

# Innovative Technology Services (ITS)



Network Infrastructure



Hardware Repairs



Software Support



Projection Systems



Information Security



Live Help Desk Support



Technical Training



Intercoms / Bells / Clocks



Systems Administration



Staff & Student Devices



Copier / Printers



Telephones

**ITS Division = 2 Departments (Client Services & Infrastructure)**



# Strive 2025 Strategic Plan - Action Steps

## #1 Academic Achievement

1.3 Ensure standards-based pathways, programs and services reflect evidence-based practices, research and integration of technology for all students



## #4 Stewardship of Resources

4.1 Ensure transparency in the use of District resources





# Why Technology?

- *Educational software designed to help students develop particular skills at their own rate of progress have shown enormous promise in improving learning outcomes, particularly in math. (MIT J-PAL, 2019)*
- *If technology is interwoven comprehensively into pedagogy, it can act as a powerful tool for effective learning of elementary students. (Chauhan S., 2016)*
- *A meta-analysis of 10 studies examines the impact of laptop programs on students' academic achievement, found significantly positive average effect sizes in English, writing, mathematics, and science. (Zheng et al., 2016)*
- *When considering the effectiveness of technology interventions, positive findings increased three fold with effective training and support. (Archer K. et al., 2014)*

# Network Infrastructure

- Installation of new future ready networks in all schools is almost complete. All but CPES are finished
- TSD's maximum bandwidth is 3 Gbps. We need to double our school bandwidth caps to support more devices, especially in UTA schools
- Comcast has been contracted to increase TSD's total bandwidth to 10 Gbps and install hardware to double all school bandwidth caps by 12/19





# Information Security - Systems Administration



- Improved systems protection and reliability by installing a backup data storage and recovery center in the Administration Building
- Deployed account management tool to school administrations
- Deployed [Securly](#) for behavior management on Chromebooks
- Increased email security protocols and deployed Gopher for Chrome to allow Chrome device data to be imported, filtered, analyzed, and bulk-updated



**Email Phishing Attacks on TSD**

This site shows examples of phishing attacks and other scam emails received in Thompson School District. If you suspect that you have received a fraudulent email, please report it to the ITS Help Desk at (970) 613-7777. Do not reply to the sender. When in doubt, report it.

The examples below are fraudulent. Do not give them any information or respond to them in any way.

**Example 10:**

Initial email from Phishing attempt:

[sites.google.com/thompsonschools.org/tsdphishingattacks](https://sites.google.com/thompsonschools.org/tsdphishingattacks)



## Hardware Repair

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## Live Help Desk



- New technical support request software is live, going through trials, and is being configured
- Student Help Desk Teams are trained and working at MVHS, LHS, and BHS
- While larger inventories of new devices has increased support requirements, repair requirements have decreased





# Staff & Student Devices

- After five staff deployment cycles over the last two school years, TSD is about 170 computers away from achieving a 5 year standard for staff computers. This will be achieved this semester
- Legacy UTA school MVHS and CBMS have been refreshed with new equipment
- Five UTA schools have been added to the four existing for a total of nine UTA schools
- Two to five more UTA schools will be deployed this school year
- [First comes access, then comes intentional and impactful use](#)

## Student to Device Ratios 2019-20 (4 years old or newer)

MVHS 1.0:1.0 CB	LES 1.2:1.0 iPad/CB	LEMS 1.6:1.0 iPad/CB
BHS 1.0:1.0 CB	TES 1.2:1.0 iPad/CB	MBES 1.7:1.0 iPad/CB
CBMS 1.0:1.0 iPad	GES 1.2:1.0 iPad/CB	NES 1.8:1.0 CB
BRMS 1.0:1.0 iPad	FHS 1.3:1.0 CB	MES 2.0:1.0 iPad
TMS 1.0:1.0 CB	CPES 1.4:1.0 iPad/CB	WES 2.0:1.0 iPad/CB
WCMS 1.0:1.0 CB	CRES 1.4:1.0 iPad/CB	CES 2.0:1.0 iPad/CB
LEES 1.0:1.0 iPad	SMES 1.4:1.0 CB	BTES 2.2:1.0 iPad/CB
CMES 1.0:1.0 CB	BFKES 1.4:1.0 iPad/CB	TVHS 2.4:1 iPad/CB
HPK8 1.0:1.0 iPad/CB	PES 1.5:1.0 iPad/CB	LHS 4.0:1.0 CB/PC
BES 1.2:1.0 CB	ISES 1.5:1.0 iPad/CB	ECE None

