# HACKENSACK PUBLIC SCHOOLS


# DIGITAL LEARNING PLAN

## JULY 1, 2016 – JUNE 30, 2019

# Hackensack Board of Education

## June 2016

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President

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Interim Business Administrator

**Rosemary Marks**
Assistant Superintendent

**Lauren Kazmark**
Director of Curriculum/NCLB Coordinator

**Rogelio Suarez**
Director of Bilingual, ESL and World Languages

**Adrian Cepero**
District Technology Coordinator

**Robert Blanchard**
Director of Buildings and Grounds

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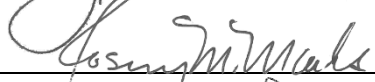
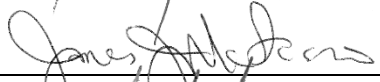
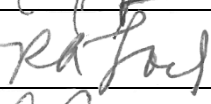
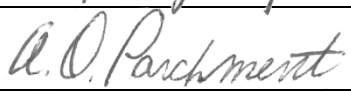
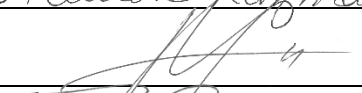
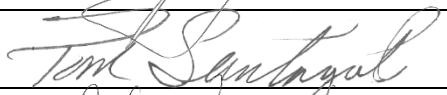
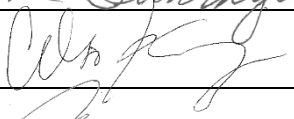
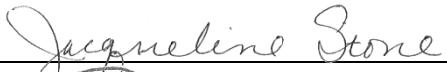
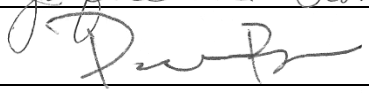
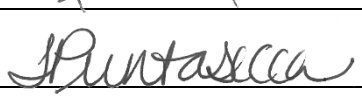
# 2016-2019 District Digital Learning Plan Stakeholders

| Name | Title/Role | Signature |
|---|---|---|
| Joseph Cicchelli | Interim Superintendent |  |
| Rosemary Marks | Assistant Superintendent |  |
| James Montesano | Principal, Hackensack High School |  |
| Corey Jones | Principal, Hackensack Middle School |  |
| Rhonda Ashton-Loeb | Principal, Fairmount Elementary School |  |
| Andrea Parchment | Principal, Jackson Elementary School |  |
| Robert Greenwood | Supervisor, Early Childhood Center |  |
| Dr. Lauren Kazmark | Director, Curriculum |  |
| Rogelio Suarez | Director, Bilingual, ESL & World Languages |  |
| Thomas Santagato | Director, Special Services |  |
| Celso King | Assistant Principal |  |
| Adrian Cepero | District Technology Coordinator |  |
| Maureen Carroll | Library/Media Specialist |  |
| Ted Malin | Teacher, Middle School |  |
| Jacqueline Stone | Teacher, High School |  |
| Patricia Burleson | Teacher, Elementary |  |
| Tracy Puntasecca | Teacher, Elementary |  |

# Our Vision

Our vision for digital learning is grounded firmly in our beliefs [that]:

- Our students will be effective communicators, quality producers, self-directed lifelong learners, community contributors, collaborative workers and complex thinkers;
- All students are entitled to opportunities to maximize their talents and abilities;
- Our ethnic and cultural diversity is our strength and prepares students for success in a global society;
- Setting high expectations for students, teachers and administrators ensures that our students successfully meet or exceed the New Jersey Core Curriculum Content Standards and the Common Core State Standards at all grade levels;
- Parents are essential partners in the education of their children;
- Maintaining a strong partnership with the Hackensack community is integral to student success;
- Understanding, implementing and responding to current trends in technology is intrinsic to success in a 21st century world;
- The District should have a well-trained, highly qualified and competent staff;
- The District should maintain a safe and secure learning environment.

Digital learning will allow us to transcend the boundaries of traditional teacher-led instruction through personalization and individualization of learning, student-led discovery, data-driven/dynamic instruction and “anytime/anywhere” access to curriculum and resources.

Students become agents of their own learning collaborating with peers and experts both in-person and virtually, analyzing and solving real-world problems, and designing and creating products; classrooms become centers for exploration, discussion and innovation rather than simply consumption of knowledge; and educators become facilitators and co-learners alongside students.

# Our Mission

Our mission is to create innovative, student-centered digital learning environments that enable teachers and administrators to become leaders in implementing 21st century themes and skills by developing and implementing technology-rich instructional programs and curriculum that emphasize:

- Personalized, “Anytime/Anywhere” Learning;
- Creativity and Innovation;
- Collaboration and Communication;
- Critical-thinking and Problem-Solving; and
- Digital Citizenship

As a result, students will be empowered to assume responsibility for their learning by applying new and existing technologies to solve real world problems while simultaneously expanding their global and cultural awareness and developing essential skills necessary for college and career readiness.

