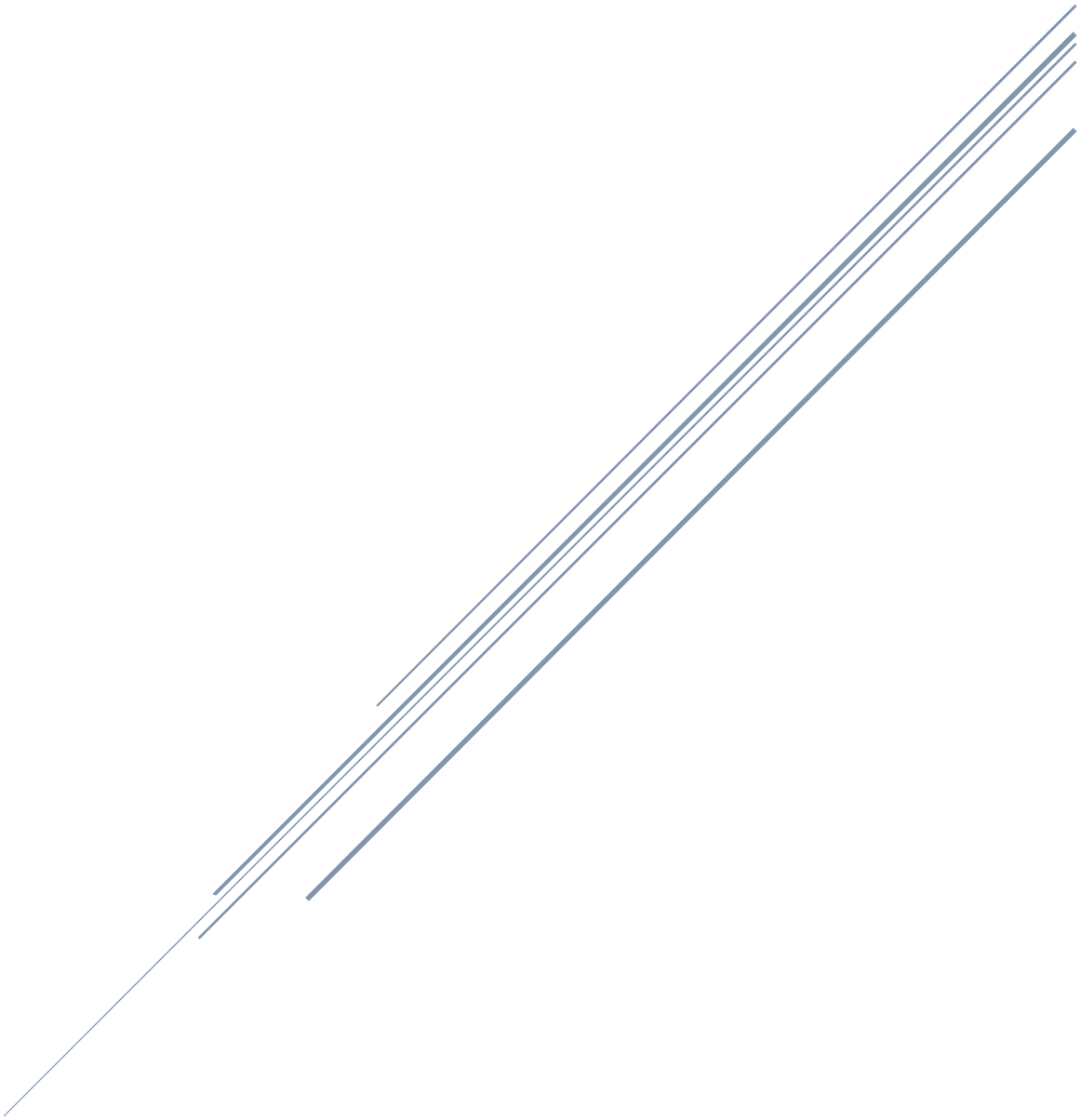
PALISADES CHARTER HIGH SCHOOL

EdTech Plan - 2023



A 21st Century Education for Every Student

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Introduction

Technology can be a powerful tool for transforming and enhancing learning. It can help affirm and advance relationships between educators and students, reinvent our approaches to learning and collaboration, shrink long-standing equity and accessibility gaps, and adapt learning experiences to meet the needs of all learners. With a steadfast vision and adequate support, PCHS will continue to embody exploration and invention through our forward-thinking instructional programs. PCHS educators are collaborators in learning, seeking new knowledge and constantly acquiring new skills alongside their students. This Educational Technology Plan (EdTech Plan) addresses the urgent need for universal, streamlined and standardized technology solutions that provide the highest quality learning experiences for all PCHS students in a technology ecosystem that works for everyone.

The Reality: COVID Changed Everything...Almost

Since the development and presentation of the Access First 3-Year Strategic EdTech Plan in 2019, a lot has changed. That plan laid the groundwork for a comprehensive technology infrastructure and user-devices, the compelling research and the reasoning behind the need for streamlined and standardized integrated technology solutions. Many of the initial recommendations have since been implemented – an initial bank of student computers was purchased to support half of the student body. Interactive displays (Promethean Boards) were purchased and are currently being utilized in over 40 classrooms and meeting rooms across campus, and several software platforms have been adopted to provide strong evaluation tools for student content mastery. With this initial investment of time and resources, we have made strides toward providing an excellent education with quality instructional technology solutions; however, COVID illuminated the need for solutions to be implemented school wide for all students and faculty. In the past three years, some of our initial adoptions have shown to be a mismatch for PCHS. Services such as AMP as an assessment tool now have an uncertain future since the parent company, Powerschool, may discontinue the platform. *Performance Matters,* another Powerschool product that facilitates data analytics and visualization has stalled within their company. As a result of these impediments to adopt streamlined EdTech resources, we are still looking for a more effective solution for monitoring and analyzing student assessment data. These speedbumps to implementation along with other unforeseen challenges in the wake of COVID, are forcing us to pivot to achieve our goals.

Recruiting and retaining enrollment and key personnel have added to our challenges and highlighted the need to provide a unified, cohesive technology strategy and tactics that works well for our school community. The world in which our students exist demands consistent and reliable access to relevant software, hardware and digital information. Technology is a centerpiece of our daily interactions and can be used to *increase learning and teacher effectiveness.* It is not enough to continue to provide solutions for some, not all. To ensure we continue to attract and retain high quality staff and maintain capacity enrollment, we have to listen to our constituents, keep pace with our institutional competitors, and provide a learning and working environment that is cohesive and relevant. Our existence as a school depends on it.

The Good News

We have a targeted destination and the vision and momentum to get us there. With our initial technology investment laying the groundwork for us to scale to school wide uniformity, we are ready to complete the investment to provide an exceptional and technologically relevant learning experience for our students. PCHS is poised to move forward because we have:

- One-time funding that will seed the full implementation of 1:1 devices and needed technology upgrades for students
- Structures in place to support technology upgrades such as PLCs, the Tech Coaches and Pali Virtual Academy
- Onboarding and device management policies and procedures that allow us to scale
- Motivation to improve EdTech engagement from all educational partners that recognize the imperative to simplify, streamline and standardize our systems in order to improve communication and provide a cohesive learning environment

From Then to Now

Unforeseen challenges over the past few years highlight the urgent need for PCHS to streamline and standardize technology solutions now:

- **2019** – The Technology Committee devised a comprehensive and research-based plan to implement a 21st century Educational Technology Program.
  *The Budget & Finance Committee and Board did not get to vote on and approve it
- **2020** – The COVID Shutdown brought traditional educational programs to a temporary halt requiring an immediate pivot; Pali Virtual Academy served as a model for remote instruction and alternative learning.
- **2021** – Instruction resumes on-campus nationally, and PCHS regains momentum.
- **Spring/Summer 2022** – Fallout from COVID is evident with learning loss for many students, lower trending enrollment , and loss of key personnel; Database Manager and Educational Technology Coordinator open positions could not be filled.
- **Fall 2022** – Datalink Networks contracted to "fill the gap" and assist with:
  - SIS/LMS Database Management Tasks
  - Educational Technology Strategic Planning and Support
  - Increasing operational capacity and streamlining systems

Focus for 2023 & Beyond Resulting from Key Findings in Fall 2022

A Comprehensive Technology Needs Assessment in Fall 2022 revealed that a shift to more universal, uniform and streamlined systems would facilitate a more effective educational delivery program. Moving toward uniformity and narrowing our focus would also ensure sustainable use of our fiscal and personnel resources. The vast array of digital tools in our school's portfolio has grown fragmented and less focused. It is not only difficult to assess the impact of these tools without uniform implementation, but it has been even more difficult to evaluate the cost benefit of each adoption. PCHS must consolidate resources and implement systems to optimize student learning. By removing tools that are duplicative,

low-utilization, costly or ineffective, there are fewer EdTech tools to manage, and the instructional focus remains on ensuring high-quality learning experiences for students.

Background

PCHS recognizes that technology provides powerful tools that can increase teacher efficiency and student learning. Committed to providing a strong EdTech ecosystem that supports both, PCHS has made positive strides in growing its technology systems and infrastructure, laying a foundation for a significant shift in technology use within all of its classrooms. With the post-COVID era creating significant challenges for attracting and retaining highly qualified faculty and engaged students, it is more important than ever that our technology works for all educational partners, removes barriers to learning, and provides adequate support for faculty and staff. We are at a pivotal moment, a precipice, where our decisions for how to forge ahead in a competitive reality will make or break PCHS as a leading option for secondary learning. If we fail to act now, we fail our current students and faculty as well as future PCHS students by not delivering on our promise to provide an exceptional education .

Common Core State Standards have brought new demands on our students and faculty . Charter schools, in particular, are facing extraordinary new challenges with regard to increased compliance and academic accountability standards. These factors coupled with changing expectations of colleges and the workplace have made this a critical moment for PCHS to respond thoughtfully with a long term strategic plan in mind. We are already behind our peers and competitors and PCHS must transform its curriculum and educational experience with a series of targeted investments that will create the next-generation learning environment.

