




Mohonasen  
CENTRAL SCHOOL DISTRICT

# Technology & Smart Schools Investment Plan 2016-2019

Board of Education Presentation 11/23/15

Technology needs to be as integrated and as easy to use as the chalkboard was.



# About Us...

2072 Curry Road Schenectady, NY 12303 (518) 356-8201

The Mohonasen Central School District draws most of its students from the town of Rotterdam – however, students also come from the towns of Colonie and Guilderland. Mohonasen is a Suburban Council school district that serves about 2,800 students in kindergarten through 12th grade. There are two elementary schools: Bradt Primary School, which serves students in grades K-2, and Pinewood Intermediate School, which serves students in grades 3-5. Draper Middle School serves students in grades 6-8 and Mohonasen High School serves students in grades 9-12.

While academics are at the heart of education, students are also provided opportunities for participation in extensive extracurricular programs that expand the learning experience beyond the classroom and offer unique, creative outlets for expression.

Mohonasen produces scholar-athlete teams, accomplished artists, award winning musicians and civic-minded youth who volunteer to help community members in need.



# District Information



## Mohonasen has *PLANS* for our students

Our mission is to ensure that students reach their Potential to Learn in an Academically rich, Nurturing and Safe environment.

## Vision Statement

Mohonasen Central School District will be widely recognized as an exemplary school district, enthusiastically educating mind, body and character. Families, visitors and community members will experience an environment of respect and care surrounding each personal interaction. They will discover a culture of excellence permeating every program. Mohonasen will be a model of a safe, effective and well-rounded educational community in a diverse suburban setting.

## District Goals

1. Raise expectations and close academic gaps
2. Development of body, mind, and character in a safe and secure environment that facilitates growth
3. Improve communications and positive interactions throughout the school community
4. Long-range education and fiscal/resource planning

## Context and Historical Development of the Plan

To succeed in the 21st century and in an evolving and increasingly complex and globalized economic environment, students must possess the skills and knowledge to become college and career ready.

Following guidance from the Partnership for 21st Century Skills Organization, and using the International Standards for Technology in Education (*ISTE*), the Mohonasen Educational Technology Advisory Group (ETAG) in conjunction with the district leadership team has developed a comprehensive technology plan for implementation over the next four years.

This plan is a roadmap for working with students and faculty over the next four years, and will be updated based upon implementation, feedback and the evolving nature of technology in the world.

Combining the research, along with additional stakeholder input, this plan represents the compilation of extensive information gathering, planning and comprehensive instructional technology development. In September 2014, the district administered a survey to determine the level of student internet access outside of the school day and access within the community. Of the possible 2,816 responses, 2,273 participants responded. With 81% of district families participating, a wealth of information was gleaned from the surveys. The results were used to help guide plan development in terms of resource allocation, accessibility and future planning. Teacher professional development surveys are also administered annually to gain additional information and help guide pertinent training.

# Center for Advanced Technology @ Mohonasen



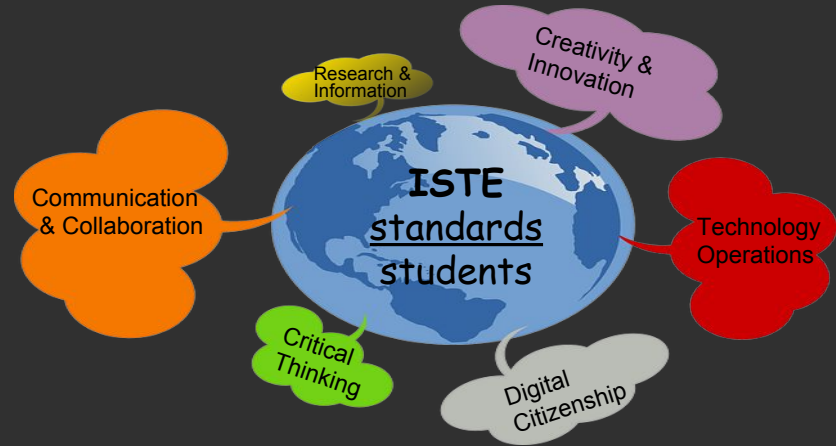
In November 2013, the Mohonasen community approved a \$48 million dollar capital project focused on updating all four district schools' aging physical and technological infrastructures. Included in the project was districtwide updating of wireless broadband connectivity. Connectivity updates have been completed in all schools. Also included in this capital project is the construction of a brand new, approximately 53,000 square foot, state-of-the-art facility, home to a variety of modern, high-tech laboratories and classrooms that offer learning experiences in environments that mirror the real-world. Through a unique partnership between Mohonasen Central School District, Capital Region BOCES and Schenectady County Community College (SCCC), classes will be offered to high school, college and workforce development students. This is yet another example of Mohonasen's forward thinking in terms of offering students opportunities to learn in programs and facilities unique to the Capital Region.

