

Our students are missing out on critical learning opportunities because we don't have the modern tools that they and our teachers need for education in the 21st century.

## We have a vision

- Teachers use technologies to create learning experiences not otherwise possible
- Students choose technologies to demonstrate what they understand and can do
- Teachers use technologies to tailor learning processes and materials for individual needs
- Students use technologies to contribute to global conversations and building of knowledge

# We have a plan

- Access to up-to-date learning devices such as tablets, netbooks, laptops, and desktops for all students.
- Personal learning device program in grades 5-7 that is primarily sustained by parent fees and is coming to grades 5-12
- Interactive projectors & document cameras for all classrooms
- WiFi & network infrastructure to support mobile learning
- Enough tech support personnel to roll out new initiatives and respond quickly when needed
- Media center collections that are up to date and include books, e-books, and online resources
- Opportunities for professional development & collaboration

# We lack the means due to chronic underfunding

Year	Enrollment	Additional funding if at AVC & DART Median	Additional funding if at AVC & DART Mean	Additional funding if at State Average
2005	5876	\$426,010	\$597,720	\$1,069,432
2006	5901	\$596,001	\$735,986	\$1,221,507
2007	5895	\$374,333	\$555,440	\$866,565
2008	5905	\$141,720	\$305,748	\$679,075
2009	5841	\$365,063	\$416,009	\$893,673
2010	5943	\$906,308	\$946,918	\$1,539,237
2011	5947	\$666,064	\$654,500	\$1,486,750
2012	6007	\$1,027,197	\$878,023	\$1,573,834
<b>Total</b>		<b>\$4,502,695</b>	<b>\$5,090,344</b>	<b>\$9,330,073</b>

Additional funding for instructional materials, equipment, and technology that would have been available had Shrewsbury been spending at levels more like neighboring and similar districts as reported by DESE at <http://profiles.doe.mass.edu/>

Shrewsbury is in the bottom 2% of school districts in the state for per pupil spending on instructional materials, equipment, and technology

	2005	2006	2007	2008	2009	2010	2011	2012	Mean
State Avg	\$337	\$360	\$356	\$362	\$357	\$394	\$422	\$377	\$371
Mean	\$257	\$278	\$303	\$299	\$275	\$294	\$282	\$261	\$281
Median	\$228	\$254	\$273	\$271	\$267	\$288	\$284	\$286	\$269
Shrewsbury	\$155	\$153	\$209	\$247	\$204	\$135	\$172	\$115	\$174

Spending comparison of instructional materials, equipment, and technology for Shrewsbury and 17 neighboring and similar districts as reported by DESE at <http://profiles.doe.mass.edu/>

## Ratios of Student Learning Devices

	Overall Student to Device Ratio	Student to Device Ratio for devices less than 5 years old
<b>Elementary</b>	4.84:1	10.65:1
<b>Middle</b>	0.98:1	1.06:1
<b>High</b>	4.26:1	7.68:1
<b>K-12</b>	2.04:1	2.55:1

- Parent-supported 1:1 program adds devices at middle schools
- Not enough modern devices at elementary and high schools

# Age of Student Learning Devices

	Student desktops more than 5 years old	Student laptops more than 5 years old	Student desktops circa 2002	Student laptops circa 2002
<b>Elementary</b>	100.00% (103/103)	91.25% (146/160)	100.00% (103/103)	28.75% (46/160)
<b>Middle</b>	40.49% (100/247)	76.56% (49/64)	25.10% (62/247)	4.69% (3/64)
<b>High</b>	39.27% (97/247)	92.68% (76/82)	0.00% (0/247)	0.00% (0/82)
<b>K-12</b>	50.25% (300/597)	88.56% (271/306)	27.64% (165/597)	16.01% (49/306)

Too many student devices are too old

## We have over 200 computers ca 2002



These computers predate MySpace (2003), GMail, Facebook, MacOS 10.4 (2004), Intel core MacBook, Google Apps for Education, Twitter, Mac OS 10.5, Google Docs (2006), iPhone, Android Phone (2007), and iPad 1 (2010)...

we do our best to keep them useful



but a 6 year old laptop is better than a 10 year old desktop

We stretch and squeeze every dollar

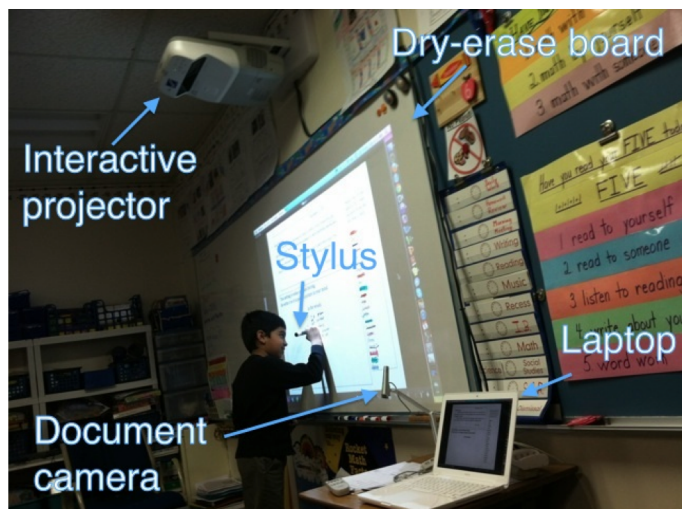


but it's just not enough

# What we need

Item	Type	Amount
Final year of seed money for middle school 1:1	One-time	\$95,000
Additional faculty laptops for 5 year replacement	Recurring	\$50,000
Additional faculty laptops for 5 year replacement	One-time	\$23,000
Additional faculty laptops for new hires	One-time	\$87,400
Additional iPads for new hires	One-time	\$21,600
Desktops for Oak computer lab	Catch-up	\$38,000
Elementary classroom computers	Catch-up	\$75,000
Special education classroom computers	Catch-up	\$75,000
Equipment and supplies for PARCC testing	One-time	\$20,000
<b>Total</b>		<b>\$485,000</b>