Thousands of devices will be end-of-life in 2020



# Software Support

Recent staff additions are improving ITS capacity to support and coordinate the onboarding and retirement of district and school software

TSD Catalog of Digital Learning Resources 2019-20

File Edit View Insert Format Data Tools Add-ons Help [All changes saved in Drive](#)

100% \$ % .0\_ .00 123 10 B I S A [Grid] [List] [Table] [Chart] [Filter] [Sum]

The Big Ideas Math Videos app provides tutorial videos for every example in the Big Ideas Math middle school and high school programs. These videos are available with both English and Spanish audio.

	A	B	C	D	E	F	G	H
	Icon	Name and Link	Type and Description - Administrative, Pedagogical, and/or Content (Scroll to the right for the color coding legend)	Platform - iPad, Chromebook (CB), Cross-compatible (CC), or Browser	Scope - grades and/or content areas, schools or districtwide	Access - Teachers & Students, Teachers, Parent Permission	Cost and/or Subscription Needed	Type
30		<a href="#">Bandmate Chromatic Tuner</a>	Students are able to see exactly what written note they are singing or playing on their instrument.	iPad, CB	K-12 districtwide	Students	Free	Content - Music
32		<a href="#">Basic Science Dictionary</a>	With more than 6500 Scientific Terms and 200+ Science Experiments from various fields like Physics, Chemistry, Biochemistry, Computer Science, Environment Science, Mathematics, Biology etc, this Science Dictionary will sure cement your basics of science from elementary level to professional level.	iPad, CB	K-12 districtwide	Teachers & Students	Free	Content - Science
33		<a href="#">BeeLine Reader</a>	Makes reading easier and faster using BeeLine Reader! BeeLine uses a color gradient to guide your eyes from the end of one line to the beginning of the next. This seemingly simple tweak makes reading substantially easier and faster because it allows you to transition between lines quickly and effortlessly.	CC	3-12 districtwide	Students	Free	Pedagogical and/or multi-content
34		<a href="#">Big Ideas Math</a>	Big Ideas Math, this is a resource for students that use the Big Ideas Curriculum to access their textbooks digitally.	iPad or Chrome App, Website (with or without educational account)	All MS math students and any HS math students participating in the math pilot	Students	Free	Content - Mathematics
		<a href="#">Big Ideas Math Solutions</a>	The Big Ideas Math Solutions app provides worked out solutions for the odd-numbered exercises in the Big Ideas Math high school programs. Step-by-step solutions help high school students find and fix their mistakes and grow as independent learners.	iPad	All MS math students and any HS math students participating in the math pilot	Students	Free	Content - Mathematics





# Technical Training

ITS offers a menu of technical and instructional technology professional development using ITS and other district trainers

## Technology Professional Development Menu

Content	Operating Systems	Learning / Classroom Management	Google / Chrome Apps	iPad Apps	SIS / Gradebook / Data	Administrative Tools
<p><b>Training Available:</b> Basic, Intermediate, Advanced</p> <p>*All individual sessions are 45 min. unless otherwise noted.</p> <p>* Basic sessions tend to be more technical in nature. Intermediate and Advanced sessions tend to move into pedagogical methods.</p>	Mac OS High Sierra to Mojave (B, I)	Google Classroom (B, I, A)	Drive (B)	Notes & Pages (B, A)	Infinite Campus (B, I)	Mirrored TVs (B, A)
	Windows 10 (B, I)	Apple Classroom - iPad only (B, A)	Mail, Hangouts, Calendar, & Keep (B, I, A)	iMovie & Clips (B, I, A) (60 mins. I & A)	Illuminate (B) (30 mins.)	ITS Help Desk (B) (30 mins.)
	Chromebooks (B)	Class Dojo & Classcraft (B, A)	Docs, Drawings, & Jam Board (B, A)	Notability (B)	iReady (B, I)	PD Pro from Power School (CourseWhere replacement) (B)
	iPads (B)	SeeSaw (B, A)	Slides & Sites (B, I, A)	Swift Playgrounds (B, A)	Alpine (B, I)	Frontline (B) (30 mins.)
		Nearpod (B, A)	Forms & Sheets (B, A)	Keynote & Numbers (B, A)		SchoolDude (B) (30 mins.)
		Securly (B)	Scratch (B, A)	Using Google Apps on iPads (B, A)		Timeclock Plus (B) (30 mins.)