# Mohonasen's Educational Technology Advisory Group (ETAG)

**ETAG** was formed in order to evaluate, refine and develop the district's new technology plan in accordance with 21st century learning expectations & environments. In essence, ETAG helps link our technology goals to the district's overarching educational goals.

ETAG consists of teachers, administrators, and instructional technology personnel districtwide. The group represents a variety of stakeholders and reports back to each building's shared decision making or technology committee. The shared decision making and building level technology committees may include building level administrators, teachers, support staff & parents. At the high school level, students are included in these discussions.

Building level agenda items and discussions are shared with ETAG on a monthly basis. ETAG works closely with the districtwide professional development



committee in order to ensure that best practices for technology support, professional development and stakeholder input are seamlessly coordinated.

The district references the *International Society for Technology in Education (ISTE)* standards when writing district curricula. *ISTE* is the most widely referenced benchmark for best practices for integrating technology in schools. These standards are the best current attempt at defining the technology-related skills, knowledge and practices that are important in the K-12 environment.

# Our instructional philosophy



“The real problem is not adding technology to the current organization of the classroom, but changing the culture of teaching and learning.”

*\*Stay tuned for additional information regarding Alan November’s scheduled evening appearance for parents at Mohonasen in March 2016*

[Alan November TED Talk](#)

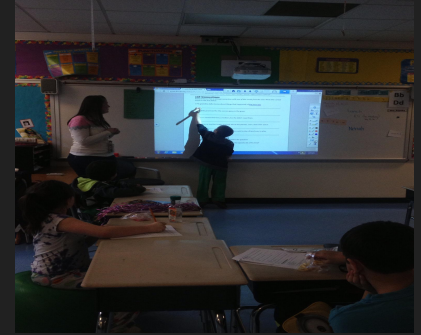


# Technology Vision

The Mohonasen Central School District continues to embrace technology that enhances learning, engages students and improves student achievement. As such, Mohonasen has adopted a *21st Century Learning* approach which requires methods of instruction that integrate innovative, research proven teaching strategies, modern learning technologies, and real-world resources and contexts from which to use and apply student learning.

We believe that significant and continuing improvement in student achievement requires creating a new classroom teaching and learning model. Simply adding technology to the classroom isn't the solution. The teacher's role must change to that of a facilitator, mentor, and manager of instruction. Students become active participants in learner-centered, collaborative, project-based learning situations and are taught to acquire and apply critical thinking, creativity, communication and collaboration skills. Parents and community members are engaged with the school, where this newer teaching and learning model is effectively supported by a variety of classroom technology.

