

Technology Plan

Sylvan Union School District

July 1, 2018 - June 30, 2021



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Background and Demographic Profile

The Sylvan Union School District (SUSD) includes 10 elementary sites (K-5) and 3 middle schools. Our current student population has held fairly steady with just over 8,000 students. Sylvan Union School District spans the northeast area of Modesto including parts of the city of Riverbank. Vacant farmland in our district boundaries will eventually become housing and the district could eventually see the student population doubling. This technology plan will cover the span of three years, from July 2018 thru June 30, 2021. The District technology plan will also serve to address the E-Rate program in the Sylvan Union School District and will be reviewed and updated biannually each year the plan is in service.

1. Plan Duration

July 1, 2018 - June 30 2021

This plan is a living document and will change. This plan will be used for E-rate and will be reviewed annually.

2. Stakeholders

The Sylvan Union School District Technology Committee is an active group of educators, and parent representatives whose focus is to assist schools in enhancing student learning and increasing the productivity of schools' instructional systems by using technology. The stakeholders include classroom teachers, administrators, librarians, classified staff, technology department staff, and parents. Members of the committee reviewed the previous plan and have been submitting suggestions for update on an ongoing basis. The technology plan is a living document, and the actual writing of the plan tends to cement the ideas within it. This plan, on the surface, provides a sense of finality, or completeness. But this is not the case. The ideas within this plan are continually germinating. The ideas are continually coming from all stakeholders in the district. Though the technology planning committee members participated by providing feedback and comments this year, those ideas have been forthcoming by others throughout the district. Technology committee members are responsible for attending meetings and reporting back to site staff on technology initiatives and expectations, gathering feedback from their sites and constituents, and sharing input with the committee at the meetings.

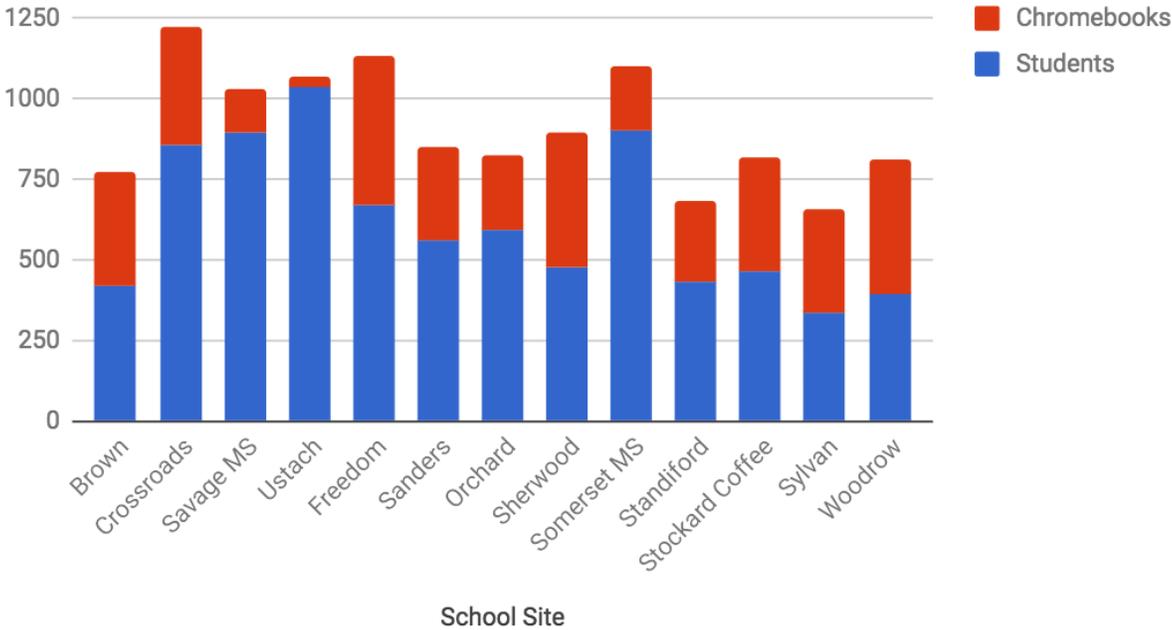
3. Curriculum

3a. Description of teachers’ and students’ current access to technology tools both during the school day and outside of the school hours.

The SUSD network consists of a gigabit fiber backbone to all sites. School sites networks all link back to the district office where fiber connects to the Stanislaus County Office of Education. The Stanislaus County Office of Education is a California High Speed Network node and supplies SUSD with Internet access.

All three middle schools are at a 1:1 student to digital device ratio. Students are checked out an iPad at the beginning of the school year with their other school materials and keep it for the duration of the school year. Devices go home with students to facilitate continued learning outside of the regular school hours. Students have access to computers in the library and access to a computer lab that also serves as the classroom for the computer science electives class. In addition, each middle school has a cart of Chromebooks that can be checked out to the teacher for classroom use.

Students and Chromebooks



| School Sites | Students | Chromebooks | Device/Student | Ratio |
|--------------|----------|-------------|----------------|-------|
|--------------|----------|-------------|----------------|-------|

| | | | | |
|-----------------|-------------|-------------|--------|------|
| Brown | 421 | 312 | 1.349 | 2:1 |
| Crossroads | 858 | 323 | 2.656 | 3:1 |
| Freedom | 669 | 411 | 1.627 | 2:1 |
| Sanders | 559 | 290 | 1.927 | 2:1 |
| Orchard | 594 | 254 | 2.338 | 3:1 |
| Sherwood | 478 | 354 | 1.135 | 2:1 |
| Standiford | 436 | 248 | 1.758 | 2:1 |
| Stockard Coffee | 464 | 304 | 1.870 | 2:1 |
| Sylvan | 334 | 322 | 1.037 | 2:1 |
| Woodrow | 393 | 292 | 1.345 | 2:1 |
| Totals: | 5206 | 3110 | | |
| | | | | |
| Savage MS | 896 | 136 | 6.588 | 7:1 |
| Ustach MS | 1035 | 38 | 27.236 | 28:1 |
| Somerset MS | 903 | 184 | 4.907 | 5:1 |
| Totals: | 2834 | 358 | | |

At the elementary schools, students have access to shared Chromebooks that are shared via classroom carts. The majority of our elementary schools are 2:1, with Woodrow, Sylvan, and Sherwood nearing a 1:1 student to computer ratio.

All certificated teachers have dedicated laptops, and additionally, classroom teachers have computer projectors and document cameras as part of the teacher workstations.

All teachers and students have access to printers, and wireless networking in all classrooms, and some teachers have been equipped with iPad tablets to promote mobile access in the classroom while teaching.

Many staff including administrators, special education teachers, and Speech and Language Pathologists, and ELD/Literacy Specialists have begun incorporating the use of iPads and apps. Currently within the district there are approximately 300 iPad devices being used by staff to support instruction.

3b. Description of the district's current use of hardware and software to support teaching and learning.

The primary use of technology in the district has been to support teachers in the instruction of students. All teachers have laptops, LCD projection systems, document cameras, and access to printers. The current deployment of technology and staff development strategies have led to a wide spread use of digital resources in the classroom including State adopted Digital “textbook” materials, streaming video, Internet resources and digital multimedia in the support of classroom instruction. Also, the use of online content management systems such as the Aeries Web Portal, have become a part of normal operations at the schools. Teachers take attendance, access student contact information, record assignments and grades, all within the Aeries Web Portal. The online Aeries Web Portal is available to both students and parents and is accessed by both on a daily basis via mobile and computer devices.

The continued use of Google Apps for Education for communication and applications (word processing, spreadsheets, web site creation, presentations, calendaring, graphics, file services, Google Classroom) by both students and staff have led to considerable increases in the use of technology by students in the classroom.

The ways in which technology is integrated into the curriculum at the sites includes:

McGraw Hill - StudySyc (Middle School Language Arts Adoption)

MyOpenMath - Middle school math resources

Benchmark Advanced - (Elementary School Language Arts Adoption)

Google Apps for Education - Suite of multiple tools and file services.

Content Specific Apps - iOS iPad Apps, Google Chromebook Apps

Content Creation Apps - iOS iPad Apps, Google Chromebook Apps

California Streaming

Aeries Web

IO (formerly EADMS)

Destiny (Library System)

Students use technology daily at the middle schools. The frequency of computer use at the elementary school is weekly. Frequency use varies in the elementary school due to the shared access of the computer technology.

All middle schools have computer technology elective courses for students who wish to develop their typing skills, learn graphics and publishing skills (yearbook, journalism), coding, and fulfill requirements required by the high schools for computer literacy prior to actually entering high school.

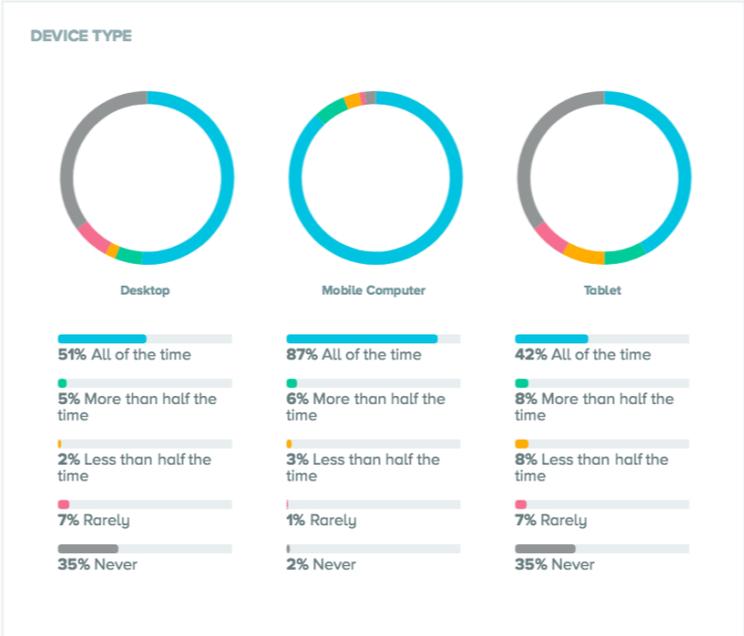
Our school libraries have a standard library system, Destiny, and circulation can be checked by any networked computer with a web browser.

All staff have email accounts, access to Google Sites, Groups, and Google + and Google Hangouts, and the remaining apps consisting of Google Apps for Education. The degree of which these tools are currently utilized is relative to the staffs’ experience; and the demands of the targeted classroom instruction.

📁 **Teacher access to devices in the classroom for their own use**

Sylvan Union Elementary

FRAMEWORK: Technology & Learning DATA FROM: Jan 1, 2018 To Present
 DOMAIN: Access
 SUCCESS INDICATOR: Teachers At School
 VARIABLE: Teacher Access To Devices In The Classroom



☐ The ratio of students to computers in the classroom as reported by teachers is



3c. Summary of the district's curricular goals that are supported by this technology plan.

The Superintendent's 2020 Vision goals are one of the main focuses for this technology plan. The mission of the Sylvan Union School District is to provide a dynamic, broad-based education that prepares **each child** to be a contributing member of society.

- We will increase student achievement and close the achievement gap in all areas using a variety of indicators to document improved learning on the part of all our students.
- Aspects of Student Achievement
 - Attendance
 - Behavior
 - Social/Emotional Development

- Learning Environment
- Academics

- By June 30, 2020, 100% of SUSD students will meet or exceed grade level standards in ELA and Mathematics as measured by the State standardized assessment and District Multiple Measures.
- By June 30, 2020, 100% of SUSD third grade students will be reading at grade level.

LCAP Technology Goals (From LCAP Plan)

A4 – Integrate technology in all content areas supported by professional learning and support by the Director of Technology and Instructional Coaches.

Children growing up today live in a technology rich world. Our students use technology every day in their lives outside of school. They expect these tools to be available to improve communication, provide information, and improve their day-to-day lives. They expect their schools and classrooms to align with these expectations. When these expectations are not met, they can have detrimental effects on school attendance, behavior, and learning. Learning and achievement is all about engaging with the content.

Many students are more stimulated and are apt to learn when they can interact with hands-on learning tools, which various forms of educational technology provide. A fifth grade teacher was quoted in a [U.S. Department of Education article](#) saying, “Technology is the ultimate carrot for students. It’s something they want to master. Learning to use it enhances their self-esteem and makes them excited about coming to school.”

*Some Positive Effects of Technology in Our Education System,
<http://edge.ascd.org/blogpost/some-positive-effects-of-technology-in-our-education-system>*

There are many examples of how technology can be used to engaged students and foster learning in the classroom. In reading, engaging students with content besides the just the printed page can foster that engagement. Researching the author of a piece and requesting students to share, in real-time, one important fact about the author using an app such as Padlet (www.padlet.com), can foster critical thinking and a classroom discussion regarding the author of an assigned reading.

In an elementary classroom, the teacher can create a HyperDoc (<https://hyperdocs.co/>) that can contain information, and target Internet resources (web links, videos, illustrations) that can bring the classroom content to life. In addition, student feedback and classroom assignment templates can be linked within the HyperDoc to enable student feedback and classroom workflow.

In the middle schools, teachers can design lessons that take advantage of the power of FlipGrid (<https://info.flipgrid.com>) to engage students in the learning content. By using the camera on their device, students can share ideas related to the classroom content, and learn from each other. Flipgrid takes a familiar social media activity, and makes it work securely and safely in the classroom. It is video the way students use video, short, authentic, and fun.

In addition, we will continue to address the needs of all learners and will address the district and site instructional goals as they relate to:

- *A Strong Foundation in Skills and Standards*
- *All Students becoming Independent Thinkers*
- *All Students becoming Lifelong Learners*
- *All Students making Healthy Choices*
- *All Students having a Sense of Purpose*
- *All Students Becoming Problem Solvers*

3d. List of clear goals, measurable objectives, annual benchmarks, and an implementation plan for using technology to improve teaching and learning by supporting the district curricular goals.

Technology is integrated into all aspects of life and learning. It cannot be separated out of any other curriculum component or instructional goal. Technology plays a part in all instructional roles.

To that effect, it is important to clearly identify what aspects of student development we are targeting for improvement and assessment.

