Comprehensive Technology Plan

Pacific Elementary

July 1, 2018 - June 30, 2021

1. PLAN BACKGROUND CRITERIA: The plan should guide the LEA's use of education technology for the next three years.

1a. Provide a brief overview of the LEA, its location and demographics and/or share a link to the LEA's website.

Pacific School's mission is to prepare children for life through experiential learning that addresses the needs of the whole child. We create a safe and secure school environment that promotes social and academic growth and develops an enthusiasm for learning, a positive self-image, and cross-cultural understanding. Pacific School's learning environment offers children, parents, and staff the unique opportunity to work together in a small, harmonious environment where individual attention and individualize instruction exists. The school focuses on an integrated curriculum that allows learning to take on greater meaning and connection to the world and to students' lives. It is the staff's intention to provide a school environment, which nourishes each child's emotional, physical and social development while stimulating curiosity and creativity. The staff endeavors to generate a love of learning, which will sustain children as they grow and develop.

Pacific Elementary School District is a single school district that ranges from preschool to 6th grade. It is located in the historic village of Davenport along the California coastline, ten miles north of the City of Santa Cruz. Davenport is a census-designated place (CDP); the 2010 United States census reported Davenport's population was 408. In 2010, the CEMEX cement plant closed. An Odwalla bottling plant also formerly provided employment and tax revenue for the community. Currently, most residents commute to work outside of this small community. There is a vibrant artist community that also provides employment and a source of pride for the community. Since the closing of larger, more industrial operations, the already stretched financial base of the district has declined. Even with the recent upturn in funding for California schools, Pacific Elementary remains financially challenged. Pacific Elementary serves a significant number of inter-district transfer students, who bring stability to the enrollment, as well as the positive presence that every child adds to a school. The district's population is somewhat diverse in terms of socio-economic status, but the predominant ethnic makeup of children is White or Hispanic. Equity and respect for all people is stressed at Pacific Elementary.

For more information, please visit our website at: http://www.pacificesd.org/

1b. Describe how a variety of stakeholders from within the LEA and the community-at-large participated in the planning process.

In our small, one-school district, collaboration on technology goals and plans has included many representatives of our school community. With an enrollment of about 120 students, we are easily able to work collaboratively on the goals and implementation for new and existing technology at Pacific Elementary.

The Superintendent/Principal, Eric Gross, has taken a leadership role in development of the plan. Heather McDougal, Technology Instructional and Support Staff; Gwyan Rhabyt, School Board President; the School Site Council; Ivan Dei Rossi, Technology Technical Support, and others have assisted in the development of this plan. An important part of any current plan is the past efforts of former Superintendents/Principals, staff, parents, and other school community members who have worked on previous plans. All new plans are built upon the foundation laid by others who planned for and implemented 20th and 21st Century technologies in the past.

1c. Summarize the relevant research and describe how it supports the plan's curricular and professional development goals.

This plan's major curricular and professional development outcomes are tied to the Common Core, which in turn, is based in research that has been accepted nationwide. Because we are using the Common Core standards and goals as the foundation for our plan's outcomes, the connection between research and the plan's goals is self-evident.

The emphasis on higher-order thinking skills and real-world problem solving is a key part of the Common Core. The transition to Common Core has been sparked by the positive, disruptive technological changes impacting all aspects of life and work in the 21st Century. Technology is no longer a tool or a novelty; it is an environment into which most of our students have been born.

The well-researched ISTE (International Society for Technology in Education) Standards work in tandem with the Common Core. The Common Core standards assume this technological environment. As the ISTE website notes, the use of technology is now "not for technology's sake, but as a tool for leap-frogging over lower-order thinking skills, such as rote memorization, to focus our energies on research and media literacy, creativity, collaboration, problem solving, and critical thinking."
Reference: http://www.iste.org/standards/standards-in-action/common-core

The Common Core emphasizes research, and the analysis and use of information, in every discipline. Accessing information is now almost totally located in the digital environment, making skills to seek, evaluate, and use information now a primarily digital skill.