# Technology Plan Focus 2016 - 2019



## ➤ Priority areas in the technology plan include:

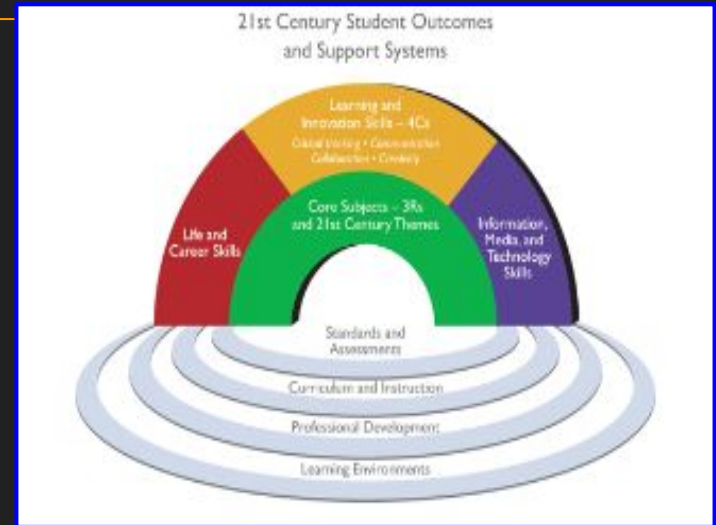
- *Creating a sustainable support model for instructional technology*
- *Increasing the acquisition of end-user devices for all educators and students*
- *Updating infrastructure work districtwide*
- *Embedding comprehensive, ongoing, relevant technology professional development*
- *Constructing a new **Center for Advanced Technology**, including specialized learning spaces, state-of-the-art technology access and instructional resources*
- *“Re-visioning” learning spaces within current buildings to maximize instructional technology*
- *Upgrading safety and security capabilities across the district*

# Technology Goals for 2016-2019

1. Teachers will continue to transform their classrooms into 21<sup>st</sup> century learning environments utilizing technology as an important tool to do so, with the goal of increasing student achievement.
2. Students will demonstrate skills that will allow them to thrive in a 21<sup>st</sup> century environment.
3. Faculty and staff will leverage the power of technology to help measure student understanding and use assessment data for continuous improvement.
4. The district will continuously look to using technology to improve communications, (including safety related topics), throughout the school community.
5. The district will maintain a technology plan that addresses the infrastructure, professional development and end-user devices necessary to support an ever-changing 21st century learning environment.

# 21st Century Learning is a combination of ...

- Content knowledge, specific skills, expertise and literacies
- Core subjects
- 21st Century Interdisciplinary Themes
- Life & Career Skills
- Learning/Innovation Skills
- Information, Media & Technology Skills

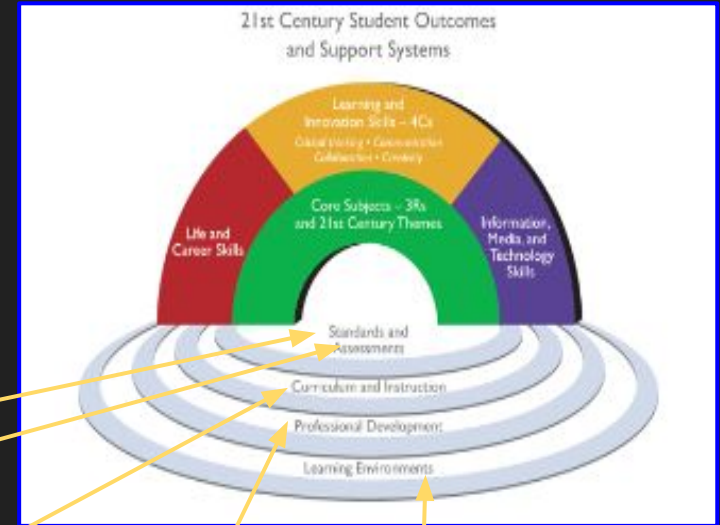


# 21st Century Learning requires support systems...

- All 21st Century Skills initiatives must focus on the integration of support systems to meet the needs of the 21st Century learner:

These support systems revolve around five critical components:

- Standards
  - Assessments
  - Curriculum and Instruction
- Professional Development
- Learning Environment



# Professional Development

In order to engage students and extend student learning with the integration of technology, the district must provide targeted, ongoing, multifaceted professional development and staff training. This is necessary in order to:

- Ensure that all teachers acquire basic computer technology utilization skills
- Ensure that teachers have skills required to access and use classroom assessment & data tools
- Provide in-school facilitation support to encourage and increase the targeted use of existing technology equipment
- Assist teachers in exploring new and innovative applications of technology in order to increase student achievement
- Better engage parents in how to use technology to communicate and support their children in the learning environment

As a district we regularly solicit feedback from faculty and staff, and we will continue to do so throughout the duration of this plan. The results will be compiled and shared with stakeholder groups. It has been integral in directing our focus and meeting the needs of our educators in order to achieve the goals of the technology plan and to provide the type of engaging learning environment that our students need.