Purported bellwether characteristics of an independent thinker will consist of being:

- Non-Judgmental of others
- Open to suggestions
- Able to learn from mistakes
- Able to recognize importance of process (in addition to product)
- Seek Experiences - “Get out of comfort zone”

Purported bellwether characteristics of lifelong learners consists of being:

- Self motivated
- Driven
- Passionate
- Able to validate individual interests
- Able to model passion
- Able to encourage exploration of interests
- Able to promote sharing of interests and development of expertise

Purported bellwether characteristics of students that make healthy choices are:

- Awareness of self
- Interdependence

- Propensity for being active (Physical)
- Social Etiquette
- Safe in Environments
- Balanced (digital and real world)

Purported bellwether characteristics of students that is developing a sense of purpose are:

- Community Awareness
- Knowledge of community’s cultures, populations characteristics, economic status, geography, “neighbors”
- Ability to identify needs
- Ability to contribute solutions

Purported bellwether characteristics of strategies to solve “real world” problems

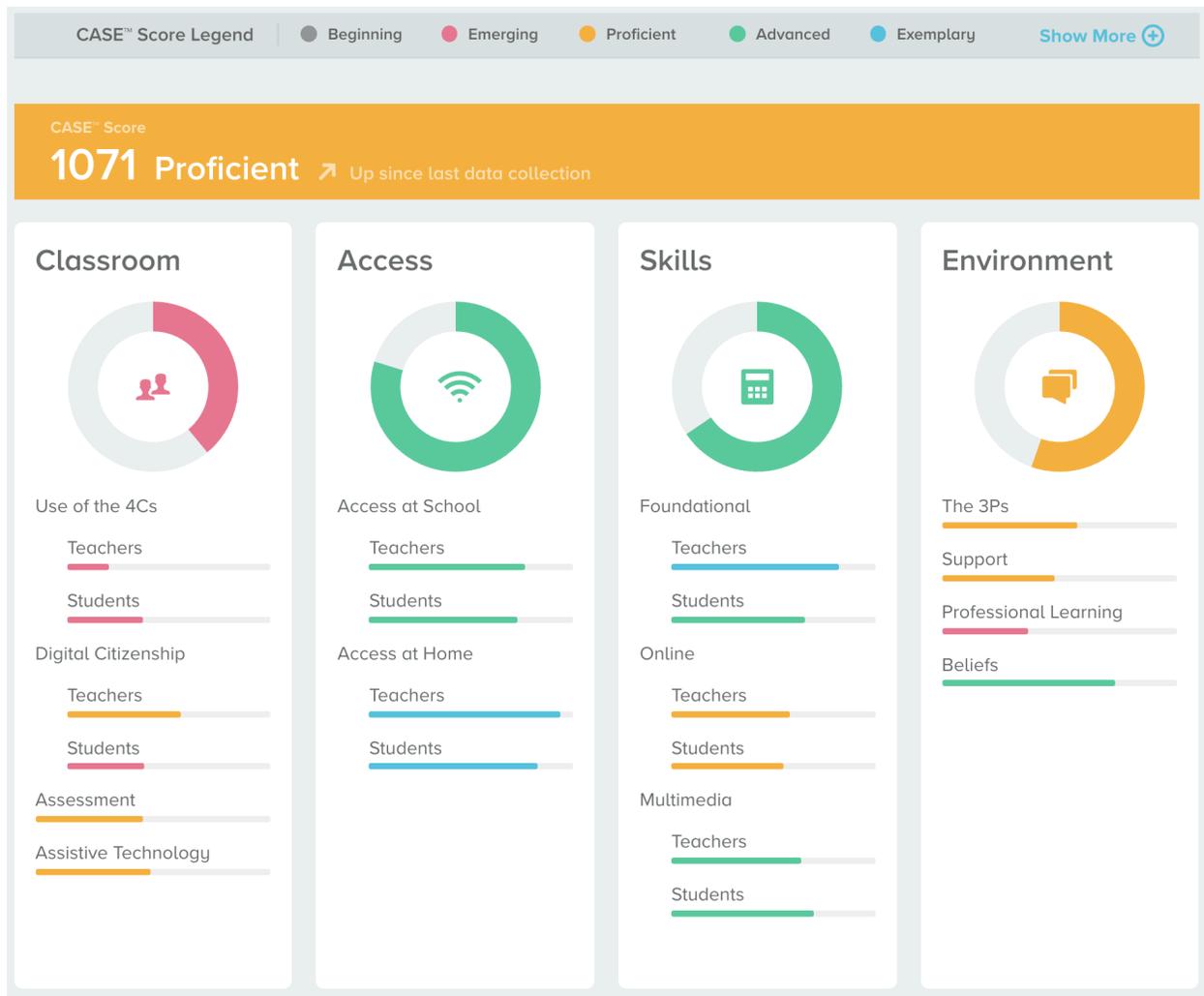
- Seek collaboration
- Locate and identify experts
- Build Teams
- Communicate in multiple modes
- Define the problem and report solutions
- Create and Ask Questions
- Clarify
- Listen to Understand
- Empathize
- Respect Different Views
- Reflect on what you hear
- Don’t jump to conclusions

The measuring of our effectiveness on these bellwether characteristics is tied directly in to all measured areas of student achievement. There is not a single assessment that measures all these skills, however these skills are measurable components of other content area curricular goals. In the past, students received citizenship marks. The citizenship mark is a very broad measure and contains many of the above items.

To provide targeted level of assessment of these goals and skills, we will use our BrightBytes data.

3d. Teaching and learning goals (Measurable Objectives, Benchmarks)

The data that has been guiding our technology implementation over the last couple of years has been our bi-annual BrightBytes data collections in the fall and in the spring. We have continued to grow in all areas of the dashboard.



However, the area that we are growing the slowest in is the Classroom and the Use of the 4Cs (Communication, Collaboration, Critical Thinking, and Creativity). Our trend analysis shows that we struggle to connect teacher beliefs, the 3Ps (Policies, Procedures, and Practices), and student use of computers in the classroom—that is, capitalizing on teacher beliefs by providing a supportive school environment that, in turn, fosters innovative classroom practices. These innovative classroom practices require instruction that promotes higher level thinking by students, and creative and innovative instructional design by the teacher. Many of the data points addressed in the BrightBytes data, within the 4Cs, target introductory strategies that provide teachers with easy entry into instruction that targets student critical thinking learning skills.

For example, the following data points are specific to the 4Cs and are broken out by teacher and student. Both teachers and students are required to complete the data surveys and key components have been extracted below for more focus.

Teachers:



Teachers ask students to receive feedback from others in the classroom

Sylvan Union Elementary

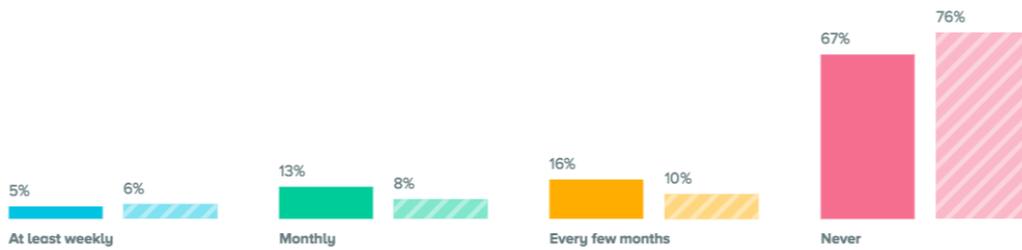
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Communication



COMPARE

Jan 1, 2018 to Present
Solids

Jul 1, 2017 to Dec 31, 2017
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 get feedback online from someone other than them

Sylvan Union Elementary

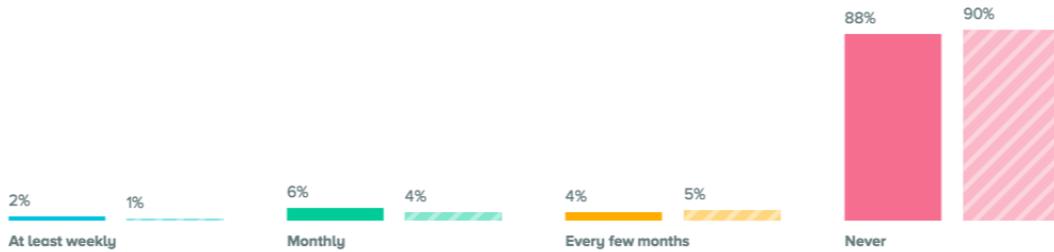
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Communication



COMPARE

Jan 1, 2018 to Present
Solids

Jul 1, 2017 to Dec 31, 2017
Stripes

Why This Matters

"One of the most potentially powerful tools is in-class formative assessments that provide real-time feedback on what students know and understand" (Bushweller, 2014).

Citation

Bushweller, K. (2014). Digital advances reshaping K-12 testing. "Education Week, 33"(25). Retrieved from <http://www.edweek.org/ew/articles/2014/03/13/25execsum.h33.html?intc=EW-TC14-TOC>

Why this matters?

"One of the most potentially powerful tools is in-class formative assessments that provide real-time feedback on what students know and understand" (Bushweller, 2014).

Teachers ask students to use web tools to receive online information

Sylvan Union Elementary

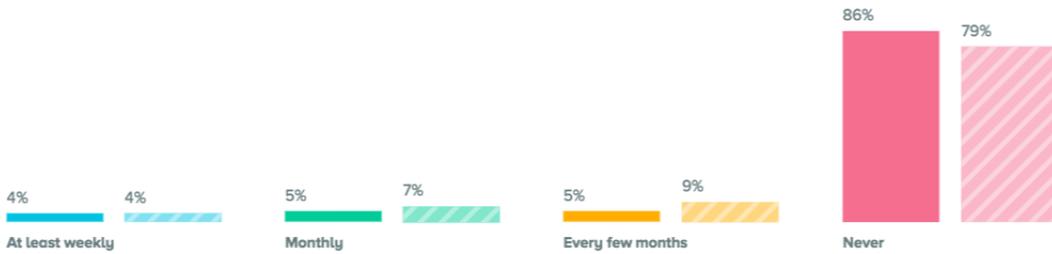
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Communication



COMPARE

Jan 1, 2018 to Present
Solids

Jul 1, 2017 to Dec 31, 2017
Stripes

Why This Matters

"To take advantage of online educational opportunities, people need to have a good understanding of how knowledge is constructed and how it represents reality and articulates a point of view" (Hobbs, 2010).

Citation

Hobbs, R. (2010). "Digital and media literacy: A plan of action" [White paper]. The Aspen Institute. Retrieved from http://www.knightcomm.org/wp-content/uploads/2010/12/Digital_and_Media_Literacy_A_Plan_of_Action.pdf

 Teachers ask students to create e-Portfolios

Sylvan Union Elementary

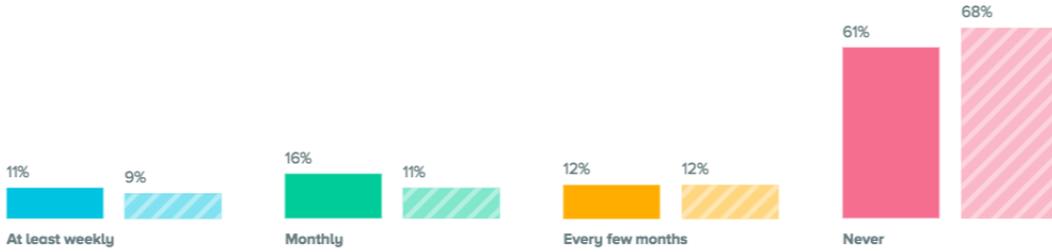
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Communication



 COMPARE

 **Jan 1, 2018 to Present**
Solids

 **Jul 1, 2017 to Dec 31, 2017** ▼
Stripes



Why This Matters

Electronic portfolios can be "especially advantageous for at-risk children" because they can house a variety of multimedia products that allow a greater range of choice for students to showcase growth and knowledge (Meyer et al., 2010).

Citation

Meyer, E., Wade, A., Pillay, V., Idan, E., & Abrami, P. (2010). Using electronic portfolios to foster communication in K-12 classrooms. In Black, E. (Ed.), "The dynamic classroom: Engaging students in higher education" (125-134). Madison, WI: Atwood Publishing.

Student Data:



Students are asked to create animations, demonstrations, models, or simulations

Sylvan Union Elementary

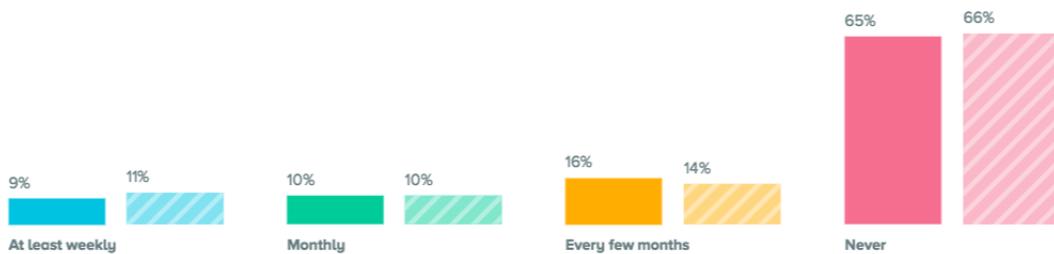
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Student Use Of The 4Cs

VARIABLE: Student Creativity



COMPARE

Jan 1, 2018 to Present
Solids

Jul 1, 2017 to Dec 31, 2017
Stripes

Why This Matters

Digital simulations and games can provide "insights into the nuances and complexities of how students solve problems" (Bushweller, 2014).

Citation

Bushweller, K. (2014). Digital advances reshaping K-12 testing. "Education Week, 33"(25). Retrieved from <http://www.edweek.org/ew/articles/2014/03/13/25exesum.h33.html?intc=EW-TC14-TOC>

Why This Matters
Digital simulations and games can provide "insights into the nuances and complexities of how students solve problems" (Bushweller, 2014).

Students are asked to develop or present multimedia presentations

Sylvan Union Elementary

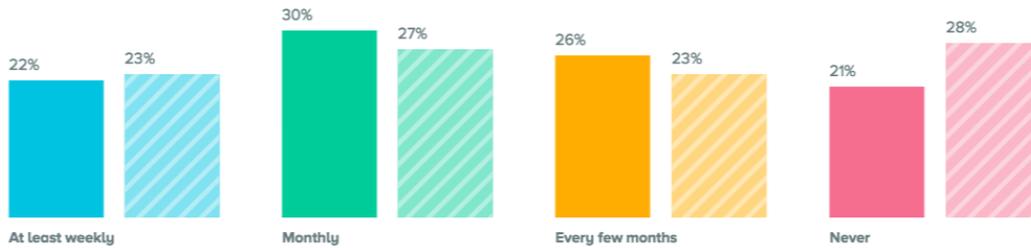
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Student Use Of The 4Cs

VARIABLE: Student Creativity



 COMPARE

 Jan 1, 2018 to Present
Solids

 Jul 1, 2017 to Dec 31, 2017 ▼
Stripes



Why This Matters

Research indicates that the use of both words and pictures "lets the brain process more information in working memory" (SEG Research, 2008).

Citation

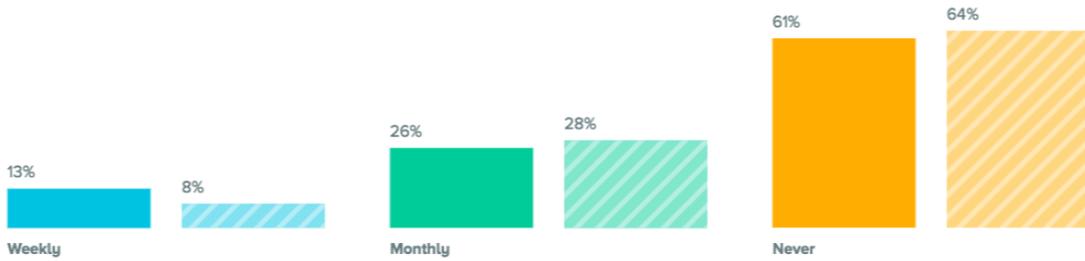
SEG Research. (2008). "Understanding multimedia learning: Integrating multimedia in the K-12 classroom". Retrieved from https://www.brainpop.com/new_common_images/files/76/76426_BrainPOP_White_Paper-20090426.pdf

 Elementary students are asked to collect and analyze data

Sylvan Union Elementary

FRAMEWORK: Technology & Learning
 DOMAIN: Classroom
 SUCCESS INDICATOR: Student Use Of The 4Cs
 VARIABLE: Elementary Student Critical Thinking

DATA FROM: Jan 1, 2018 To Present
 FILTERED TO: Elementary



 COMPARE

 **Jan 1, 2018 to Present**
Solids

 **Jul 1, 2017 to Dec 31, 2017** ▼
Stripes



Why This Matters

Students who participate in an inquiry-based science classroom—those in which students ask authentic questions and carry out experiments and observations to answer them—are able to build on their own knowledge of concepts, reason scientifically, and construct explanations (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>

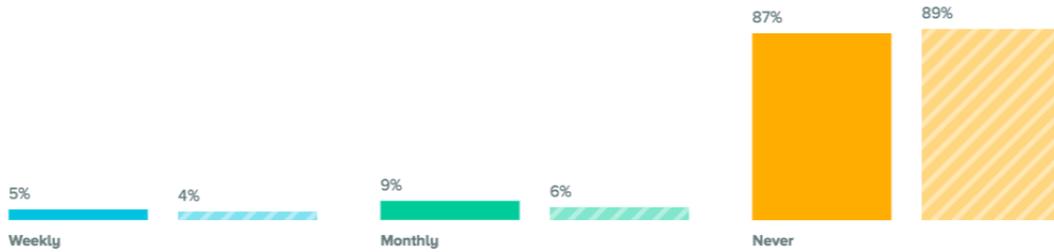


Elementary students are asked to create and upload art, music, movies or webcasts

Sylvan Union Elementary

FRAMEWORK: Technology & Learning
DOMAIN: Classroom
SUCCESS INDICATOR: Student Use Of The 4Cs
VARIABLE: Elementary Student Creativity

DATA FROM: Jan 1, 2018 To Present
FILTERED TO: Elementary



COMPARE

Jan 1, 2018 to Present
Solids

Jul 1, 2017 to Dec 31, 2017
Stripes

Why This Matters

Students who participate in multimodal projects learn new vocabulary to describe their creation process, final product, and feelings about the topic at hand (Lynch, n.d.).

