# Bernards Township School District



# Technology Plan

## June, 2016- June 30, 2019

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# I: DISTRICT VISION

## Vision:

Infuse 21st Century Learning skills as the base for our technology integration in the classroom. Take the framework of this and continue to incorporate these disciplines into the curriculum for next year.

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication
- Collaboration

## Basic:

This should be done at the department level in order to achieve a seamless integration and broad success.
- Develop a successful plan that will include 100% compliance on AUP signatures
- Investigate a sustainable 1:1 program for the district.
    - Can include but not limited to 3rd - 12th grade.
    - Evaluation of a K-2 student device with grade level sets.

## Expanded:

STEM/STEAM initiative- implementation of a fully articulated 6-12 STEM (Science-Technology-Engineering-Mathematics) program that allows students to strengthen their problem solving skills, work collaboratively with others, and become creative, divergent thinkers.

Reconstruct Technology support specialists job description - evolve role to Technology Integration and Innovation Coach
- Provide the best 21st Century Skill sets in these areas
- Ensure alignment to revised 8.1 and 8.2 NJCCCS- include in curriculum revision sessions

Restructure computer labs to become learning centers.

Enable GMail for Students
- What grade level is this most effective/appropriate?
    - 3rd-12th Grade
- Emphasis on building a Digital Community in the District (Safety and Citizenship)
    - What is appropriate to write and where?

Include Technology Integration Specialist
- Trained staff who can assist staff in creating lesson plans that are technology focused, as well as provide training on new technology.

# II. DISTRICT INFRASTRUCTURE

**NJTRAx Technology Readiness was updated within the 2015-2016 school year, but not attached.**

## Infrastructure Expanded Section:

## Needs Assessment -

Describe the technology inventory needed to improve student academic achievement through 2017 including, but not limited to:

- Technology equipment
- Increased networking capacity
- Applications used for curricular support
- Technology maintenance policy and plans
- Telecommunications services
- Technical support
- Facilities infrastructure
- Other services

The district will need to maintain a robust, reliable data network in order to improve student and staff access to technology. The network capacity can be segmented into three parts: bandwidth to public Internet, bandwidth between district sites, and bandwidth between user devices (desktops, laptops, Chromebooks, etc.) and servers. Currently, the district maintains a 500 Mbps Internet connection shared by all district sites and multiple private fiber networks of 1000 Mbps capacity links between district sites. Utilization of available Internet bandwidth and bandwidth between sites is currently monitored; such monitoring must continue in order to determine the bandwidth needed by staff and students. With increased utilization, due to legitimate use especially during high stakes testing, identify a need for increasing available bandwidth. Bandwidth between user devices and servers is tested via benchmarking. Poor performance in user device benchmarks identifies the need for increasing available bandwidth or reducing network device latency. In order to improve student achievement, the available Internet bandwidth will need to be increased considerably. The current capacity is inadequate and will not sustain serious growth in Internet usage and LAN video service usage.

This increase will be obtained by participating in DRLAP. DRLAP is an initiative lead by the New Jersey Department of Education to create regional purchasing as a consortia for high-speed telecommunications services to reduce the cost of broadband services starting July 1, 2015.

The district's current ISP contract expires July 1, 2016, and at that point in time, Bernards Township School District will enter the DRLAP consortium and will be able to negotiate bandwidth rates capped at those rates. Entering the consortium we will increase total district

bandwidth from 500 Mbps to 1000 Mbps. This will allow for sustainable growth as well allow for cost savings on a newly negotiated contract with our current ISP.

Server storage space, server hardware, and core switching equipment need to be procured in order to facilitate core network services for student academic achievement. This updated equipment is critical to provide appropriate performance, scalability and availability to network services that allow accessibility to increase instruction,engagement and academic excellence.

Hardware equipment purchases over the next three years:

| Budget Year: | 2016-2017 | 2017-2018 | 2018-2019 |
|---|---|---|---|
| Network Equipment | 1 - 10 GB Router/Switch | 4 - 10 GB Router/Switch | 7 - 10 GB Router/Switch |
| Storage Hardware | | 1 -SAN | |
| Server Hardware | | 1- BladeCenter Chassis w/4 Blades | |
| Private Fiber Network Upgrade | | | 10 GB PFN/ Both High School and Middle School |
| Wireless Access Points | 50 - Access Points for Ridge High | | |

All K-12 teachers are assigned a mobile device to improve student academic performance. These resources need to be maintained at an adequate level to ensure their consistent availability. The increase in available resources has lead to the matching need to increase maintenance and support availability. **Please see Appendix I for device data.**

The district has deployed building-wide wireless access at all district facilities, offering comprehensive coverage so students and staff can access the Internet and network resources for educational purposes. The wireless networks need to be monitored for bandwidth usage patterns and security purposes. The increase in wireless availability and wireless devices has provided a need to update the wireless to the latest standard in wireless technology. Currently the wireless infrastructure 3-8 has an AC access point per classroom. Some AC deployment has occurred within the high school but will need to continue to be procured until each classrooms contains an AC access point.

