place
Director of Instructional Technology	N/A	In place
Teacher Site Tech Support	N/A	In place
Student Tech Support at each site	N/A	In place

[Top](#)

4. STUDENT OUTCOMES

The [ISTE Standards for Students](#) combined with the [California State Standards](#) and [Next Generation Science Standards](#) describe the skills and knowledge students must have to learn effectively and live productively in an increasingly global and digital society. They are designed for use by educators across the curriculum with all students. Both students and teachers are responsible for achieving foundational technology skills to fully apply the standards. The goal is for educators to be able to skillfully guide and inspire students to amplify learning with technology and to challenge students to be agents of their own learning.

There are ISTE Standards for Students in seven areas:

1. Empowered Learner	5. Computational Thinker
2. Digital Citizen	6. Creative Communicator
3. Knowledge Constructor	7. Global Collaborator
4. Innovative Designer	

In order to continuously develop skills and knowledge of both our teachers and students, each year of this plan focuses on new standard areas, adding new outcomes in those areas to the outcomes of previous years.

School Year	ISTE Standards for Students - Yearly Focus Areas						
	Digital Citizenship	Empowered Learner	Knowledge Constructor	Creative Communicator	Computational Thinker	Global Communicator	Innovative Designer
2017-2018	75%	40%	50%	20%	30%	10%	10%
2018-2019	85%	50%	60%	30%	40%	20%	20%
2019-2020	100%	65%	70%	40%	50%	30%	40%
2020-2021	100%	80%	80%	60%	60%	40%	60%
2021-2022	100%	90%	90%	80%	70%	50%	80%
2022-2023	100%	100%	100%	100%	80%	60%	90%

Focus Standard
Implementation in Progress

There are many ways teachers and students can meet the goals of the ISTE Standards for Students. In addition, technology is continually changing and this plan must be flexible enough to allow for such future changes. In order to provide guidance, accountability, and flexibility for each standard area, the tables below include 1) the text of the standard, 2) expected student outcomes, 3) how outcomes will be assessed, and 4) examples of possible ways to meet the standard. Cells are highlighted in yellow to show focus standards each year.

Digital Citizenship (ISTE Student Standard 2)

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.⁵

2a. Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

2b. Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

2c. Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

2d. Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Outcomes

2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
75% of students in grades K-8 will receive Digital Citizenship instruction	85% of students in K-8 will receive Digital Citizenship instruction	100% of students in K-8 will receive Digital Citizenship instruction	100% of students in K-8 will receive Digital Citizenship instruction	100% of students in K-8 will receive Digital Citizenship instruction	100% of students in K-8 will receive Digital Citizenship instruction

Assessment

1. TK-8th grade teachers will self-report through the district Digital Citizenship web site the Common Sense Media lessons they taught to students.
2. Students will use the Common Sense Media Digital Passport website to assess their understanding of Digital Citizenship topics.
3. School sites will acquire certification as a Common Sense Media Digital Citizenship School.
4. Discipline data will be gathered to track and monitor digital citizenship issues.

⁵ Broadband Data Improvement Act, <https://www.gpo.gov/fdsys/pkg/PLAW-110publ385/pdf/PLAW-110publ385.pdf>, accessed 4/5/17

Digital Citizenship Lesson Examples

Students complete the lessons listed for their grade-level on the district's [Digital Citizenship website](#). Completion of these lessons support our students' social-emotional needs as they interact with technology. Students 3rd-5th can use Digital Passport to assess their learning.

TK-K	Common Sense Media Curriculum: <ul style="list-style-type: none"> • ABC Searching
1	Common Sense Media Curriculum: <ul style="list-style-type: none"> • Going Places Safely • Staying Safe Online • Keep it Private
2	Common Sense Media Curriculum: <ul style="list-style-type: none"> • My Online Community • Follow the Digital Trail • Screen out the Mean
3	Common Sense Media Curriculum: <ul style="list-style-type: none"> • Private vs. Personal Information • Talking Safely Online • Rings of Responsibility • Digital Passport
4	Common Sense Media Curriculum: <ul style="list-style-type: none"> • Secure Passwords • What's Cyberbullying • Power of Words • Digital Passport
5	Common Sense Media Curriculum: <ul style="list-style-type: none"> • Cyberbullying: Be Upstanding • Super Digital Citizen • Digital Footprint • Digital Passport
6	Everfi Ignition- Digital Literacy and Responsibility Curriculum <ul style="list-style-type: none"> • Viral World • Digital Relationships and Respect • Choosing a Computer Common Sense Media Curriculum: <ul style="list-style-type: none"> • Safe Online Talk • Cyberbullying: Be Upstanding • Strategic Searching <p>Students will use ELA writing standards for research with online citation tools, such as NoodleTools. (Lessons may be co-taught with Library Media Specialist.)</p>
7	Common Sense Media Curriculum: <ul style="list-style-type: none"> • A Creator's Responsibilities