# Copier/Printers

- Our Canon contract ended in June
- We chose Pacific Office Automation and Konica Minolta Copier/Printers
- They are faster and more distributed for better uptime
- Faxing services have been changed from paper-based faxing machines to online digital faxing
- Changes in faxing and more devices/digital curriculum is reducing paper/ink costs districtwide





# Projection Systems

- As older types of interactive whiteboards and LCD projectors become inoperable, they are being replaced with mirrored TV systems
- 250 more were installed during the last six months and we are training new users now
- They can wirelessly mirror up to four desktops of any device type to model instruction and/or show student work on a high definition display





# Intercoms/Bells/Clocks

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# Telephones



- TSD communication systems have needed replacement for many years
- As school networks are replaced, new telephones, intercoms, bell software, and centralized clocks are being installed
- New phones have been installed at Administration, SSC, TMS, LHS, and TVHS. BHS is next
- New Intercom/Bell/Clock systems have been installed at TMS and LHS. BHS is being installed now.





# Budgets

Budgets →	2019-20 General ITS	2006 MLO	2018-19 + 2019-20 2018 MLO	2018 Bond	Totals
Allocation →					
↓Project Expenditures/Encumbered↓	\$1,780,508	\$494,148	\$2,714,000	\$2,200,000	\$7,188,656
Student Devices	\$67,002	\$0	\$433,489	\$718,225	\$1,218,716
Staff Devices	\$2,873	\$0	\$466,093	\$0	\$468,966
Network Infrastructure	\$92,281	\$7,200	\$182,854	\$0	\$282,335
A/V/I (i.e. Projection and Intercoms)	\$951	\$0	\$250,705	\$338,435	\$590,091
Telephone Systems	\$15,313	\$0	\$185,107	\$0	\$200,420
Bandwidth	\$6,912	\$260,247	\$0	\$0	\$267,159
Software	\$228	\$201,276	\$50,660	\$0	\$252,164
Computer & Innovation Labs	\$0	\$0	\$35,750	\$0	\$35,750
Training	\$3,546	\$0	\$25,076	\$0	\$28,622
Other Non-MLO Related Costs	\$1,336,689	\$0	\$0	\$58,080	\$1,394,769
Total Spent →	\$1,525,795	\$468,723	\$1,629,733	\$1,114,740	\$4,738,991
Remaining Budget →	\$254,713	\$25,425	\$1,084,267	\$1,085,260	<b>\$2,449,665</b>



## Works Cited

1. Archer, Karin, et al. “Examining the Effectiveness of Technology Use in Classrooms: A Tertiary Meta-Analysis.” *Computers & Education*, vol. 78, 2014, pp. 140–149., doi:[10.1016/j.compedu.2014.06.001](https://doi.org/10.1016/j.compedu.2014.06.001).
2. Chauhan, Sumedha. “A Meta-Analysis of the Impact of Technology on Learning Effectiveness of Elementary Students.” *Computers & Education*, vol. 105, 2017, pp. 14–30., doi:[10.1016/j.compedu.2016.11.005](https://doi.org/10.1016/j.compedu.2016.11.005).
3. Zheng, Binbin, et al. “Learning in One-to-One Laptop Environments.” *Review of Educational Research*, vol. 86, no. 4, 2016, pp. 1052–1084., doi:[10.3102/0034654316628645](https://doi.org/10.3102/0034654316628645).
4. Massachusetts Institute of Technology J-PAL. “Will Technology Transform Education for the Better?” [Education Technology Evidence Review](#), 2019.