# Technology-Related Professional Development

## Professional Practice:

- Pedagogical & curricular expertise
- Family Engagement
- Collaboration/Professional Learning Communities
- Social/Emotional Factors

## Instruction/Student Learning:

- Differentiated instruction
- Data collection on student learning
- Response to Intervention
- Progress Monitoring
- Behavior Management
- Instructional Technology

## Learning Standards/Content

- Create assessments
- Plan/develop curriculum
- Integrate content across subjects
- Enhance instruction through technology

## Necessary/Required Trainings

- Implement current & new district technology
- Meet and maintain state-mandated regulations

# Instructional Technology Purchases/Work in the last 3 years:

**2012-2013**

- Established purchasing plan for interactive whiteboards/projectors K-12
- Began purchasing plan for iPads at Bradt

**2013-2014**

- Began purchasing plan for chromebooks, carts for Pinewood
- Continued purchasing plan for interactive projectors K-12
- Continued purchasing plan for iPads at Bradt
- Began purchasing plan for tablets at Pinewood, Draper, High School

➤ The yearly upgrading cycle for software (including online and blended learning initiatives), hardware and peripherals is not explicitly detailed in these charts, but does occur on an annual basis.



# Instructional Technology Purchases/Work in the last 3 years:

## 2014-2015

- Began massive infrastructure upgrade as part of the November 2013 Capital Project. Completed October 2015.
- Continued purchasing plan for interactive projectors districtwide
- Created purchasing plan for chromebooks, ipads and storage carts districtwide
- Purchased iPads for teacher leader use
- Purchased green screens for production use
- Purchased digital video cameras and iPad stands in all schools

➤ \$100,000 was dedicated to security upgrades district-wide and is not included in above hardware and equipment chart.

## Other Instructional Technology notes

- Approximately 21% of the total number of students with disabilities in district are provided with assistive technology as documented on their Individualized Education Programs (IEPs)
- Examples of assistive technology devices: iPads, laptops, augmentative communication devices, interactive projectors, personal and field sound systems.
- Additional necessary instructional technology resources: variety of text to speech, speech to text, audio-books and other language-based software applications

# District technology inventory less than 5 years old:

PC desktop computers	568
Macs	41
PC Laptops	85
iPads/tablets (none with access to external keyboards)	104
Chromebooks	270
<b>Total end user devices &lt; 5 yrs old</b>	<b>1068</b>

Document cameras	10
Interactive projectors	40
Interactive whiteboards	8
Projectors	45
Multifunction printers	14
<b>Total peripheral devices &lt; 5 yrs old</b>	<b>117</b>

## *Other inventory notes:*

- The district has an inventory tagging system for district-owned instructional technology equipment
- The district allows adults to bring their own device and log onto the district's internet

# Smart Schools Bond Act 2014



- *The legislation is meant to provide all NYS districts with the ability to build **21st century learning environments.***
- Mohonasen received a \$1.7 million allocation.
- Districts can expend the funds in any of six specific areas below:
  1. Install high speed broadband or wireless connectivity
  2. Install high speed broadband or wireless connectivity for communities
  3. *Acquire Learning Technology equipment or facilities (devices)*
  4. Construct, enhance or modernize educational facilities to accommodate pre-k programs
  5. Construct, enhance, and modernize educational facilities to provide instructional space to replace classroom trailers
  6. *Install high-tech security features in school buildings and on school campuses*