PCHS recognizes that for any widespread technology integration plan to successfully impact student learning it must be accompanied with a robust investment in faculty and staff professional development. Feedback from teacher surveys and the Technology Needs Assessment from Fall 2022 indicate that the focus of training for faculty should be threefold:

1. Increase capacity with internal instructional systems – the SIS and LMS
2. Increase capacity with added software platforms to enhance student engagement and differentiated instructional strategies
3. Develop familiarity and capacity with new adoptions for assessments and streamlined communications (e.g. ParentSquare and FMX calendaring system)

In order to appropriately address these training needs, there are significant challenges with the PCHS weekly schedule which lacks universal planning time each week. The most effective model of professional development would include regular time in the bell schedule and school calendar that allows for collaboration. Training embedded within a weekly schedule will provide the designated time needed to provide extensive staff development and support for faculty throughout the year.

Furthermore, no training is effective without uniformity within its implementation and use. PCHS has begun the transition to streamline and simplify the myriad technology applications and devices to improve overall instruction and operations at the school. With the current investment of half of the required devices, upgraded Promethean Boards in many classrooms and group meeting rooms, PCHS

has initiated the transition toward a more effective model of advanced technology integration. However, all students and faculty deserve the opportunity to learn in a top-tier environment; all students must have the proper equipment for their *best learning* to occur, and all students should have the same proper equipment to provide the best learning opportunities for all students.

This is nothing new. In November 2014, The U.S. Department of Education's Office of Educational Technology (OET) published *Future Ready Schools: Building Technology Infrastructure for Learning*…to help schools and districts consider device purchases as well as other infrastructure concerns when building technology systems to support learning. They conclude that ***schools should provide [all] students with appropriate learning devices.*** The flagship policy document for the United States, the National Educational Technology Plan, states that while acknowledging the continuing need to provide greater equity of access to technology itself, the plan goes further to call upon all involved in American education ***to ensure equity of access to transformational learning experiences enabled by technology***.

At every charter renewal, we are asked: "How does learning best occur?" and "What is a 21st century education?" Learning best occurs when we can confidently say that we are providing equal access to our instructional program for all students. High quality and uniform learning tools create consistency, smoother operations, minimize interruptions to learning and effectively support our faculty and students . Learning best occurs when students are highly engaged in a relevant and cutting-edge educational program. Learning best occurs when we recognize the realities for educating our students have changed, that wherever they go after PCHS will demand more advanced and more specific skill sets. It is incumbent upon us to respond with a strategy and program that addresses these realities. Learning best occurs when students feel safe, seen, and the school that says it supports them does not create division between the haves and the have-nots—neither for faculty nor for students.

This EdTech strategic Plan is particularly necessary as PCHS shifts from traditional paper and pencil tests, and scantron use, to next generation digital assessments that enable more flexibility, responsiveness, and contextualization. Ensuring uniform access to hardware, software and reliable internet will enhance PCHS's use of ongoing, formative, and embedded assessments that are less disruptive and more useful for improving learning. These advances also ensure that all students have the best opportunity to demonstrate their knowledge and skills on statewide assessments that increasingly focus on real-world skills and complex demonstrations of understanding. The PCHS mission and vision statements underscore the need to complete the transition to high quality and uniform technology solutions that are better aligned with our educational purpose.

Purpose

PCHS Mission Statement

PCHS will empower our diverse student population to make positive contributions to the global community by dedicating our resources to ensure educational excellence, civic responsibility, and personal growth.

PCHS Vision Statement

PCHS envisions itself as a national model of a rigorous college-preparatory educational program serving a diverse student population. Through shared responsibility, a student-centered curricular and co-curricular program, a standards-based and aligned curriculum, inclusive classes, and an extensive use of technology, the overarching goal is to create a highly enriched comprehensive secondary school. PCHS will educate all students to reach their intellectual, physical, psychological, and social potential in a safe, cooperative, and supportive environment. The educational program will prepare PCHS graduates for admission to four-year colleges, institutions of higher learning and post-secondary career fields.

This EdTech Plan is grounded in the belief that technology not only enhances instruction but is vital to the development of skills students need to succeed in life. Because technology plays such an important role in education, having a vision of how our technology program will look in the future is important. For this reason, we crafted specific PCHS Education Technology Mission and Vision statements that were developed by the LTSP technology committee members.

PCHS Educational Technology Mission Statement

Implement technology to create and support the best possible learning environment for students, faculty, staff, and community. Specifically, for all students and faculty/staff:

- To provide equitable and universal access to information
- To meet the curricular needs of all learners
- To refine critical thinking skills and foster creativity
- To provide a medium for expression and communication
- To collect, assess, and share information on student learning
- To improve the effectiveness of day-to-day administrative tasks
- To provide skills and proficiencies necessary for the 21st Century workforce

PCHS Educational Technology Vision Statement

We envision using technology to create an environment where:

- Students engage in challenging, inquiry-based curriculum through hands-on learning
- Students are knowledgeable and comfortable using technology
- Students take responsibility for their own educational success
- Students are empowered to realize their own unique talents

faculty use technology to support all learning across the curriculum. They function as coaches, mentors, advocates, and managers of information in a learning environment where technology is universal, secure, stable, and relevant. Through ongoing, comprehensive professional development, all faculty acquire the

knowledge and skills to integrate technology into a challenging and interdisciplinary curriculum which addresses students' specific needs, developmental levels and learning styles. Teachers join and foster their own Personalized Learning Networks that support lifelong learning.

Administrative functions, including those performed by faculty and staff, are to be as automated as reasonably possible, thereby allowing more of the school system's energy and resources to be focused on student education.

The school becomes an environment where all students and faculty/staff have ready access to a full range of current technology, software tools, and applications. The schools have knowledgeable personnel and external resources (such as parents, community members, business, higher education, and network resources) to further the curriculum goals.

Components of EdTech

Schoology Learning Management System (LMS)

Each faculty member is provided with access to our school's Learning Management System (LMS), Schoology. Schoology is an online LMS that allows teachers to organize curriculum, create lesson plans, and provide student assessment. The platform allows for peer collaboration and engagement through public or private discussion forums and groups. Classes are automatically created, and students are enrolled into the LMS from our Student Information System (SIS), Infinite Campus. Teacher buy-in and use of Schoology is high. Generally speaking, most teachers feel comfortable with the platform and utilize a number of its features such as the course calendar, announcements and posts to groups. Schoology provides another avenue for school-wide communications as posts can be sent via school email through personal notification settings.

Infinite Campus Student Information System (SIS)

Infinite Campus (IC) is a robust SIS that houses all student data and related information. With a variety of integrated tools, it has the potential to house all SIS needs for PCHS. Currently, this platform is used to manage attendance, grades, and test scores. IC runs a number of ad hoc and custom reports used by every department at PCHS. The system is challenging to master and requires specific settings to ensure seamless data transfer with our LMS. Since viewing current student information via custom reports is integral to the daily functioning of PCHS, we are partnering with Datalink Networks to manage this system and create reports as needed. Datalink Networks has created a training framework to demonstrate how to run frequently requested reports so that PCHS staff can manage this work internally to minimize the added cost of an outside vendor. For less frequent and custom needs, Datalink Networks utilizes a SQL coding expert to identify, run and catalog specific ad-hoc/custom reports. Use of a custom coding expert is costly, so should be used with discretion to ensure the best use of our financial resources.

Software/Subscriptions

PCHS has a robust assortment of available instructional resources and software applications. During the 2021-2022 school year, the former EdTech Coordinator began tracking subscriptions including costs, scope and number of licenses, and expiration dates. However, with their departure and ongoing

vacancy, it was challenging to monitor software purchases and usage. This year, our fiscal procedures introduced an approval process to ensure that any purchase or software renewal requests were first vetted, and the need was substantiated prior to contracting with the tool. An audit of software usage for current licenses showed that in many cases only a handful of faculty or staff had been using certain tools. The total cost of software licenses totals over $500,000; therefore, we are continuing to update the subscription tracker with a renewed focus on reducing unnecessary, under-utilized or superfluous licenses. This will result in cost savings that can be redeployed for future technological needs, such as 1:1 devices.

PALI Virtual Academy

The Pali Virtual Academy currently provides approximately 200 students with a progressive alternative to the traditional classroom within PCHS. All courses offered are Common Core State Standard and A-G UC aligned. Students work independently to access the curriculum while adhering to the PCHS school calendar, bell schedule and the PCHS Virtual Academy policies and guidelines.

This program serves all learners who need to independently access the curriculum. These students may be, but are not limited to, those working, pursuing a professional athletic or performing arts career, accruing excessive on-site attendance concerns, those with scheduling problems or individual learning styles not met in the traditional classroom, students prone to under-perform in large, crowded school settings and those working to make up deficient credits. Students follow the California State Education Code Attendance Policy for Independent Study students.

Professional Development and Training

To increase faculty capacity with hardware and software applications, we will invest in focused initial training in large and small groups. The thrust of initial universal training will be to ensure facilities with common use cases and to establish uniformity with adopted procedures. Training will review existing or new processes for use with different platforms. Primary focus must be initially on existing tools and systems, for example, knowledge of gradebook settings in Infinite Campus, developing standardized language for comments on students' individual IEP notes, ensuring attendance procedures are followed for student absences or school sponsored activities, field trips or athletic events. Once universal adoption of processes is established, ongoing support will be provided through our EdTech Coaches and PLCs for specific practice and universal adoption of best practices and school wide procedures.

Educational Technology (EdTech) Coaches

PCHS has three faculty member Ed Tech Coaches whose mastery of PCHS's EdTech resources for instruction allows them to provide training and support to the rest of the faculty. They provide training faculty wide, in small groups, departments, PLCs and individually with faculty to provide hands-on support with available tools. They provide mentoring and guidance to the EdTech Leaders in each PLC.