Upgrade our current Interactive whiteboards and classroom projectors
    ○ Across the board

- Evaluate the potential to replace all district projectors and Smartboards with an improved instructional tool.
  - **[Please see Appendix II for pilot device data.](#)**

Upgrade network backbone
- 1000 Mbps Internet bandwidth upgrade
- 10 GB internal network upgrade

# III. TEACHING AND LEARNING WITHIN THE DISTRICT

**Future Ready District Level Report - Unable to produce due to NJTRAx issues**

## Curriculum, Pedagogy, Teaching and Learning and Assessment

In order to establish a successful and modern educational facility, Bernards Township Public Schools needs to begin an integration of 21st Century Classroom skills district wide. This integration also includes a top down district initiative of modeling Digital Citizenship. With appropriate training and deployment we will see a shift in how the students of Bernards Township are educated. Successful integration will see a change from focus on basic competency to promotion of understanding academic content at much higher level.

Overview of 21st Century Classroom and modeling Digital Citizenship

- 21st Century Classroom can be accomplished by changing how the classroom is structured and lessons are taught
- Digital Citizenship can be accomplished from a district wide, top down modeling approach.
  - "Lead by example."

The district initiative and integration of 21st Century skills and career ready practices work in tandem with one another. Modeling digital citizenship provides a foundation for what Bernards Township Public Schools expects from all of its digital citizens (Faculty, Students and Parents) when using 21st Century technology. A 21st Century Classroom relies heavily on critical thinking, inquisitive natured questions, and problem solving skills using modern technology.

This integrated model is based upon the core curriculum of competencies which remains the focus of the educators. The delivery of these competencies, however, shifts from a traditional classroom structure into skills and characteristics that are results from a 21st Century Classroom. These skills and characteristics they have gained translate into a real life skills and tools they can use in their future careers.

Focus will be placed on the following 21st Century Classroom characteristics over the next three years:

- **Technology integration** - more than just the use of technology, but students use technology to achieve set goals in different ways not possible before.
- **Collaborative environment**- creating a career centric environment that helps students foster and develop new ideas and exposes them to opposing viewpoints.
- **Creative expression** - Builds student confidence and allows them to explore the boundaries of their own self.
- **Students take responsibility of their learning**- they are engaged and actively participate in their own learning.
- **Inquiry based approach** - the core idea of students approaching a new topic, not just a static response but based upon the context of them answering the question, which then becomes the cornerstone of this new teaching model.
- **Justification for answers** - creating an encouraging environment for students to approach a problem from multiple angles.
- **Writing for reflection** - use 21st century tools to provide reflection lessons based upon their own posts as well as peers
- **Problem solving methodology** - developing high level problem solving skills to aid students.
- **Hands on learning** - ability to provide more hands on learning experience and bring education outside of the walls of the classroom
- **Teacher as a facilitator** - shift in best practice within education. No longer will the teacher be the authoritarian of the classroom but their role is reshaped so they work beside the student providing support and encouragement.

Digital Citizenship characteristics that will be integrated into a Bernards Township student's daily life.

- **Digital Access** - participation in a digital society, providing and expanding technology access.
- **Digital Communication** - how to be an effective communicator using digital tools. With the rapid change in 21st century technology everyone can communicate more frequently, and with this change we must teach how to make appropriate decisions with these new communication options.
- **Digital literacy** - learning about and the proper usage of technology. This process will use many of the skills being taught in the 21st Century Classroom to how to learn, use and properly use digital tools.

- **Digital etiquette** - Promoting proper behavior as citizens within a digital world. This is a digital continuation of character education that is taught throughout the district.
- **Digital Security** - How to protect yourself and your image in the ever changing digital landscape.

# IV TRANSFORMATIONAL BUDGETING

The technology committee not only has the responsibility to research and develop a technology plan to enhance learning within a classroom. It also has the responsibility to develop a sustainable plan for procurement.

The committee is responsible for working with the Superintendent and Business Administrator to come up with funding plans that allow the district to progress forward with technology initiatives to progress forward with technology initiatives and still be a sustainable solution as they progress over their life cycle. For this particular plan the overall cost of implementing 1:1 poses many challenges. Even if the funds are available to start the initiative, they must be sustainable to have it continue as a initiative for the future.

The committee has come up with following recommendations for funding this three year technology plan.

- Technology Budget increase:

Currently the technology budget for the entire district is under 1% of the entire district budget. With the increased demand in technology, as well as the blending of curriculum and technology within the classroom, it is imperative that the technology being used is being properly maintained and it is moving forward with the curriculum. This only covers minimal maintenance and service contracts to keep core systems in place and up and running. It does not include the proper maintenance of the technology that has been deployed within the classroom. Nor does it take into consideration implementing new technology that can enrich students' education.

- Lease purchasing or financing of equipment.

Currently, there are many avenues available for the district to take advantage of low interest rates for lease financing of equipment. The current percentage varies from under 2% to 3% depending on the length of finance contract. Some financing vessels offer a $1 buyout or some also offer current market value of the device.