Citation

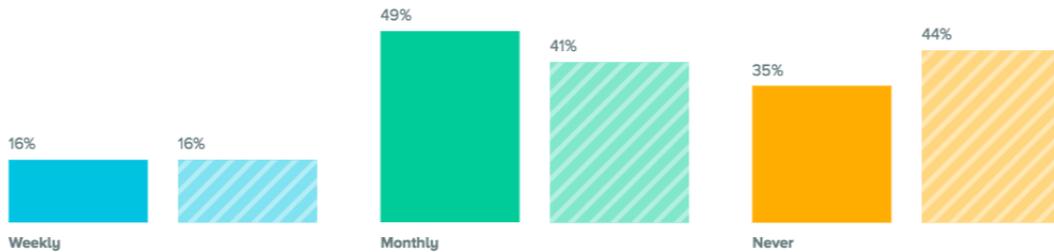
Lynch, G.H. (n.d.). The importance of art in child development. "PBS Parents". Retrieved from <http://www.pbs.org/parents/education/music-arts/the-importance-of-art-in-child-development/>

Elementary students are asked to develop or present multimedia presentations

Sylvan Union Elementary

FRAMEWORK: Technology & Learning
DOMAIN: Classroom
SUCCESS INDICATOR: Student Use Of The 4Cs
VARIABLE: Elementary Student Creativity

DATA FROM: Jan 1, 2018 To Present
FILTERED TO: Elementary



COMPARE

Jan 1, 2018 to Present
Solids

Jul 1, 2017 to Dec 31, 2017
Stripes

Why This Matters

Integrating the arts into core subject areas increases students' engagement and can lead to students grasping a greater understanding of concepts (WJZ, 2011).

Citation

WJZ. (2011). Study shows arts education helps learning process. Retrieved from <http://www.artseveryday.org/WhatWeDo/News/detail.aspx?id=5062>

Why This Matters

Integrating the arts into core subject areas increases students' engagement and can lead to students grasping a greater understanding of concepts (WJZ, 2011).

Addressing these targeted goals with professional development and classroom deployment to students will insure that student learning incorporates skills beyond the basics and foundational skills, towards more higher-level skills required in today's world.

The technology committee also identified areas of concern with a need for improvement in the area of student research. Specifically, we need students to be able to validate online information and determine good data from bad data. This particular topic has been in the news recently with the public at large being duped by false information posted to online websites. An inability to verify information found online, and to accept it as truth just because it is published online, is a severe literacy deficiency and needs to be corrected early on in a student's education. Many of

these skills are addressed in the BrightBytes data under the category of Student Digital Citizenship.

“” Students are taught how to cite online information

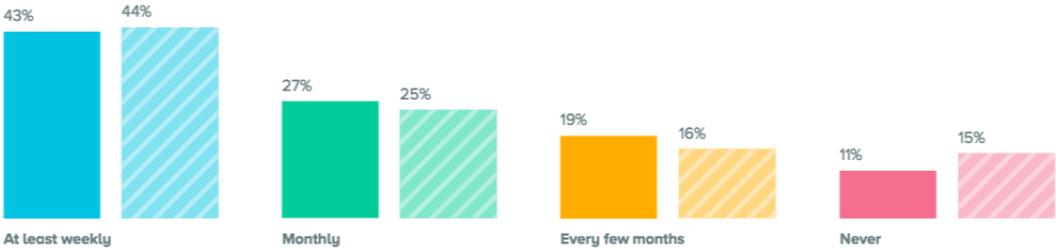
Sylvan Union Elementary

FRAMEWORK: Technology & Learning DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Student Digital Citizenship

VARIABLE: Student Frequency Of Learning Digital Citizenship



COMPARE

Jan 1, 2018 to Present Solids

Jul 1, 2017 to Dec 31, 2017 Stripes

Why This Matters

One study showed that “47% of high school students admitted to copying and pasting from the Web” but didn’t consider it cheating (Bunji, 2010).

Citation
 Bunji, A. (2010, November 5). Identifying reliable sources and citing them. Retrieved from <http://www.scholastic.com/teachers/top-teaching/2010/11/reliable-sources-and-citations>

DATA HIGHLIGHT

30% of students are infrequently taught this, if at all

 **Students are taught how to share information about themselves online**

Sylvan Union Elementary

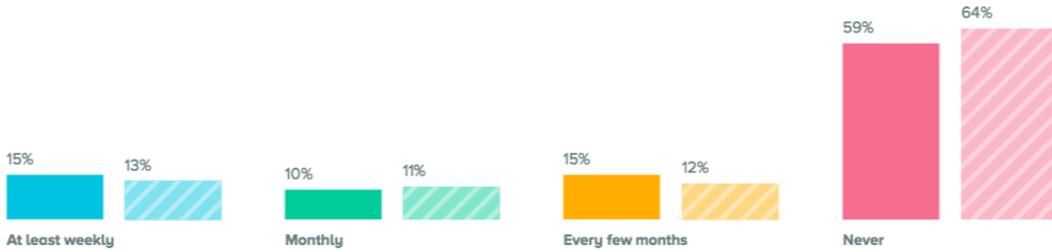
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Student Digital Citizenship

VARIABLE: Student Frequency Of Learning Digital Citizenship



 COMPARE

 **Jan 1, 2018 to Present**
Solids

 **Jul 1, 2017 to Dec 31, 2017** ▼
Stripes

Why This Matters

In today's marketplace, content that our students create and share online is "becoming the new CV" (Richardson & Mancabelli, 2013).

Citation

Mancabelli, R., & Richardson, W. (2013). "Preparing students for the new world of work in the 21st century" [White paper]. BrightBytes. Retrieved from http://pages.brightbytes.net/21stCenturyWork_pt1.html

 DATA HIGHLIGHT



Why This Matters
In today's marketplace, content that our students create and share online is "becoming the new CV" (Richardson & Mancabelli, 2013)
(CV stands for, Curriculum Vitae. It is similar to a resume but more detailed.)



Elementary students are taught how to cite online information

Sylvan Union Elementary

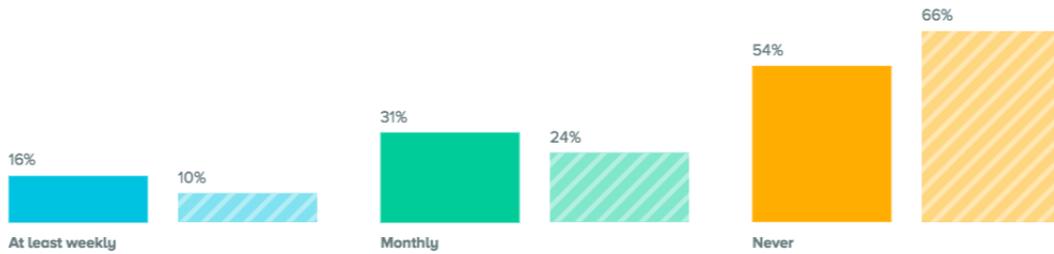
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Student Digital Citizenship

VARIABLE: Elementary Student Frequency Of Learning Digital Citizenship



COMPARE

Jan 1, 2018 to Present
Solids

Jul 1, 2017 to Dec 31, 2017
Stripes

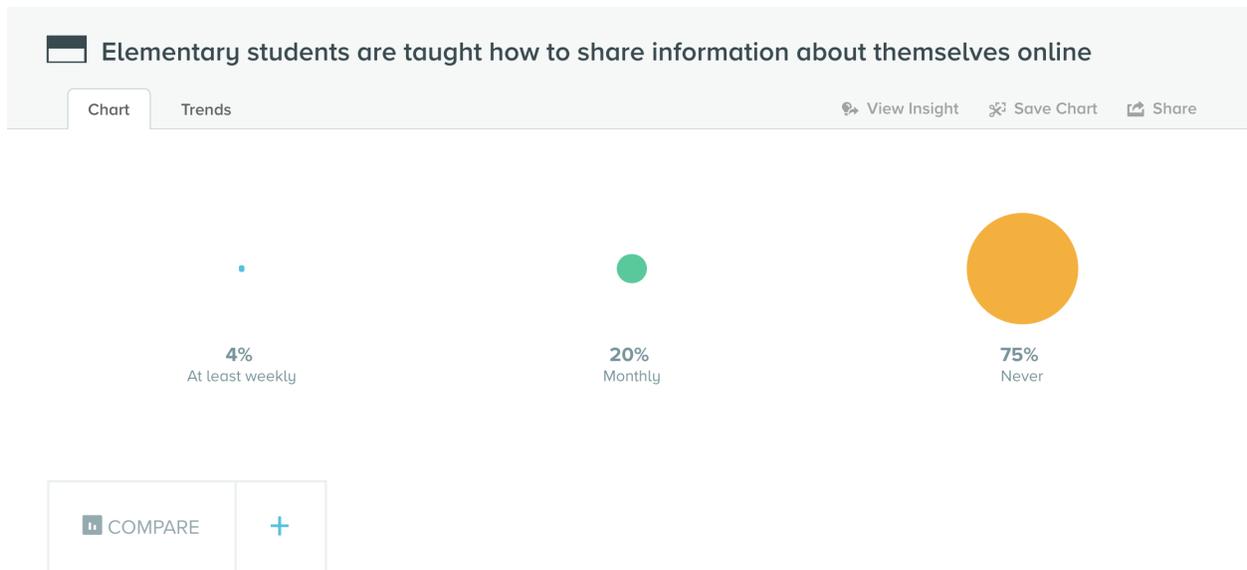


Why This Matters

Because technology literacy is quickly becoming a highly valued skill in college and the workforce, students need help while they are in school to use technology effectively and efficiently (Kuntz, 2012).

Citation

Kuntz, B. (2012). Engage students by embracing technology. "Educational Leadership, 56"(6).



These two Digital Citizenship goals encompass a large part of the skill necessary for students to be successful in our digital age. Validating information online, and citing that information, and knowing what to share, or publish, provides the scaffolding for students to be strong adult digital citizens.

3e. Digital Citizenship: Information Literacy Skills, Ethical Use, and Internet Safety

Digital Citizenship skills continues to be a core component of instruction for students in our current age. Our previous school data showed that teachers have the knowledge but they were lacking tools to distribute that knowledge to students. As a result, we continue to focus on the CommonSense Media Curriculum (<https://www.commonsense.org/education/>) and provide guidance on additional lessons for each teacher to deliver to their students.

This curriculum is important for students to learn and understand in this day and age, but it is also a requirement of those school districts that participate in the Federal E-Rate Program.

To validate, document, and collect data on delivery of this instruction we provided timelines for when particular lessons were to be taught, and on completion of these lessons teachers were required to complete an online form confirming the delivery of instruction.

Teachers are encouraged to spiral back to the cyber citizenship content throughout the year, as many opportunities present themselves as teachable moments throughout the regular classroom day and within subject matter content of all types.

There were three targeted lessons that the district was tracking completion status. These lessons met the E-Rate requirement in addition to supporting the responsible use of technology in the classroom. The lessons were:

(Completed by September 30, 2017)

Kindergarten - Going Places Safely
First Grade - Sending Email
Second Grade - Show Respect Online
Third Grade - Talking Safely Online
Fourth Grade - The Power of Words
Fifth Grade - Digital Citizenship Pledge

191 responses were collected from teachers who had taught these targeted lessons. It should be noted that there are more than 191 elementary school teachers in the Sylvan Union School District, however some grade levels team taught the curriculum to their grade level.

Sixth Grade - Safe Online Talk & Scams and Schemes
Seventh Grade - Trillion Dollar Footprint & Cyberbullying: Crossing the Line
Eighth Grade - Cyberbullying: Be Upstanding & Which Me Should I Be?

34 responses were collected from our middle school teachers who had taught these targeted lessons. Again, there are more than 34 middle school teachers in the Sylvan Union School District, however all instruction was taught by the social studies teachers at each of the three middle schools.

The remaining lessons with the targeted curriculum were to be completed by November 30, 2017.

Grade 3

Rings of Responsibility
Private and Personal Information

Grade 4

Private and Personal Information
Whose Is It, Anyway?

Grade 5

Talking Safely Online
Picture Perfect

Grades 6-8

A Creator's Responsibility
Strategic Searching

The District Instructional coaches and technology department provided support to teachers in meeting these goals. The use of the Google Classroom Learning Management System was used to organize targeted instruction for teachers on these lessons. Curriculum was provided in multiple formats, PDF, Powerpoint/Slide show, and the interactive Nearpod format.

For next year, we will continue to evaluate content and determine needs based on teacher feedback. E-Rate requirements will continue and we will need to continue to document the completion of this instruction. A goal for next year will be to more thoroughly document teacher feedback regarding the delivery of the curriculum to students.

3f. Description of access for all students

The Sylvan Union School District believes the use of technology in educating children is mandatory. It is with the understanding that in order for students to perform to their fullest potential, it is imperative that all students have access to technology at all times and include safe, managed, access to the Internet. The previous plan described goals of providing technology access to students, "...at all times in the form of a safe, managed, secure digital device." I am pleased to share that those goals have all been accomplished in the last four years with the deployment of 1:1 devices in the middle schools and shared Chromebook carts in the elementary schools. The challenge moving forward will be to sustain what we have started, improving on the access at the elementary school level. The consensus by teachers at the elementary level is the need for more access by students to technology. This concern has been repeated by members of the technology plan committee and voiced by teachers in classroom conversations and emails with staff.

In addition, as the level of technology sophistication increases, teachers are beginning to differentiate technology devices as 1:1, everyday student use devices, to requesting, "*special use computers*" that are capable of higher end operations such as video production, coding and app development, image manipulation capable of running professional level software suites such as Adobe CC, Unity Developer Tools, and Final Cut Pro video editing.

We have been fortunate to receive one time appropriated monies, as they have secured much of our student and teacher technologies. Most of the technology acquired for student use in previous years, which laid the foundation for technology use currently, has come in the form of one time competitive EETT grants. The arrival of digital state tests, and the change in State funding in the form of LCAP from the LCFF Local Control Funding Formula, arrived just in time to address our previous technology plan's goals.

Now that we have established the use of technology in the classroom as common practice, the rules that we utilized in the previous 4 years may not apply. Our acquisition of technology for student use, utilizing LCFF funding and targeted funding as detailed in the LCAP, was unique as we did not have any prior established technology for students as part of our normal practice. There was no cause for concern related to supplanting, as LCFF funded technologies for students was above and beyond our normal classroom instruction. Now that we have established technology as an integral part of regular instruction, the funding sources we use to sustain our programs have to be sure to address the supplanting issue if the rules stay the same. This concern

may be alleviated due to the fact that all State testing is now online, and mandatory. The rules related to the funding of mandated State testing should provide relief related to funding sources that support the purchase of classroom/student technology.

3g. Student record keeping

In the past four years, we have made great strides in our utilization of our student information system. Previously we had been under utilizing the capabilities and power of our Aeries student information system. It had only been used to store student demographic information, central office data, and primarily only used by teachers to take attendance. This has changed.

Today our teachers utilize the Aeries student information daily. They are still taking attendance within the system, but they are also now recording grades in digital gradebooks, communicating with their student's parents through the Aeries Parent Portal, which also provides access to parents related to their child's attendance, daily work progress through the class gradebooks, and access to report card and trimester student achievement. Teachers utilize applications such as IO (EADMS) for benchmark and formative classroom assessments that are linked directly into Aeries and the Aeries gradebook. Our Google Apps suite is linked to Aeries providing teachers with immediate accounts for new students, and the ability for teachers to create and auto-populate Google Classrooms with a single click of a button within Aeries.

The information above describes the standard uses of typical student information systems today. But when it comes to student learning, assessment and prompt feedback are essential for student learning. It is important to know how we are doing as a district overall in the instruction of our students. The Aeries student information system and supported assessment add-on tools, such as IO, provides a very good summative evaluation for how we are doing. However, the power of assessment and record keeping is when it is timely and relative to the learner. John Hattie's research demonstrates that student self-reported grades, formative evaluation, and feedback, are more effective than direct instruction, study skills, and time on task, when it comes to student achievement (<https://visible-learning.org/hattie-ranking-influences-effect-sizes-learning-achievement/>). The goal is to provide teachers with student record keeping strategies that illicit these student behaviors and as a result become an important aspect of the overall picture of student record keeping. A goal for this plan is to provide clear directions to teachers on digital tools, such as SeeSaw, <https://web.seesaw.me/>, that can provide for improved student record keeping directly related to student achievement.