Another important role of technology in schools is that of ensuring equity in an increasingly technology-driven workplace and world. The National Council of the Teachers of Mathematics notes on their website, "The implementation of the Common Core State Standards for Mathematics (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010) has the potential to move forward key features of standards-based reforms in mathematics that have been promoted in the United States for more than 2 decades (e.g., National Council of Teachers of Mathematics, 1989, 2000; National Science Foundation, 1996)."
Reference: http://www.nctm.org/Publications/Journal-for-Research-in-Mathematics-Education/2016/Vol47/Issue1/Research-Commentary_-Educational-Technology_-An-Equity-Challenge-to-the-Common-Core/

2. CURRICULUM COMPONENT CRITERIA: The Plan must establish clear goals and realistic strategy for using telecommunications and information technology to improve education services.

2a. Describe teachers' current access to instructional technology and current use of digital tools.

Within the confines of budgetary challenges, the Board of Trustees and school staff has endeavored to stretch resources to provide current technology.

The school deploys WIFI connectivity throughout the campus. In addition, the school has acquired mobile devices that have been assigned to classrooms, while others are in carts and can be shared across grade levels. Peripherals vary from room to room, but all teachers have access to printers, devices that function as cameras (still and video), and projectors or displays. Teachers are issued district laptops that are for the purposes of professional activities, instructional planning, curriculum development, and other teacher tasks.

Because the school is small -- about 120 students -- many functions that would have been made digital in larger districts are now in the beginning stages of this transition. State assessments are now conducted online with appropriate devices. Beyond those provided by the State of California, the tool for analyzing this data, given the small numbers of test results available to staff for analysis, is primarily EXCEL. Larger services, such as *Illuminate*, are not cost effective with such small numbers of students.

The office staff is transitioning to a higher level of technology use for daily tasks, as well as scanning more documents to relieve storage issues. In an effort to be both technologically efficient and green, the district's policies are hosted by GAMUT Online, a digital policy hosting service. In this way, policies and administrative regulations are immediately accessible to all members of the school community.

2b. Describe students' current access to instructional technology and current use of digital tools. Include a description about the LEA policy, practices, and/or replacement policy that ensures equitable technology access for all students.

Pacific School children have access to computers throughout the day in all classrooms, except kindergarten. In addition to classroom desktops, Pacific School's computer program has expanded with the addition of a computer lab that accommodates larger groups of children at one time. Children learn basic skills, such as keyboarding and word processing, as a foundation to higher-level skills, such as multi-media presentations, some concepts in programming in a simple language, and research/presentation skills related to communicating and collaborating on classroom projects.

Assistive technologies are available for disabled students, including, but not limited to, voice recognition and digitized text.

2c. Describe goals and an implementation plan, with annual activities, for using technology to improve teaching and learning. Describe how these goals align to the LEA's curricular goals that are supported by other plans. Describe how the LEA's budget/Local Control and Accountability Plan (LCAP) supports these goals, and whether future funding proposals or partnerships may be needed for successful implementation.

Pacific Elementary has established the following goals for students learning about technology:

1. Demonstrate proficiency in use of computers, applications, and understanding of concepts underlying hardware, software, & connectivity
2. Demonstrate proficiency in use of computers, applications, and understanding of ethics & safety in using digital devices at home, in school, and in society.
3. Demonstrate the ability to use technology for research, critical thinking, decision-making, communication, and collaboration, creativity, & innovation.

In order to achieve these goals, Pacific Elementary will implement the following plan:

- Increase the internet connectivity speed from 16mbps to 250mbps
- Maintain the current number of computers in the school by replacing the existing computers in the computer lab and in the classrooms as they become obsolete
- Replace and repair hardware and software as necessary
- Train teachers and instructional aides in the expected scope and sequence for teaching technology skills
- Identify the people who will be primarily responsible for instructing students in the use of technology
- Develop a schedule that implements the plan

These technology goals are aligned with curricular goals in that the proficient use of technology will be integral to students becoming proficient readers, writers, mathematicians, and scientists. Technology, in the curricular sense, is a means to the end of academic success across the spectrum of subject matter. This connection is identified in detail in the scope and sequence table below in the "Aligned" column.