With financing options, we have the ability to save in volume as well as get the technology we need immediately and spread out the cost over the life of the technology.

- Introducing a district "grant writer."

This role will be a function of one of the Business Office personnel in which they spend time writing grants to assist in filling budget gaps district wide. Leaving this as a direct duty to one individual it provides someone with the attention needed to work diligently on getting grants to assist in the technology plan.

- Category 2 funding available E-rate.

The district is now entitled to Category 2 funding for technology equipment purchase such as servers, access points, and infrastructure equipment including switches and firewall. Category 2 requires the district to purchase this equipment upfront in full, however will be reimbursed the following year up to 38%. It allows the large ticket items to be purchased at a discount.

- Option of taking these capital projects such as projector and smartboard projects out to bid. A bid on these projects will breed larger competition and historically result in a cost savings to the district.

# V. SCHOOL INFRASTRUCTURE

## RIDGE HIGH SCHOOL



**INFRASTRUCTURE**

The current state of digital projection has slowly degraded over the past few years. Warranty on these products can no longer be procured, failure rates district wide have increased, and the technology is no longer adequate for instructional usage.

The technology committee recommends replacing all projection units within the High School. Currently the projection units in some rooms are eight years old and have outlived their product's life expectancy. The projector units will be replaced with an interactive version of an ultra short throw projector. The ultra short throw projectors provide the following benefits:

- No shadowing when modeling or in front of the classroom
- Brighter display
- Wide/Larger display area
- Reduce glare (which allows classroom lights to remain on while teaching)
- Internal speakers which allows all rooms to have a source of audio for presentation
- Interactive pens, increases student engagement and enhances teacher modeling

The district will continue to maintain a minimum of 1 staff device per classroom. With the procurement of new display units, classrooms will begin a standardization practice. This will include but not limited to a onelink docking station, which will increase the ease of classroom setup when teachers move between multiple classrooms throughout the day. **Please see attached Appendix II device survey data**

**Investigate Feasibility of 1:1 (computing device:student) Learning Environment:**

The district will investigate the feasibility of establishing a 1:1 learning environment. Focus will be given, primarily, to establishing such a learning environment utilizing the Chromebook platform.  Alternative technologies, which are not as reliant on the user being able to read and write proficiently, such as touch-based, graphic tablet computers, will be investigated for use in classrooms serving students with severe learning disabilities.  The feasibility study may include a pilot implementation in which specific instructional and learning benefits are intended.  These benefits include:
- The classroom environment more closely mimicking a modern workplace with each employee (student) having access to a variety of productivity tools and being proficient at choosing the appropriate tool for a task.
- Equal / Equitable access to computer equipment and software/applications.
- Ubiquitous access to information resources, and their own works (both within school and outside of school).
- Increased familiarity and proficiency with computer technology and using digital resources.
- Increased engagement during learning activities.
- Enabling a greater degree of differentiation of instruction resulting in a more personalized learning experience for students and leading to greater individual growth.
- Increased collaboration among students.
- Enhanced communication between students and the teacher.

## VI. TEACHING AND LEARNING

The district initiative and integration of 21st Century classroom work in tandem with one another. Modeling digital citizenship provides a foundation of what Bernards Township expects from all of its digital citizens (Faculty, Students and Parents) when using 21st technology. A 21st Century Classroom relies heavily on critical thinking, inquisitive natured questions, and problem solving skills using modern technology.

This integrated model is based upon the core curriculum of competencies which remains the focus of the educators. The delivery of these competencies, however, shifts from a traditional classroom structure into skills and characteristics that are results from a 21st Century Classroom. These skills and characteristics they have gained translates into real life skills and tools they can use in their future careers.

### Consider Professional Learning

### Goals:

Using our professional development time, to differentiate and create educational resources that can be used in the growth of the classroom and improve how we teach. This professional growth needs to be evaluated and measured throughout the year to validate that knowledge and modeling being used within our professional development is being properly implemented and having a positive effect on the educational environment.

### Common: - New Teacher Orientation

Overview of Bernards Township common platforms to function daily within their job.

● Introduction of 21st Century Classroom and how to be a good Digital Citizen, as well as how to teach that to your students.

### Ongoing: - Continuing education

Differentiated Professional development. Using a variety of delivery strategies.

● Staff College.
● Small group clinics with targeted goals and objectives during monthly meetings.

- Self learning module - youtube based and available district wide. Khan Academy (Pull them in).
- Guest speakers, out of district workshops, and use of external entities to enrich staff development.

The need to include an Technology Coach who will work with staff and administration to develop, implement and educate on emerging educational technologies and teaching strategies to support student growth.

One of the goals the technology committee wants to implement within professional development, which is also presented in this three year technology plan, is continuing education on digital citizenship. This not only affects students within the classroom, but faculty should be modeling their digital footprint as well.

Our Staff College professional development structure, even though it is effective, needs some corrective action to make sure it remains current.

Currently the Staff College model provides differentiated instruction that covers the breadth of the district needs; however, classes that are offered need to be evaluated to ensure that they are effective and relevant.