3h. Two way home-school communication

As described in the previous section, our Aeries Parent/Student Portal provides parents and teachers with access to how their students are doing at school. In the communications ranking of effectiveness, the Aeries parent portal ranks high on the list of tools for two way home-school communication. In addition to the Aeries Parent Portal, we have implemented Aeries Online Enrollment that expedites the process for new families when enrolling their children into school.

The second most effective tool we utilize to communicate with parents is our BlackboardConnect system. This system provides school sites, and the district, with tools to immediately communicate with our families via voice telephone calls on both landlines and cell phones, text messaging, email messages, and multiple question surveys. Messages can be configured to utilize any method or all forms of communication at once.

District and School Websites

For the past five years the district website has been hosted on the SchoolLoop content management system. We were fortunate enough to sign a contract right before E-Rate discontinued funding support for web hosting and the SchoolLoop company began to charge a fee for hosting district websites (*their policy was to offer the district website complimentary during E-Rate supported web hosting and only charge for school site websites.*) Our district website has been hosted for free for the last five years. This will change at the end of June, 2018, as we will need to sign a new contract with SchoolLoop or purchase a complete web hosting service. We have been gathering feedback from our users related to our use of SchoolLoop and talking with competing web hosting vendors since last summer. A decision will need to be made soon as to the direction to take for web hosting.

School sites have been utilizing Google Sites to create and host their school websites. We have been offering support in their development of their school websites. Google recently updated the Google Sites system with attractive templates and ease-of-use improvements. Google Sites is part of our district wide Google Apps Suite, and as such, there is no cost to the district or schools.

A potential district website solution may be to utilize the Google Sites app as our school sites have been using.

In regards to websites, there has been many new laws that require that websites be accessible to all people, even those with disabilities. As a result, some school districts have been audited by civil rights groups to ensure that their websites are accessible to everyone. Many of the fee based web hosting companies that provide services to schools take the work of evaluating and proofing published web sites to ensure that they meet all federal guidelines for accessibility. Currently, Google Sites does not have tools to evaluate accessibility features and leave that responsibility up to the author or designer of the web site, in this case, the school site.

4. Professional Development (*Focus on the 4 Cs*)

According to our BrightBytes data, the strongest need for professional development is in helping teachers to effectively use technology to foster critical thinking skills in our students. In BrightBytes these activities are measured through the 4Cs section.

The 4Cs consist of Critical Thinking, Communication, Collaboration, and Creativity. Within each of the 4Cs are a set of data points the Bright Bytes uses to analyze each component.

1. Critical Thinking
 - a. Teachers ask students to collect data
 - b. Teachers ask students to conduct experiments and perform measurements
 - c. Teachers ask student to conduct research
 - d. Teachers ask students to identify and solve authentic problems
2. Communication
 - a. Teachers ask students to receive feedback from others in the classroom
 - b. Teachers ask students to get feedback online from someone other than them
 - c. Teachers ask students to use chat or video chat applications
 - d. Teachers ask students to use web tools to receive online information
 - e. Teachers ask students to write online
 - f. Teachers ask students to create e-Portfolios
3. Collaboration
 - a. Teachers ask students to collaborate online with classmates
 - b. Teachers ask students to collaborate online with teachers
 - c. Teachers ask students to collaborate online with students at other schools
 - d. Teachers ask students to use an online space for documents
4. Creativity
 - a. Teachers ask students to create and upload art, music, movies, or webcasts
 - b. Teachers ask students to create animations, demonstrations, models, or simulations
 - c. Teachers ask students to develop or present multimedia presentations
 - d. Teachers ask students to use a digital camera (photo or video)

The 4Cs should not be looked at in isolation. They are concepts that go together and are a major component of our State testing. The State CAASPP student assessment encompasses many of the activities described within the 4Cs.

The 4Cs components are the district's greatest potential for improvement as demonstrated in our BrightBytes data. As such, they are also the greatest need for professional development. It should be noted that in order to be successful in the 4Cs, teacher foundational technology skills must be

at a level to support the 4Cs. So, though these skills are not mentioned in this area of the technology plan, they can't be ignored. See **Appendix A** for K-5 Technology Skills Continuum and the 6-8 Technology Skills Continuum.

Professional development must be multi-dimensional and include small group delivery, individual, and collaborative opportunities for teachers to learn from each other. We encourage teachers to develop their educational social networks, and seek out examples of stellar instructional technology use in the classroom. This can occur online through #edchat discussions on platforms such as Twitter.com, to local educational technology conferences such as the ETC conference that occurs at the end of February each year and is sponsored by the Stanislaus County Office of Education.

The responsibility of professional development does not fall on one set of shoulders. It falls on multiple shoulders including the director of technology, instructional coaches, site leadership, and ultimately, on teachers themselves. We all have a responsibility to share what is working in the classroom with technology, and to communicate this information within our professional learning communities.

The data below shows that even though we have increased our daily usage of technology in the classroom, the higher order tasks to engage students in critical thinking skills are still a challenge.



Teacher-reported frequency of student computer use in the classroom

Sylvan Union Elementary

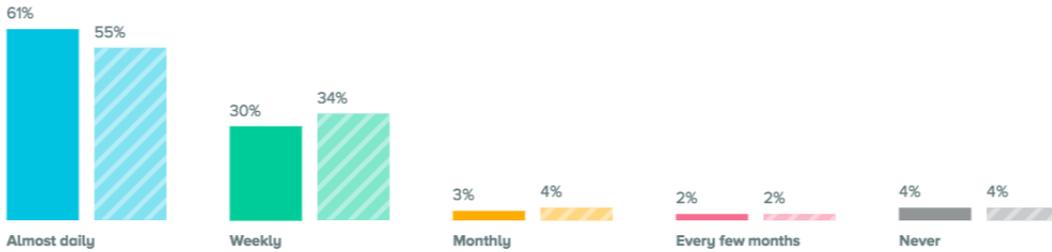
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Frequency Of Computer Use In The Classroom



COMPARE

Jan 1, 2018 to Present
Solids

Jul 1, 2017 to Dec 31, 2017
Stripes

Why This Matters

The problems of the digital divide, wherein wealthier students have more technology and access to high-speed internet than students living in poverty, makes access and use of student computers in the classroom all more important (Barone, 2012).

Citation

Barone, D. (2012). Exploring home and school involvement of young children with web 2.0 and social media. "Research In the Schools, 19"(1), 1-11.



Teachers ask students to collaborate online with classmates

Sylvan Union Elementary

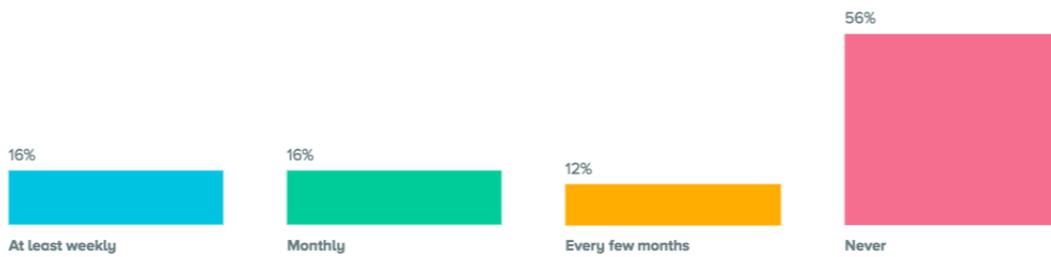
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Collaboration



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 use an online space for documents

Sylvan Union Elementary

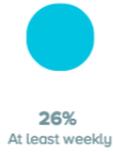
FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Collaboration



Why This Matters

Collaboration and messaging on Google docs or other messaging technologies allow teachers to sustain shared synchronous teacher-student interactions that facilitate an in-depth understanding of student needs (Velasquez et al., 2013).

Citation

Velasquez, A., Graham, C.R., & West, R.E. (2013). An investigation of practices and tools that enabled technology-mediated caring in an online high school. *The International Review of Research in Open and Distance Learning*, 14(5), 278-299.



Teachers ask students to collaborate online with teachers

Sylvan Union Elementary

FRAMEWORK: Technology & Learning

DATA FROM: Jan 1, 2018 To Present

DOMAIN: Classroom

SUCCESS INDICATOR: Teacher Use Of The 4Cs

VARIABLE: Teacher Collaboration

12% At least weekly

17% Monthly

16% Every few months

55% Never

Why This Matters

Collaboration and messaging on Google docs or other messaging technologies allow teachers to sustain shared synchronous teacher-student interactions that facilitate an in-depth understanding of student needs (Velasquez et al., 2013).

Citation

Velasquez, A., Graham, C.R., & West, R.E. (2013). An investigation of practices and tools that enabled technology-mediated caring in an online high school. *The International Review of Research in Open and Distance Learning*, 14(5), 278-299.

The previous sampling of Bright Bytes data provides a view of the areas ripe for improvement. Creating classroom instruction that combines elements of these four strategies is the beginning of teacher learning to support and develop instruction to elicit critical thinking in our students.

At this time in the district, teachers have become very familiar with utilizing technology for substitution and augmentation. These are the lower areas of the familiar SAMR model used to classify technology instruction in the classroom. Transformative new learning practices that are inquiry, investigative, and resource-based are needed in order to take advantage of the educational technologies that have been installed throughout the schools.

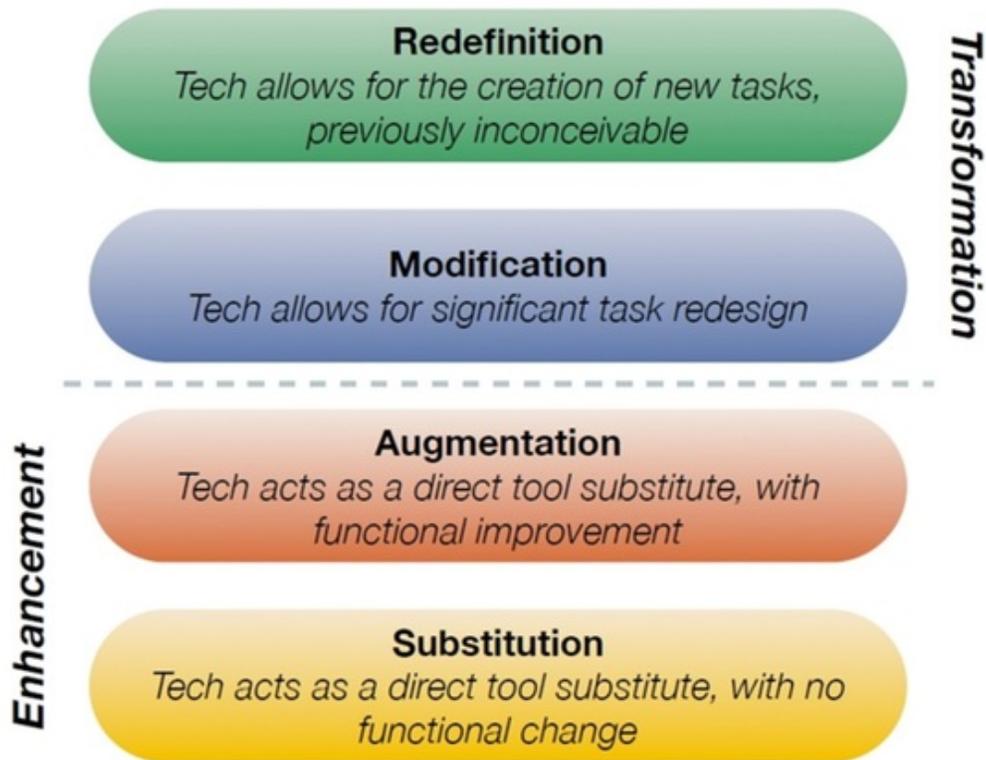


Image is the creation of Dr. Ruben Puentedura, Ph.D. <http://www.hippasus.com/trpweblog/>

We use the SAMR model, developed by Dr. Ruben Puentedura, to assist in this transformation. SAMR stands for Substitution, Augmentation, Modification, and Redefinition. All four levels of SAMR serve different purposes and can be used on a continuum depending on the task. Our goal is to support teachers as they continue to push toward the transformation of their teaching to incorporate technology in ways that modify and redefine tasks and learning outcomes for our students.

The delivery of technology professional development has been embedded in all areas of teacher learning. Technology professional development as occurred during trainings for State adopted ELA resources, such as StudySync and Benchmark Advanced, to the Leadership meetings focused on the content of Breakthrough Coaching.

Our team of certificated Instructional Coaches have conducted small group professional development for teachers in the above-mentioned ELA resources, our IO student assessment platform, and have covered topics in all areas of our district wide Google Apps for Education deployment. Several of our instructional coaches are now Google Certified and provide a level of expertise that rival many of the fee based professional development services available. In addition to the small group professional development conducted by our instructional coaches, they also work one-on-one with teachers to demonstrate instructional technology lessons, and to provide coaching and feedback to teachers as the implement technology with their students. At the district level, professional development has been offered after school and covered concepts such as utilizing Nearpod for creating student interactive presentations, which take

advantage of the fact that students have 1:1 devices. Also, professional development to teachers in the areas of classroom management, through tools such as Apple Classroom provides teachers with control over a classroom full of student iPads. Teachers can lock devices, steer students to specific web site, lock them to a specific app, and monitor the activity of students on devices, all from their teacher device. This process is handled transparently for the teacher through the integration of the Aeries Student Information System and Apple School Manager.

“Put a strong professional learning program in place that supports your vision and learning objectives before giving technology to students. Talk to teachers, explain what the initiative will look like, and work to support their needs...Encourage teachers to take risks and experiment with using new learning strategies and technologies. As they gain experience and become comfortable with integrating technology into learning, they will become evangelists to their peers. Establish professional learning communities for educators to share and learn from their experiences.”

THE Journal White Paper: Checklist for a Successful 1:1 Rollout

4. Hardware, Infrastructure, Technical Support, and Software

Existing Hardware:

In 2005, the Sylvan Union School District computer technology consisted of one to three desktop computers in a corner of the regular classrooms. Attendance, gradebooks, report cards, etc., were all done by hand using pencil and paper. The challenge 13 years ago, was just to encourage teachers to use their email. In a relatively short amount of time, the use of computer technology in school district has changed significantly. Huge shifts in society have seen the replacement of analog technologies to digital technologies, and many of our school’s processes have made that change. The technologies in our schools and classrooms continues to evolve and our challenge is to ensure that our students and educational processes keep pace.

All staff have access to computers for communication and information resources. All teachers have a dedicated teacher station, consisting of a laptop computer, document camera, digital projector, and access to a network printer. At the middle schools, in addition to the laptop, the teachers have access to an iPad tablet, similar to the device that the students receive through the 1:1 program.