	<ul style="list-style-type: none"> • My Media • Which Me Should I Be? <p>Students will use ELA writing standards for research with online citation tools, such as NoodleTools. (Lessons may be co-taught with Library Media Specialist.)</p>
8	<p>Common Sense Media Curriculum:</p> <ul style="list-style-type: none"> • Identifying High-Quality Sites • Cyberbullying: Crossing the Line • Trillion Dollar Footprint <p>Students will use ELA writing standards for research with online citation tools, such as NoodleTools. (Lessons may be co-taught with Library Media Specialist.)</p>
Other	<p>http://info.everfi.com/rs/everfi/images/Ignition%20Curriculum%20Guide.pdf</p> <p>General Middle School topics:</p> <ul style="list-style-type: none"> • Email etiquette • Document sharing etiquette • How to evaluate resources

[Top](#)

Empowered Learner (ISTE Student Standard 1)					
<p>Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.</p> <p>1a. Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.</p> <p>1b. Students build networks and customize their learning environments in ways that support the learning process.</p> <p>1c. Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.</p> <p>1d. 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 to explore emerging technologies.</p>					
Outcomes					
2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
40% of students will create a digital portfolio of artifacts to show how they have met their learning goals.	50% of students will create a digital portfolio of artifacts to show how they have met their learning goals.	65% of students will create a digital portfolio of artifacts to show how they have met their learning goals.	80% of students will create a digital portfolio of artifacts to show how they have met their learning goals.	90% of students will create a digital portfolio of artifacts to show how they have met their learning goals.	100% of students will create a digital portfolio of artifacts to show how they have met their learning goals.
Assessment					
3rd-8th grade students will include their work in their digital portfolio.					

Student will self-assess their portfolios using a rubric.
 Teachers will give feedback to students throughout the year using a rubric.
 Students will share their work and receive feedback from the community during a student learning showcase event.

Empowered Learner Examples

All grades, as appropriate for the grade level	<ul style="list-style-type: none"> • Students set learning goals, make choices about how to meet them, and evaluate their progress. • Students have basic knowledge of how to use devices and software applications and can troubleshoot to solve technical problems. • Students create artifacts to show how they have met their learning goals; for example digital posters, blogs, digital stories, assessments, e-portfolios, showcase, research projects and works of art.
K-2	<ul style="list-style-type: none"> • Students choose and use features such as audio, video, highlighting, note taking, texts to speech and other tools for learning. • Students seek digital or human feedback; for example via spell-check and grammar-check tools, online references, learning analytics programs or collaborative spaces.
3-5	<ul style="list-style-type: none"> • Students choose and use features such as audio, video, highlighting, note taking, texts to speech and other tools for learning. • Students seek digital or human feedback, for example via spell-check and grammar-check tools, online references, learning analytics programs or collaborative spaces.
6-8	<ul style="list-style-type: none"> • Students make online connections with other learners and experts; for example via social media, email, video conferencing, digital pen pals, etc. • Students expand their use of online tools for graphing, data gathering and analytics, word processing and presenting. • Students extend skills on citing sources and avoiding plagiarism.

[Top](#)

Knowledge Constructor (ISTE Student Standard 3)

Students critically curate a variety of resources using digital tools to construct knowledge, producing creative artifacts, and making meaningful learning experiences for themselves and others.

3a. Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

3b. Students evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.

3c. Students curate information from digital sources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.

3d. Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

Outcomes

2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
50% of students will participate in at least one research activity to construct knowledge.	60% of students will participate in at least one research activity to construct knowledge.	70% of students will participate in at least one research activity to construct knowledge.	80% of students will participate in at least one research activity to construct knowledge.	90% of students will participate in at least one research activity to construct knowledge.	100% of students will participate in at least one research activity to construct knowledge.

