

**Jefferson School District 14J  
Technology Strategic Plan**

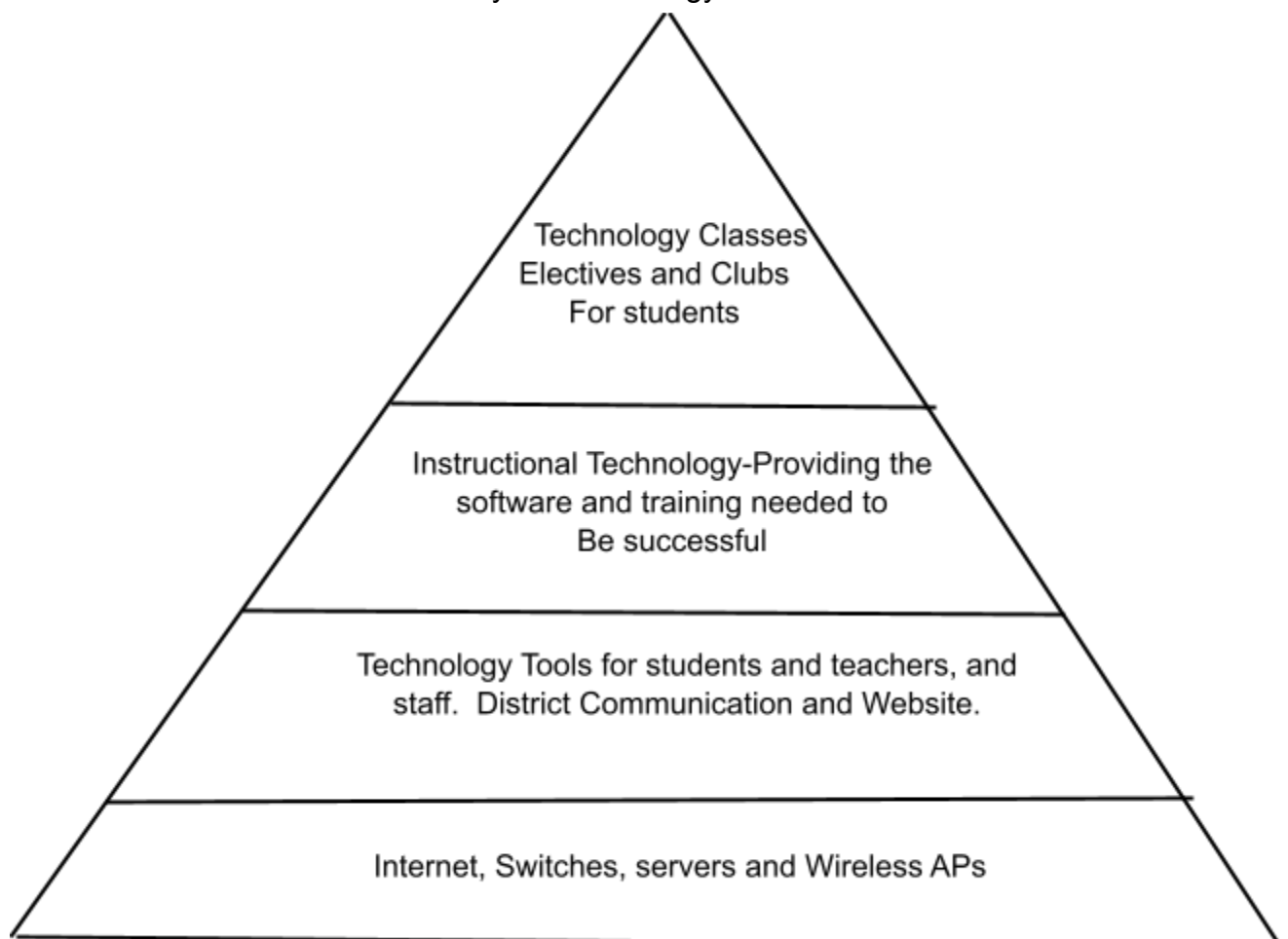
**Prepared by  
Christopher Stephen Shaw  
Technology Director**

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## Overview:

In my previous technology plan I talked about preparing students to face the challenges of a modern workforce which would require employees to have the skills to work in a world where they may be collaborating with coworkers on projects in different geographic regions and how this modern collaborative workforce requires individuals who are not just technically savvy but are comfortable adapting in a world of constantly changing technology. With this vision in mind we started building the foundations the district needed to provide staff and students with the technology and skills they would need to face this ever changing world..