We have approximately 1000 laptop computers that are being used by teachers and other staff. These laptops are comprised of Dell Latitude enterprise level computers. All Windows laptops are running enterprise level operating systems Windows 7, Windows 8, or Windows 10 versions. All Windows laptops are authenticated on to the network through Windows Active Directory. In addition to the Dell laptops we also have approximately 150 Apple Mac laptops.

| Model | Year Deployed |
|---------------------|----------------|
| Dell Latitude D510 | 2005 |
| Dell Latitude D620 | 2006 |
| Dell Latitude E5440 | 2007 |
| Dell Latitude E6500 | 2008 |
| Dell Latitude E5500 | 2009 |
| Dell Latitude E5520 | 2011 |
| Dell Latitude 6530 | 2012 |
| Dell Latitude E5530 | 2013 |
| Dell Latitude 3540 | 2013 |
| Dell Latitude E5540 | 2014 |
| Dell Latitude 3340 | 2014 |
| Dell Latitude E5550 | 2014 |
| Dell Latitude E5450 | 2015 |
| Dell Latitude 3379 | 2016 |
| Dell Latitude E5470 | 2016 |
| Dell Latitude E5570 | 2016 |
| Dell Latitude E3470 | 2016 |
| Dell Latitude 5480 | 2017 |
| Apple MacBook Air | 2008 - Present |
| Apple MacBook Pro | 2006 - Present |

** Table shows current laptop models in the Destiny inventory system. Older laptops may be currently used as emergency spares or student devices.*

Teacher station equipment is replaced when the equipment can no longer meet the needs of classroom instruction or can no longer be repaired to a satisfactory working condition. The replacement of teacher laptops will often be around five to seven years, though some laptops have gone beyond those ages and continue to be useful. Document cameras in the classroom rarely get replaced, as the technology that makes up a document camera is extremely dependable. Document cameras do get replaced when they become damaged due to accidents and can no longer be repaired. Our classroom projectors are used daily. Our Epson projectors have been fairly consistent with minimal failure. We have been told that our Central Valley air, with all our agriculture and farming, can wreak havoc on the internal components of the projectors. Due to the constant cooling required by the fans, the filters that keep the fans from blowing dirt and dust, into the electronic components can get clogged causing the projectors to overheat and burn out bulbs quickly or damage entire projectors. Our site custodians do a great job of cleaning the filters on our projectors and the technology department replaces, or repairs filters when they become damaged. The majority of our classroom projectors have been installed during past modernization projects (2012-2017). These classrooms all received short throw projectors that are mounted on arms above the whiteboard. The exceptions are our three newest schools, Crossroads Elementary School, Savage Middle School, and Sanders Elementary School, which all received pole mounted traditional classroom projectors. We continue to evaluate new teacher workstation technologies being developed and deployed in school districts, such as interactive flat screens, but costs associated with ancillary requirements such as power, networking, and mounting make pursuing new display technologies difficult.

The technology department manages support requests and laptop battery replacement on all district teacher and staff laptops. In addition, the technology department supports all district printers.

Printers are shared devices and printing is limited to staff and teachers. Students are encouraged to submit digital copies of school work whenever possible.

Student access to technology includes iPads in the middle schools, Chromebooks in the elementary schools, and computer labs at all three middle schools. All student devices are managed through server technologies that insures the devices have appropriate software and Internet access.

Computer to student ratios at the elementary schools are one computer to three students with some elementary schools nearly 1:1. Chromebooks are shared devices at the elementary schools and are secured in carts so they can be charged and easily wheeled between classrooms.

In the chart below are the numbers of devices per school site, the type of device and the last year that Google with support OS upgrades on the device.

| School Site | Device Type | Number of Device Type | Google End of Life (AUE- Auto Update Expiration) |
|-----------------|-------------------------------------|-----------------------|--|
| CF Brown | Asus C100p Acer R11 Acer C720 | 3 76 233 | July 2020 June 2021 June 2019 |
| Crossroads | Acer C720 | 323 | June 2019 |
| Freedom | HP 11 G5 Acer C720 | 33 378 | July 2021 June 2019 |
| Orchard | Acer C720 | 254 | June 2019 |
| Sanders | Acer C720 | 290 | June 2019 |
| Sherwood | Acer C720 Acer C740 Acer R11 | 279 35 40 | June 2019 June 2020 June 2021 |
| Standiford | Acer C720 HP G5 11 EE | 176 72 | June 2019 January 2022 |
| Stockard Coffee | Acer C720 HP G5 11 EE | 208 96 | June 2019 July 2021 |
| Sylvan | Acer C720 HP G5 11 EE | 176 34 | June 2019 July 2021 |
| Woodrow | Acer C720 HP G5 11 EE | 252 40 | June 2019 July 2021 |
| Savage MS | Acer C720 | 136 | June 2019 |
| Somerset MS | Acer C720 HP G5 11 EE | 180 4 | June 2019 July 2021 |
| Ustach MS | Acer C720 HP G5 11 EE | 36 2 | June 2019 July 2021 |

** When a device reaches Auto Update Expiration (AUE), it means that the product model is considered obsolete and automatic software updates from Google are no longer guaranteed.*

All middle school students are checked out a iPad tablet at the beginning of the school year with their other school materials. During the initial back to school meetings, students and parents are provided a handbook that provides tips for parents and students, the rules related to the use of the

technology, and information about the voluntary iPad insurance. Insurance for the year is approximately \$25 and covers theft, accidental damage, cracked screens, liquid submersion, flood, natural disasters, and power surge by lightning. In addition to student iPads, students have access to the school computer lab, and desktop computers in the library. In addition, specific courses have laptops and desktop to support video school news, yearbook creation, and visual arts.

| Device | Number of Devices | Year Released | Year Deployed |
|----------|-------------------|---------------|---------------|
| iPad 2 | 1000 | March 2011 | Spring 2014 |
| iPad Air | 1000 | October 2014 | Spring 2015 |
| iPad Air | 1000 | October 2014 | Spring 2016 |

** The technology committee defined the Chromebooks and iPads as daily activities. Meaning they are used every day by students to access the Google Apps Suite and State adopted material such as Benchmark Advance and StudySync. They recommended that we look at developing a plan that would allow access to higher end computers to support higher end tasks such as digital video editing, audio editing, and digital image manipulation. Currently, Chromebooks due not have the processing power, or storage capabilities, to produce any video longer than a screen capture.*

The chromebooks/iPads that are replaced with newer technology will be redistributed to the primary grades to support technology integration for grades TK-2nd grade, or traded if available for trade-in. The State Board of Education has advised that all approved textbook adoptions must include components for digital textbooks, e-books, and other interactive material. Primary grade teachers can utilize the additional chromebooks/iPads to support literacy workstations and independent reading aligned to our current English Language Arts adoption. The redistributed chromebooks/iPads will also be distributed to childcare and boys and girls club to support the homework assistance components of both programs until the devices are no longer usable.

Obsolete Equipment Process

School sites notify the business department of equipment that they are obsoleting and complete the shared spreadsheet document. This document is shared with the Business Department and Maintenance and Operations department. The technology department reviews the list and makes contact with the site to inquire about the equipment. If applicable, the technology department will salvage anything that can be repaired or used for parts. Once that is complete, the remaining materials are added to the Obsolete Equipment list and sent for board approval. Once the board approves the obsoleted materials list, the Maintenance and Operations department is notified so that they may schedule the recycler to pick up the obsolete materials at the respective sites, or to

a non-profit, such as 2nd Chance Computer Refurbishing (<http://www.2ndchancemodesto.org/>) that cannibalizes multiple, outdated, hardware, to run low powered operating systems (Linux OS), and then distributes them to low socioeconomic families in the community.

District Standards

The district has adopted standards for both hardware and software. These standards help to reduce support costs and provide a common set of applications district wide for both staff and students. The current standards for desktop and laptop computers are the Dell Optiplex, Dell Latitude models and MacBook Pro laptops. Our current standard for Chromebooks is the Chromebook 11 G6 -Education Edition. Currently this Chromebook costs \$257.35, plus \$33.78 for the Google Apps server license so that they can be managed by the server. It is important to note that Google has determined end of life dates on all managed Chromebooks. The data assigned to the model is the last date that a particular model will be supported by the Google Apps management dashboard. This information is available on the Google web site at: <https://support.google.com/chrome/a/answer/6220366?hl=en> . Google's end of life for the HP Chromebook 11G6 EE is November 2023.

In our middle school, the standard device is the current iPad. Apple does not publish an end of life for different iPad models. It should be noted that older iPad hardware reaches a point where the newer iOS operating systems are no longer supported on the device. This just means that the device is still usable, however applications will be relegated to the most recent version that is compatible with the highest available iOS version on the device. For example, our sixth grade iPads are iPad 2 devices. These devices were first released on March 2, 2011. We purchased our iPad 2 devices during the spring of 2013. The iPad 2 devices can only be updated to iOS 9. The current iOS version is 11.2.6. The important thing to note is mission critical State assessments are not tied to iOS versions, but to specific iOS apps. In this case the Air Secure Browser app that students use on the iPads. This app is still compatible with iOS 9, so student devices are still eligible to be used for State testing.

The district has also deployed iPad tablets to administrators, speech and special education teachers. Some schools have also begun evaluating their use with students and teachers. Students at some of the elementary schools have access to iPads and are either used in a shared deployment, or individually based on student independent learning plan.

Infrastructure

Infrastructure are the components necessary to make the user devices operate effectively in an enterprise environment. These components consist of the servers, the cabling and cabling components (patch panels, wall plates, cable terminations, etc.), network electronics including switches and routers, WIFI Access points, and the services and software that run across the infrastructure to manage all the devices.

Servers

The technology department manages 30 separate servers across the district. These servers are located at each of our sites. The servers run necessary DNS (Domain Name Services,) DHCP (IP addressing and assignment services,) file share services, print share services, SMTP email relay services, Active Directory (user and group account management for sign on and permission access) and other services essential for the technology to run smoothly. In addition, the department supports the server hardware that is running Food Services applications, Maintenance and Operations (Johnson Controls) applications, and Child Care applications.

In addition to the Windows servers, the technology department manages three caching servers that facilitate the management of the three thousand student iPads. These servers cache content locally and prevent iPads from needing to go out over the Internet to download applications and updates. This reduces out network traffic and enables us to better utilize our available network bandwidth.

Finally, we manage the district Destiny Library system that is used by all sites to manage circulation and inventory of textbooks, instructional resources, computers, Chromebooks and iPads.

| Site | Server OS | Description |
|-----------------|---|---|
| District Office | PowerEdge T610 Server Windows Server 2008 R2 Enterprise | Windows Services |
| Standiford | Dell T420 Server Server 2012 R2 | Windows Services |
| District Office | Dell ES 5405 Server Server 2008 R2 | Aeries (historical on prem.) |
| District Office | Dell E5405 Server Server 2008 R2 | ABI - BBCconnect Mail Relay |
| District Office | Dell PowerEdge R520 Server 2012 R2 | Historical Aeries SQL DB |
| District Office | Dell E5-2603 Server Server 2012 R2 | Destiny Library and Resource Manager |
| Sherwood | PowerEdge 2900 server Server 2008 R2 St | Windows Services |
| Woodrow | Dell X5450 Server Server 2008 R2 | Windows Services |
| Brown | Dell 5160 Server | Windows Services |

| | | |
|---------------------------|--|------------------------------|
| | Server 2008 R2 | |
| Orchard | Dell 5450 Server Server 2008 R2 | Windows Services |
| Somerset | Dell 5620 Server Windows Server Enterprise | Windows Services |
| Stockard Coffee | Dell X3470 Server Windows Server Enterprise | Windows Services |
| Sylvan | Dell ES E5 2640 Server Server 2012 R2 | Windows Services |
| Ustach | Dell E5649 Server | Windows Services |
| Freedom | Dell 5160 Server Server 2008 R2 | Windows Services |
| Sanders | Dell X 5355 Server Server 2008 R2 | Windows Services |
| Savage | Dell E5-2640 Server Server 2012 R2 St | Windows Services |
| District Office | Dell E5 -2640 Server 2012 R2 | Quest Back-up (AppAssure) |
| Crossroads | Dell E5 2620 Server Server 2012 R2 | Windows Services |
| Savage (Student Server) | Dell 5420 Server Server 2008 R2 | Windows Services (students) |
| Food Services/Maintenance | Dell E5410 Server 2008 R2 | Windows Services |
| District Office | Dell E5620 Server Server 2008 R2 Enterprise | Windows Services |
| Child Care | Dell 5160 Server Server 2008 R2 | Windows Services |
| District Office | Mac OS X Server MacMini Server | Caching Services |
| Ustach | Mac OS X Server MacMini Server | Caching Services |

| | | |
|--------|-----------------------------------|------------------|
| Savage | Mac OS X Server MacMini Server | Caching Services |
|--------|-----------------------------------|------------------|

Wide Area Network and Local Area Networks

The 2016-2017 school year was our first full year using our, E-Rate supported, Comcast Metro Fiber WAN (Wide Area Network.) Previously, our WAN was supported by the cable franchise INET agreement and we had been receiving district wide connectivity between sites and to the Stanislaus County Office of Education without yearly fees. All sites are now connected to the district office via the Comcast Metro Fiber WAN, and the district office is connected via fiber to the County Office of Education. Bandwidth between the sites supports data transmission in all electronic formats. Local area networks (LANs) are in place and working at all locations. We have a gigabit (1000GB) WAN backbone, with the exception of Crossroads, located in Charter Communications territory, and as of this writing, running at 100MB speed to the WAN. This network topology and infrastructure will support the transmission of all electronic resources and data.

Local Area Networks at the site have 1000MB (1GB) connections to the WAN and to all WIFI access points. Wired connections to data drops in the classroom our running at 100MB from the IDF (intermediate distribution frame.)

The majority of our network traffic at the school sites now travels over WIFI. We recently finished the second stage of our District wide WIFI project. This project was supported with E-Rate funds and as a result we now have 464 WIFI access points across the district. These access points are located in each classroom and in office locations and support the increased number of devices on campus. All access points are controlled by two servers that the technology department manages.

| Site | Server OS | Description |
|-----------------|--------------------------|---|
| District Office | Ruckus ZoneDirector 3000 | 32 - Ruckus R500 Access Points 222 - Ruckus R600 Access Points |
| District Office | Ruckus SmartZone 100 | 210 - Ruckus R500 Access Points |

Networks through our campuses are designed using a star topology. There is a central location, referred to as the MDF (Main Distribution Frame) and the satellite locations that are referred to as IDFs (Intermediate Distribution Frame). IDFs all connect back to the central MDF location via fiber. All MDFs district wide connect back to the District office MDF. The District MDF

connects to the Stanislaus County Office of Education, which also serves as our local DCP (Digital California Project) Node. From the DCP node we get out to the educational, CENIC network, and the greater Internet.

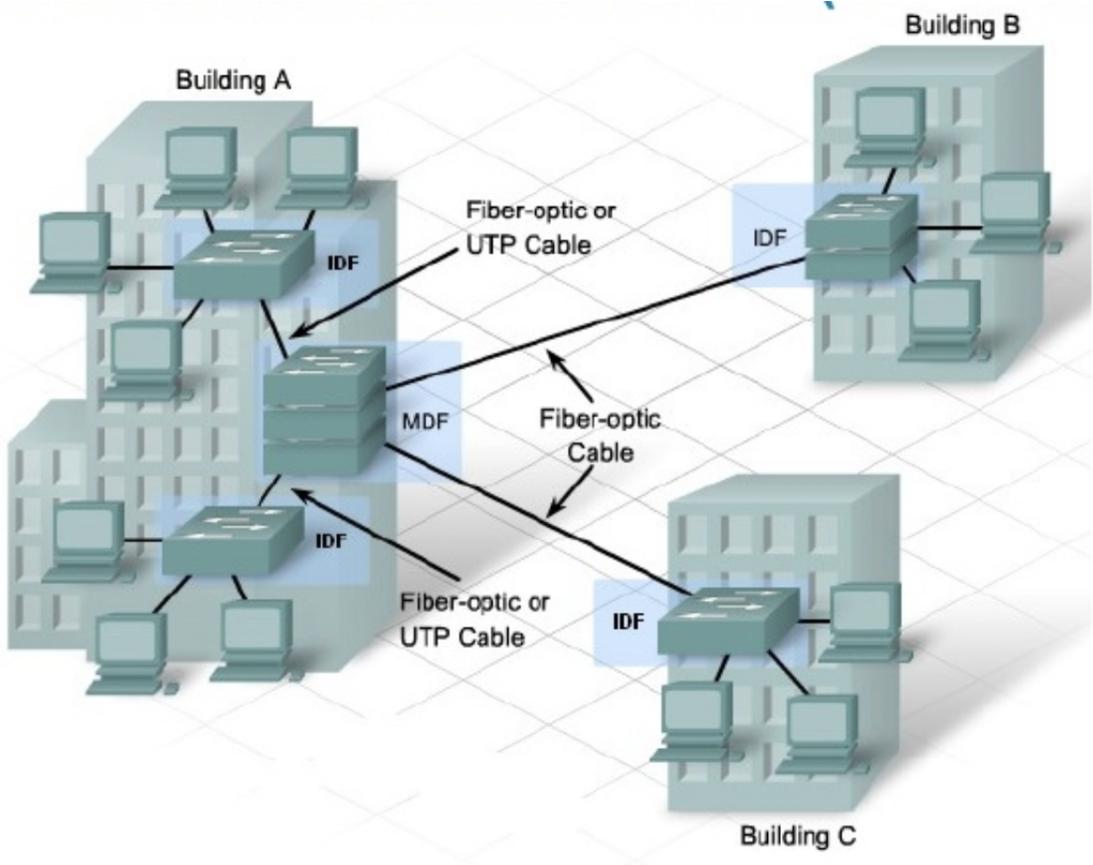


Illustration courtesy of <https://www.slideshare.net/mberner/d3chapter-2routing-and-switching-in-the-enterprise>

Within each MDF and IDF are a series of cable patch panels and network switching equipment. This equipment connects to every data drop in the school and to the Ruckus WIFI access points. Depending on the size of the school, there will be multiple IDFs located on a site campus.