Assessment

Review of student research results using a classroom-created rubric (to be included in a student's digital portfolio).

3rd-8th grade students will include their work in their digital portfolio.

Student will self-assess their portfolios using a rubric.

Teachers will give feedback to students throughout the year using a rubric.

Students will share their work and receive feedback from the community during a student learning showcase event.

Knowledge Constructor Examples

All grades, as appropriate for the grade level	<ul style="list-style-type: none"> Students research using multiple sources (digital, online, print).
K-2	<ul style="list-style-type: none"> Students use online tools to research using multiple sources (age-appropriate search engines such as Kiddle).

	<ul style="list-style-type: none"> Students review video content to learn more about a topic of interest (ex. YouTube, TedTalks, EdPuzzle).
3-5	<ul style="list-style-type: none"> Students use online bookmarking and note-taking tools. Students evaluate sources based on the 5 W's. Students use online resource in Social Studies to study the American Revolution (ex. Mission US).
6-8	<ul style="list-style-type: none"> Students create a storyboard plot chart for core novels. Students publish a research based multimedia/digital story/photojournalism or research project and show evidence of evaluation of all sources based on the 5 W's.

[Top](#)

Creative Communicator (ISTE Student Standard 6)

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

6a. Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

6b. Students create original works or responsibly repurpose or remix digital resources into new creations.

6c. Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.

6d. Students publish or present content that customizes the message and medium for their intended audiences.

Outcomes

2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
20% of students will meet this standard and include their work(s) in their digital portfolio	30% of students will meet this standard and include their work(s) in their digital portfolio	40% of students will meet this standard and include their work(s) in their digital portfolio	60% of students will meet this standard and include their work(s) in their digital portfolio	80% of students will meet this standard and include their work(s) in their digital portfolio	100% of students will meet this standard and include their work(s) in their digital portfolio

Assessment

3rd-8th grade students will include their work in their digital portfolio.

Student will self-assess their portfolios using a rubric.

Teachers will give feedback to students throughout the year using a rubric.

Students will share their work and receive feedback from the community during a student learning showcase event.

Creative Communicator Examples

All grades, as appropriate for the grade-level	<ul style="list-style-type: none"> Students choose from a variety of tools to demonstrate what they know.
K-2	<ul style="list-style-type: none"> Students can create digital counting books. Students can create instructional videos to show the parts of plants.
3-5	<ul style="list-style-type: none"> Students draft, edit and revise writing workshop pieces in Google Docs.

	<ul style="list-style-type: none"> • Students create a Google Slide presentation on a topic using multimedia. • Students use video making tools (ex. Screencastify) to explain a math concept (ex. Khan video style). • Students use Google Slides for collaborative projects, creating presentations, brochures, and other materials to support project goals. • Students create a mindmap of a topic as preparation for writing (ex. Mindmap Chrome extension).
6-8	<ul style="list-style-type: none"> • Students incorporate multimedia, such as student-generated or stock video, music, and video editing tools (ex. iMovie) to report on their learning .

[Top](#)

Computational Thinker (ISTE Student Standard 5)

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

5a. Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.

5b. Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.

5c. Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

5d. Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

Outcomes

2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
30% of students will meet this standard and include evidence in their digital portfolio	40% of students will meet this standard and include evidence in their digital portfolio	50% of students will meet this standard and include evidence in their digital portfolio	60% of students will meet this standard and include evidence in their digital portfolio	70% of students will meet this standard and include evidence in their digital portfolio	80% of students will meet this standard and include evidence in their digital portfolio

Assessment

3rd-8th grade students will include their work in their digital portfolio.

Student will self-assess their portfolios using a rubric.

Teachers will give feedback to students throughout the year using a rubric.

Students will share their work and receive feedback from the community during a student learning showcase event.