PLC EdTech Leaders

Each PLC has a designated EdTech leader to serve as the main conduit between the PCHS EdTech Team and their respective PLCs. PLC EdTech Leaders are identified as having advanced technological skill proficiencies based on their own perceptions of self-efficacy and the recommendations of other

members within the PLC. The goal is for these individuals to attend EdTech related technology training, meetings with EdTech Coaches, product demonstrations, and/or individual training sessions, and then relay pertinent information to their team during designated group meetings. This leveraged approach supports the PLC model and reinforces the peer-to-peer method of support and faculty development that has proven to be an effective model for learning new skills, increasing mastery of available tools, and adoption of uniform procedures. Current PLC EdTech Leaders are identified in the Appendices.

Values Alignment with Current Needs

Service to Students is Priority One

PCHS's purpose is to provide an excellent educational program to all of our students. All of our decisions in support of high-level instruction must demonstrate that student needs are being met and are of the utmost importance. Some key questions to keep in mind as we invest in technology for current and future needs include:

- Does this program or tool align to what we know about best instructional strategies?
- Does the tool support our teaching framework or complicate and confuse our faculty and staff?
- Is there evidence that use of this tool leads to desired outcomes?
- Is there wide enough use and adoption to validate the need to maintain this resource?

Clear Communication

In a large organization such as PCHS, clear communication is essential to ensure clarity over decisions and events affecting the community. All of our actions related to technology, from decisions to adopt and onboard various resources to our standard operating procedures and policies should support and allow for strong and open communication throughout our organization. This posture allows us to maintain a spirit of collaboration and bottom-up implementation of technology at PCHS that supports the PCHS community overall. Furthermore, it is critical to have conversations about topics such as interoperability, data privacy, cybersecurity, and bandwidth alongside discussions of tool effectiveness. Working to bridge the gap between teaching and learning, our Technology, LTSP, PLC teams help ensure all student groups and teacher interests are represented.

Uniformity Ensures Longevity and Continuity of Learning

A uniform system of implementation, strong onboarding procedures, and clear expectations arising out of thoughtful management systems allow for minimized interruption to student learning in the classroom and beyond. With systems and resources that address critical learning needs, fewer resources are wasted, and our personnel can advance into the work of higher order thinking and teaching tasks that will benefit our students and community the most.

During the 2021-2022 school year, the EdTech Team initiated several projects to support the points above. These include, implementing *EdTech Impact*, an analytics tool deployed on school-owned devices to capture EdTech usage and help to inform budget and training needs, a *Subscription Tracker* to manage current licenses and streamline renewals, and the *PCHS EdTech Library* where available apps are

in one place along with related resources. With these initiatives just getting off the ground, PCHS faced sudden EdTech staffing changes at the close of the 21-22 school year. We had to reevaluate expenditures and priorities related to critical and longer-term technology needs. In response to our EdTech Comprehensive Needs Assessment conducted in Fall 2022, our focus shifted slightly to tighten and streamline our EdTech strategy by simplifying initiatives in order to focus on areas of greatest impact. Our findings were as follows:

- Too many non-strategic initiatives and activities dilute effective school functioning
- EdTech onboarding, training and off boarding need bolstering
- Inconsistent communication limits efficiency and transparency
- Redundancies waste precious resources and limit options for future technology investment

The critical focus of our response to the EdTech Needs Assessment centers on two primary goals:

1. Increase faculty and staff capacity with primary applications—Infinite Campus and Schoology
2. Streamline and unify technology resources to improve the educational program

These two focus areas require uniform tools and procedures for all technology usage, and significant training for all faculty and staff to maximize their effective use of those tools. Moving toward uniformity will improve the efficiency of PCHS's educational program as well as improve communication with clear and uniform best practices. Uniformity will also ensure an equitable teaching and learning environment for ***all*** faculty and students. In an era where students are living immersed in a never-ending cascade of technology and input, it is incumbent upon PCHS to teach, train and guide students to navigate our highly digital and technology driven world.

A Curricular Environment Free from Barriers to Learning

A Well-Equipped Faculty and Student Body

Teachers' and students' access to technology both at home and at school deeply impacts the learning environment. Specifically, a recent *Pew* report states that 92% of teachers believe that access to technology and the Internet has had a major impact on instruction.

Students who can access technology at home can engage in anytime, anywhere learning. However, gaps in technology access often exist. While almost all teens have access to a digital device at home, the number of people with whom the device is shared is important. Devices shared between multiple members of a household means a device may not always be available for learning. According to *Pew*, although 93% of teens have a computer or have access to one at home, 71% share that access with other family members.

Faculty who can access technology at home can better plan transformative instruction. Faculty who have access to computers at home are more likely to use technology frequently and thus have better technology skills. These skills are a prerequisite to the use of digital creativity, digital collaboration, digital communication, and critical thinking in the classroom. According to the 2011 *US Census*, even

though 98% of all American homes can receive high speed Internet, not all of them do, or can afford it, and ~20% of Americans do not have access to a home computer.

Schools and districts should create, support and fund policies that increase access to technology at home for faculty and students. Anytime, anywhere access to technology fosters anytime, anywhere access to connected learning.

Faculty ' and students' access to technology at school is a prerequisite for 21st Century Learning. According to *NCES*, the ratio of students to computers in the classroom every day is 5.3 to 1. However, this is often not sufficient for transformative instruction to occur.

Teachers who have difficulty getting access to high quality computers for students when needed are much less likely to plan and implement classroom activities that include digital communication, digital collaboration, digital creativity, and critical thinking.

The takeaway is that schools and districts should ensure that all students at all schools have sufficient access to technology throughout the school day. Students are digital natives who often have better access to technology outside of school as compared to inside. This results in a digital divide between school and reality for many of today's youth. Increasing access can bridge this gap.

1:1 is a Must...*Now*

Maintaining a Competitive Edge

PCHS is widely regarded as one of the best high schools in the greater Los Angeles region. With a reputation for excellence, for years we have enjoyed full enrollment and an enthusiastic pool of prospective and current families. However, the landscape and our place in it is changing, and fast. Up until the Pandemic , the way students learned looked very different. Learning could afford to be slow when students were not connected 24/7.

PCHS is no longer keeping pace with surrounding schools and districts. Every school district in Southern California is making innovative and intentional investments in technology. Below is a list of comparable charter schools and districts in the surrounding area and when they converted to a 1:1 device program. The dates below show when universal conversion for 1:1 devices school wide or district wide was implemented.

Charter School/ District	**Conversion Year for 1:1**
Los Angeles Unified School District	2019
Santa Monica-Malibu Unified School District	2019 for 8th grade and up
Granada Hills Charter High School	2021
Birmingham Community Charter High School	2015
El Camino Real Charter High School	2019
Conejo Unified School District	2014
Orange County Unified School District	2021
San Diego Unified School District	2016

PCHS is poised to do the same, and we really need to do so! This will not only ensure we stay competitive; it may simply mean that we remain solvent. In three of the past six years, our enrollment has dipped below 3000 students with an enrollment swing of up to 100 students; the fiscal impact of lower enrollment takes a significant toll on our annual operating budget and affects all aspects of our educational program. The chart below with data from CDE's *Dataquest* shows PCHS changes in enrollment that affect per pupil funding which directly impacts the annual operating budget.

Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Enrollment	3056	2964	3042	3087	2984	2959

Note – Every drop in enrollment of 25-Students (i.e. 2021-22 to 2022-23) equates to lower school funding of ~$300,000

Increased Accountability Measures

As a charter school, PCHS is facing ever increasing pressure from state and regional authorizers to ensure compliance with requirements that demonstrate students' academic progress. The state and charter authorizers have increased the number of assessments required for charter renewal. The state requires 95% participation on each of these tests for a school to be considered high performing. All standardized tests are given on secure browsers. It has become almost impossible to ensure installation of these secure browsers on individual devices that we do not own or control. To keep pace with growing assessment demands alone PCHS needs to be 1:1. This will benefit all of our students by providing equal access to instructional content and curriculum and by providing fair and equitable testing conditions for all students. Furthermore, having uniform 1:1 devices reduces interruptions to testing conditions for both security protocols and can be swapped out in the event a device is broken or malfunctions or loses charge.

BYOD is Not Sufficient and NOT Doing Right by Our Students

Having a One-to-One (1:1) computing device school ensures that all the students have equal access to the type and functioning of an appropriate device – thus creating digital equality in the school. On the other hand, in a Bring-Your-Own-Device (BYOD) model, very often the more well-to-do students in the school will have access to better and faster devices, while others may have no device at all at home. This gives some students an undue instructional advantage further widening the learning gap across student subgroups.

The 2017 Federal Technology Plan Update underscores these concerns stating:

> "Many institutions have BYOD or BYOT policies that permit students to use their own mobile devices at school. Although it is certainly reasonable to allow students to learn and communicate using their own devices, serious concerns arise if schools use BYOD as their primary method for ensuring students have devices, including the following:
>
> **Economic disparity.** The ability to access digital learning resources is distributed disproportionately to students whose families can afford the devices. ***This can widen the very***

gaps that technology is capable of closing. This situation also may raise legal concerns because schools are expected to provide a free education for all students.

Instructional burden. It can be very difficult for teachers to manage learning experiences and activities when they have to support multiple platforms and device types, and some activities may be incompatible with some devices. In this situation, teachers may revert to activities of the lowest common denominator that work on older and less robust devices at the expense of a more effective learning experience.

Privacy and security. Student-owned devices may not have appropriate safeguards in place for storing their learning data. In addition, personal devices likely will not have the security features required to provide valid assessment."