The following chart is a listing of the current network technology in each MDF and IDF at each school site.

| Site | Distribution | Electronics/Switching | Approximate Deployment |
|-----------------|--------------|-----------------------|------------------------|
| District Office | MDF | Cisco 4500X | 2016 |
| | MDF | Cisco 2960X | 2013 |
| | MDF | Cisco 2960X | 2013 |
| | IDF | Cisco 2960G | 2012 |

| | | | |
|----------|---------------|--|------|
| | | | |
| CF Brown | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | MDF | Cisco 2960X 24port | 2016 |
| | MDF | Cisco 2960S | 2010 |
| | IDF 10 | Cisco 2960 | 2010 |
| | IDF 50 | Cisco 3560X 12 port | 2016 |
| | IDF 20 | Cisco 2960 | 2010 |
| | IDF 40 | Cisco 2960 | 2010 |
| | IDF 60 | Cisco 3560cx - 12 port | 2016 |
| | | | |
| Sherwood | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | MDF | Cisco 3560 24 Ports | 2016 |
| | IDF Library | Cisco 3550 - 24 port | 2016 |
| | IDF 30 | Cisco 2960s - 48 port | 2014 |
| | IDF 40 | Cisco 2960S - 48 Port | 2014 |
| | IDF 50 | Cisco 2960S - 48 Port | 2014 |
| | IDF 10 | Cisco 3560 - 48 Port | 2016 |
| | | | |
| Somerset | MDF (Library) | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | MDF | Cisco 2960X 24 Port | 2015 |
| | MDF | Cisco 2950 | 2005 |
| | MDF | Cisco 3508 | 2005 |
| | IDF 10 | Cisco 2950 | 2005 |
| | IDF 20 | Cisco 2950 | 2005 |
| | IDF 30 | Cisco 2950 | 2005 |
| | IDF 40 | Cisco 2950 | 2005 |
| | IDF 50 | Cisco 2950 | 2005 |
| | IDF 60 | Cisco 2950 | 2005 |
| | IDF MPR | Cisco 2950 | 2005 |
| | IDF 80 | Cisco 2960X 24 Port | 2015 |
| | IDF 90 | Cisco 2950 | 2005 |

| | | | |
|-----------------|----------------------|--|------|
| | IDF 70 | Cisco 2950 | 2005 |
| | MDF | Cisco 3560-CX 8 PoE | 2015 |
| | | | |
| Standiford | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | IDF 10 | Cisco 2950 | 2005 |
| | IDF (Cust) | Cisco 2960 | 2015 |
| | IDF Core | Cisco 2960 48 Port | 2015 |
| | IDF 20 | Cisco 2960 | 2015 |
| | IDF 30 | Cisco 2960 | 2015 |
| | IDF 50 MPR | Cisco 3560 12 Port | 2016 |
| | | | |
| Stockard Coffee | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | MDF | Cisco 2950 | 2007 |
| | MDF RM 11 | Cisco 2960X 24 Port | 2015 |
| | MDF | Cisco 2960 | 2015 |
| | MDF | Cisco 2950 | 2005 |
| | IDF 20 | Cisco 2950 | 2005 |
| | IDF 20 | Cisco 2960 48 ports | 2015 |
| | IDF 10 (MPR) | Cisco 3560 12 Port | 2016 |
| | | | |
| Sylvan | MDF | Cisco 3850 | 2017 |
| | MDF Office | Cisco 2960X 24 Port | 2015 |
| | MDF | Cisco 2960 48 Port | 2015 |
| | IDF 10 | Cisco 2960 24 Port | 2015 |
| | IDF10 (Library) | Cisco 2960 24 Port | 2015 |
| | IDF 20 RM 20 Storage | Cisco 2960X 24 Port | 2015 |
| | IDF 50 | Cisco 2960 X 48 Port | 2015 |
| | | | |
| Woodrow | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | IDF 10 | Cisco 2960S 48 Port | 2014 |
| | IDF 20 | Cisco 2960S 48 Port | 2014 |

| | | | |
|---------|------------------------|--|------|
| | IDF 30 | Cisco 2960S 48 Port | 2014 |
| | IDF 40 | Cisco 2960S 48 Port | 2014 |
| | IDSF 50 | Cisco 2960S 24 Port | 2014 |
| | IDF 60 | Cisco 2950 24 Port | 2007 |
| | IDF 60 MPR | Cisco 3560 12 Port | 2016 |
| | IDF Core | Cisco 2960 | 2014 |
| | | | |
| Ustach | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | DF 90 (rm 97) | Cisco 2960X 24 Port | 2015 |
| | IDF 80 (rm 84) | Cisco 2960X 24 Port | 2015 |
| | IDF 60 (rm 64) | Cisco 2960X 24 Port | 2015 |
| | IDF Office | 35XL | |
| | MDF (Library bathroom) | Cisco 3560A TS | 2015 |
| | MDF (Library bathroom) | Cisco 3560A | 2018 |
| | MDF (Library bathroom) | Cisco 2960X 24 Port | 2015 |
| | IDF 40 (rm 44) | Cisco 2960X 24 Port | 2015 |
| | IDF 20 (rm 23) | Cisco 2960X 24 Port | 2015 |
| | | | |
| Orchard | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | IDF 20 (rm 21) | Cisco 3560cx- 8 port | 2015 |
| | IDF 7 (portable) | Cisco 3560cx- 8 port | 2015 |
| | IDF 7 (portable) | Cisco 2950S 24 Port | 2005 |
| | IDF 3 | Cisco 2960x 24 Port | 2015 |
| | IDF 4 | Cisco 2960x 24 Port | 2015 |
| | IDF 5 | Cisco 2960x 24 Port | 2015 |
| | MDF | Cisco 2960x 24 Port | 2015 |
| | MDF | Cisco 2960x 24 Port | 2015 |
| | IDF 6 (MPR) | Cisco 3560 CX 8 Port | 2015 |
| | | | |
| Freedom | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | IDF 1 | Cisco 2950G-48 | 2005 |

| | | | |
|---------|------------------------------|--|------|
| | IDF 1 | Cisco 3560CX-12P | 2016 |
| | IDF 2 | Cisco 2950G-48 | 2005 |
| | IDF 2 | Cisco 3560CX-12P | 2016 |
| | IDF 3 | Cisco 2950G-48 | 2005 |
| | IDF 3 | Cisco 3560CX-12P | 2016 |
| | IDF 4 | Cisco 2950G-48 | 2005 |
| | IDF 4 | Cisco 3560CX-12P | 2016 |
| | IDF 5 (Office) | Cisco 2950G-24 | 2005 |
| | IDF 5 (Office) | Cisco 2960X-24P | 2013 |
| | IDF 6 (Gym) | Cisco 2950G-24 | 2005 |
| | IDF 6 (Gym) | Cisco 3560CX-12P | 2016 |
| | IDF Relos | Cisco 2950G-24 | 2005 |
| | IDF Relos | Cisco 3560CX-12P | 2016 |
| | IDF 2 Relos | Cisco 3560CX-12P | 2016 |
| | MDF (Library) | Cisco 2960x 24 Port | 2013 |
| | MDF | Cisco 2950G-48 MDF | 2005 |
| | | | |
| Sanders | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | IDF 20 | Cisco 2960X 24 Port | 2015 |
| | IDF 20 | Cisco 3560 24 Port POE | 2013 |
| | IDF 30 | Cisco 2960X 24 Port | 2015 |
| | IDF 30 | Cisco 3560 48 port POE | 2013 |
| | IDF 40 | Cisco 2960X 24 Port | 2007 |
| | IDF 40 | Cisco 3560 - 48 Port POE | 2013 |
| | IDF 50 | Cisco 2960X 24 Port | 2015 |
| | IDF 50 | Cisco 3560 - 48 Port POE | 2013 |
| | MDF Core ? Replaced by 3850? | Cisco 3750 x 2 | 2007 |
| | | | |
| Savage | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | MDF Stack | Cisco 3750G - 12S | 2013 |
| | MDF Stack | Cisco 3750G-24T | 2013 |

| | | | |
|------------|------------------|--|------|
| | MDF Stack | Cisco 3750G-24T | 2013 |
| | IDF 20 | Cisco 3560-48 | 2013 |
| | IDF 20 | Cisco 3560-48 | 2013 |
| | IDF 20 | Cisco 2960X-24P | 2015 |
| | IDF 30 | Cisco 3560-48 | 2013 |
| | IDF 40 | Cisco 2960X-48 (replaced) | 2015 |
| | IDF Gym 50 | Cisco 3560-24 | 2013 |
| | IDF MPR 60 | Cisco 3560-24 | 2013 |
| | IDF 70 | Cisco 3560-48 | 2013 |
| | IDF 80 | Cisco 3560-48 | 2013 |
| | | | |
| Crossroads | MDF | Cisco Catalyst 3850 12 Port 10 GB Fiber Switch | 2017 |
| | MDF | Cisco 2960X-24P | 2015 |
| | IDF 20 Kinder | Cisco 3560 | 2007 |
| | IDF 20 Kinder | Cisco 3560CX-12P | 2015 |
| | IDF 30 C Wing | Cisco 3560 | 2007 |
| | IDF 30 C Wing | Cisco 2960X-24PS | 2015 |
| | IDF 50 D Wing | Cisco 3560 | 2007 |
| | IDF 50 D Wing | Cisco 2960X-24PS | 2015 |
| | IDF 40 E Wing | Cisco 3560 | 2007 |
| | IDF 40 E Wing | Cisco 2960X-24PS | 2015 |
| | IDF 60 Portables | Cisco 3560 | 2007 |
| | IDF 60 Portables | Cisco 3560CX-12P | 2015 |

Network Infrastructure Software and Services

Software runs on the network switches that controls IP routing and enables devices to communicate with each other. Servers on the network control DNS (domain name services) and enable users to access websites by familiar web addresses, rather than numeric IP addresses, and

DHCP (dynamic host configuration protocols) services provide every device with a unique IP address. Without an IP address, devices cannot communicate on the network.

Additionally, our Windows servers authenticate users on the network by requiring a username and password, and upon authentication provide the user with appropriate user access based on their credentials.

Web filtering for students and staff is handled by the Securly web filter server. Restrictions are set and deployed to both students and staff and adhere to the requirements of the Child Internet Protection Act (CIPA.) In addition, the Securly filter automatically audits all student documents and email messages. It uses artificial intelligence and keyword search terms to flag questionable documents and email messages. Messages flagged by the auditor are sent to the Director of Technology who reviews them and forwards them on to school counselors, or site administration, when appropriate.

Technical Support

The technology department consists of the Director of Technology, three computer technicians, and the department secretary. The technology department secretary is a new position to the department as of February 2017.

Computer Technician Responsibilities

- Assist in the initial set-up of computer equipment, including the installation of identified applications and new users on the network.
- Install and troubleshoot software.
- Maintain an inventory of computers and repair parts.
- Maintain a service/preventative maintenance log.
- Pick up and deliver equipment as necessary.
- Perform related duties as assigned.

Department Secretary

- Serves as secretary for the Director of Technology Services.
- Prepares, monitors, and maintains department files, budgets, service contracts, purchase orders, etc. Prepares and maintains documents and records for related committees, department plans, department trainings, compliance reporting requirements, etc.
- Provides customer service to the district related to user accounts, passwords, etc. on various platforms.
- Coordinates calendar, facilities, registration, logistics, budget and reports for technology services department trainings.
- Coordinates the district user support system with Technicians to ensure timely response to user needs.
- Performs other clerical duties as assigned.

Director of Technology (Classified)

- Direct the design, maintenance and installation of the school site and District information systems, networks, associated technologies and client-based applications.
- Apply for and understand government grants and the appropriate corresponding regulations and guidelines
- Maintain a knowledge and understanding of industry standards relating to technology.
- Develop and administer policy guidelines, system standards and operating procedures; interpret policy, and establish goals for the Information Technology Department.
- Assist in the development, implementation, modification and evaluation of district/school site technology plans.
- Participate in the development of long and short-range plans for the configuration and usage of the mainframe computer system, Local Area Networks (LAN) and Wide Area Networks (WAN). Forecast needs and requirements provide recommendations, direct the design and implementation of systems and procedures for improving efficiency of operations.
- Performs economic and technical feasibility studies for new hardware and software requirements. Review and recommend mainframe, networking, and PC equipment specifications district-wide.
- Develop and implement standards for hardware and software purchases and installations.
- Coordinate activities with other district departments and outside agencies and organizations.
- Provide guidance and leadership in the District's Staff Development Component for Technology.
- Evaluate technology innovations and monitor technology standards to make recommendations regarding the most cost-effective District use of technology.
- Monitor and evaluate the scheduling of computer installation, maintenance and repairs.
- Meet with and maintain quality relationships with vendors for the mutual benefit of both parties.
- Communicate with users to help solve problems with District applications and procedures in an understandable language.
- Design methods for the preparation and maintenance of records related to passwords, licenses, work orders and other computer-related matters.
- Train, evaluate and supervise personnel in the Information Technology Department.
- Research, prepare and present oral, written, and electronic reports as necessary.
- Maintain necessary records.
- Develop and administer assigned budgets; direct the forecast of and recommend additional funds needed for staffing, equipment, materials and supplies.
- Assume related responsibilities and perform related duties as required.

District Wide Software

Aeries Gradebook - The Aeries gradebook is the district standard. The Technology Department supports all teachers and manages access to teacher gradebooks.

Aeries Online Enrollment - Aeries Online Enrollment is the online student registration system we began using in 2017. Online enrollment allows our parents to easily complete all the necessary paperwork to enroll their children in our schools. Information is accessible by the school site once completed by the parent and facilitates an improved and sped up process when parents arrive in person for verification.

Aeries Report cards - The Aeries report card is the district standard for all grade levels.

Aeries Web & Aeries Parent Portal - Our District student information system is Aeries. It is a web based application that is accessible from any network connected device, including mobile devices. User accounts and access permissions are managed by the Technology Department.

Apple School Manager - Apple School Manager is the companion server application to our JAMF and Mosyle MDM applications. ASM combines three key components of managing Apple devices in our schools, device management, formerly known as DEP (Device Enrollment Program,) user and roster management achieved through connecting to Aeries SIS using APIs, and Apps and Books management (formerly known as the Volume Purchase Program (VPP.))

Benchmark Advance - Benchmark Advance is the elementary school technology component of our State adopted ELA materials. The technology department manages teacher accounts, student accounts and technical support issues.

Blackboard Connect - The District standard for auto dialer and community messaging is Blackboard Connect. The technology department manages user accounts and permissions, student accounts for our county school students on our campuses and not in Aeries, and the SQL scripts connecting our Aeries SIS for automating attendance and tardy calls.

BrightBytes - BrightBytes is our district system for measuring the year to year effectiveness of our district programs, including technology and our district LCAP plan. The data supplied by the system can be found in this technology plan and is used to measure improvement over time regarding key components. The BrightBytes system collects data twice each year, once in fall and again in the spring for comparison purposes.

California Streaming - California Streaming (<http://www.californiastreaming.org>) is a video service that we utilize through the Stanislaus County Office of Education. The technology department creates and manages accounts for teachers and staff.

Clever (SSO) - Clever is a tool for single sign on capabilities. It is used to simplify the process of student logins to applications such and BenchMark Advance in the elementary schools. Clever uses APIs that allow it to sync with our Aeries SIS. One feature of the Clever system is to allow students to login to Benchmark utilizing a QR code the student holds up to the Chromebook camera. Other Chromebook applications that are being used with Clever include Typing.com.