# Mohonasen Smart Schools focus



## Smart Schools Allowable expenditure areas

3. Continued acquisition of classroom learning technology (end-user devices and peripherals)

6. Continued Installation of High-Tech Security Features

## Mohonasen's Smart Schools Plan focus

- Work toward end-user technology devices for all teachers and students such that they have state-of-the-art classroom technology and “anytime” access to 21st century information and tools.
- Provide a 1:1 device to classroom environment, working toward 1:1 student to device ratio
- Ensure upgraded presentation equipment in all district classrooms and including specialty larger group instruction areas
- Ensure equipment for specialty classroom spaces such as production studios, blended learning spaces, and advanced technology labs
- Ensure safety and security of our personnel, physical plant, protection of operations and data systems
- Updating of surveillance camera system and data capture
- Enhanced access control measures and tracking

# 2016-2019 acquisition of classroom learning technology

## Elementary Schools Description

In each of the schools in the district, technology is accessible to our students, is integrated into our classrooms and is a basic component of our programs. Physical education teachers also use iPads as instructional tools in their classes.

With additional training on Google apps for education, we have seen an increase in Google apps use in creating and sharing projects. We have invested heavily in the elementary schools technology over the past few years, and thus the need for end-user technology is not as great here as it is in the high school and middle school. Teacher leaders throughout the district use iPads in their classrooms. See chart below for the elementary needs.

At the grade K-2 Bradt elementary, there is a computer lab with PCs, 60 chromebooks distributed into classrooms in clusters, as well as the opportunity to access a full class set on a rotating basis. All of Bradt's classrooms will have interactive projectors by the end of the 2016 school year. The K classes also have 3-4 iPads to use for center work as part of the Daily 5 routine. The iPads can also function as document cameras, and some classrooms also have Apple TV access to expand the functions of the iPads.

At the grade 3-5 level at Pinewood, there is a computer lab with PCs, as well as an additional learning lab with PCs. There are two rolling carts with 30 chromebooks each available for sign-out on a rotating basis. Three quarters of the classrooms at Pinewood also have either interactive projectors or interactive whiteboards and projectors.

## \$ Estimated Costs

**SS:** Smart Schools

**GF:** General Fund

**CP:** Current Capital Project

**Funding source**

**Quantity**

**Cost**

Complete interactive capabilities in all classrooms K-5 by June 2016

GF

30

appx \$45,000

Purchase additional chromebooks & storage units moving toward one-to-one class set/classroom

GF/SS

500

appx \$200,000

Begin purchasing one-to-one mobile devices for all teachers

SS

90

appx \$32,000

# 2016-2019 acquisition of classroom learning technology

## Secondary Schools Description

It is the goal for our Draper Middle School and Mohonasen High School students to learn in a technology-rich environment where all students have access to current technology and are provided with the opportunities, knowledge and skills needed to be competitive in the 21st century. Teachers have received training in Google apps for Education, and will continue to receive ongoing professional development in how to integrate these applications into their daily instruction. With the purchase of mobile devices for all teachers, they will be able to more easily use Google apps, to communicate assignments, facilitate school/home communication and access student data. Teacher leaders throughout the district use ipads in their classrooms.

**Draper Middle school** has two PC computer labs, as well as two rolling carts with 30 chromebooks each available for sign out on a rotating basis. Teachers are also piloting using chromebooks this year in some math classes. We are looking to outfit the remainder of Draper’s classrooms with interactive capabilities within the next three years. With technology being integrated more frequently into daily instruction, more opportunities for all stakeholders to better learn, communicate and collaborate are provided.

**Mohonasen High School** has two computer labs with PC’s, as well as an additional graphics lab with a combination of Macs and PC’s. Macs are also used in the music theory classes, where there are 20. There are two rolling carts with 30 chromebooks each available for sign-out on a rotating basis. The science department shares an additional class set of 30 chromebooks. We are looking to outfit the remainder of the high school’s classrooms with interactive capabilities within the next three years. Part of the plan also includes exploring distance learning options as way to increase exposure to different learning environments, and offer students more potential opportunities This may also coincide with our partnership with SCCC and students using a more forward thinking approach to taking college classes, online or via a blended setup.