Computational Thinker Examples

All grades, as appropriate for the grade-level	<ul style="list-style-type: none"> Students solve problems using various strategies and tools.
K-2	<ul style="list-style-type: none"> Students create algorithms to represent and replace routines and procedures within the classroom. (ex. Zearn, Khan Academy, Dreambox) Students determine and input a series of algorithms to navigate a maze or accomplish a basic task. (ex. Hour of Code) Students learn Computer Science concepts using online tools (ex. Activities from CS Unplugged, Kodable, etc.)
3-5	<ul style="list-style-type: none"> Students identify a problem that can be solved computationally, formulate

	<p>multi-step solutions, select the best possible solution and explain why using variables, conditionals, loops, and functions.</p> <ul style="list-style-type: none"> • Students create and share an animated and interactive story using loops, events, conditionals and variables, and debug the program to correct errors and achieve a given objective. • Students use online resources to explore manipulatives and conduct online science and math experiments (ex. Gizmos and GeoGebra). • Students, in small groups or individually, use Google Drawings, Google Docs, and physical representations to analyze and describe overlapping systems (NGSS). • Students use online tools as appropriate to supplement the adopted science curriculum (ex. STEMscopes). • Students use online programs to work on math facts in resource classes (ex. Zearn)
6-8	<ul style="list-style-type: none"> • Students use online resources to solve problems in math class. • Students use Google Docs, Google Sheets, and other online resources to represent scientific findings in chart and graph form. • Students use online tools as appropriate to supplement the adopted science curriculum (ex. Gizmos and STEMscopes). • Students use online tools to learn and develop programming skills. • Students use online programs to work on math facts in resource classes (ex. Reflex)

[Top](#)

Global Collaborator (ISTE Student Standard 7)

Global Collaborator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

7a. Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.

7b. Students use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.

7c. Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

7d. Students explore local and global issues and use collaborative technologies to work with others to investigate solutions.

Outcomes

2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
10% of students will meet this standard and include evidence in their digital portfolios.	20% of students will meet this standard and include evidence in their digital portfolios.	30% of students will meet this standard and include evidence in their digital portfolios.	40% of students will meet this standard and include evidence in their digital portfolios.	50% of students will meet this standard and include evidence in their digital portfolios.	60% of students will meet this standard and include evidence in their digital portfolios.

Assessment

3rd-8th grade students will include their work in their digital portfolio.

Student will self-assess their portfolios using a rubric.

Teachers will give feedback to students throughout the year using a rubric.

Students will share their work and receive feedback from the community during a student learning showcase event.

Global Collaborator Examples

All grades, as appropriate for the grade-level	<ul style="list-style-type: none"> Students participate in a learning activity that connects them with people outside of their classroom, community, or city.
K-2	<ul style="list-style-type: none"> Students will interview a book author or participate in a digital storytelling project in collaboration with a school located in another city, state, or country.

3-5	<ul style="list-style-type: none"> • Students facilitate interactive discussions with experts in real-time (ex. Nature Conservancy's website www.natureworkseverywhere.org). • Students use online resources to learn about different regions of the county, state or country including the climate, landforms, resources, economy, and people of those regions. • Students will participate in a Mystery Skype session with another classroom using geography questions and maps to determine their location. • Students research ballot measures and share with community their recommendations.
6-8	<ul style="list-style-type: none"> • Students use online communication tools with a guest speaker/expert or collaborate and learn with another classroom in a different geographic location (ex. Skype, FaceTime, Zoom, etc.). • Students effectively use email to communicate about academics with their teachers and other school staff.

[Top](#)

Innovative Designer (ISTE Student Standard 4)

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

4a. Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

4b. Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

4c. Students develop, test and refine prototypes as part of a cyclical design process.

4d. Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

Outcomes

2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
10% of students will of students will meet this standard and include evidence in their digital portfolios.	20% of students will of students will meet this standard and include evidence in their digital portfolios.	40% of students will of students will meet this standard and include evidence in their digital portfolios.	60% of students will of students will meet this standard and include evidence in their digital portfolios.	80% of students will of students will meet this standard and include evidence in their digital portfolios.	100% of students will of students will meet this standard and include evidence in their digital portfolios.

Assessment

3rd-8th grade students will include their work in their digital portfolio.

Student will self-assess their portfolios using a rubric.

Teachers will give feedback to students throughout the year using a rubric.

Students will share their work and receive feedback from the community during a student learning showcase event.