The district's budget supports the attainment of these goals by allocating sufficient funds to:

- Purchase the necessary hardware, software, and infrastructure
- Contract with an IT expert who is responsible for repairing and running all IT on campus
- Maintain a working relationship with the COE in order to support filters and connections
- Hire staff to instruct students in the use of technology according to the scope and sequence below

As the budget is always strained, district staff will seek additional funding in the form of grants.

2d. Describe goals and an implementation plan, with annual activities, for how and when students will acquire the technology skills and information literacy skills needed for college and career readiness.

The goals for each grade level, with regard to technology skills and information literacy, will build upon the foundation laid in each prior year in each of the following areas: basic operations, word processing, spreadsheets (including tables, charts, & graphs), multimedia and presentation tools, and acceptable uses (including copyright & plagiarism). The scope and sequence will follow a plan developed by the Long Beach Unified School District, which was adapted by the Fresno County Office of Education, as seen in the tables below:

K-12 Technology Skills

Scope and Sequence

English Language Arts Anchor Standards		Mathematical Standards	
RL	Reading Standards for Literature	MD	Measurement & Data
RI	Reading Standards for Informational Texts	EE	Expressions & Equations
W	Writing	A	Algebra
SL	Speaking & Listening	F	Functions
L	Language	SP	Statistics & Probability
		SMP	Standards of Mathematical Practice

Code Literacy Categories		Aligned	Skills	K	1	2	3	4	5	6
Proceed through increasing levels of abstraction from simple block-based spatial puzzles through formulating patterns to fit	Computational Thinking	EE, F, L	Use movement blocks in formulas	O	O	O	I	R	M	M
		EE, F, L	Use loops to repeat patterns of behavior	O	O	O	I	R	M	M
		MD, EE, SP	Predict how to solve a logic problem	O	O	O	I	R	M	M

		Aligned	Skills	K	1	2	3	4	5	6
a script, to writing code languages using math-based algorithms to accomplish graphic results		EE, F	Create a reusable function block	O	O	O	I	R	M	M
		EE, F	Use "if" and "while" loop blocks correctly	O	O	O	I	R	M	M
	Multimedia & Presentation Tools	L, MD, EE, F	Use correct syntax within a programming language	O	O	O	O	I	R	M
		MD, SMP	Use x & y axes to place objects in space	O	O	O	O	I	R	M
		MD, EE, A, F	Use a draw function to animate objects	O	O	O	O	I	R	M
		EE, A, F	Use an "if" statement to make conditionals	O	O	O	O	I	R	M
		MD, EE, F, A	Explain terms (loops, if statements, functions, etc.)	O	O	O	O	I	R	M
		O – Optional I = Introduce R = Reinforce M = Mastery								

Digital Literacy Categories	Aligned	Skills	K	1	2	3	4	5	6
Demonstrate	Basic	SBAC	Turn on	O	I	R	M	M	M	M

proficiency in use of computers, applications, and understanding of concepts underlying hardware, software, & connectivity	Operations		computer & login							
		SBAC	Use mouse, to manipulate shapes, icons; click on urls, buttons, check boxes; scroll	O	I	R	M	M	M	M
		SBAC	Use icons, windows, menus	O	I	R	M	M	M	M
		SBAC	File management; saving documents	O	I	R	M	M	M	M
		SBAC	Explain & use appropriate online tools & resources (e.g. tutorial, assessment, browser)	O	I	R	M	M	M	M
		W6	Keyboarding: proper posture, letter, #, space, return, delete keys, typing proficiency	O	I	R	M	M	M	M
	Word Processing	W5, W6, W10	Use word processor to write, edit, print, save	O	I	R	M	M	M	M
		W5, W6, W10	Use menu/tool bar (font, spacing, margins)	O	I	R	M	M	M	M

			K	1	2	3	4	5	6
		format, edit							
	W5, W6, W10	Highlight, copy, paste	O	O	I	R	M	M	M
	W5, W6, W10	Copy & paste images, insert graphics	O	I	R	M	M	M	M
	L4	Proofread & edit (dictionary, spelling & grammar check, thesaurus)	O	O	I	R	M	M	M
O – Optional I = Introduce R = Reinforce M = Mastery									