## The Interactive Classroom



Supports Universal Design for Learning (UDL) principles

- Multiple means of representation
- Multiple means of demonstrating understanding
- Multiple means of engagement

# Widespread support

- Generous donations from elementary PTOs and the Celebration in the Garden along with modest district funds have outfitted nearly every PK-4 classroom
- The new Sherwood is fully outfitted for grades 5-6
- Oak needs classroom projectors and making as many interactive as possible increases the value
- Generous donations from the Celebration in the Garden along with modest district funds have or will outfit nearly every 9-12 classroom with a projector cart

## What we need

Item	Type	Amount
Elementary classrooms	One-time	\$0
25% of Oak classrooms	Year 1 of 4	\$52,500
<b>Total</b>		<b>\$52,500</b>

If donations continue at previous levels no new appropriations will be needed for elementary classrooms

Oak projector carts are insufficient and aging. The summer of 2014 will commence a 4-year phased replacement with interactive projectors

SHS projector carts are aging and a 4-year phased replacement with interactive projectors is planned to begin in the summer of 2015

## Media Services, Educational TV Studio, Professional Development

- Media centers have been engaging in fundraising to maintain their collections of print and electronic media and need more help
- Our TV Production students aren't getting experience working with HD and the window to upgrade the Educational TV Studio is shrinking
- Professional development opportunities are needed to maintain the development of innovative, collaborative learning opportunities for our students

## What we need

Item	Type	Amount
Restoration of Media Center collections	Catch-up year 1 of 3	\$60,000
Sustain Media Center collections	Recurring	\$27,000
Educational TV Studio HD upgrade	Year 1 of 3	\$20,000
Professional development	Recurring	\$8,000
<b>Total</b>		<b>\$115,000</b>

# Infrastructure

- Ubiquitous, high-capacity wireless networking (WiFi) supports students, faculty, and staff
- Good Internet performance relies on the municipal network and Internet services provided by SELCO
- IT hardware, software, and services support efficient student learning, school and district operations, and school and district administration

# Shortcomings

- Elementary WiFi is through older, less robust technology and is less consistent and has lower capacity
- SHS WiFi lacks coverage and capacity to support the Personal Learning Device program.
- 1:1 schools need more and higher capacity fiber links
- Our improved web filtering service costs a bit more but delivers a lot more
- Our annual network maintenance and support costs have gone up

# What we need

Item	Type	Amount
Improve Elementary WiFi	One-time	\$92,000
Finish building out SHS WiFi	Catch-up	\$50,000
Increase and upgrade fiber connections	One-time	\$80,000
<b>Total</b>		<b>\$222,000</b>

## Tech Support Personnel

- The Tech Support Team consists of four Tech Support Specialists, an AV specialist, an IT Operations Specialist, and an IT Systems Manager
- Demand for tech support has been increasing even before the introduction of the Personal Learning Device program
- The Technology Department also designs, operates, maintains our AV systems throughout the district (interactive and cart projectors, ETS, digital media and CATV distribution, PA systems) and makes them available to inside and outside groups using our buildings

## Our tech support team is stretched thin

School Year	Tickets	% Increase over previous year
2010-2011	3074	NA
2011-2012	3229	5%
2012-2013 (introduction of Personal Learning Device Program)	7927	59%
2013-2014 (projected)	8623	8%

- Support requests are up
- Tech support staff are spending more time on crisis management than prevention
- Projects that compete with support requests are taking longer to complete
- State reporting requirements keep escalating
- Data services keep expanding

## What we need

Item	Type	Amount
One Middle School Instructional Technology Support Specialist	Recurring	\$40,000
One AV/Instructional Technology Support Specialist	Recurring	\$40,000
One Data Support Specialist	Recurring	\$55,000
Contract services, stipends	Recurring	\$20,000
<b>Total</b>		<b>\$155,000</b>

# Summary

	Catch-up	One-time & Short-term	Recurring	Total
Learning Devices	\$188,000	\$247,000	\$50,000	\$485,000
Interactive Projectors		\$52,500		\$52,500
Media, ETS, PD	\$60,000	\$20,000	\$35,000	\$115,000
Infrastructure	\$50,000	\$172,000		\$222,000
Support Personnel			\$155,000	\$155,000
<b>Total</b>	<b>\$298,000</b>	<b>\$491,500</b>	<b>\$240,000</b>	<b>\$1,029,500</b>

## It's time to invest and start rebuilding

Type of expense	Total amount	% of increase	\$ per pupil
Catch-up (one-time and short-term)	\$298,000	29%	\$49
Projects (one-time and short-term)	\$491,500	48%	\$81
Annual (including personnel)	\$240,000	23%	\$40
<b>Total</b>	<b>\$1,029,500</b>	<b>100%</b>	<b>\$170</b>

- The FY 2014 tech budget is \$166/student
- The projected enrollment for FY 2015 is 6052
- The requested increase for FY 2015 is \$170/student
- More than three-fourths of the increase is for one-time and short-term catch-up and projects