## \$ Estimated Costs

<b>SS:</b> Smart Schools <b>GF:</b> General Fund <b>CP:</b> Current Capital Project	<b>Funding source</b>	<b>Quantity</b>	<b>Cost</b>
Address interactive capabilities in all secondary classrooms by June 2019	GF/SS	90	appx \$135,000
Purchase additional chromebooks and storage units moving toward one-to-one class set/classroom	GF/SS	500	appx \$200,000
Begin purchasing one-to-one mobile devices for all teachers	SS	130	appx \$39,000

# 2016-2019 acquisition of classroom learning technology

**The Center for Advanced Technology @ Mohonasen** will offer innovative academic programs and career training in laboratories and classrooms that mirror today's evolving high-tech, high-demand workplace. Through hands-on learning, students will gain skills and knowledge to meet the growing workforces demands of the regional, national and even international economy. Providing a state-of-the-art 21st century learning environment, complete with technological resources, is a critical cornerstone of the educational programs offered in this facility. Additionally, the transportation facility will also require technology equipment for meeting driver safety and training, and keeping up with the latest developments in transporting students safely.

## \$ Estimated Costs

SS: Smart Schools

GF: General Fund

CP: Current Capital Project

Funding source

Quantity

Cost

Classroom: interactive projectors, teacher workstations, laptops

GF/CP/SS

appx 20 projectors  
6 computers

appx \$100,000

Laboratories: itemized lists

GF/CP/SS

get from blueprints

\$ TBD

Office technology: projectors, workstations, flat screen displays

GF/CP/SS

TBD

\$ TBD



# Continued installation of high-tech security feature details

The following plans allow for enhanced video surveillance, as well as additional access and control measures to district buildings. Each building's digital safety and surveillance systems are currently under evaluation as to what needs to be updated. The two new buildings, the Center for Advanced Technology (CAT) and the Transportation Facility, each need complete surveillance systems. An added necessity to the security aspect is ensuring that each building is able to effectively communicate with the remaining district buildings in case of emergency. Products and services that allow this to occur are being vetted.

## \$ Estimated Costs

**SS:** Smart Schools

**GF:** General Funds

**CP:** Current Capital Project

	Funding source	Quantity	Cost
Complete security system for CAT building, including cameras, cabling, mounting hardware, desktop systems, software, cameras in classrooms and hallways, flat screen monitors.	CP- infrastructure SS - hardware	TBD	appx \$100,000 in project budget
Complete security system for transportation building including cameras, cabling mounting hardware, desktop systems, software, cameras in classrooms and hallways, flat screen monitors.	CP- infrastructure SS - hardware	TBD	\$ TBD
Security: Operational, data protection/disaster recovery, emergency notification	GF/SS	TBD	\$TBD

# Timeline for rollout of new equipment through Smart Schools Plan

<b>2015-2016</b>	<ol style="list-style-type: none"><li>1. mobile devices for teachers</li><li>2. additional chromebooks K-12</li><li>3. additional other end-user devices per plan K-12</li><li>4. security enhancements</li></ol>
<b>2016-2017</b>	<ol style="list-style-type: none"><li>1. mobile devices for teachers</li><li>2. chromebooks K-12</li><li>3. additional other end user devices per plan K-12</li><li>4. equipment through “re-visioned” learning environments - blended learning, projectors, peripherals.</li></ol> <p>Explore BYOD options at all buildings</p>
<b>2017-2019</b>	<p>Continue to purchase chromebooks &amp; end user devices per plan</p> <p>Create replacement cycle plan</p> <p>Review technology plan for updates and next cycle</p>

# Sustainability:

How do we support this level of technology integration moving forward?