Doing Right by Our Faculty and Staff

The Information Technology (IT) Team is responsible for setting up access and permissions for computing devices. However, these tasks become extra challenging when there are varied devices across various platforms in the same classroom – such as windows, iOS, Android etc. For teachers working in the classroom, this can be a problem as they need to ensure that all the digital lessons they create are device agnostic. This means that they should work regardless of the device the student is using, fellow teachers are using and the platform they are on. This sounds simple, but it's very often much more difficult, and can also be limiting. Additionally, in the classroom, the students often call upon the teachers to provide basic tech troubleshooting for devices the teacher is not familiar with, which wastes instruction time, which impacts learning for all students in that class. Now multiply that by 5-6 students in that very same class, each with different configured devices, and the impact to the overall class instruction is significant.

Teachers should not be put into a position of having to provide tech support to a myriad of devices to ensure that lessons and classwork can continue in the face of a tech problem with a personal device. However, standardizing the device, desktop and software used minimizes these issues, and makes the digital classroom a much more hassle-free and instructionally focused experience.

Very often students are using mobile devices such as cell phones and smartphones because they cannot afford to buy both a laptop style computing device. Mobile devices, and mobile applications, are not the same across all platforms and this also causes challenges in a BYOD classroom with many students not being able to access essential apps, programs and losing out on critical learning experiences. Whereas, in a 1:1 device school, all the students are on the same platform and are all using the same type of compatible device, thus ensuring that students have equal opportunity to access the information as and when required. And when a student forgets their device at home, or fails to adequately charge it, another one exactly like it can be readily available to them to minimize the learning loss for that student that day.

Teacher Training

The sheer variety of devices that show up in a BYOD program can present significant challenges for teachers unfamiliar with a certain operating system or piece of hardware. When planning for school wide professional development of EdTech it is hard to duplicate the experience the teachers will face in

a BYOD environment. When creating PD resources such as handouts, interactive tutorials, or screencasts you must always make triplicate instructions for iOS, OSX, Windows and Android devices.

Incompatibility

Another downside to BYOD Program variety of devices lies in whether they're all compatible with your school or district EdTech systems. If all students can't perform the same tasks or access the same programs via their devices, then the purpose of BYOD is severely undermined.

The PCHS IT Department struggled with this issue when setting up our Impero device monitoring software. The ability to monitor all BYOD student devices accessing our network did not meet our expectations due to unforeseen incompatibility issues that couldn't be resolved to our satisfaction. This incompatibility issue was only with BYOD devices. Managed Chromebooks and other PCHS provided/ managed devices worked as planned.

Carts = Inequity + Extra Expense

More devices are required to provision 1:1 when using carts compared to a true 1:1 program where each individual is issued a device and they can take it home because carts are sitting unused during prep periods. Take home 1:1 is more cost-effective than providing portable computing devices in carts. If you give each student a device, you need to budget and plan for 3,000 devices that last on average 4 years. In order to ensure full and consistent integration of technology across all curricula with each teacher you would need to put a cart in essentially every teacher's classroom. With roughly 115 classrooms at an average of 35 devices per cart you would need to budget for approximately 1,000 extra devices - 4,025 devices instead of 3,000.

As mentioned above, having a 1:1 computing device school ensures that all the students are on the same page in terms of the type of device as well as the functioning capacity of the device – thus creating digital equality in the classroom. On the other hand, in a "classroom carts" scenario, students needing to access the coursework and materials outside of class are going home to various levels of access to devices. Some families only have one device to share among all of their siblings whereas others do not have access to a personal computing device for their students at all. This would then place the burden to purchase a device for home access on the parents which would impact lower income families more than affluent ones.

An EdTech Plan centered around classroom carts essentially entails purchasing and maintaining 1,000 more devices than a 1:1 device program and then expecting our parents who don't have access to computing devices at home to take on an additional expense.

Students also typically take better care of school 1:1 devices when they are issued them because the financial accountability for lost, stolen, malicious damage, or destroyed devices can be traced back to an individual student. Stolen or damaged devices from carts aren't linked to a student and therefore almost always becomes the responsibility of the school to repair or replace. Cart-based devices are much more likely to be stolen from carts where they are not checked out or assigned to an individual but instead to a teacher or classroom.

Carts make sense in an elementary setting where there is little expectation of doing student work on the device outside of the classroom. At the high school level where students need to access the work outside of the classroom, or even across multiple classrooms at school, any EdTech Plan involving a purely cart based model for student devices would be inequitable and expensive. Curriculum has become highly dependent on computing devices and web-connectivity and the school is committed to providing access to the very best curriculum for our students. Online textbooks are rapidly taking over the role that traditional textbooks have occupied. As the trend toward portable computing and online resources replacing traditional textbooks continues to grow, Williams Act compliance will mean that schools are obligated to provide a computing device to access the curriculum both at school and at home.

Classroom Monitoring and Test Security

Teachers can only remotely manage district/school issued devices in a classroom setting in order to lock down the computer screen to the task at hand and to guarantee test security when completing online assessments.

Other computing platforms do not afford teachers the ability to remotely control, monitor, and push out content. At the present time, teachers need the ability to be able to monitor and control what students have access to during class in order to keep them focused on the learning task at hand.

Security Breaches

With lots of different, unregulated devices on school networks, it's possible for kids to introduce malicious elements to a school's network and platforms and increases the risk of harm to administrative systems and student/family sensitive data. This can be minimized with robust networking systems that clearly show who's doing what and when, and that can grant or deny access to important programs at a cost to the district. These tighter controls can be implemented and managed much more easily in a more homogeneous and standardized computing environment provided in a 1:1 Program.

Leveraging Our Advantages Now

Now is a very opportune time for PCHS to leverage our position and the One-Time Funding resources available to us so that we adopt a 1:1 Program which can serve students well now as a 21st century school.

- Scalability is in place now with existing structures and procedures with our IT and inventory management systems
- One-time funding and existing tech for the first roll out already in place and ready to deploy for a school-wide roll out Fall 2023
- Moving quickly to adapt and adopt industry-standard and college-preparatory 1:1 practice will boost our school profile in the current environment of declining enrollment across LAUSD and the greater LA area
- Our Pali Virtual Academy provides a window into another benefit of forward-thinking tech integration into our educational program

Just because we CAN manage a piecemeal/BYOD program without 1:1, does not mean we should and here's why:

- **Standardization**: Unifying and streamlining resources benefits both student learning continuity and teacher effectiveness – reducing pressure and drain on students, teachers, staff and tech support personnel. Moving to standard devices will save PCHS time, energy, fiscal and personnel resources overall – one standardized system is much easier to manage, secure, and hedge against liability.
- **Security**: With a 1:1 Program, the IT Team can manage the computers remotely and control student access, updates and software usage. Updates can be pushed out remotely, uniformly, at the same time and content can be monitored and managed to ensure optimal learning and on-task operation in the classroom. Currently, teachers must manage student devices that may not be compatible with PCHS's technology infrastructure without any controls on what students do on their devices in the classroom (*read YouTube, games, social media, etc.). Furthermore, with newly required assessment software for internal testing measures upon which PCHS's charter and adherence to state mandates depends, uniform testing protocols are required; BYOD student devices pose a significant problem and risk for ensuring testing security and equitable access to the same testing environment for every student. Finally, BYOD creates significant vulnerability for data breaches and cyber-attacks. The immediate loss is worth noting in such a crisis event, but the fallout over frozen programs and access (Schoology, IC, Welligent) being shut down to remedy the post-breach infrastructure would cost the school greatly in lost instructional time, stress and frustration, and school community perception.
- **Stronger Device Management** and stronger internal operations: When new students come and current students leave, it creates a strain on staff to manually roll out the laptops or devices. With a 1:1 program – a rollout policy can be created, and technology allows the ability to onboard a user remotely.
- **Improved College and Career Readiness**: Students who will have an edge in the future will have reliable access to technology, uninterrupted learning and be able to transfer technology skills from high school into colleges and entry level jobs. All of us adults are likely to operate daily on a school issued laptop. This is the way we live now. It is reasonable to expect that our students will be behind the curve without access to quality school issued devices during these critical high school years. It is an equitable practice to provide quality and consistent computing devices to all students to maximize their learning opportunities for the 21st century.

Managing the Cost

There are a number of ways we believe the cost is one that PCHS is able to afford and maintain on an annual basis. We currently have enough devices to provide for about half of the student body. The remaining half could be purchased this spring 2023 from one-time relief funds that will serve as seed money to complete school-wide implementation. This provides a quick way for all students to gain all the above benefits in an equitable manner, and provides a two-year window for PCHS to save/accrue/plan for the next two-year cycle purchase in Winter 2024-25. Additional funding can be

found by prioritizing the central use of streamlining software subscriptions and prioritizing the direct student benefits of 1:1. Furthermore, several line items in the current budget could be postponed this coming year in order to ensure adequate funds and sufficient buffer for the initial school wide roll out. Below is a chart showing the full cost of implementation for the next five years. Details of the cost for devices, insurance, and service agreements can be found in the Appendices.

Year	Year 1 2023-24	Year 2 2024-25	Year 3 2025-26	Year 4 2026-27	Year 5 2027-28	Year 6 2028-29	Year 7 2029-30	Year 8 2030-31
***# units**	1,500	0	750	750	750	750	750	750
Class	Initial # of units for incoming 9th-10th gr. class of '26-'27	Sufficient devices for incoming class of '28	Replenish devices for incoming class of '29	Replenish devices for incoming class of '30	Replenish devices for incoming class of '31	Replenish devices for incoming class of '32	Replenish devices for incoming class of '33	Replenish devices for incoming class of '34
****Cost**	$615,000	$0	$307,500	$307,500	$307,500	$307,500	$307,500	$307,500

* Annual purchases to be planned/approved in early spring each year

**Cost not adjusted to reflect inflation, which may run between 2-5% annually over these 8-Years.

Reduce & Consolidate

Though the roles of Database Manager for the SIS and EdTech Coordinator were originally intended to be filled by newly hired individuals, the shift to contract with Datalink Networks to provide SIS-LMS and EdTech support resulted in cost reductions. Further consolidation of current tech adoptions and operations could result in more streamlined and efficient processes and increased cost savings as indicated in the chart below. Even if PCHS opted to preserve some of the licenses currently available, shifting from some underutilized school-wide licenses to individual usage licenses could result in significant savings.