Digital Literacy Categories		Aligned	Skills	K	1	2	3	4	5	6
Demonstrate proficiency in use of computers, applications, and understanding of concepts underlying hardware, software, & connectivity	Spreadsheet (tables, charts, graphs)	MD, SBAC	Use spreadsheet to organize & graph info	O	O	O	I	R	M	M
		SBAC	Explain terms (cell, column, row, values, charts, graphs)	O	O	O	I	R	M	M
		MD, SBAC	Enter & edit data, calculations, formulas	O	O	O	I	R	M	M
		MD, SBAC	Use math symbols in formulas	O	O	O	I	R	M	M
		RI 7	Use data to solve, predict, conclude	O	O	O	I	R	M	M
	Multimedia & Presentation	W6	Create, edit, format text on	O	I	R	M	M	M	M

			K	1	2	3	4	5	6
Tools		slide							
	W6	Organize slides to convey idea	O	O	I	R	M	M	M
	W6 & SL5	Copy/paste/import graphics, change size & position	O	O	O	I	R	M	M
	W6 & SL5	Use painting & drawing tools & edit work	O	O	I	R	M	M	M
	W6, RL7, SBAC	Use online videos (play, rewind, forward)	O	I	R	M	M	M	M
		O – Optional I = Introduce R = Reinforce M = Mastery							

Digital Literacy Categories	Aligned	Skills	K	1	2	3	4	5	6
Demonstrate proficiency in use of computers, applications, and understanding of ethics & safety in using digital devices at home, in school, and in society.	Acceptable use, copyright, and plagiarism	Digital Citizenship							
		Comply w/ rules for responsible use	I	R	M	M	M	M	M
		Digital Citizenship							
		Explain responsible uses & describe consequences	I	R	M	M	M	M	M
		Digital Citizenship							
		Explain fair use guidelines for copyrighted material; credit source	O	I	R	M	M	M	M
		Digital Citizenship							
		Explain strategies for safe use (password,	O	I	R	M	M	M	M

			anti-virus software, spam filters, popup blockers)							
		Digital Citizenship	Demonstrate safe email practices, limit public exposure, etiquette	O	O	O	I	R	M	M
		Digital Citizenship	Demonstrate strategies for dealing with cyber-bullying	O	I	R	M	M	M	M
		Digital Citizenship	Identify risks of online communication	O	I	R	M	M	M	M
				O – Optional I = Introduce R = Reinforce M = Mastery						

Digital Literacy Categories		Aligned	Skills	K	1	2	3	4	5	6
Demonstrate the ability to use technology for research, critical thinking, decision-making, communication, and collaboration,	Research & Information Gathering	RI5, RI7	Use appropriate tech to locate, collect, organize content from media for a purpose, citing sources	O	I	R	M	M	M	M
		RI5, RI7	Search databases to	O	O	I	R	M	M	M

creativity, & innovation.				locate information							
			RI5, RI7	Evaluate online sources for reliability	O	I	R	M	M	M	M
			RI7	Use content specific tech tools (probes, sensors, measuring devices, simulations to gather & analyze data	O	O	O	I	R	M	M
			RI6, RI7, RI9	Use web 2.0 tools (chat rooms, blogs, wikis) to gather & share information	O	O	O	I	R	M	M
			RL7	Analyze purpose of media message	O	I	R	M	M	M	M
	Communication and Collaboration		W6	Collaborate online with other students	O	O	I	R	M	M	M
			W6, W10	Communicate ideas online (presentations, drawing)	O	I	R	M	M	M	M
			W6, W10, SL2, SL5	Create projects using text, audio, video, graphics	O	O	I	R	M	M	M
			W6, W10, SL3	Use guidelines to evaluate	O	O	I	R	M	M	M

		multimedia presentations							
	W6, W10, SL1	Use web 2.0 tools to communicate & collaborate	O	O	I	R	M	M	M
		O – Optional I = Introduce R = Reinforce M = Mastery							

2e. Describe goals and an implementation plan, with annual activities, to address Internet safety and the appropriate and ethical use of technology, including AB 307 and Children's Internet Protection Act (CIPA) compliance, in the classroom.