Destiny Library and Resource Manager - Destiny is the district wide library system. The web based Destiny system provides each site with the ability to check out books and resources to both students and teachers. It allows students to access the library collection from any networked device, or even from home. It also allows school sites to keep track of resources such as Chromebooks, iPads, teacher laptops, document cameras, etc. etc. The technology department manages the server and SQL database that runs the Destiny Library system and keeps the software up to date.

FrontLine - Time and Attendance - The Business Department in collaboration with Human Resources and Technology departments deployed systems to track classified work hours. This information is necessary for wage and hour compliance. The technology department supports these systems at each site by managing and updating software and insuring that computer and scanner equipment are up to date and in working condition.

GAM - GAM (Google Apps Management) is a free Python based command line application that is used in conjunction with the Google Apps for Education Suite. It allows for bulk operation and reporting that is normally found in third party Google Apps Suite tools for a fee. It is used by the technology department to easily create accounts and run bulk operations such as reports on our Google Apps domain.

Google Apps for Education - Sylvan Union School District has been using Google Apps for Education suite for over 5 years now. It is used by all staff and students for email, word processing, presentation, website creation, video communication, graphics, and unlimited file storage. Google makes Google Apps for Education free to schools. The technology department manages all Google Apps users and settings and permissions related to the Google suite of tools and apps in the Google store.

Google Sites - Google Sites is part of the district wide implementation of Google Apps for Education. It plays a prominent role in our school sites' communication with parents and the community. Sites is the web publishing system our schools use to create their school websites. The technology department supports all sites in the development of their school websites utilizing Google Sites.

HR Laserfiche Workflow System - The Human Resources Department in collaboration with the Stanislaus County Office of Education has developed a LaserFiche workflow system for onboarding new employees to the District. New employees are tracked through the human resources department and then through the technology department to ensure that Windows accounts, email accounts, and district group assignments are created for new employees.

IO (Formerly EADMS) - IO is the digital assessment system used in the district for formative and benchmark assessments district wide. IO uses APIs (applications programming interface) in Aeries to manage student accounts, rostering, and teacher accounts. The technology department manages and configures the API to insure accurate connections between both IO and Aeries.

JAMF Mobile Device Management System (Middle Schools) - The JAMF MDM (Mobile Device Management) system is used to manage our more than 3000 middle school iPads. It is used to secure devices, to restrict and push applications, to update devices, to recover lost devices, to manage classroom and rostering for things such as Apple Classroom, and to generate reports on device usage and device specs. The JAMF MDM works in conjunction with the Apple School Manager services to provide a controlled environment for student school devices.

KeepnTrack - KeepnTrack is the system that Student Services deployed to all school sites to ensure that visitors to our schools and classrooms meet district security guidelines. It is a web based system that scans volunteer credentials and verifies the visitor before allowing them access to school grounds and student classrooms.

McGrawHill StudySync - StudySync is the middle school technology component of our State adopted ELA materials. The technology department manages teacher access codes, student and teacher accounts, student access codes, and technical support issues.

Mosyle MDM - Mosyle is another MDM that we are using as a freemium tool at Sylvan Elementary School. Mosyle has a limited free component that allows for some management and control of school iPads. Sylvan has a shared cart of about 30 iPads that they are using Mosyle with to do some basic app management of the devices. Mosyle also works with Apple School Manager for provisioning of school devices, and Apple app store for education integration. The technology department works with the library media specialist to manage their iPads using Mosyle.

Microsoft Office (Staff only) - All Teachers and Staff have access to Microsoft Office for accessing files received in these formats.

MyTechDesk Support Ticket System - MyTechDesk Support Ticket system is a web based system that the technology department uses to allow district employees to request technical support. The system provides the department with the ability to assign, track and document the work to resolve technical and technology support requests. This application is provided free of charge through the Imperial County Office of Education.

PeachJar - Peachjar is our digital document and parent flyer distribution system. Gone are the days of making hundreds of copies of parent flyers or information about little league sign up day. Organizations wishing to distribute flyers to students and parents at our schools submit that information to the district office and then digital copies are loaded and shared via the school website through the Peachjar link on their school website.

QCC - QCC, which is managed and supported by the Stanislaus Office of Education, is used at all sites to track purchasing information and all district business and human resources related data. The technology department manages the installation and technical support requests related to the use of QCC.

Rosetta Stone (ELD) - EL teachers utilize the web based Rosetta Stone application for language support for second language students.

SchoolLoop (District Website) - The District currently uses SchoolLoop for publishing the District website. This is a multi-user tool that allows for district employees to publish content on the district web site. We have been using SchoolLoop for free due to a contract that we signed five years ago. This contract ends at the end of June, and is one of our identified needs further down in this plan.

Securly Web Filter - Securly is the district wide Internet filter. The filter prevents students and staff from inadvertently accessing inappropriate web content. In addition, Securly has a tool titled Auditor built into the filter. This tool audits every student email and all Google documents for inappropriate or questionable content. The Auditor uses AI and keyword search terms to scan email and documents. When an email or document is flagged, a copy of it is forwarded to the Director of Technology for review. From there it is forwarded to the school counselor, site administration, or responded to by the Director of Technology. In addition, Securly has a new parent portal that we have been testing and will be rolling out next year to all parents. This feature allows parents to get a weekly report of their child's Internet access at school and at home. Securly also filters the student iPads when students access the Internet from home.

Windows Active Directory - All users with Windows computers are authenticated on to the District network. Their login accounts and permissions are created and managed by the technology department.

Windows Defender - Windows Defender is our standard anti-virus and malware software. It comes with Windows ten and is replacing our older fee based MacAfee Antivirus solution. Windows Defender is free and comes included with Windows 10.

Technology Needs

Network hardware

The technology department continues to systematically replace old network equipment. Through past school modernization projects, and the Federal E-Rate program we have managed to replace aging network electronic equipment. The network equipment deployment dates provide a guide for which equipment is ready to be replaced in the next round of E-Rate.

In addition, key network components will need new SmartNet Agreements to ensure that if the event of a failure, we could get them up and working quickly. As the core switches at each school sites MDFs were replaced this year, the need for SmartNet agreements has been eliminated as the device warranty covers those core site switches. The three-core network electronic switches that require ongoing SmartNet agreements are:

1. District Office MDM - Cisco 4500 Core Router - This device connects all our sites to the County Office and the Internet.
2. Ruckus ZoneDirector3000 - This server/controller manages half of all the district WIFI access points.

3. Ruckus SmartZone 100 This server/controller manages the other half of all the district WIFI access points.

The majority of our network users in the district connect to the network over the WIFI.

The technology department also recommends continuing to budget 10 hours of AMS support time as it relates to network electronics configuration on an as needed basis.

Servers

We continue to replace our site servers each year. We have been replacing 2-3 servers each year and we have been utilizing refurbished server hardware with extended warranties to keep costs down.

Classroom Projectors

We anticipate an increase in the number of repair requests for classroom projectors over the next three years. Classroom projectors were installed during the modernization projects at each of the school sites. As some of these modernization projects occurred several years ago, the projectors installed during those projects will begin to show their age from constant daily usage. We are beginning to explore vendors, including Epson, for repairing of internal components, power supplies, motherboards etc. It is our hope to repair projectors rather than replacing projectors as replacing could require additional work in mounting newer projectors to existing mounting equipment.

Teacher Laptops

We are continuing on the cycle of replacing teacher/staff laptops that are between 6 - 7 years old. Our replacement numbers have been around 35-40 laptops each Summer.

Student Technology Hardware

The technology department has seen an increase in the number of support requests for both Chromebooks and iPads. This is directly related to the amount of use the devices have received and age of the equipment. We continue to replace screens on Chromebooks and iPads, keyboards on Chromebooks, and internal batteries when devices no longer charge when plugged in. To this date, we have not replaced any broken devices with a new device and have either repaired, or in extreme cases obsoleted the device and used it for parts.

Our chromebooks are coming up on a EOL (End of Life) date dictated by Google. This EOL date is the last date that Google will support OS (operating system) updates and management capabilities on a specific device. An EOL date does not mean the device will completely stop working. It just means that the device is no longer supported by Google if something changes in terms of the Google apps ecosystem. Currently, we have quite a few Google Chromebooks that will be meeting their EOL date at the end of June 2019. These devices are our Acer 720 Chromebooks. These devices make up the majority of our student Chromebooks. We will continue to research the potential pitfalls of using devices that have reached their EOL and continue to work with the business department on ways to fund replacing this equipment. It should also be noted that Google is listening to its users. The actual EOL date on the Acer 720

Chromebooks was originally earlier than June 2019. But an outcry from schools and districts using the device, encouraged Google to push the date back.

Student iPad devices are in a similar stage as our student chromebooks. Our 6th grade iPads do not have a EOF date, but they have reached a point where the hardware electronics is no longer powerful enough to support the new iOS operating systems. The 6th grade iPads are topped out at iOS 9.3.5. This means that they are only able to utilize apps that are compatible with iOS 9.3.5. Any apps that are updated to take advantage of new iOS capabilities will not run on the older 6th grade iPads. This is not a problem, as the apps that we originally deployed on these devices work fine. A problem may arise when a necessary app, such as the Air Secure Test Browser, that we use for testing, is updated and no longer supports the older iOS and devices. This would require a change at the site level for how state testing is administered.

This problem is not unique to iPads, and occurs with laptops and desktop computers too. We will continue to work with the business department on creative ways to fund updating the middle school student technology, and extend the useful life time of the older equipment.

When student technology devices are updated, the older technology devices will be migrated down to the primary grade levels to support the ELA program. Older devices will continue to be utilized to support instruction until their use is no longer at an acceptable level. At that time, we will begin the obsoleting process to salvage and recycle the hardware.

Support Needs

Advances in technology have made deploying thousands of computer devices easier than what it was 10 years ago. That being said, other advances in our digital world have not had the same results. Using technology, we can get a lot more work done than what we could do in the past. However, the technology that is behind those increases has resulted in a higher reliance on the network and network equipment, the servers that run the tools we use, and the knowledge related to managing the all the different systems that comprise our everyday tools.

Additionally, the lower cost devices that students now have access to have increased the physical number of devices in our schools. The amount of support tickets the technology department receives is increasing as the equipment ages.

In December, our most senior technology department team member retired. His job description was technology specialist. His primary job responsibilities were servers, network infrastructure and preventative maintenance. Since his retirement, his job responsibilities have been absorbed by the director of technology.

By July 2018, we anticipate the department will consist of the director of technology, two computer repair techs, and a department secretary.

It is recommended that the district acquire a yearly support contract with a local vendor to provide 8-5 support in the case of a network, switch, or server failure, and scheduled updates.

This will provide some level of knowledge redundancy related to the higher-level skills required to run the technology and learning tools of our organization.

4. Funding and Budget

List of established and potential funding sources:

- General Fund
- Categorical: Title I
- Lottery
- Facilities Budget: State construction funds (*Possibly with board approval*)
- Site budgets
- Grants
- Business partnerships (in-kind)
- E-Rate (Telecommunications)
- K-12 EdTech Vouchers
- Donations
- E-Rate (Internal Connections)

3 Year Ongoing Budget (*All previously budgeted with the exception of the network/server/communications support hours.*)

The final entry in the budget chart below describes a support contract for additional support in the areas of Network/Server/Communications technologies. The biggest challenge we currently have in the technology department is providing teachers with instructional support in the classroom. Demonstrating to teachers the way they can use technology to enhance their classroom instruction. In the technology department, those responsibilities rest with the director of technology. Unfortunately, the progress we have made in the area of technology have created additional work and challenges that have prevented the department from addressing this goal. The retirement, of the Technology Specialist, in December, has only highlighted the need for additional Network/Server/Communications support. The support contract will provide some assistance in regards to updating servers, yearly E-Rate projects, network maintenance and support, planning and future implementation of a new district wide telephone system, WAN and LAN support, and WIFI management. In place of those responsibilities, the director will be empowered to visit individual classrooms and work with teachers on improving their

instructional technology integration, consult with principals, and provide additional professional development to staff and teachers.

| Year | 2018-2019 | 2019-2020 | 2020-2021 |
|---|------------------------|------------------------|------------------------|
| Aeries Renewal | \$26,447.00 | \$26,447.00 | \$26,447.00 |
| Destiny Library Sys | \$18,000.00 | \$18,000.00 | \$18,000.00 |
| JAMF MDM | \$18,696.00 | \$18,696.00 | \$18,696.00 |
| SMART Net Agreement Core District Switch | \$1,641.60 | \$1,641.60 | \$1,641.60 |
| Ruckus Zone Director 3000 Maintenance | \$6,285.00 | \$6,285.00 | \$6,285.00 |
| Ruckus SmartZone 100 | \$6,000.00 | \$6,000.00 | \$6,000.00 |
| AMS 10 Hour Open Support | \$1,200 | \$1,200 | \$1,200 |
| (2) Server Replacements | \$6,000 | \$6,000 | \$6,000 |
| Teacher Laptop Refresh | \$50,000 | \$50,000 | \$50,000 |
| iPad Refresh (Previous trade in \$45 value) (anticipate extending 7 th & 8 th grade current iPads and skip refresh in 2019-2020) | \$289,000 | \$0 | \$289,000 |
| Elementary CB Refresh Sched (64 CBs) \$18,632.32 site | 4 Sites \$74,529.28 | 3 Sites \$55,896.96 | 3 Sites \$55,896.96 |
| Short-Throw Projector Replacement | \$12,000 | \$12,000 | \$12,000 |
| Standalone Projector Replacement | \$5,000 | \$5,000 | \$5,000 |

| | | | |
|---------------------------------------|--------------|--------------|--------------|
| Student Device Repair | \$15,000 | \$15,000 | \$15,000 |
| Equipment and Supplies | \$30,000 | \$30,000 | \$30,000 |
| BrightBytes Renewal | \$15,003.17 | \$15,003.17 | \$15,003.17 |
| Securly Web Filter | \$17,710.00 | \$17,710.00 | \$17,710.00 |
| District Web Site Content MGT Sys | \$12,000 | \$12,000 | \$12,000 |
| Software Purchases | \$20,000 | \$20,000 | \$20,000 |
| Network/Server/Communications Support | \$15,000 | \$15,000 | \$15,000 |
| Totals: | \$639,512.05 | \$331,879.73 | \$620,879.73 |

4. Monitoring and Evaluation

Monitoring, evaluation, and communication, about the plan’s overall progress and impact on teaching and learning is critical. It is recommended that weekly meetings be reestablished between the superintendent, assistant superintendent and the director of technology so that central office can be kept up to date on the technology plan.

Furthermore, it is recommended that the district wide technology committee be recreated and that site representation from all sites becomes strongly encouraged. Incentives to participating in the district technology committee should be made clearly apparent to all site administration. Meeting locations can rotate between sites and can also be conducted online to facilitate participation.

The director of technology will be responsible for coordinating these meetings and setting up appropriate times and dates.

Information and feedback collected from these meetings will be used, in conjunction with the BrightBytes data, to adjust and modify the technology plan during the three years of plan implementation.