➤ ***Funding sources***

➤ ***Impact on the final Technology and Smart Schools Plan:***

- Priority areas of plan to be tagged to funding sources with \$\$ amounts

➤ **Smart Schools Investment Plan:**

- purchasing plan for end user devices and peripherals to be finalized
- replacement cycles incorporated into the plans
- final plan presented for approval

# *Final thoughts:*



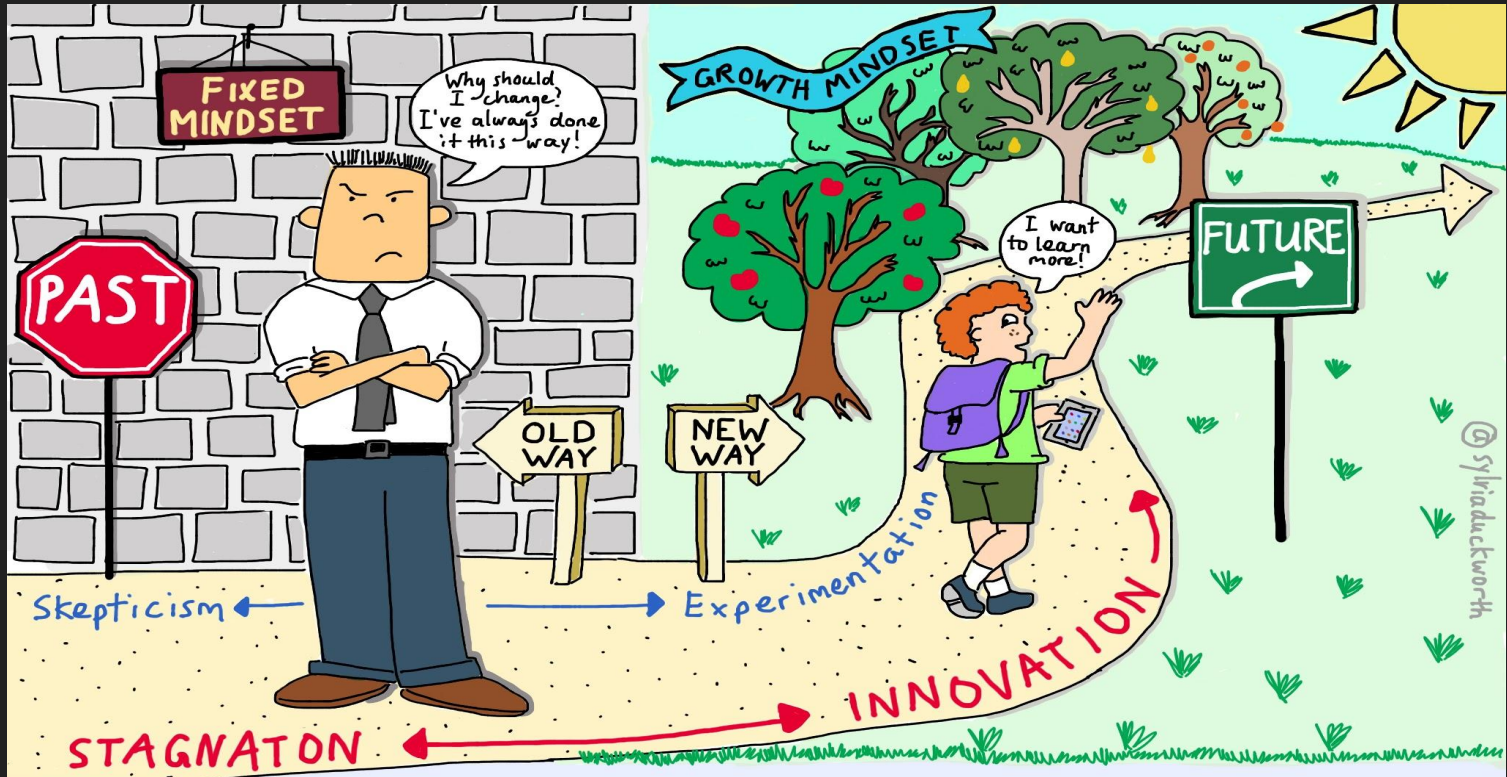
## ➤ ***Mohonasen's Technology Plan:***

- Creating and expanding 21st century learning environments
- Technology is integrated into what we expect students to know and do
- Ongoing professional development & instructional support model is critical

## ➤ ***Smart Schools Investment Plan (SSIP) expenditures:***

- instructional technology devices to support 21st Century learning
- safety

## ➤ **Change is the only constant!**



"If you don't like change, you're going to like irrelevance even less."

-General Eric Shinseki