Proposing this model change, we wish to include an effective and oversight role that is part of the proposed Instruction Technology Integrator's role. This will make sure that Staff College courses are relevant, meeting the district needs and expectations as well as providing continuing education for staff.

Provide funding to bring in subject matter experts (e.g., Science, Language Arts, Math) who can enhance the knowledge and skills of teachers and assist with integrating technology-based learning methods in the classroom.

**Funding for staff development should be included in the department budgets:**

Application of professional development in the classroom.
Classroom teachers will implement lessons learned from professional development within their classroom as a student growth objective (SGO).

**Introduction of a new training model:**

During media center and computer lab time, both specialist and teacher collaborate and work together during that time to co-teach a lesson.

**Self funding professional development:**

One challenge that faces all school districts is budgetary constraints that don't allow for further engagement of staff outside of the classroom. One recommendation is to provide fund balance that is self fed from grants and charging other districts to attend guest speaker conferences.

**Curricular Considerations:**

With the State's adoption of the 2014 New Jersey Core Curriculum Content Standards for Technology comes the need redesign the high school technology instructional program. Historically, the primary strategy for delivering technology instruction at the high school level has been to integrate technology learning outcomes throughout the content areas.  Because of this there has been an absence of technology-specific course offerings at the high school level.  The success of the above mentioned integrated approach is highly dependant on the individual teacher's willingness and ability to design lessons which purposefully incorporate technology learning outcomes.  Because of this, results have been inconsistent.

Recently we have begun to implement additional technology-specific course offerings.  In September of 2015 AP Computer Science was added to the Program of Studies.  With the first year of the STEAM Academy implementation in September of 2016, additional technology-oriented course offerings will be available to students.

# VII. SCHOOL INFRASTRUCTURE

## William Annin



## INFRASTRUCTURE

The current state of digital projection has slowly degraded over the past few years. Warranty on these products can no longer be procured, failure rates district wide have increased, and the technology is no longer adequate for instructional usage.

The technology committee recommends replacing all projection units within the Middle School. Currently the projection units in some rooms are eight years old and have outlived their product's life expectancy. The projector units will be replaced with an interactive version of an ultra short throw projector. The ultra short throw projectors provide the following benefits:

- No shadowing when modeling or in front of the classroom.
- Brighter display.
- Wide/Larger display area.
- Reduce glare (which allows classroom lights to remain on while teaching).
- Internal speakers which allows all rooms to have a source of audio for presentation.

- Interactive pens, increases student engagement and enhances teacher modeling.

The district will continue to maintain a minimum of 1 staff device per classroom. With the procurement of new display units, classrooms will begin a standardization practice. This will include but not limited to a onelink docking station, which will increase the ease of classroom setup when teachers move between multiple classrooms throughout the day. **Please see attached Appendix II device survey data**

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# VIII. TEACHING AND LEARNING

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classroom structure into skills and characteristics that are results from a 21st Century Classroom. These skills and characteristics they have gained translate into real life skills and tools they can use in their future careers.

## Consider Professional Learning

### Goals:

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### Common: - New Teacher Orientation

Overview of Bernards Township common platforms to function daily within their job.

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### Ongoing: - Continuing education

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- Staff College.
- Small group clinics with targeted goals and objectives during monthly meetings.
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- Guest speakers, out of district workshops and use of external entities to enrich staff development.

Need to include an Technology Coach who will work with staff and administration to develop, implement and educate on emerging educational technologies and teaching strategies to support student growth.

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Currently the Staff College model provides differentiated instruction that covers the breadth of the district needs; however, classes that are offered need to be evaluated to ensure that they are effective and relevant.

Proposing this model change, we wish to include an effective and oversight role that is part of the proposed Instruction Technology Integrator's role. This will make sure that Staff College course are relevant, meeting the district needs and expectations as well as providing continuing education for staff.

Provide funding to bring in subject matter experts (e.g., Science, Language Arts, Math) who can enhance the knowledge and skills of teachers and assist with integrating technology-based learning methods in the classroom.

### Funding for staff development should be included in the department budgets:

Application of professional development in the classroom
Classroom teachers will implement lessons learned from professional development within their classroom as a student growth objective (SGO).

### Introduction of a new training model:

During media center and computer lab time, both specialist and teacher collaborate and work together during that time to co-teach a lesson.

### Self funding professional development:

One of the challenges that faces all school districts is budgetary constraints that don't allow for further engagement of staff outside of the classroom. One recommendation is to provide fund balance that is self fed from grants and charging other districts to attend guest speaker conferences.

### Curricular Considerations:

With the State's adoption of the 2014 New Jersey Core Curriculum Content Standards for Technology comes the need revisit the technology course offerings at William Annin Middle School.  In the recent past, students of William Annin Middle School have enjoyed access to an exceptionally progressive technology instructional program.  Beginning in sixth grade, students

are exposed to coding principles and a skills-based curriculum.  In seventh and eighth grade, the learning pathway utilizes digital storytelling and video game design as vehicles for exploring technology principles.   Fortunately, the changes seen in the NJCCCS redesign mirror instructional changes that are being pursued here in Bernards Township.  During the Summer of 2016 curriculum projects are planned to review and update the middle school technology program to ensure alignment to the 2014 New Jersey Core Curriculum Content Standards for Technology.  Beginning September of 2016, the new WAMS STEM Academy will afford students additional technology-learning options.