New Software Adoptions Currently Underway

We recognize the need to provide a rigorous and engaging curriculum using a variety of technological solutions. Additionally, we are bound by forthcoming state mandates for internal assessments and data analysis as a basis for instructional decisions and investment. We know that operationally, the need for improved and transparent communication is critical. Therefore, we have prioritized leveraging existing tools and increasing proficiency over those, including *MS365* applications such as Outlook for email and our internal school calendar and Sharepoint as a landing space for institutional content.

To improve communication, we are piloting a 3-month trial subscription to *ParentSquare*, which will allow for direct 2-way communication and messaging. This powerful tool allows us to improve the way we communicate to specific constituencies without diluting messages that go out to our entire community. It may also reduce the number of other subscriptions with its forms, attendance notifications, and payment features tied to the Student Information System, Infinite Campus.

Lastly, in response to the new requirements of AB1505 for charter renewals, we have begun the process to contract with *NWEA* for internal ELA and math data this spring. *NWEA* has been on the forefront of standardized assessment data monitoring and responsive instruction for over 40 years, and along with many other schools in the region, PCHS's selection of their robust testing framework is a sound choice to

ensure the most actionable and impactful assessments. We plan to add the science module into our testing cycle once the first baseline data process is complete and we have reviewed the adoption.

Appendices

The Research: 21st Century Learning

Today's students must be prepared to thrive in a constantly evolving technological landscape. To prepare for that landscape PCHS had adopted the **International Society for Technology in Education (ISTE)** Standards for Students, Educators, Educational Leaders, Coaches and Computer Science Educators. The ISTE Standards for Students are designed to empower student voice and ensure that learning is a student-driven process. This technology plan is rooted in the idea that every stakeholder should be held to a set of forward thinking technology standards in order to assure that all students at PCHS become empowered learners and authentic constructors of knowledge.

As educators, we must rethink how we teach and learn. The ISTE standards will act as a roadmap to help PCHS educators deepen their practice, promote collaboration with peers, challenge themselves to rethink traditional approaches and prepare our students to drive their own learning.

21st Century Learning requires organizations to meet the current requirements of our standardized tests while also striving to achieve the 4Cs: communication, collaboration, creativity, and critical thinking. The skills needed for success in college and career are becoming increasingly complex, and schools must rise to meet new demands.

New academic standards and accountability measures across the nation have broadened the classroom experiences required for proficiency. As expectations rise, students are struggling to keep up. This trend is evidenced by falling preliminary assessment scores across the nation. Traditional instruction may be to blame. In their recent investigation of 21st Century Learning, *National Academies Press* found that rote learning does not support the educational transfer necessary to tackle the complex problems demanded by intensified academic standards. Students must be exposed to unfamiliar problems and encouraged to design meaningful solutions. Technology is a tool for such problem solving. A national *Walden University* study reports that teachers who use technology frequently place the highest emphasis on problem solving.

In addition to meeting traditional academic standards, students must also be prepared to tackle the demands of a modern world and modern workforce. A research report from *Adobe Education n*otes that, "In today's world, a proficient employee needs to be computer literate, visually literate, information literate, media literate, and digitally literate." According to a report from the *Partnership for 21st Century Skills*: "Many of the fastest-growing jobs and emerging industries rely on workers' creative capacity - the ability to think unconventionally, question the herd, imagine new scenarios, and produce astonishing work." Technology assists with this type of capability. *Pew* reports that 76% of Advanced Placement and National Writing Project teachers believe that digital tools such as the Internet, social media, and cell phones "encourage student creativity and personal expression." In addition,

the National Writing Project reports that the creation and consumption of multimedia increases the likelihood of deeper learning and longer skill retention.

Technology is a key driver towards instruction that impacts student learning outcomes, both on standardized assessments and for 21st Century Learning skills. Students must have regular opportunities to engage in the 4Cs. In addition, they must have access to instant feedback enabled by digital assessment and customized assistive technology.

Curriculum

The PCHS EdTech Plan is aligned to the National EdTech Plan (NETP)8, International Society for Technology in Education (ISTE) Standards9 (see Appendix H), and the Digital Literacy for the K-12 Classroom Scope and Sequence (see Appendix A). Recognizing that technology is embedded in nearly every aspect of our lives, this plan outlines the district's intent to leverage digital resources across all content areas to enhance both teacher performance and student achievement, while at the same time serve as a guideline for making fiscally responsible decisions that maximize return on investment.

It is our inherent duty as educators when curating curriculum for our students to look outside the constraints of our content area and be cognizant of the world we are releasing our students into. As technology rapidly branches into every sector of society and ultimately into education we must harness it not only to better facilitate instruction and increase productivity but also to introduce new skills needed by students now only possible as a direct result of this technology.

Digital technology like whiteboards, interactive lessons, mobile apps, augmented reality, virtual reality, and touchscreen tablets have opened up new opportunities for classroom learning that has created a shift away from teacher-centered, lecture-based direct instruction.

Technology is also leveling the playing—or learning—field for students who have special needs or are non-traditional learners, by enabling them to learn in the style or at a pace that works best for them. By providing the technological tools to help students excel, whether it's an online learning management system for self-directed learning or a mobile device non-verbal students can use to communicate, schools are positioning all students for success.

Technology can enable personalized learning or experiences that are more engaging and relevant. Mindful of the learning objective, educators can allow students to choose from a menu of learning experiences - writing essays, producing media, building websites, collaborating with experts across the globe in data collection - assessed via a common rubric to demonstrate their learning.

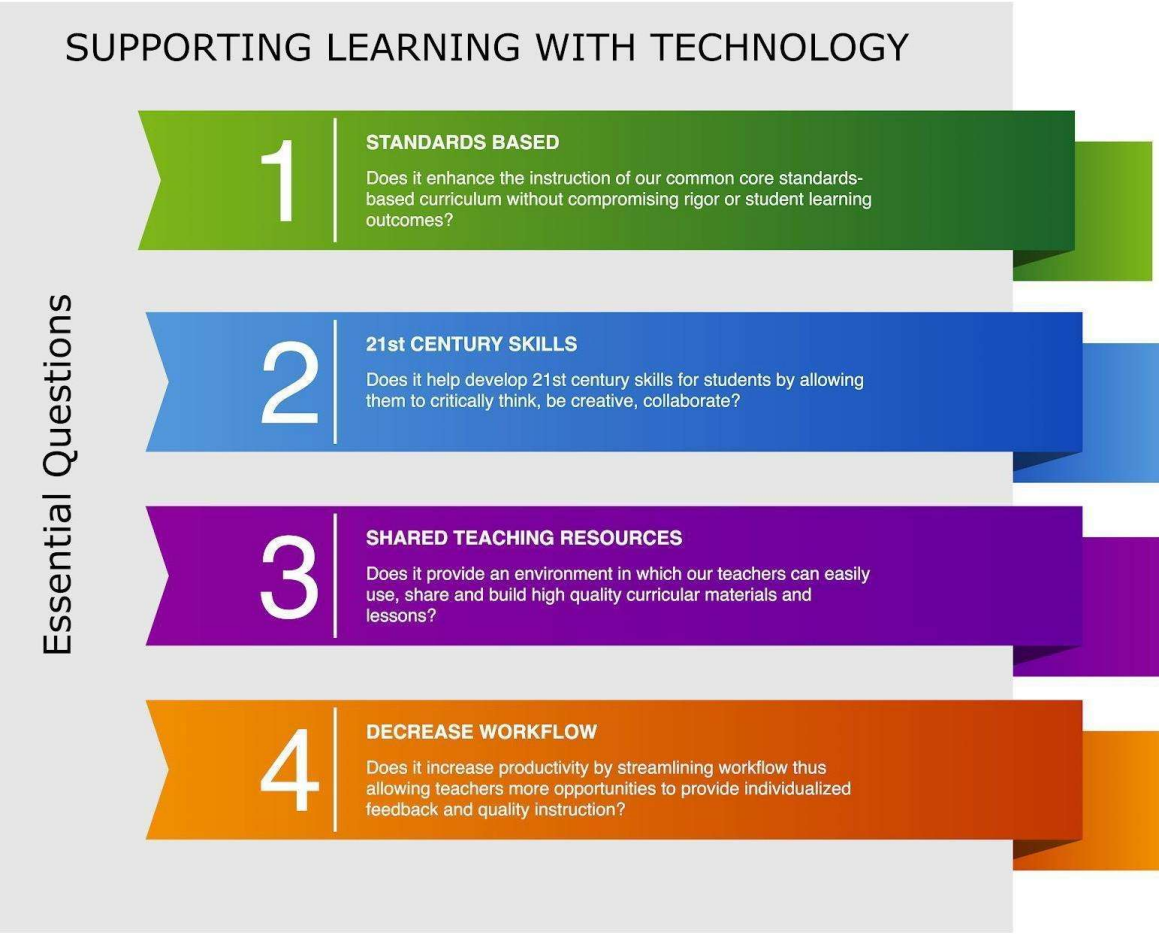
Technology can help facilitate the type of project-based learning that requires collaboration and communication among students. By focusing on the skills students will need to foster to be future problem solvers and critical thinkers the curriculum we curate will demand support through technology. It should force us to rethink the way we instruct, the learning activities we ask our students to complete, the assessments to gauge learning and even the physical spaces of learning.

Classroom technology by itself has never been the ultimate goal nor destination for the district. Rather, classroom technology can be an effective platform upon which instruction and learning can be

differentiated (each student receiving what they need to master the curriculum unique to their own learning styles and modalities), engaging (software that is well designed and draws each student into an interactive, adaptive learning situation with the chance for individualized remediation), and collaborative (multiple students working together to accomplish a learning goal or to produce a group product), and is able to draw the student into an active role in their daily experience.