### Hierarchy for Technology Success.



When I wrote this on 3/5/2019, I had no idea that just a year later the world would be under siege by a global pandemic which would turn the traditional models for education on its head. Luckily in the last year we made great strides in the bottom two tiers of our

plan by greatly improving our network capabilities and getting new computers to teachers, staff and students. This work allowed us to make the transition to an online model of teaching faster than many of our counterparts in other districts. I heard from many Technology Directors who spent the first few months of the pandemic just scrambling to find the hardware resources their students and teachers needed to transition to distance learning. Our preparations and improvements allowed us to jump directly into tier three and ramp up google classroom and online tools for collaborating and teaching online. It wasn't an easy transition to say the least but we did manage to get an online program up and running at breakneck speed last spring. Last summer taking the lessons we learned from the spring we boosted our Instructional Technology and support capabilities by bringing Becca Mallery into the fold. She has worked hard this year teaching best practices to our teachers, researching software, providing support for teachers and students and creating training videos, classes and other materials. Having her help focus on instructional technology has been indispensable this year and is part of the reason why our efforts have been so successful. This further cements my belief that this position needs to be part of our long term vision for our strategic technology plan.

### **Vision:**

The global pandemic has made us rethink technology and the role it plays in education. We have gone from preparing students for some future world where they need to collaborate online with coworkers to a world where everyone needs these skills in the here and now. Today many tech companies are questioning whether they will return to a traditional workplace model and I suspect we will see many cultural shifts in how people engage in business and commerce after this pandemic is over. Although education was turned on its head by the pandemic the question arises what should education look like after the pandemic subsides? I think we can all agree that in person schooling is crucial for the development of children. There are social and cultural development that only in person education can provide that we are unable to replicate in an online environment. However, as we move back to in person education we should take this opportunity to make sure we are not just reinstating tired old models of education but using this as an opportunity to push ourselves forward.

As we move past this pandemic I imagine a classroom where technology becomes a natural extension of teaching and learning. Computers and the use of technology should feel comfortable and normal because students and teachers engage in them as part of their normal routine. I picture a district where teachers use google classroom or other class management software as a way to organize and plan their lessons each

year. They can post supplemental materials, videos and assignments. Teachers will be able to record and post lectures that students can access for review or for a substitute to show if the teacher is out sick. Students in this district will have chromebooks that allow them to log in and see what is happening in each class, the assignments, materials, lectures and expectations. Teachers and students will be able to communicate through various media such as chat, email and video conference to ask questions and get help. Students will have the means to do assignments online, collaborate on group projects remotely and turn in their assignments. In this vision paper becomes the exception as everyone shifts to online formats. In this world both students and teachers engage with each other as seamlessly in the classroom as they do outside the classroom. This will push us forward to a world where students develop the skills to work in any environment, adapt to change and integrate with technology. It also puts the district in position where we are flexible in the ways in which we can also deliver education in other non-traditional ways such as online learning options for students.

To create this vision, however, there are some important lessons we learned from the pandemic that we need to make sure we address.

1. Inequity was greatly magnified by the pandemic. A student's access to technology and the internet are crucial to their success.
2. Instructional Technology needs to become a key component of every school district. In a world where technology is a lynchpin to success we need someone who can focus on keeping the skills and knowledge of teachers and students up to date and offer them the support they need.
3. Support becomes much broader in a pandemic. Once school issued technology leaves the district the traditional models for support have to be expanded. During the pandemic we discovered that not only do teachers need support but so do students, families and in some cases the community also need technology support.
4. Communication becomes challenging and increasingly more important as you work remotely and have less direct contact with people.
5. Traditionally most schools do not allocate the resources they need to have current up to date technology available. It is pretty common for districts to rely on donated computers, second hand equipment and the cheapest new technology available. This model proved to be a weak link for many districts that discovered older and outdated technology was woefully inadequate to meet the demands of distance learning.

Next we will go back to our hierarchy for Technology Success and apply what we have learned from the pandemic to this model to help us achieve our vision.

## **Goals and Objectives**

### **The Base ( Internet, Switches, Servers, and wireless AP's)**

Your network infrastructure is the backbone that will support all of your computers, software and classes. If this infrastructure is not solid then you will experience problems with internet access and how everyone's technology performs in the classroom.