Innovative Designer Examples

All grades, as appropriate for the grade-level	<ul style="list-style-type: none"> Teachers will use Project-Based Learning principles to guide students in creating passion projects. Students will have access to a Makerspace and utilize various materials, supplies, and tools to develop creative solutions to problems.
K-2	<ul style="list-style-type: none"> Students will design and build a bridge using defined resources, e.g., popsicle sticks and glue that can carry a specified weight. Students use a design process and various tools to solve real world problems (ex. mind mapping, drawing, and multimedia).
3-5	<ul style="list-style-type: none"> Students will use the Engineering Design process to design a product that

	<p>meets certain criteria and solves a real world problem.</p> <ul style="list-style-type: none"> • Students will apply knowledge of circuitry to design and create a wearable tech item.
6-8	<ul style="list-style-type: none"> • Students will use the Engineering Design process to design a product that meets certain criteria and solves a real world problem. • Students use coding programs to create a game that helps to promote awareness of an endangered bird and what can be done to protect it. (ex. Scratch and Game Maker)

[Top](#)

5. Teacher Outcomes

The [ISTE Standards for Teachers](#) (2017) are intended to support educators in operationalizing the student standards. ISTE categorized the Standards for Teachers into two overarching themes:

- 1) Empowered Educator
- 2) Learning Catalyst

Teachers can use these standards to identify professional learning goals as they develop their abilities to lead students to use technology effectively.

Empowered Educator	Learning Catalyst
1. Learner	4. Collaborator
2. Leader	5. Designer
3. Citizen	6. Facilitator
	7. Analyst

Empowered Educator

Learner
Teachers continually improve their practice by learning from and with others, exploring best practices in the use of technology to improve student learning. Teachers: <ol style="list-style-type: none">a. Explore and apply evolving pedagogical strategies that leverage technology by setting professional learning goals and reflecting on progress and impact.b. Cultivate personal and professional learning communities by participating in local and global learning networks.c. Stay current with research that supports improved student learning outcomes, including findings from the learning sciences.
Leader
Teachers seek opportunities to be teacher-leaders, working with colleagues to improve teaching and learning. Teachers: <ol style="list-style-type: none">a. Shape, advance and accelerate a shared vision for empowered learning with technology through engagement in their school, district or community.b. Advocate for equitable access to educational technology, digital content, and learning opportunities to meet the diverse needs of all students.c. Identify, test and curate digital tools, applications and resources, and share their knowledge to support effective use of evolving technologies that support teaching and learning.
Citizen
Teachers model safe, ethical and legal behaviors and create learning environments that encourage students to engage in positive, socially responsible behavior. Teachers: <ol style="list-style-type: none">a. Exercise safe, ethical and legal practice with digital tools and resources and model

positive, socially responsible and empathetic behavior in online interactions or when using networked devices.

- b. Model digital literacy and responsible management of personal data, digital identity and intellectual rights and property.
- c. Understand the implications of data collection on student privacy and advocate for the awareness and protection of student's personal and learning analytics data.
- d. Advocate for the critical evaluation and consumption of media, resources and information to build a learning culture of critical thinking, thoughtful questioning and shared responsibility/ethics.

Learning Catalyst

Collaborator

Teachers dedicate time to collaborate with both colleagues and students to improve practice, discover and share resources and ideas, and solve problems. Teachers:

- a. Dedicate planning time to collaborate with colleagues to create authentic learning experiences that leverage technology.
- b. Collaborate and co-learn with students to explore and experiment with digital tools and resources that support learning, and to diagnose and troubleshoot technology issues.
- c. Use collaborative tools to engage virtually with experts, teams and students, locally and globally, to expand students' authentic, real-world learning experiences.
- d. Exhibit cultural competency when communicating with students, parents and colleagues and interact with them as co-collaborators in student learning.

Designer

Teachers design learning activities and environments that empower students to achieve the 2016 ISTE Standards for Students. Teachers:

- a. Design and iterate learning experiences that use technology to accommodate learner variability, personalized learning and foster student agency.
- b. Evaluate, curate and use digital tools and content that align with content area standards and maximize active learning.
- c. Employ instructional design principles to create online, blended, mobile, and face-to-face learning environments that engage and support learning.

Facilitator

Teachers evolve into facilitators of learning who empower their students and apply the 2016 ISTE Standards for Students in their practice. Teachers:

- a. Foster a culture of student agency where learners are empowered to take ownership of their learning goals and outcomes.
- b. Design and manage technology use and student learning strategies in a variety of environments, including hands-on, digital and virtual environments.
- c. Build learning opportunities that challenge students to use a design process and/or computational thinking to solve problems or innovate solutions.
- d. Cultivate student expression and knowledge construction in choosing and using digital tools, platforms and resources to create, communicate, curate, and publish original works.
- e. Cultivate and employ deliberately collaborative student groups that are personally responsible for the success of the group as a whole.