This EdTech Plan hopes to outline a model that supports learning and teaching by considering the following 4 essential questions before making all decisions regarding how technology is to be integrated here at PCHS.

1. Does it enhance the instruction of our common core standards-based curriculum without compromising rigor or student learning outcomes?
2. Does it help develop 21st century skills for students by allowing them to think critically, be creative, and collaborate?
3. Does it provide an environment in which our teachers can easily use, share and build high quality curricular materials and lessons?
4. Does it increase productivity by streamlining workflow thus allowing teachers more opportunities to provide individualized feedback and quality instruction?



Classrooms that prepare students for college and career seamlessly integrate technology into daily instruction in a way that intentionally scaffolds students' technology skills. Although today's students are digital natives with many skills in social networking, most of them are not social learners with the ability to apply complex technology skills to everyday challenges.

Furthermore, students' everyday experiences are seamlessly interwoven with digital devices and instant communication. In order to meet students "where they are," technology instruction must be infused in every subject area. Teachers are aware of this trend. According to a national *Pew* survey, 95% of students regularly use the Internet.

Given this, a modern curriculum must purposefully include incremental technology-infused skill acquisition. However, the design of every effective curriculum begins by considering the unique needs of the learners. Although students are comfortable tweeting and surfing the web, they still need support to use technology for productivity tasks such as creating spreadsheets and sending professional email.

Being aware of students' skill profiles with technology can greatly inform the development of a cohesive, integrated curriculum that allows students to build the technology skills sets necessary for college and career.

Assessments

Measuring learning is a necessary part of every teacher's work. Teachers need to check for student understanding, and parents, students, and leaders need to know how students are doing overall in order to help them successfully prepare for college and work. In addition to supporting learning across content areas, technology-enabled assessments can help reduce the time, resources, and disruption to learning required for the administration of paper assessments (Gohl, E. M., Gohl, D., & Wolf, 2009).

Assessments delivered using technology also can provide a more complete and nuanced picture of student needs, interests, and abilities than can traditional assessments, allowing educators to personalize learning. Technology can help us redefine assessment in a variety of ways. These tools can provide unobtrusive measurements for learners who are designing and building products, conducting experiments using mobile devices, and manipulating parameters in simulations. Problems can be situated in real-world environments, where students perform tasks, or include multi-stage scenarios that simulate authentic, progressive engagement with the subject matter. Teachers can access information on student progress and learning throughout the school day, which allows them to adapt instruction to personalize learning or intervene to address learning shortfalls.[6]

Technology can help us imagine and redefine assessment in a variety of ways. These tools can provide unobtrusive measurements for learners who are designing and building products, conducting experiments using mobile devices, and manipulating parameters in simulations. Problems can be situated in real-world environments, where students perform tasks, or include multi-stage scenarios that simulate authentic, progressive engagement with the subject matter. Teachers can access information on student progress and learning throughout the school day, which allows them to adapt

instruction to personalize learning or intervene to address particular learning shortfalls. The unique attributes of technology-based assessments that enable these activities include the following[11]:

1. Enhanced question types
2. Enables assessment of Growth Mindset
3. Provide Real-Time Feedback
4. Increase Accessibility
5. Adapt to Learner Ability and Knowledge
6. Embedded with the Learning Process
7. Access for Ongoing Learning

PCHS has decided to make a shift towards building an infrastructure that can better support teachers in delivering high quality online assessments.

Technology Support

21st Century Learning requires organizations to meet the current requirements of our standardized tests while also striving to achieve the 4Cs: communication, collaboration, creativity, and critical thinking. The skills needed for success in college and career are becoming increasingly complex, and schools must rise to meet new demands.

New academic standards and accountability measures across the nation have broadened the classroom experiences required for proficiency. As expectations rise, students are struggling to keep up. This trend is evidenced by falling preliminary assessment scores across the nation. Traditional instruction may be to blame. In their recent investigation of 21st Century Learning, *National Academies Press* found that rote learning does not support the educational transfer necessary to tackle the complex problems demanded by intensified academic standards. Students must be exposed to unfamiliar problems and encouraged to design meaningful solutions. Technology is a tool for such problem solving. A national Walden University study reports that teachers who use technology frequently place the highest emphasis on problem solving.

In addition to meeting traditional academic standards, students must also be prepared to tackle the demands of a modern world and modern workforce. A research report from *Adobe Education notes* that, "In today's world, a proficient employee needs to be computer literate, visually literate, information literate, media literate, and digitally literate." According to a report from the *Partnership for 21st Century Skills*: "Many of the fastest-growing jobs and emerging industries rely on workers' creative capacity - the ability to think unconventionally, question the herd, imagine new scenarios, and produce astonishing work." Technology assists with this type of capability. *Pew* reports that 76% of Advanced Placement and National Writing Project teachers believe that digital tools such as the Internet, social media, and cell phones "encourage student creativity and personal expression." In addition, the National Writing Project reports that the creation and consumption of multimedia increases the likelihood of deeper learning and longer skill retention.

Technology is a key driver towards instruction that impacts student learning outcomes, both on standardized assessments and for 21st Century learning skills. Students must have regular opportunities to engage in the 4Cs. In addition, they must have access to instant feedback enabled by digital assessment and customized assistive technology.

PLC EdTech Leaders for 2022-2023

PLC	PLC Leader(s)	EdTech Leader
Algebra 1	Larry Wiener	Perisha Bellinger
Algebra 2	Stephen Matthews	Kevin Oliva
AP History	Rob King	Steve Burr
Biology	Julie Benke	Julie Benke
Chemistry	Jane Curren	Gregg Strouse
English 9	Sarah Rosenthal	Scarlett Rojas
English 10	Evelyn Rivera & Alaina Voccio	Stephen Berger
English 11	All members are leaders	Michele Green
English 12	Shirin Ramzi	Logan Milburn
Geometry	Perisha Bellinger	Cheryl Onoye
Gov/Econ	Peyman Nazarian	Peyman Nazarian
Grading for Equity: English	Stephen Berger	Randy Tenansnow
Math Analysis	Cheryl Rivin	Boris Tsap
Performing Arts	Allison Cheng	Peter Ye
Physical Education	Adam Licea	Adam Licea
Sociology	David Pickard	Peyman Nazarian
Spanish 1	Laura Vladika	Laura Bachrach
Spanish 2	Laura Bachrach	Laura Bachrach
Spanish 3	Laura Vladika & Patricia Perez	Maggie Nance
Special Education	Paula Anderson	Crystal Storey
Study Skills	Joel Jimenez	Blaine Gorelik
Tech Ed	Pat Kuper	Alice Kim
U.S. History	Katie Pawlik	David Carini

Visual Arts	Angelica Pereyra and Ellen Unt	Rick Steil
World History	Kyle Thomas	Amir Osterweil

Hardware Resources as of 2022-2023

Item	**Location**	**Year**
40 Promethean Boards	Various Classrooms	2021-2022
1500 Student Devices	Home/School Loaner Program	2021-2022

Projected Cost for 1:1 Implementation

Year 1			
Part	**Cost**	**Quantity**	**Total**
Lenovo 300E Gen 3	$290	1500	$435,000
Google Mgt License	$25	1500	$37,500
Insurance (Case Included)	$80	1500	$120,000
Device Mgt Support Services (optional)	$15	1500	$22,500
Total	**$410**	**1500**	**$615,000**
Year 2	**No Cost – full implementation with existing inventory**		**$0**
Year 3			
Part	**Cost**	**Quantity**	**Total**
Lenovo 300E Gen 3	$290	750	$217,500
Google Management License	$25	750	$18,750
Insurance (Case Included)	$80	750	$60,000
Device Mgt Support Services (optional)	$15	750	$11,250
Total	**$410**	**750**	**$307,500**
Year 4			
Part	**Cost**	**Quantity**	**Total**

Lenovo 300E Gen 3	$290	750	$217,500
Google Management License	$25	750	$37,500
Insurance (Case Included)	$80	750	$120,000
Device Mgt Support Services (optional)	$15	750	$22,500
Total	**$410**	**750**	**$307,500**
Year 5			
Part	**Cost**	**Quantity**	**Total**
Lenovo 300E Gen 3	$290	750	$217,500
Google Management License	$25	750	$18,750
Insurance (Case Included)	$80	750	$60,000
Device Mgt Support Services (optional)	$15	750	$11,250
Total	**$410**	**750**	**$307,500**

Financing Future Tech Investment

PCHS must allocate sustainable funding sources to provide the technology solutions that best serve our school community. Funding technology to ensure our strong systems continue unimpeded and unhampered is essential to ensuring the longevity of our educational programs. Through ongoing reflection and analysis of our current resource allocation and needs, we can improve the efficiency and deployment of resources, reserving adequate funding on an annual basis for 1:1 devices. In addition to currently available one-time seed money which enables us to initiate our school wide adoption of 1:1 devices, we are committed to implementing best practices including: further review and analysis of the usage and instructional impact data for subscriptions, consolidation of underutilized subscriptions, and reducing duplication across departments and roles to better manage and evaluate our resources.

The chart below projects minimum cost savings as a result of these measures:

Category	Consolidation & Improved Efficiency	Estimated Cost Savings
Personnel	Reduction in benefits costs ~40% of 2 full time positions	$71,500
Improved Efficiencies	Reduction in back-end fixes resulting from new set up in SIS and uniform grading procedures	$30,000
Instructional Software	Reduction in unused/non-renewed subscriptions (ex: Impero solutions, Performance Matters)	$139,707
Training by PLCs	Utilize PLC and EdTech Coaches for training and PD	40 hrs. x $150/hr. = $6000
Total Minimum Projected Cost Savings (Estimated)		***$247,207***

Funding Sources for 1:1

The following table illustrates the reasonable estimate for 1:1 device adoption and management as a component of sustainable funding from LCFF through ongoing investment in our educational program.