The Board of Trustees has adopted policies related to student and staff use of technology and student privacy.   These policies were recently reviewed and updated. Policies on copyright and use of copyrighted works are also in place and were reviewed recently. Internet Use Agreements are part of the annual student packets and yearly staff school-year start up. The Internet agreements include statements regarding the appropriate use of copyrighted works. In addition, the ethics of research are taught to upper grade students, including the difference between copying content that is copyrighted and appropriately incorporating information into reports and research, with citation.

Because the school is small and children are well known, it is relatively easy to closely monitor student use of the digital environment at school. During research activities, teachers are able to teach students to carefully evaluate the provenance and likely veracity of the sources they use.

Pacific School District contracts with the County Office of Education to provide CIPA compliant filtering of digital content that is accessed by students and staff. While no filtering system can catch all questionable content, every effort is made by the COE to keep the filtering current. The Superintendent/Principal takes action to inform the COE when an accessed site should be blacklisted. Students are required to immediately inform an adult if any questionable content is accidentally accessed.

3. PROFESSIONAL DEVELOPMENT COMPONENT CRITERIA: The Plan must have a professional development strategy to ensure that staff understands how to use these new technologies to improve education services.

3a. Summary of the teachers' and administrators' current technology proficiency and integration skills and needs for professional development.

Currently, the teachers and the administrator posses a range of technological skills and proficiency levels. All instructors have a command of basic skills, and some are advanced users of some aspects of technology. But many of us would benefit from professional development in several areas and very few know what students are now expected to know and do in terms of technology at each grade level. Specifically, teachers need time to examine the technology scope and

sequence document. They also need time to discuss the logistics of implementation. Lastly, they need instruction in the specific areas where they are in need of further development and need help before they can fully implement the plan.

3b. Goals and an implementation plan, with annual activities, for providing professional development opportunities based on a LEA needs assessment.

To address this need, teachers need time to examine, understand, and plan for implementation of the technology curriculum. Secondly, teachers need to become knowledgeable and comfortable teaching each area of technology that is expected at their grade level(s). Toward this end, staff meeting time, and a portion of our 2 professional development days per year, will be dedicated toward bringing this curriculum to reality. Currently, identified areas of need include becoming more knowledgeable about Google Drive, Khan Academy, and keyboarding programs. Scheduling instruction in technology is also a need.

4. INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT, SOFTWARE, AND ASSET MANAGEMENT COMPONENT CRITERIA: The Plan must include an assessment of the telecommunication services, hardware, software, asset management, and other services that will be needed to improve education services.

4a. Describe the existing hardware, Internet access, electronic learning resources, technical support, and asset management already in the LEA that will be used to support the Curriculum and Professional Development Components of the plan.

Professional Development & Curricular Needs

At a School Site Council meeting on 3/15/18, [Need to update] faculty, parents, and office staff indicated the following priorities:

- Professional development is needed in order to become and remain highly functioning users of technology and to incorporate technology into instruction.

- Conversion to electronic forms for, & grade books would make our work more efficient

- Headsets are needed for office staff to use the phone hands-free

- Records need to be scanned and stored digitally

- Staff needs to better understand the existing phone system and alarm system

Electronic Learning Resources

We mostly use free web-based applications, rather than purchased software. Khan Academy is used widely, mainly as a supplement to core math instruction. Short videos are often shown to illustrate concepts in science and social studies. Programs that allow students to construct worlds, creatures, and motion are used to promote creative-problem solving. Basic programming is taught in GATE through coding and robotics applications. A weather station, with web-based data in real time, was installed in March 2018 and can be used for science instruction.

Technical Support

Pacific Elementary contracts with a part-time Information Technology technician to handle the technology issues that we are unable to address on our own. The IT Tech keeps our system's infrastructure running, repairs hardware, and advises about software. The IT Tech also serves as an expert liaison with the IT department at the County Office of Education. The IT Tech monitors all donations of technology to ensure that what is accepted is compatible with our infrastructure and that the items are current.