To date we have successfully completed the following improvements to our network infrastructure

- 1.) Created a 10 GB network
- 2.) We have increased our Internet bandwidth to 1 GB
- 3.) We have increased Wireless access throughout the district

Recommendations:

- 1.) We should use E-rate to clean up wiring in our older schools to improve connectivity.
- 2.) In the next 1-2 years we should update and replace our servers that manage our network using E-rate funds
- 3.) We should protect this investment by updating and replacing UPS (uninterruptible power supplies).

Budgeting

1. With E-rate funding in 21-22 the district should invest \$15,000 to update wiring and UPS in the HS and old Elementary school in the upcoming year.
2. In 22-23 we should invest a similar amount to update and replace our servers at the district.
3. By 23-24 our network infrastructure will be almost 5 years old and we should plan on updating switches and AP's to make sure we maintain good solid bandwidth capabilities.

**Second Layer ( Computers, Technology, and District Communication)**

Once you have a solid base then you want to make sure you have good tools for students and teachers to use. A saving grace for us during the pandemic is that we had made big strides in replacing teacher computers, acquiring chromebooks for students and improving district communication through a new website and improved communication tools.

Issues:

1. One of the things we have found is that old computers have proven to be inadequate for handling online learning and working remotely. While most teachers and administrators received new computers the technology department scrambled finding computers that could meet the needs of IA's and support staff.
2. We have barely met the demands of students needing chromebooks and many of our chromebooks are old and about to expire for support over the next few years.

Chrome Books Expiring	Summer 2021	Summer 2022	Summer 2024	
DO	6			
JES	9	78	160	
JMS	1	108	58	
JHS	36	251	117	
	52	437	335	824

3. Access to the internet really exposed equity problems in education. While we have been talking about how access to technology affects the homework gap the pandemic really laid bare this issue. Not all internet access is equal and students with better equipment and better bandwidth had better outcomes during this pandemic. As technology becomes increasingly important moving forward we should do more to battle this inequity.
4. Computer labs are in bad shape. We have been using old donated computers and we should start making plans for the labs going forward.

Recommendations:

1. To address the issues with the labs, outdated computers and equity issues I recommend we move to a 1:1 program for each school for at least 3rd-12th

grade. A 1:1 program will make sure that each student has the technology tools they need to meet their educational needs. This will allow students to have a tool just like a textbook that they can take home and use for their education. Additionally most of the computers used in labs are just needed for internet based programs or testing and all of this can be done on chromebooks. By moving to a 1:1 program we can focus on specialty computers for labs for robotics programs, video production or other electives that require more advanced windows based computers. To meet this need knowing that chromebooks get damaged and eventually become unsupportable I recommend we start a replacement schedule to keep our chromebook fleet up to date.

Recommended purchasing Schedule			
Year		Cost Per Computer	Estimated Annual Cost
21-22	225	265	\$59,625.00
22-23	225	265	\$59,625.00
23-24	225	265	\$59,625.00
24-25	225	265	\$59,625.00
	900		

Vision for labs:

Elementary we can turn the existing lab into a makerspace where students use chromebooks and not replace the existing desktops.

MS already has a makerspace and 15 computers for advanced classes such as robotics and video editing. We should work to make that a full class set moving forward.

HS has several labs. The Library recover lab could easily be a space where students use their chromebooks for credit recovery. The testing lab would no longer need desktops if students used their chromebooks for testing. The main lab could be a makerspace and we have a handful of laptops for a robotics program that never made it off the ground before the pandemic. CTE has a high end lab to do CAD that should be kept in place and up to date. We should expand the computers for high end applications like CAD, Robotics and Video Production and focus resources in labs to those applications.

- In addition to getting Chromebooks into each student's hands we need to make sure students have access to internet access. We have a lot of students with inadequate access or no internet access at all. This year we purchased hotspots and I would recommend that we keep at least 100 active to fight this inequity.

Verizon Hot Spots			
Cost Unlimited Data	Months	Devices	Cost
	15	12	100
			\$18,000.00

- Although we have replaced the majority of our work computers, we should create a replacement schedule where we add new inventory each year and rotate old stock down to support staff and/or computer labs that need computers. To do this I would recommend a 5 year rotation cycle.