Fiscal Year	23-24	24-25	25-26	27-28	28-29	29-30	31-32	32-33
Implementation Year	1	2	3	4	5	6	7	8
Funding Source	CARES	CARES	LCFF	LCFF	LCFF	LCFF	LCFF	LCFF
Cost	**$615,000**	**$0**	**$307,250**	**$307,250**	**$307,250**	**$307,250**	**$307,250**	**$307,250**


ISTE®
Standards

INTRODUCTION

The ISTE Standards serve as a framework for innovation and excellence in learning, teaching and leading. As a body of work, the suite of standards has guided educator practice, school improvement planning, professional growth and advances in curriculum. The ISTE Standards have been updated as learning have evolved, and now the ISTE Standards will be considered a single work comprising of four sections: Students, Educators, Educational Leaders and Coaches. As a compilation, the ISTE Standards provide a holistic and comprehensive guide to transforming systems in order to transform the lives of our students.

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SECTION 1: STUDENTS

1.1. Empowered Learner

Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students:

1.1.a. articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.

1.1.b. build networks and customize their learning environments in ways that support the learning process.

1.1.c. use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.

1.1.d. understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

1.2. Digital Citizen

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

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

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

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

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

1.3. Knowledge Constructor

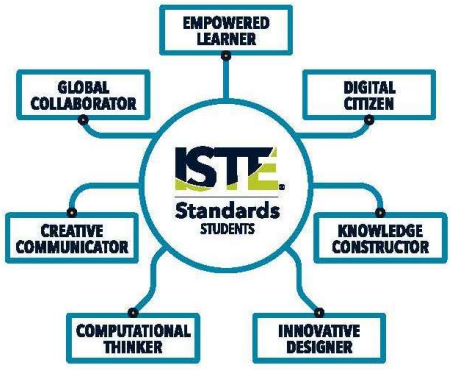
Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others. Students:

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

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

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

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



1.4. Innovative Designer

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

- 1.4.a. know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
- 1.4.b. select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
- 1.4.c. develop, test and refine prototypes as part of a cyclical design process.
- 1.4.d. exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

1.5. Computational Thinker

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

- 1.5.a. formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
- 1.5.b. collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.
- 1.5.c. break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.
- 1.5.d. understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

1.6. Creative Communicator

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

- 1.6.a. choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
- 1.6.b. create original works or responsibly repurpose or remix digital resources into new creations.
- 1.6.c. communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.
- 1.6.d. publish or present content that customizes the message and medium for their intended audiences.

1.7. Global Collaborator

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

- 1.7.a. use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.
- 1.7.b. use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.
- 1.7.c. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
- 1.7.d. explore local and global issues and use collaborative technologies to work with others to investigate solutions.

SECTION 2: EDUCATORS

Empowered Professional

2.1. Learner

Teachers continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. Teachers:

- 2.1.a. Set professional learning goals to explore and apply pedagogical approaches made possible by technology and reflect on their effectiveness.
- 2.1.b. Pursue professional interests by creating and actively participating in local and global learning networks.
- 2.1.c. Stay current with research that supports improved student learning outcomes, including findings from the learning sciences.

2.2. Leader

Teachers seek out opportunities for leadership to support student empowerment and success and to improve teaching and learning. Teachers:

- 2.2.a. Shape, advance and accelerate a shared vision for empowered learning with technology by engaging with education stakeholders.
- 2.2.b. Advocate for equitable access to educational technology, digital content and learning opportunities to meet the diverse needs of all students.
- 2.2.c. Model for colleagues the identification, experimentation, evaluation, curation and adoption of new digital resources and tools for learning.

2.3. Citizen

Teachers inspire students to positively contribute and responsibly participate in the digital world. Teachers:

- 2.3.a. Create experiences for learners to make positive, socially responsible contributions and exhibit empathetic behavior online that build relationships and community.
- 2.3.b. Establish a learning culture that promotes curiosity and critical examination of online resources and fosters digital literacy and media fluency.
- 2.3.c. Mentor students in the safe, ethical and legal practice with digital tools and protection of intellectual rights and property.
- 2.3.d. Model and promote management of personal data and digital identity and protect student data privacy.

Learning Catalyst

2.4. Collaborator

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

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

2.5. Designer

Teachers design authentic, learner-driven activities and environments that recognize and accommodate learner variability. Teachers:

- 2.5.a. Use technology to create, adapt and personalize learning experiences that foster independent learning and accommodate learner differences and needs.
- 2.5.b. Design authentic learning activities that align with content area standards and use digital tools and resources to maximize active, deep learning.
- 2.5.c. Explore and apply instructional design principles to create innovative digital learning environments that engage and support learning.

2.6. Facilitator

Teachers facilitate learning with technology to support student achievement of the 2016 ISTE Standards for Students. Teachers:

- 2.6.a. Foster a culture where students take ownership of their learning goals and outcomes in both independent and group settings.
- 2.6.b. Manage the use of technology and student learning strategies in digital platforms, virtual environments, hands-on makerspaces or in the field.
- 2.6.c. Create learning opportunities that challenge students to use a design process and/or computational thinking to innovate and solve problems.
- 2.6.d. Model and nurture creativity and creative expression to communicate ideas, knowledge or connections.

2.7. Analyst

Teachers understand and use data to drive their instruction and support students in achieving their learning goals. Teachers:

- 2.7.a. Provide alternative ways for students to demonstrate competency and reflect on their learning using technology.
- 2.7.b. Use technology to design and implement a variety of formative and summative assessments that accommodate learner needs, provide timely feedback to students and inform instruction.
- 2.7.c. Use assessment data to guide progress and communicate with students, parents and education stakeholders to build student self-direction.

Crompton, H., & Sykora, C. (2021). Developing instructional technology standards for educators: A design-based research study. Computers and Education Open 2 https://doi.org/10.1016/j.caeo.2021.100044

SECTION 3: EDUCATION LEADERS

3.1. Equity and Citizenship Advocate

Leaders use technology to increase equity, inclusion, and digital citizenship practices. Education leaders:

- 3.1.a. Ensure all students have skilled teachers who actively use technology to meet student learning needs.
- 3.1.b. Ensure all students have access to the technology and connectivity necessary to participate in authentic and engaging learning opportunities.
- 3.1.c. Model digital citizenship by critically evaluating online resources, engaging in civil discourse online and using digital tools to contribute to positive social change.
- 3.1.d. Cultivate responsible online behavior, including the safe, ethical and legal use of technology.

3.2. Visionary Planner

Leaders engage others in establishing a vision, strategic plan and ongoing evaluation cycle for transforming learning with technology. Education leaders:

- 3.2.a. Engage education stakeholders in developing and adopting a shared vision for using technology to improve student success, informed by the learning sciences.
- 3.2.b. Build on the shared vision by collaboratively creating a strategic plan that articulates how technology will be used to enhance learning.
- 3.2.c. Evaluate progress on the strategic plan, make course corrections, measure impact and scale effective approaches for using technology to transform learning.
- 3.2.d. Communicate effectively with stakeholders to gather input on the plan, celebrate successes and engage in a continuous improvement cycle.
- 3.2.e. Share lessons learned, best practices, challenges and the impact of learning with technology with other education leaders who want to learn from this work.

3.3. Empowering Leader

Leaders create a culture where teachers and learners are empowered to use technology in innovative ways to enrich teaching and learning. Education leaders:

- 3.3.a. Empower educators to exercise professional agency, build teacher leadership skills and pursue personalized professional learning.
- 3.3.b. Build the confidence and competency of educators to put the ISTE Standards for Students and Educators into practice.
- 3.3.c. Inspire a culture of innovation and collaboration that allows the time and space to explore and experiment with digital tools.
- 3.3.d. Support educators in using technology to advance learning that meets the diverse learning, cultural, and social-emotional needs of individual students.
- 3.3.e. Develop learning assessments that provide a personalized, actionable view of student progress in real time.

3.4. Systems Designer

Leaders build teams and systems to implement, sustain and continually improve the use of technology to support learning. Education leaders:

3.4.a. Lead teams to collaboratively establish robust infrastructure and systems needed to implement the strategic plan.
3.4.b. Ensure that resources for supporting the effective use of technology for learning are sufficient and scalable to meet future demand.
3.4.c. Protect privacy and security by ensuring that students and staff observe effective privacy and data management policies.
3.4.d. Establish partnerships that support the strategic vision, achieve learning priorities and improve operations.

3.5. Connected Learner

Leaders model and promote continuous professional learning for themselves and others. Education leaders:

3.5.a. Set goals to remain current on emerging technologies for learning, innovations in pedagogy and advancements in the learning sciences.
3.5.b. Participate regularly in online professional learning networks to collaboratively learn with and mentor other professionals.
3.5.c. Use technology to regularly engage in reflective practices that support personal and professional growth.
3.5.d. Develop the skills needed to lead and navigate change, advance systems and promote a mindset of continuous improvement for how technology can improve learning.

SECTION 4: COACHES

4.1. Change Agent

Coaches inspire educators and leaders to use technology to create equitable and ongoing access to high-quality learning. Coaches:

- 4.1.a. Create a shared vision and culture for using technology to learn and accelerate transformation through the coaching process.
- 4.1.b. Facilitate equitable use of digital learning tools and content that meet the needs of each learner.
- 4.1.c. Cultivate a supportive coaching culture that encourages educators and leaders to achieve a shared vision and individual goals.
- 4.1.d. Recognize educators across the organization who use technology effectively to enable high-impact teaching and learning.
- 4.1.e. Connect leaders, educators, instructional support, technical support, domain experts and solution providers to maximize the potential of technology for learning.