# VII. SCHOOL INFRASTRUCTURE

## Cedar Hill Elementary School



### INFRASTRUCTURE

The current state of digital projection and interactive whiteboards/Smartboards has slowly degraded over the past few years. Warranty on these products can no longer be procured, failure rates district wide have increased, and the technology is no longer adequate for instructional usage.

All of K-5 Smartboards will be upgraded to the latest interactive display or whiteboard. The technology being implemented within these classrooms will depend on the grade level band.

The committee also recommends replacing all Smartboards in grade 2-5 with new interactive displays. **Please see attached Appendix II device survey data.**

- No shadowing when modeling or in front of the classroom.
- Brighter display.
- Wide/Larger display area.
- Reduce glare (which allows classroom lights to remain on while teaching).
- Internal speakers which allows all rooms to have a source of audio for presentation.
- Interactive pens, increases student engagement and enhances teacher modeling.

The district will begin to maintain a minimum of 1 staff device per classroom. With the procurement of new display units, classrooms will begin a standardization practice. This will include but not be limited to a onelink docking station, which will increase the ease of classroom setup when teachers move between multiple classrooms throughout the day.

**Investigate Feasibility of 1:1 (computing device:student) Learning Environment:**

The district will investigate the feasibility of establishing a 1:1 learning environment. Focus will be given, primarily, to establishing such a learning environment utilizing the Chromebook platform. Alternative technologies, which are not as reliant on the user being able to read and write proficiently, such as touch-based, graphic tablet computers, will be investigated for use in classrooms serving students with severe learning disabilities. The feasibility study may include a pilot implementation in which specific instructional and learning benefits are intended. These benefits include:

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### Ongoing: - Continuing education

Differentiated Professional development. Using the variety of delivery strategies.

- Staff College.
- Small group clinics with targeted goals and objectives during monthly meetings.
- Self learning module - youtube based and available district wide. Khan Academy (Pull them in).
- Half day professional development elementary schools.

- Guest speakers, out of district workshops and use of external entities to enrich staff development.

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## Curricular Considerations:

With the State's adoption of the 2014 New Jersey Core Curriculum Content Standards for Technology comes the need redesign our elementary technology instructional program. Fortunately, the changes seen in the NJCCCS redesign mirror instructional changes that have been pursued here in Bernards Township.  Historically, the instructional program was primarily application-based with an emphasis on programs within the Microsoft Office suite.  Over the past three years our technology instructional programs have been transitioning to a skills-based focus with an emphasis on 21st Century Skills and Career Ready Practices.  In addition, a focus has been placed on keyboarding proficiency in grades 3, 4, and 5.  Student performance benchmarks have been established based off of expectations set forth in the Common Core State Standards for English Language Arts.

The established BTSD Keyboarding Benchmarks are as follows:

| By March of: | 3rd Grade | 4th Grade | 5th Grade |
|---|---|---|---|
| Volume | ½ - ¾ page | 1 page | 2 pages |
| Font | 12; Times New Roman | 12; Times New Roman | 12; Times New Roman |
| Margins | 1" | 1" | 1" |
| Length of Sitting | 45 minutes | 45 minutes | 45 minutes |
| Words per Minute | 8 | 15 | 20 |

| Accuracy | 80% | 80% | 90% |
| --- | --- | --- | --- |
|  |  |  |  |

# VII. SCHOOL INFRASTRUCTURE

# Liberty Corner Elementary School



**INFRASTRUCTURE**

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- Increased collaboration among students.
- Enhanced communication between students and the teacher.

## VIII. TEACHING AND LEARNING

The district initiative and integration of 21st Century Classroom work in tandem with one another. Modeling digital citizenship provides a foundation of what Bernards Township expects from all of its digital citizens (Faculty, Students and Parents) when using 21st Century technology. A 21st Century Classroom relies heavily on critical thinking, inquisitive natured questions, and problem solving skills using modern technology.

This integrated model is based upon the core curriculum of competencies which remains the focus of the educators. The delivery of these competencies, however, shifts from a traditional

classroom structure into skills and characteristics that are results from a 21st Century Classroom. These skills and characteristics they have gained translate into a real life skills and tools they can use in their future careers.

## Consider Professional Learning

### Goals:

Using our professional development time, to differentiate and create educational resources that can be used in the growth of the classroom and improve how we teach. This professional growth needs to be evaluated and measured throughout the year to validate that knowledge and modeling being used within our professional development is being properly implemented and having a positive effect on the educational environment.

### Common: - New Teacher Orientation

Overview of Bernards Township common platforms to function daily within their job.

- Introduction of 21st Century Classroom and how to be a good Digital Citizen, as well as how to teach that to your students.