Analyst

Teachers understand and use data to inform their instruction and support students to achieve their learning goals. Teachers:

- a. Design and implement a variety of formative and summative assessments that capitalize

on technology to provide feedback to students and inform instruction.

- b. Provide alternative ways for students to demonstrate competency and reflect on their learning.
- c. Use student assessment data to guide student progress and to communicate with students, parents and education stakeholders in order to build student self-direction.

Teacher Examples

- Teachers use Google Forms as an assessment tool for quizzes or tests.
- Teachers use student data tools to create online assessment and review results to guide instruction (ex. SchoolCity).
- Teachers use polling to guide objectives or provide feedback (ex. Google forms and PollEverywhere).
- Teachers use G-Suite tools such as Google Classroom and Google Docs to provide feedback on student work.
- Teachers use screencast tools to provide feedback to students (ex. Screencastify).
- Teachers use tools to communicate assignments and facilitate collaborative learning (ex. Google Classroom, Edmodo, and Schoology).
- Teachers use web-based tools, apps and programs to demonstrate the 4C's of 21st century learning.
- Teachers use online curricular tools to differentiate instruction (ex. Dreambox, Social Studies Weekly, Khan Academy, Digital Media).
- Teachers facilitate opportunities to enhance and extend students' exposure to technology beyond the classroom (ex. STEAM, Project Lead the Way (PLTW), MakerSpace, and Student Tech Support Teams).
- Teachers create Professional Learning Networks (PLNs) within SUSD and outside with use of social media (ex. Twitter and LinkedIn).
- Teachers actively design, implement, and participate in professional development on technology topics.

Assessment

We will use the Brightbytes survey to track and monitor the instructional staff's yearly progress using data specifically gathered from the SAMR lens. This data shows our current progress:

EdTech Tool Usage Level	Percentage
Beginner	34%
Substitution	24%
Augmentation	30%
Modification	5%
Redefinition	4%

6. Professional Development

There are and will be many opportunities for professional growth.

- A. Digital Citizenship
 - a. Digital Citizenship professional development will be offered by the district
 - b. A [website](#) with Common Sense Media resources has been created for teachers. Teachers are expected to teach Digital Citizenship lessons throughout the year and also document when they have completed the recommended lessons.
 - c. When a group of teachers at a school site completes the required lessons to become a Common Sense Media Certified School, they will complete the form and submit it to Common Sense Media.
- B. G Suite PD/Certification
 - a. Teachers will continue to participate in a series of sessions to learn about the basic G Suite skills and prepare for the optional exam to become certified at Level 1.
 - b. Three differentiated sessions will continue to be offered each year for the next two years.
 - c. Sessions include learning and understanding the SAMR Model and creating Project-Based Learning opportunities for students.
- C. Coaching Sessions
 - a. Teachers are encouraged to access coaching support to guide them in creating, implementing, and assessing a technology integrated lesson or project.
- D. Digital Portfolios
 - a. Use of Google Sites to create student digital portfolios
- E. Conferences/Workshops
 - a. Teachers are invited to attend EdTech conferences such as G Suite Summits and Computer Using Educators (CUE).
 - b. Teachers are invited to participate in certification programs through the Santa Clara County Office of Education (SCCOE) including Leading Edge Certification (LEC), Digital Storytelling, Project-Based Learning (PBL), and Design Thinking.
 - c. Teachers are encouraged to attend the SCCOE STEAM Symposium.
 - d. Teachers are invited to attend the Krause Center for Innovation (KCI) Mini-MERIT summer program.
- F. Design Thinking/Makerspace
 - a. Teachers are encouraged to attend events focused on Design Thinking and Makerspaces such as the annual MakerFaire in San Mateo, Makerspace courses through Sonoma State University, and PBL.
- G. Content Specific Professional Development
 - a. Teachers are invited to attend content specific EdTech professional development such as:
 - i. Math: Desmos, Geogebra, Dreambox, Khan Academy
 - ii. Writing Workshop Units of Study
 - iii. Science: NGSS, STEMScopes, Gizmos
 - iv. Social Studies: TCI
 - v. ELA: NewsELA
 - vi. Computer Science: Scratch, Tynker, Khan Academy