4.2. Connected Learner

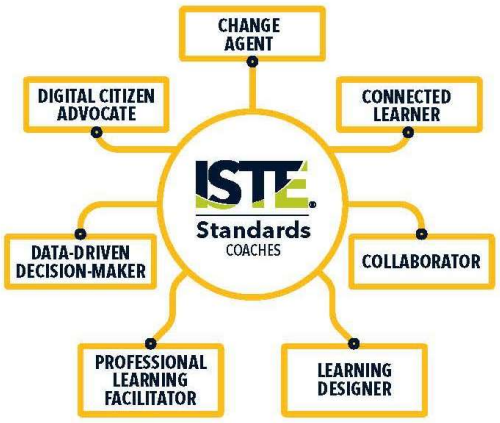
Coaches model the ISTE Standards for Students and the ISTE Standards for Educators and identify ways to improve their coaching practice. Coaches:

- 4.2.a. Pursue professional learning that deepens expertise in the ISTE Standards in order to serve as a model for educators and leaders.
- 4.2.b. Actively participate in professional learning networks to enhance coaching practice and keep current with emerging technology and innovations in pedagogy and the learning sciences.
- 4.2.c. Establish shared goals with educators, reflect on successes and continually improve coaching and teaching practice.

4.3. Collaborator

Coaches establish productive relationships with educators in order to improve instructional practice and learning outcomes. Coaches:

- 4.3.a. Establish trusting and respectful coaching relationships that encourage educators to explore new instructional strategies.
- 4.3.b. Partner with educators to identify digital learning content that is culturally relevant, developmentally appropriate and aligned to content standards.
- 4.3.c. Partner with educators to evaluate the efficacy of digital learning content and tools to inform procurement decisions and adoption.
- 4.3.d. Personalize support for educators by planning and modeling the effective use of technology to improve student learning.



4.4. Learning Designer

Coaches model and support educators to design learning experiences and environments to meet the needs and interests of all students. Coaches:

- 4.4.a. Collaborate with educators to develop authentic, active learning experiences that foster student agency, deepen content mastery and allow students to demonstrate their competency.
- 4.4.b. Help educators use digital tools to create effective assessments that provide timely feedback and support personalized learning.
- 4.4.c. Collaborate with educators to design accessible and active digital learning environments that accommodate learner variability.
- 4.4.d. Model the use of instructional design principles with educators to create effective digital learning environments.

4.5. Professional Learning Facilitator

Coaches plan, provide and evaluate the impact of professional learning for educators and leaders to use technology to advance teaching and learning. Coaches:

- 4.5.a. Design professional learning based on needs assessments and frameworks for working with adults to support their cultural, social-emotional and learning needs.
- 4.5.b. Build the capacity of educators, leaders and instructional teams to put the ISTE Standards into practice by facilitating active learning and providing meaningful feedback.
- 4.5.c. Evaluate impact of professional learning and continually make improvements in order to meet schoolwide vision for using technology for high-impact teaching and learning.

4.6. Data-Driven Decision-Maker

Coaches model and support the use of qualitative and quantitative data to inform their own instruction and professional learning. Coaches:

- 4.6.a. Assist educators and leaders in securely collecting and analyzing student data.
- 4.6.b. Support educators to interpret qualitative and quantitative data to inform their decisions and support individual student learning.
- 4.6.c. Partner with educators to empower students to use learning data to set their own goals and measure their progress.

4.7. Digital Citizen Advocate

Coaches model digital citizenship and support educators and students in recognizing the responsibilities and opportunities inherent in living in a digital world. Coaches:

- 4.7.a. Inspire and encourage educators and students to use technology for civic engagement and to address challenges to improve their communities.
- 4.7.b. Partner with educators, leaders, students and families to foster a culture of respectful online interactions and a healthy balance in their use of technology.
- 4.7.c. Support educators and students to critically examine the sources of online media and identify underlying assumptions.
- 4.7.d. Empower educators, leaders and students to make informed decisions to protect their personal data and curate the digital profile they intend to reflect.

COMPUTATIONAL THINKING COMPETENCIES FOR EDUCATORS

Leaders and educators around the world have the enormous responsibility of preparing all students for success in a future where computing power underpins every aspect of the systems we encounter in our daily lives. Ensuring that every student understands and is able to harness the power of computing to improve their success in their personal, academic or professional lives is an ambitious goal. The ISTE Standards: Computational Thinking Competencies for Educators is intended to help all educators contribute to making that goal a reality.

Similarly to how technology is used by educators to deepen content area learning while building digital learning skills, teachers can integrate CT practices in their instruction to introduce computational ideas. This will enhance student content knowledge and build confidence and competence in CT. By integrating computational thinking into the classroom, educators can support students to develop problem-solving and critical-thinking skills, and empower them for success as CS learners and computational thinkers.

This document is not a one-size-fits-all list of expectations, but a recognition that competencies present different opportunities for growth and goal-setting for educators. Educators are doing powerful work to integrate CT across other disciplines to enable students to learn, use and apply CS concepts and CT practices across different contexts. ISTE seeks to help educators recognize where this work is already happening, identify opportunities to make these connections more explicit, and develop new ways to deepen student learning in CS, using computational thinking to drive that work.

5.1. Computational Thinking (Learner)

Educators continually improve their practice by developing an understanding of computational thinking and its application as a cross-curricular skill. Educators develop a working knowledge of core components of computational thinking: such as decomposition; gathering and analyzing data; abstraction; algorithm design; and how computing impacts people and society. Educators:

- 5.1.a. Set professional learning goals to explore and apply teaching strategies for integrating CT practices into learning activities in ways that enhance student learning of both the academic discipline and CS concepts.
- 5.1.b. Learn to recognize where and how computation can be used to enrich data or content to solve discipline-specific problems and be able to connect these opportunities to foundational CT practices and CS concepts.
- 5.1.c. Leverage CT and CS experts, resources and professional learning networks to continuously improve practice integrating CT across content areas.
- 5.1.d. Develop resilience and perseverance when approaching CS and CT learning experiences, build comfort with ambiguity and open-ended problems, and see failure as an opportunity to learn and innovate.
- 5.1.e. Recognize how computing and society interact to create opportunities, inequities, responsibilities and threats for individuals and organizations.

5.2. Equity Leader (Leader)

All students and educators have the ability to be computational thinkers and CS learners. Educators proactively counter stereotypes that exclude students from opportunities to excel in computing and foster an inclusive and diverse classroom culture that incorporates and values unique perspectives; builds student self-efficacy and confidence around computing; addresses varying needs and strengths; and addresses bias in interactions, design and development methods. Educators:

- 5.2.a. Nurture a confident, competent and positive identity around computing for every student.
- 5.2.b. Construct and implement culturally relevant learning activities that address a diverse range of ethical, social and cultural perspectives on computing and highlight computing achievements from diverse role models and teams.
- 5.2.c. Choose teaching approaches that help to foster an inclusive computing culture, avoid stereotype threat and equitably engage all students.
- 5.2.d. Assess and manage classroom culture to drive equitable student participation, address exclusionary dynamics and counter implicit bias.
- 5.2.e. Communicate with students, parents and leaders about the impacts of computing in our world and across diverse roles and professional life, and why these skills are essential for all students.

5.3. Collaborating Around Computing (Collaborator)

Effective collaboration around computing requires educators to incorporate diverse perspectives and unique skills when developing student learning opportunities, and recognize that collaboration skills must be explicitly taught in order to lead to better outcomes than individuals working independently. Educators work together to select tools and design activities and environments that facilitate these collaborations and outcomes. Educators:

5.3.a. Model and learn with students how to formulate computational solutions to problems and how to give and receive actionable feedback.

5.3.b. Apply effective teaching strategies to support student collaboration around computing, including pair programming, working in varying team roles, equitable workload distribution and project management.

5.3.c. Plan collaboratively with other educators to create learning activities that cross disciplines to strengthen student understanding of CT and CS concepts and transfer application of knowledge in new contexts.

5.4. Creativity & Design (Designer)

Computational thinking skills can empower students to create computational artifacts that allow for personal expression. Educators recognize that design and creativity can encourage a growth mindset and work to create meaningful CS learning experiences and environments that inspire students to build their skills and confidence around computing in ways that reflect their interests and experiences. Educators:

5.4.a. Design CT activities where data can be obtained, analyzed and represented to support problem-solving and learning in other content areas.

5.4.b. Design authentic learning activities that ask students to leverage a design process to solve problems with awareness of technical and human constraints and defend their design choices.

5.4.c. Guide students on the importance of diverse perspectives and human-centered design in developing computational artifacts with broad accessibility and usability.

5.4.d. Create CS and CT learning environments that value and encourage varied viewpoints, student agency, creativity, engagement, joy and fun.

5.5. Integrating Computational Thinking (Facilitator)

Educators facilitate learning by integrating computational thinking practices into the classroom. Since computational thinking is a foundational skill, educators develop every student's ability to recognize opportunities to apply computational thinking in their environment. Educators:

5.5.a. Evaluate and use CS and CT curricula, resources and tools that account for learner variability to meet the needs of all students.

5.5.b. Empower students to select personally meaningful computational projects.

5.5.c. Use a variety of instructional approaches to help students frame problems in ways that can be represented as computational steps or algorithms to be performed by a computer.

5.5.d. Establish criteria for evaluating CT practices and content learning that use a variety of formative and alternative assessments to enable students to demonstrate their understanding of age-appropriate CS and CT vocabulary, practices and concepts.

ADOPTING THE ISTE STANDARDS

The ISTE Standards are research-based and can meet local goals, needs and priorities. Adopting the standards in a school, district or state/province takes different forms. Leaders may decide to use the standards in a variety of ways, including:

- As part of statewide or district-level expectations.
- To guide systemwide planning, including school improvement and technology plans.
- To guide professional development plans and/or individual professional growth goals.
- To map curriculum.
- To ensure that lesson design and plans include purposeful use of technology.
- As part of a learning management system or web system.
- In teacher preparation across the curriculum.
- To embed in job descriptions and hiring decisions.

Access this report to support systemwide adoption of the ISTE Standards

Crompton, H., & Sykora, C. (2021). Developing instructional technology standards for educators: A design-based research study. Computers and Education Open 2 **https://doi.org/10.1016/j.caeo.2021.100044**