### Ongoing: - Continuing education

Differentiated Professional development. Using the variety of delivery strategies.

- Staff College.
- Small group clinics with targeted goals and objectives during monthly meetings.
- Self learning module - youtube based and available district wide. Khan Academy (Pull them in).
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Provide funding to bring in subject matter experts (e.g., Science, Language Arts, Math) who can enhance the knowledge and skills of teachers and assist with integrating technology-based learning methods in the classroom.

### Funding for staff development should be included in the department budgets:

Application of professional development in the classroom
Classroom teachers will implement lessons learned from professional development within their classroom as a student growth objective (SGO).

### Introduction of a new training model:

During media center and computer lab time, both specialist and teacher collaborate and work together during that time to co-teach a lesson.

### Self funding professional development:

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### Curricular Considerations:

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being pursued here in Bernards Township.  Historically, the instructional program was primarily application-based with an emphasis on programs within the Microsoft Office suite.  Over the past three years our technology instructional programs have been transitioning to a skills-based focus with an emphasis on 21st Century Skills and Career Ready Practices.  In addition, a focus has been placed on keyboarding proficiency in grades 3, 4, and 5.  Student performance benchmarks have been established based off of expectations set forth in the Common Core State Standards for English Language Arts.

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# VII. SCHOOL INFRASTRUCTURE

# Oak Street Elementary School



## INFRASTRUCTURE

The current state of digital projection and interactive whiteboards/Smartboards has slowly degraded over the past few years. Warranty on these products can no longer be procured, failure rates district wide has increased, and the technology is no longer adequate for instructional usage.

All of K-5 Smartboards will be upgraded to the latest interactive display or whiteboard. The technology being implemented within these classrooms will depend on the grade level band.

The committee also recommends replacing all Smartboards in grade K-5 with new interactive displays. **Please see attached Appendix II device survey data**.

- No shadowing when modeling or in front of the classroom.
- Brighter display.
- Wide/Larger display area.
- Reduce glare (which allows classroom lights to remain on while teaching).
- Internal speakers which allows all rooms to have a source of audio for presentation.
- Interactive pens, increases student engagement and enhances teacher modeling.

The district will begin to maintain a minimum of 1 staff device per classroom. With the procurement of new display units, classrooms will begin a standardization practice. This will include but not limited to a onelink docking station, which will increase the ease of classroom setup when teachers move between multiple classrooms throughout the day.

**Investigate Feasibility of 1:1 (computing device:student) Learning Environment:**

The district will investigate the feasibility of establishing a 1:1 learning environment.  Focus will be given, primarily, to establishing such a learning environment utilizing the Chromebook platform.  Alternative technologies, which are not as reliant on the user being able to read and write proficiently, such as touch-based, graphic tablet computers, will be investigated for use in classrooms serving students with severe learning disabilities.  The feasibility study may include a pilot implementation in which specific instructional and learning benefits are intended.  These benefits include:

- The classroom environment more closely mimicking a modern workplace with each employee (student) having access to a variety of productivity tools and being proficient at choosing the appropriate tool for a task.
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**Goals:**

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# Mount Prospect Elementary School

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# SECTION 4: Building the Technology Plan for Digital Learning

## District:

What is the District's Vision for Digital Learning over the next three years?

**ANSWER**:

Students attending Bernards Township Public Schools are digital natives. It is our responsibility to prepare them for future success in the 21st Century. We need to provide real skill sets that allow them to learn in, and adapt to, the ever changing landscape. Decisions made today will have major effects on the quality and effectiveness of the educational process.

The 21st Century brings the need for most entering the workforce to possess a strong working knowledge of information technologies. The challenge for Bernards Township Public Schools is clear:  we must provide a learning environment for the 21st Century. It is imperative that we accept the responsibility to educate students and staff in the use of technology and provide ample access to tools for the educational process and the efficient management of instruction.

We continue to expect that changing technology will have a constant impact on all aspects of the curriculum, teaching strategies and learning process as a whole.
This plan will be reviewed, evaluated and modified as needed to ensure that our district is providing the best possible educational environment for our students, staff and community.


Indicate the laste date NJTrax Technology Readiness was updated for the District: **2016-01-14**


# School:

Indicate the laste date NJTAx Technology Readiness was updated for Ridge HIgh: **2016-01-14**

Indicate the laste date NJTAx Technology Readiness was updated for William Annin: **2016-01-14**

Indicate the laste date NJTAx Technology Readiness was updated for Cedar Hill: **2016-01-14**

Indicate the laste date NJTAx Technology Readiness was updated for Liberty Corner: **2016-01-14**

Indicate the laste date NJTAx Technology Readiness was updated for Mount Prospect: **2016-01-14**

Indicate the laste date NJTAx Technology Readiness was updated for Oak Street: **2016-01-14**

# The current effective learning model in each school?

It is intended for computing technology and digitals tools to *enhance* the curricula, not to become the learning focus. For this reason, utilization of a research-based model for infusing technology, such as the [SAMR model](#), is recommended to inform lesson planning and curriculum integration, and to monitor the effectiveness of the technology infusion.  Model lessons should be shared as exemplars in appropriate curriculum entries in Rubicon Atlas.