[Top](#)

7. Infrastructure/Devices for Students and Instructional Staff

- A. **Student Devices:** The Tech Plan Committee recommends progress towards obtaining 1 to 1 devices in 2nd-8th grade. The following table shows where we stand as of spring 2017 in the use of Chromebooks and a suggested timeline to purchase additional devices to reach this goal. We are also mindful that we have students with special needs. We are including specific recommendations for each of our student groups.

a. Chromebooks and Recommendations as of Spring 2017

Site	Total Number of Students 2nd-8th in 2017-2018	Current Number of Chromebooks	Additional Chromebooks Needed
Argonaut	234	175	59
Foothill	219	195	24
Saratoga	230	216	14
Redwood	789	719	*Option A: 70 or Option B: 240
Totals for District	1,472	1,305	*Option A: 167 or Option B: 337

*See Budget Proposal on page 39

b. Additional Needs

- i. First Grade Students
 - In order to support 1st grade students' introduction to the use of technology, principals at the elementary sites highly recommend that an additional cart be purchased for the 1st grade level at each site, for a total of 3 carts of 25 Chromebooks each.
- ii. Special Education Needs
 - In order to support students with special needs, we recommend the purchase of interactive displays and 1 to 1 iPads in order to provide more engaging learning opportunities for students.
- iii. Math Redwood Request
 - In order to support the use of interactive lessons in Math, we recommend the purchase of an interactive display for piloting in a middle school math class.
- iv. Socioeconomically Disadvantaged
 - In order to support students who do not have access to home devices/internet service, we recommend the purchase of 15 Chromebooks with protective cases for check-out by students at parent request, based on need. This support is increasingly important as more

curriculum is only available online, including TCI (social studies) and STEMscopes (science), which will be used in grades 6 and 7 in 2017-2018 and all three middle school grades the following year.

- v. Instructional Technology Coach
 - In order to facilitate and accelerate the integration of technology in the curriculum, we recommend that a teacher be hired to provide coaching support to classroom teachers. This teacher will be able to assist in planning, implementing and assessing lessons or projects.

[Top](#)

8. Budget

Here are the recommendations for additional budget items. Expenses that have already been approved can be viewed in the 2016-2017 budget.

Devices	2017-2018
Chromebooks and Carts for 2nd-8th Grade	Option A: \$117,000 Option B: \$140,000
Chromebooks and Carts for 1st Grade	\$31,000
Interactive Displays	\$16,000
iPads for SpEd	\$17,000
At home internet service and Chromebooks	\$13,000
Total Additional Budget Requested for Devices	Option 1: \$194,000 Option 2: \$217,000

We are presenting two options for the purchase of Chromebooks for the middle school. Option A refers to purchasing one device per student. Option B refers to purchasing a cart with devices per classroom. The spring 2017 recommendation is to approve Option B.

Instructional Technology Support	2017-2023 Estimate per year
1.0 FTE Instructional Technology Coach	\$100,000

Professional Development	2017-2023 Per year
Krause Center for Innovation Mini-MERIT Workshop (up to 25 participants)	\$30,000
G Suite Summit (up to 10 participants)	\$10,000
CUE Conference/Other EdTech PD (up to 10 participants)	\$16,000
Digital Portfolios	\$1,000
Total Additional Budget Requested for Professional Development	\$57,000

[Top](#)

5/11/2017

9. Evaluation and Monitoring

We will continuously evaluate and monitor the progress made on the Tech Plan. Every year, we will do the following:

Task	Person(s) Responsible	Stakeholders Involved
Administer annual BrightBytes survey to gather feedback and measure our growth.	Director of Technology	Administrators Staff Students Parents
The Tech Plan committee will meet every year to evaluate and document progress made in each outcome. Adjustments will be made as needed. Revise whole document in Year 3.	Director of Technology	Administrators Staff Students Parents
Action items related to the Tech Plan will be included in our district LCAP.	Director of Technology Assistant Superintendent of Educational Services	Tech Plan Committee Assistant Superintendent of Educational Services
Organize a district-wide student showcase to empower students' sharing of their work with the community.	Director of Technology Assistant Superintendent of Educational Services Administrators	Administrators Staff Students Parents

[Top](#)