PESD Tech Hardware Inventory [Update]	
March 2016	
Mac Hardware	
Item	**Quantity**
MacBook Pro	6
iMac	1
MacMini	17
MacBook Air	2
PC Hardware	
Dell Desktop / Laptops Windows 8/10	6
Chromebooks	
Acer Chromebook	11
HP Chromebook	14
Tablets	

iPad	6
Kindle	4
Printers	
Brother Printer	4
HP Laserjet	2
HP Office Jet	4
Sharp Muliti Function Copier	1
Network	
Ambient Weather Station Observer IP	1
Cisco Router	1
Comcast Modem/Router	1
Cyber Power UPS	3
ESI Telecom Server	1
Netgear Managed Switches	4
QNAP NAS	1
Pelican Thermostat Controller	1
Ruckus Wi-Fi Controller	1
Ruckus A/P	4
Miscellaneous	
LCD TV	3
Smart Board	1
Projectors	4
Document Cameras	4
Bar Code Scanners	2

Headphones	40
Chromebook Carts	4

4b. Describe the technology hardware, electronic learning resources, networking and telecommunications infrastructure, physical plant modifications, technical support, and asset management needed by the LEA's teachers, students, and administrators to support the activities in the Curriculum and Professional Development components of the plan.

Within budgetary constraints, the Board of Trustees remains committed to preparing Pacific students to function as full citizens and successful participants in a digital age.

The district has full WIFI access in all classrooms. Students have access, during school hours, to Internet and digital resources, as needed for research, collaboration, and other instructional activities.

Digital devices and equipment are inventoried. This inventory is digital, and so is available to appropriate staff based on access permissions. Danger of theft is low. Pacific Elementary is surrounded by the homes and businesses of community members who feel connected to the school. It is lovingly watched over by all in the community.

Security of digital devices and equipment in the classroom is primarily the responsibility of the classroom teachers, and when present, aides. Adult supervision makes the issuing and retrieving of hand held devices very successful at the classroom level with classroom personnel. Most current hand-held devices have anti-theft capabilities built in, with such features as "Find my iPad" or the ability to track who has logged in last to a Chrome Book and then disable it. Digital devices now come standard with many tracking and security options previously provided by other means.

Prior reviews and reports of Pacific's technology infrastructure indicated a need to better maintain the equipment and infrastructure. In the past two years, additional technical support has been provided through an on-call, technical support person. This technical support person has reviewed existing technology, supported staff in making or has himself upgraded, repaired and/or maximized the existing equipment, retired legacy equipment, reviewed the health of the network and connections, suggested upgrades to both classroom and office systems as needed, and taught on-site staff additional skills in using and maintaining the existing systems. While a very small budget for the entire small school district is still a limiting factor, significant progress has been made in this area.

5. MONITORING AND EVALUATION COMPONENT CRITERIA: The plan must include an evaluation process that enables the school to monitor progress toward the specific goals and make mid-course corrections in response to new developments and opportunities as they arise.

5a. Describe the process for evaluating the plan's overall progress and impact on teaching and learning.

The Superintendent/Principal and the School Site Council will track the development and implementation of all activities. Progress toward the goals of the Common Core, with an emphasis on those that use the digital environment, such as research and collaboration, will be a guiding measure of success. The Superintendent/Principal will report progress annually to the Board of Trustees at a public meeting. Modifications will be made as needed an in accordance with budget criteria.

5b. Describe the schedule for evaluating the effect of plan implementation, including a description of the process and frequency of communicating evaluation results to tech plan stakeholders.

The Superintendent/Principal and the School Site Council will track the development and implementation of all activities. Progress toward the goals of the Common Core, with an emphasis on those that use the digital environment, such as research and collaboration, will be a guiding measure of success. The Superintendent/Principal will report progress annually to the Board of Trustees as a public meeting. Modifications will be made as needed an in accordance with budget criteria.

The Superintendent/Principal is responsible for monitoring the progress of the E-Rate program, the management of timelines, the assigning of technical support, the coordination with other plans, such as LCAP. Through these activities, the Superintendent/Principal will ensure that a continuous improvement cycle will be in effect for the duration of the plan.