## APPENDIX I
**District Device Evaluation**
**K-12 Devices**

The objective of this pilot was to evaluate the functionality of new devices to determine if they meet the staff's current expectations. The technology committee developed  a benchmarking tool to assist in evaluating these tools. The benchmarking tool was a list of very specific common tasks, that most staff perform each day. These tasks provided a control to determine if expectations were met on the device. Included within this pilot was another strand, in which the

technology committee searched to see if Windows 8 operating system was a direction the district wanted to pursue.

In order to collect a large data sample with a small number of pilot devices, staff members volunteered to demo the device a few weeks at a time. This provided enough time to do the common tasks, while also being able to form an opinion about the device. Once they completed their tasks, all we required was for them to complete the survey.
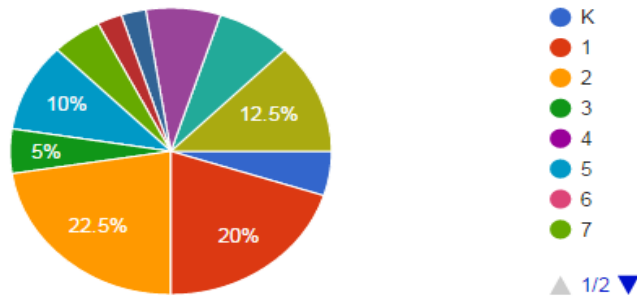
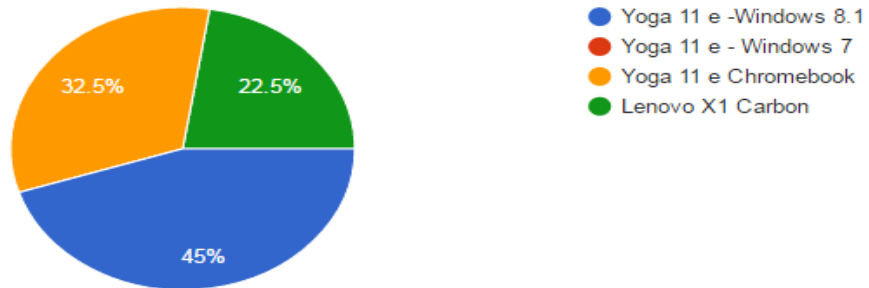Here are the common tasks we asked each staff to complete.

**Tasks:**

1. Present a SMARTboard lesson
2. Present a streaming video to the class (Youtube, Discovery Education video, etc)
3. Present a digital slide presentation (MS PowerPoint, Google Slides, Prezi, etc)
4. Record notes at a meeting (faculty meeting, department meeting, PLC meeting, etc)
5. Enter student grades into TAC
6. Read, send, manage email
7. Record student attendance
8. Manage an online calendar (Novell, Google Calendar, etc)
9. Access websites
10. Plan a lesson and record it in OnCourse
11. Present an interactive simulation to the class
12. Conduct a class poll (Google Forms, Polleverywhere.com, Survey Monkey, etc)
13. Display student work or an exemplar
14. Display and review a homework assignment
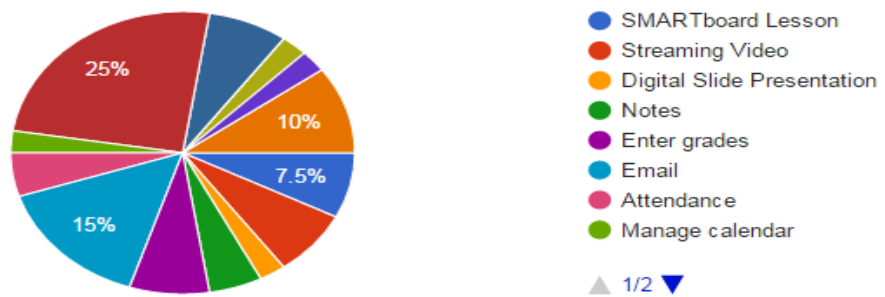
**Below are the survey results:**

## Please select the grade level the device was used. (40 responses)



Legend:
- K
- 1
- 2
- 3
- 4
- 5
- 6
- 7

1/2

Values shown: 10%, 5%, 22.5%, 20%, 12.5%

## Please select your test device used for the task. (40 responses)



Legend:
- Yoga 11 e -Windows 8.1
- Yoga 11 e - Windows 7
- Yoga 11 e Chromebook
- Lenovo X1 Carbon

Values shown: 32.5%, 22.5%, 45%

## Which task was performed? (40 responses)



Legend:
- SMARTboard Lesson
- Streaming Video
- Digital Slide Presentation
- Notes
- Enter grades
- Email
- Attendance
- Manage calendar