Appendix A
K-5 TECHNOLOGY SKILLS CONTINUUM

| Digital Literacy Category | | Alignment To CCSS/SBAC | Skills | A: Awareness G: Guided Practice M: Mastery | | | | | |
|--|---|---|--|--|-----|-----|----------|----------|----------|
| | | | | K | 1 | 2 | 3 | 4 | 5 |
| Demonstrate Proficiency in the use of computers & applications, as well as an understanding of the concepts underlying hardware, software, and connectivity. | Basic Operations | SBAC Skill | Demonstrate beginning steps in using available hardware and applications (e.g., turn on a computer, launch a program, use a device such as a mouse, login.) | A/G | G/M | M | M | M | M |
| | | SBAC Skill | Use desktop icons, windows, and menus to open applications and documents. Know that icons (e.g., recycle bin/trash, folder) are symbols used to signify a command, file, or application. | A | M | M | M | M | M |
| | | SBAC Skill | Recognize the functions of basic file menu commands (e.g., New, Open, Close, Save, Print). | A | G | G/M | M | M | M |
| | | SBAC Skill R5, R7 | Use various operating system features (e.g., open more than one application/program, work with menus & icons, use the taskbar/dock). | | A | G | M | M | M |
| | | W6 * 5 th Grade W6: type a minimum of two pages in a single setting | Keyboarding - Use proper posture & ergonomics - Locate and use letter and number keys with left and right-hand placement - Locate and use correct finger, hand for space bar, return/enter and shift key - Gain proficiency and speed in touch typing. | A | A/G | G/M | M 15 wpm | M 20 wpm | M 25 wpm |
| | | SBAC Skill | Identify successful troubleshooting strategies for minor hardware and software issues/problems (e.g., frozen screen, no sound.) | A | A | G | G | G | G |
| | CCR (College and Career Readiness) | Understand the purpose of the Learning Management System (Google Classroom.) Login and access information presented by the teacher. | | | | | A/G | A/G | |
| | Word Processing & Collaborative Documents | W5, W6, W10 | Use a word processing application to write, edit, print, and save simple assignments. | A/G | G | G | G/M | M | M |
| | | W5, W6, W10 | Use menu/tool bar functions in a word processing program (i.e., font size/style, line spacing, margins) to format, edit, and print a document. | | A | G | G/M | M | M |
| | | W5, W6, W10 | Highlight, copy and paste text and images within a document, as well as from one document to another. Insert and size a graphic in a word processing document. | | A | G | G/M | M | M |
| | | W5, W6, W10 | Proofread and edit writing using appropriate resources (e.g., dictionary, spell-checker, grammar resources.) | | A | G | G/M | M | M |
| | | W5, W6, W10 | Demonstrate use of intermediate features in word processing applications (e.g., tabs, indents, headers and footers, end notes, bullet and numbering, tables). | | | A | G | G | G |
| | | W5, W6, W10 | Create a document in Google Drive and manage sharing settings. | | | A/G | G/M | M | M |
| W5, W6, W10 | | Utilize the collaborative features in Google Docs as appropriate (comments, revision history, highlighting, etc.) | | | | A | G/M | M | |

K-5 TECHNOLOGY SKILLS CONTINUUM

| Digital Literacy Category | | Alignment To CCSS/SBAC | Skills | A: Awareness G: Guided Practice M: Mastery | | | | | |
|--|--|------------------------|--|--|-----|-----|---|-----|-----|
| | | | | K | 1 | 2 | 3 | 4 | 5 |
| Demonstrate Proficiency in the use of computers & applications, as well as an understanding of the concepts underlying hardware, software, and connectivity. | Spreadsheets, Databases, Tables, Charts and Graphs | MD, SBAC Skill | Demonstrate an understanding of the spreadsheet as a tool to record, organize, and graph information | | | | A | G | G |
| | | SBAC Skill | Identify and explain terms related to spreadsheets (cell, column, row, values, labels, headers, etc.) | | | | A | G | G |
| | | SBAC Skill | Enter data into spreadsheets, charts, or tables and draw conclusions from that information. | | | | A | G | G/M |
| | | RI7 | Use spreadsheets and other applications (such as Google Forms) to make predictions, solve problems, and draw conclusion. | | | | A | A | G |
| | Multimedia and Presentation Tools | W6 | Create, edit, and format text on a slide. | | | A | G | G/M | M |
| | | W6 | Create a series of slides and organize them to present research or convey an idea. | | | A | G | G/M | M |
| | | W6 | Copy and paste or import graphics; change their size and position on a slide. | | | A | G | G/M | M |
| | | W6 | Create a multimedia presentation using various media as appropriate (e.g., audio, video, animations, etc.). | | | | | A | G |
| | | W6, RL7 SBASC Skill | Watch online videos for information and use play, pause, rewind, and forward buttons. | A | A/G | M | M | M | M |
| | | L4 | Use a variety of technology tools (e.g., dictionary, thesaurus, grammar-checker, calculator) to maximize the accuracy of work. | | | A/G | G | G | G |
| | Internet, Networking, and Online Communication | R5, SL2 | Use age-appropriate online tools and resources (e.g., tutorial, assessment, Web browser). | | A | A/G | G | G/M | G/M |
| | | CCR | Explain terms related to the use of networks (e.g., username, password, network, file server). | | A | A/G | G | G/M | M |
| | | R5, SL2 | Use age-appropriate Internet-based search engines to locate and extract information, selecting appropriate key words. | | A | A/G | G | G/M | M |
| | | CCR | Use e-mail functions and features (e.g., replying, forwarding, attachments, subject lines, signature, and address book.) | | | A | G | G/M | M |

K-5 TECHNOLOGY SKILLS CONTINUUM

| Digital Literacy Category | | Alignment To CCSS/SBAC | Skills | A: Awareness G: Guided Practice M: Mastery | | | | | |
|--|--|------------------------|--|--|-----|-----|-----|-----|-----|
| | | | | K | 1 | 2 | 3 | 4 | 5 |
| Demonstrate the responsible use of technology & an understanding of ethics & safety issues in using electronic media at home, in school, and in society. | Acceptable Use, Copyright and Plagiarism | Digital Citizenship | Explain and demonstrate compliance with school rules (Acceptable Use Policy) regarding responsible use of computers and networks. | A | A/G | G | G/M | M | M |
| | | Digital Citizenship | Explain the importance of giving credit to media creators when using their work in student projects. | | | A | A/G | G/M | M |
| | | Digital Citizenship | Explain responsible uses of technology and digital information; describe possible consequences of inappropriate use. | | A | A | A/G | G/M | G/M |
| | | Digital Citizenship | Describe appropriate and responsible use of communication tools (e.g., chats, instant messaging, blogs, email, and wikis). | | | A | A/G | G/M | M |
| | | Digital Citizenship | Follow classroom rules for the responsible use of computers, peripheral devices, and resources. | A/G | G | G/M | M | M | M |
| | | Digital Citizenship | Explain ethical issues related to privacy, plagiarism, spam, viruses, hacking, and file sharing. (ex: Identify examples of plagiarism, and discuss the possible consequences of plagiarizing the work of others.) | | | A | A/G | M | M |
| | | Digital Citizenship | Write correct in-text citations and reference lists for text and images gathered from electronic sources. | | | | A | G | G/M |
| | Cyber Safety | Digital Citizenship | Identify cyber-bullying and describe strategies to deal with such a situation. | | | A | A/G | A/G | G |
| | | Digital Citizenship | Provide examples of safe and unsafe practices for sharing personal information via e-mail and the Internet. Explain and use practices to protect one's personal safety online (e.g., not sharing personal information with strangers, being alert for online predators, reporting suspicious activities). | | | A/G | G | G/M | M |
| | | Digital Citizenship | Describe and use safe and appropriate practices when participating in online communities (e.g., discussion groups, blogs, social-networking sites). Demonstrate safe e-mail practices, recognition of the potentially public exposure of e-mail and appropriate e-mail etiquette. Recognize and describe the potential risks and dangers associated with various forms of online communications. | | | A | G | G/M | M |
| | | Digital Citizenship | Identify probable types and locations of Web sites by examining their domain names, and explain that misleading domain names are sometimes created in order to deceive people (e.g., .edu, .com, .org, .gov, .au). | | | | | | A |

K-5 TECHNOLOGY SKILLS CONTINUUM

| Digital Literacy Category | | Alignment To CCSS/SBAC | Skills | A: Awareness G: Guided Practice M: Mastery | | | | | |
|---|---|------------------------|---|--|---|---|-----|-----|-----|
| | | | | K | 1 | 2 | 3 | 4 | 5 |
| Demonstrate the ability to use technology for research, critical thinking, problem solving, decision making, communication, collaboration, creativity and innovation. | Research: Gathering and Using Information | R1, R7 | Use various age-appropriate technologies to locate, collect, and organize information. Explain and demonstrate effective searching and browsing strategies when working on projects. | | A | A | A/G | A/G | G |
| | | R5, R7 | Evaluate Internet resources in terms of their usefulness for research. | | | A | A/G | A/G | G |
| | | R7 | Locate, download, and organize content from digital media collections for specific purposes, citing sources. | | | | A | A/G | G |
| | | R7 | Identify the purpose of a media message (to inform, persuade, or entertain.) Analyze and explain how media and technology can be used to distort, exaggerate, and misrepresent information. | | | A | A/G | G | G |
| | | R7 | Evaluate the authenticity, accuracy, appropriateness, and bias of electronic resources, including web sites. | | | | A | A/G | A/G |
| | Communication and Collaboration | W6, W10 | Use online tools (e.g., e-mail, online discussion forums, blogs, and wikis) to gather and share information collaboratively with other students. | | | A | A/G | A/G | G |
| | | W6 | Plan, design, and develop a multimedia product to present research findings and creative ideas effectively, citing sources. | | | | A | G | G |

6-8 TECHNOLOGY SKILLS CONTINUUM

| Digital Literacy Category | | Alignment To CCSS/SBAC | Skills | A: Awareness G: Guided Practice M: Mastery | | |
|--|---|------------------------|--|--|-----|-----|
| | | | | 6 | 7 | 8 |
| Demonstrate proficiency in the use of computers & applications, as well as an understanding of the concepts underlying hardware, software, and connectivity. | Basic Operations | CCR | Identify and assess the capabilities and limitations of emerging technologies. | A | G | G |
| | | W6 SBAC Skill | Keyboarding - Use proper posture & ergonomics - Gain proficiency and speed in touch typing. - <i>*5th Grade W6: Type a minimum of two pages in a single setting.</i> | M 30 WPM | M | M |
| | | SBAC Skill | Identify successful troubleshooting strategies for minor hardware and software issues/problems (e.g., "frozen screen.") | G | G/M | M |
| | | CCR | Understand the purpose of the Learning Management System. Login and access information presented by the teacher. Participate in online discussions, polls, and assessments. Interact with the LMS to create content (i.e. - ePortfolios, wikiprojects) | G | G/M | G/M |
| | Word Processing & Collaborative Documents | W5, W6, W10, SL5 | Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, and styles) to improve the appearance of documents and materials. | G | G/M | M |
| | | W5, W6, W10 | Use editing features appropriately (e.g., track changes, insert comments.) | G/M | M | M |
| | | W5, W6, W10 | Demonstrate use of intermediate features in word processing applications (e.g., tabs, indents, headers and footers, end notes, bullet and numbering, tables). | G/M | M | M |
| | | W5, W6, W10 | Create a form, spreadsheet, drawing, or other document in Google Drive (depending on project) and manage sharing settings as appropriate. | G/M | M | M |
| | | W5, W6, W10 | Utilize the collaborative features in Google Docs as appropriate to annotate, provide feedback, communicate, and collaborate with others (comments, revision history, highlighting, etc.) | G/M | M | M |

6-8 TECHNOLOGY SKILLS CONTINUUM

| Digital Literacy Category | | Alignment To CCSS/SBAC | Skills | A: Awareness G: Guided Practice M: Mastery | | |
|--|--|------------------------|---|--|-----|-----|
| | | | | 6 | 7 | 8 |
| Demonstrate proficiency in the use of computers & applications, as well as an understanding of the concepts underlying hardware, software, and connectivity. | Spreadsheets, Databases, Tables, Charts and Graphs | MD, SBAC Skill | Demonstrate an understanding of the spreadsheet as a tool to record, organize, and graph information. | M | M | M |
| | | SBAC Skill | Identify and explain terms related to spreadsheets (cell, column, proficiency in row, values, labels, headers, etc.) | G/M | M | M |
| | | SBAC Skill | Enter data into spreadsheets, charts, or tables and draw conclusions from that information. | G/M | M | M |
| | | RI7 | Use spreadsheets and other applications (such as Google Forms) to make predictions, solve problems, and draw conclusions. | G/M | M | M |
| | | F, SMP, R7 | Perform simple operations in a database (i.e., browse, sort, filter, understanding of the search on selected criteria, delete data, enter data). | A | G | G |
| | | F, SMP, R7 | Use advanced formatting features of a spreadsheet application (e.g., reposition columns and rows, add and name worksheets). | A | A | G |
| | | F, SMP, R7 | Use spreadsheets to calculate, graph, organize, and present data hardware, software, and in a variety of real-world settings. Distinguish among different types of charts and graphs, and choose the most appropriate type to represent given data. | A | A/G | G/M |
| | Multimedia and Presentation Tools | W6 | Use a variety of applications to plan, create, and edit multimedia products (e.g., slide presentations, videos, animations, simulations, podcasts). | G | G/M | M |
| | | W6 | Identify technology tools (e.g., authoring tools) that can be used to create a multimedia product, and understand the appropriate purpose for the tools depending on the outcome and audience. | A | A/G | G |
| | | SMP3, SL5 | Create multimedia presentations for a variety of audiences using various media as appropriate (e.g., audio, video, animations, etc.) | G | G | G/M |
| | | W6, RL7 SBAC Skill | Use note-taking skills while watching online videos for information. | G | G/M | M |
| | | SMP5, W6 | Use a variety of technology tools (e.g., dictionary, thesaurus, grammar-checker, calculator) to maximize the accuracy of work. | G/M | M | M |

6-8 TECHNOLOGY SKILLS CONTINUUM

| Digital Literacy Category | | Alignment To CCSS/SBAC | Skills | A: Awareness G: Guided Practice M: Mastery | | |
|--|--|------------------------|--|--|---|---|
| | | | | 6 | 7 | 8 |
| Demonstrate the responsible use of technology & an understanding of ethics & safety issues in using electronic media at home, in school, and in society. | Spreadsheets, Databases, Tables, Charts and Graphs | Digital Citizenship | Comply with school rules (Acceptable Use Policy) regarding responsible use of computers and networks. | M | M | M |
| | | Digital Citizenship | Explain responsible uses of technology and digital information; describe possible consequences of inappropriate use. | M | M | M |
| | | Digital Citizenship | Describe appropriate and responsible use of communication tools (e.g., chats, instant messaging, blogs, and wikis.) | M | M | M |
| | | Digital Citizenship | Explain ethical issues related to privacy, plagiarism, spam, viruses, use of hacking, and file sharing. (ex: Identify examples of plagiarism, and discuss the possible consequences of plagiarizing the work of others.) | M | M | M |
| | | Digital Citizenship | Write correct in-text citations and reference lists for text and images gathered from electronic sources. | G/M | M | M |
| | Cyber Safety | Digital Citizenship | Identify cyber-bullying and describe strategies to deal with such a situation. | G/M | M | M |
| | | Digital Citizenship | Provide examples of safe and unsafe practices for sharing personal information via e-mail and the Internet. Explain and use practices to protect one's personal safety online (e.g., not sharing personal information with strangers, being alert for online predators, reporting suspicious activities). | M | M | M |
| | | Digital Citizenship | Describe and use safe and appropriate practices when participating in online communities (e.g., discussion groups, blogs, social-networking sites). Demonstrate safe e-mail practices, recognition of the potentially public exposure of e-mail and appropriate e-mail etiquette. Recognize and describe the potential risks and dangers associated with various forms of online communications. | M | M | M |
| | | Digital Citizenship | Identify probable types and locations of Web sites by examining their domain names, and explain that misleading domain names are sometimes created in order to deceive people (e.g., .edu, .com, .org, .gov, .au). | G/M | M | M |

6-8 TECHNOLOGY SKILLS CONTINUUM

| Digital Literacy Category | | Alignment To CCSS/SBAC | Skills | A: Awareness G: Guided Practice M: Mastery | | |
|---|---|------------------------|--|--|---|-----|
| | | | | 6 | 7 | 8 |
| Demonstrate the ability to use technology for research, critical thinking, problem solving, decision making, communication, collaboration, creativity and innovation. | Research: Gathering and Using Information | R1, R7 | Use various age-appropriate technologies to locate, collect, and organize information. Explain and demonstrate effective searching and browsing strategies when working on projects. | M | M | M |
| | | R7 | Locate, download, and organize content from digital media collections for specific purposes, citing sources. | M | M | M |
| | | R7 | Identify the purpose of a media message (to inform, persuade, or entertain). Analyze and explain how media and technology can be used to distort, exaggerate, and misrepresent information. | A/G | G | G/M |
| | | R7 | Evaluate the accuracy, appropriateness, and bias of electronic resources, including Web sites. | G/M | M | M |
| | Communication and Collaboration | W6, W10 | Use online tools (e.g., e-mail, online discussion forums, blogs, and wikis) to gather and share information collaboratively with other students. | G/M | M | M |
| | | W6 | Plan, design, and develop a multimedia product to present research findings and creative ideas effectively, citing sources. Demonstrate how the use of various techniques and effects (e.g. editing, music, color, rhetorical devices) can be used to convey meaning in media. | G/M | M | M |