Computer staff/teachers			
Year		Cost Per Computer	Estimated Annual Cost
21-22	15	1200	\$18,000.00
22-23	15	1200	\$18,000.00
23-24	15	1200	\$18,000.00
24-25	15	1200	\$18,000.00
25-26	15	1200	\$18,000.00
	75		

- Improved communication is becoming critical for providing information to students, staff and the public at large. We have created a new website and made it easier for staff to make changes and updates. We should continue to strive to keep our website from becoming stagnant by keeping content dynamic. Additionally this year we implemented a new mass communication tool that has made it easier for staff to target and send out messages to parents and community members. Despite this we still struggle to engage with the community and promote a positive image for the school district. We are finding that video production and video messaging provides better methods for sharing messages and engaging with the public. I recommend that we continue to put resources into keeping our websites dynamic and keep pushing forward with



video messaging to stay engaged with the community and promote a positive image of the district.

### **Layer 3 (Instructional Technology)**

Something that is becoming just as important as the technology is our ability to teach our students and staff how to use the technology and software tools that are available. One of the biggest challenges throughout this pandemic is that many students were learning how to use computers, while using the computers. Along with that, so many of those students didn't have someone to help them in-the-moment. Having teachers add technology to their massive list of topics to teach does not make sense; especially when they are learning it themselves. Throughout Becca's time as an Instructional Technology Specialist, she has stayed busy helping families, students, and staff in navigating the technology we use, finding new technology, providing training both planned and in-the-moment, and creating platforms for staff to share their technology resources.

Transitioning back to in-person learning is going to prove a new challenge for the district and especially for the technology department. It is anticipated that not all students will come back at the same time. This means that staff, students, and families need to be prepared for a hybrid model. Finding the balance for teachers to teach in-person and engage in distance learning without burning them out needs to be of highest priority. We can not ask our teachers to do two jobs, so how do we ensure that all students are still getting their education and balance the workload of teachers and staff? The Instructional Technology Specialist would work with staff to set up a plan where they can offer live classes to both students in the classroom and online, at the same time. The Instructional Technology Specialist would work closely with teachers to support them in their transition, help navigate through the new technology, provide technology training to all staff, and meet them where they are at. Along with this, the Instructional Technology Specialist would continue to work with students and families to ensure that they are comfortable with using technology and getting online, as needed.

Even as we return to an in person model after the pandemic has passed, software like google classroom, having assignments online, and being able to interact with a teacher online are going to become part of every classroom. We need to make sure our teachers, students and families have the skills and support the need to meet these

needs. These skills not only will help prepare our students for the future but make it easier for us to adapt to how we teach students and face similar challenges in the future.

#### Recommendation

1. Hire full time and Instructional Technology Specialist with the following responsibilities
  - a. Provide training on software and technology resources for students and staff
  - b. Create training materials
  - c. Help develop a program for developing technology skills among elementary students
  - d. Research best practices and stay up to date on latest software and classroom best practices in regards to technology
  - e. Provide support to staff and family related to software and technology being used in the classrooms.
  - f. Help teachers create dynamic and engaging lessons.
  - g. Assist Director of Technology with other projects and assignments
  
2. At this level we should recommend software that teachers use for the upcoming year.
  - a. Google Classroom for Classroom Management
  - b. If we need a full fledged video conference for distance learning the preference is zoom. If we are back to full in person instruction then we should reevaluate this need. Google meets may be sufficient in such an environment
  - c. Securly should be maintained as our web filter especially in a 1:1 environment.
  - d. One challenge for teaching is making lessons dynamic and engaging lessons. We are currently working with WESD and other districts to investigate software such as nearpod and methods used to reinvigorate the way students engage in lessons.

#### **Layer 4 (Classes and Extracurricular Activities)**

Once in person school returns to normal JSD should continue its efforts to develop clubs and classes to expand access to computer and technology programs for students. JMS has made great strides by offering video production and robotics .

#### Recommendations:

1. Start creating clubs that promote computer science and technology that are accessible to all levels of K-12. Programming clubs, robotics clubs, media clubs etc...
2. Start looking for ways to offer courses for K-12 that gets them introduced to computer science concepts and skills. Code.org offers a free comprehensive computer science curriculum that allowed my previous school to offer computer programming to TAG students at Elementary, create a semester long programming class for middle school and create a CTE track for computer science at the High School level.

We found once these courses and clubs were offered there was huge demand for the material from the student body.

#### Budgeting

1. Funding to support the purchase of equipment for clubs in activities.
2. Future planning for staffing to support growth of computer science related education.