1/2

Values shown: 25%, 10%, 7.5%, 15%

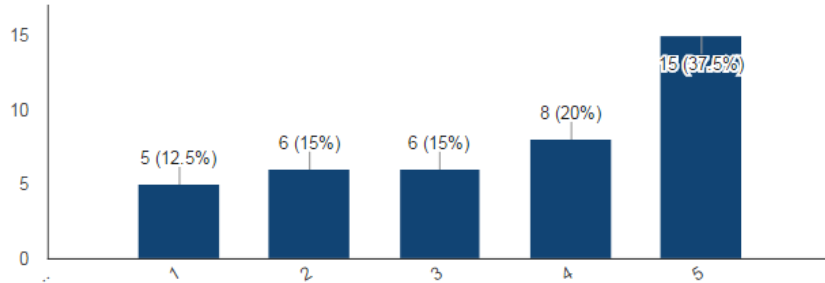## If 'Other', please describe: (5 responses)

| |
|---|
| classroom lesson |
| general comments... |
| I did all of the tasks asked of me. |
| a variety of tasks including planning, document creation, email, etc. |
| EVERYTHING. I used it for lesson planning, grading, digital classroom, presentations, email, attendance... etc. |

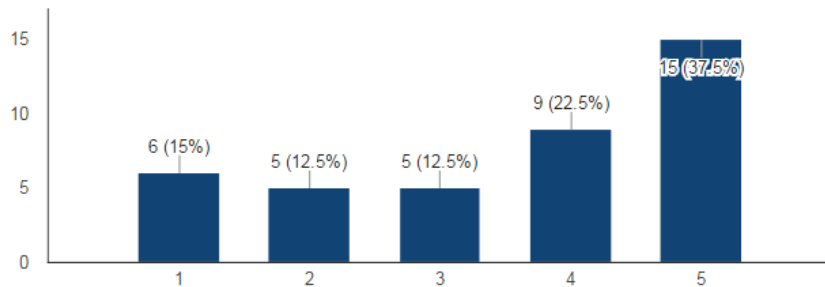## How well did the test device perform the function? (40 responses)

How well did the test device perform the function compared to your current device?
(40 responses)



Do you feel the device used will increase productivity? (40 responses)



**Here are the responses to the suvey's questions:**
**https://docs.google.com/spreadsheets/d/1wUNiCOAfJE71OGfKzGyZ_yorY0graT6CRs1w5**
**GmDHIM/pubhtml**

The data from this survey gave us the insight on the following things.

- Currently adopting Chromebooks as a 'Staff Device' does not meet their current expectations
- Windows 8 as an operating system is not well suited for staff needs.
- Tablet and Pen interaction is critical for the Secondary Staff for daily instruction
- Lightweight and long battery life are a must.

# APPENDIX II
**District Projector/Interactive Device Survey Information**
**K-12 Projector/Interactive Device**

The technology committee was tasked to determine what device(s) would be the best replacement for the current aging projector/smartboard fleet. This pilot was performed at the elementary level; however, the data collected was used to make the decision on the device to replace the projectors in the secondary schools.

The pilot consisted of the following devices:
- Infocus Jtouch interactive display
- Epson 585 Ultra Short Throw projector (non interactive)
- Epson 585 Ultra Short Throw projector (interactive)
- Smartboard 4065 interactive display

The committee compiled a list of ten guided questions which focused on separate strands of performance.
**Ten Guided Questions**

1. Visual
    - Is the screen bright enough?
        - Is the display affected by glare or sunlight?
    - Is the screen size large enough?
    - Is the device easy to connect to and begin using?
2. Sound
    - Is the volume loud enough on the device?
    - When turned up, is the quality of the sound still clear?
3. Interaction
    - Do the interaction features exceed expectations?
    - How many students can interact with the device?
    - Do you have to calibrate it often?
4. How are other subject specific curriculum working with the pilot
    - Does GO Math work?
5. Does your device work well with Smart Notebook software?
6. Is your device suitable for the grade level you teach?
    - If not do you think it is more appropriate at another grade level?
7. What are some positive features about the pilot device
8. What are some negative features about the pilot device
9. What comments have the students made with respect to the new device?
10. Does this device **exceed** your expectations for delivering instruction in a classroom?

The committee's approach to this pilot was to produce authentic results. So the ten guided questions were given to each staff member that participated in the pilot. We asked them not to directly answer the questions but to keep them in mind as they used the device.

The pilot ran for over four months. This allowed each staff member to become comfortable with the device. It also allowed the device to be observed and used by their peers. During the pilot the committee, as well as the staff involved in the pilot, got the opportunity to work with each other's device. Thus opinions could be formed naturally and not guided by predetermined questions.

Finally, the technology committee invited the individuals involved with the pilot to a meeting. During the meeting, an open discussion occurred about each device. This allowed this natural/authentic information to be shared among the group. The discussion resulted in a unanimous decision that the Epson Ultra Short Throw interactive projector was the right fit for the district. It met and exceeded expectations in each strand of the ten guided questions. It also outperformed technology that was more than double its price point.

The committee also concluded that increased functionality and the marginal cost difference between an interactive and noninteractive, made the device the best fit for secondary schools as well.