**What is a Digital Learning Environment?**

A Digital Learning Environment is one in which the entire teaching and learning process is transformed by the use of technology; where students and teachers are not merely using technology, rather technology is integrated into or impacts every aspect of the learning experience (classroom environment, curriculum, instruction and assessment). Learning is primarily student-led and is accessible to all types of learners from anywhere, at any time providing opportunities for learning beyond the traditional school day.

**Model Digital Learning Environment**

In order to ensure consistency and foster collaboration, the technologies and resources listed below are considered by the District as the standard for a model Digital Learning Environment:

- Interactive whiteboard or projection device (80% Student Use)
- Teacher station (mobile or located in rear of classroom)
- Teacher/Student-Assigned Mobile Devices with multimedia capabilities
- Student Workstations (K-1 Only)
- Online Learning Management System
- Common Core-, ISTE NETS- and Standard 8.0-aligned digital curriculum/resources
- Online formative assessments
- Online collaborative workspace for students and teachers

# Current State

## Ubiquitous Access to Technology

Significant strides have been made over the last three years in alignment with the 2013-2016 Technology Plan to provide teachers and students with equitable and ubiquitous access to technology equipment and web-based tools to transform the teaching and learning process.

### NJTRAx Technology Readiness

Updated: June 27, 2016

| Recommended PARCC Specs (Scoring 0-9) | | | |
|---|---|---|---|
| Location Name | Tech | Network | Device |
| District | 9 | 9 | 9 |
| Hackensack High School | 9 | 9 | 9 |
| Hackensack Middle School | 9 | 9 | 9 |
| Nellie K. Parker | 9 | 9 | 9 |
| Fanny M. Hillers | 9 | 9 | 9 |
| Jackson Ave | 9 | 9 | 9 |
| Fairmount | 9 | 9 | 9 |

### 1-to-1 Initiatives

In 2012 the District began a 1-to-1 initiative at the High School in Grade 9. All students received an Apple iPad, which they were able to use for academic purposes both at school and at home. This initiative would be expanded each year - a grade level at a time - until all High School students had an assigned device.

In its fourth year, the High School 1-to-1 initiative, while currently half iPad and half Chromebook (exclusively Chromebook moving forward), has met the initial objective of providing each student with a device by 2015. All classroom teachers have also been provided a device for use in and outside of school. This has also been supplemented by 4 carts of 30 Chromebooks each that can be “checked-out” of the Media Center as needed.

In 2013-2014 the District expanded its 1-to-1 plans to include both the Middle School and its four K-4 elementary schools. These would also be gradually introduced, but would be “cart-based” rather than “take-home” for logistical and security reasons.

Currently the Middle School has 42 classroom carts of Chromebooks (30 per cart) that are shared between grade level content-area teams. The elementary schools have 13 carts each (11 carts for General Education and Bilingual/ESL classrooms and 2 exclusively for self-contained Special Education classrooms with 15 Chromebooks each). All carts have headsets with microphones and mice for use as needed.

Currently the ratio of students to devices in grades K-8 is approximately 2-to-1, but should be reduced to 1-to-1 in all schools by 2017-2018.

**Interactive Whiteboards and Document Cameras**

Ninety-nine percent of District classrooms have been outfitted with an interactive whiteboard (SMART Board) and a document camera. Each year 30-40 projectors are replaced as part of on-going maintenance as units reach their end-of-life.

In 2015-2016 the District began using 65" SMART flat panel displays at both the Middle School and High School. LCD Flat Panel displays, while slightly more expensive, are more efficient, require less maintenance and provide better image quality than projector-based boards.

Interactive whiteboards are intended for student-centered learning through the use of interactive lessons and activities available online or designed using specialized software (i.e., SMART Notebook). While they may be used intermittently as a traditional presentation device, student use of the board should be its primary focus (ideally 80% student use).

**Special Needs, Bilingual/ESL and Gifted and Talented**

Part of the mission of the Hackensack Public Schools is to ensure "all students are entitled to opportunities to maximize their talents and abilities." To this end the Department of Technology maintains a robust network infrastructure that allows for our general education, special needs, gifted and talented and Bi-lingual/ESL students to access any technology resources needed and recommended for their individual needs.

Hackensack has implemented amplified classrooms, special keyboards and mice, Apple iPads, and interactive white boards in various Special Education classrooms; Special Needs (including "At-Risk") and Bilingual/ESL students utilize specialized web-based applications that include individualized tutorials and intervention services prescribed through adaptive assessments; Bilingual/ESL students also utilize specialized software to assist with language decoding and acquisition skills; and Gifted and Talented students participate in STEM-based activities using Lego Robotics Kits in the elementary schools and coding projects at the Middle School.

The Department of Technology makes itself available for consultation to child study teams, school caseworkers, teachers, administrators, and parents during the development of student IEP's. The District uses the process outlined in The Assistive Technology Training Online Project (ATTO) to identify AT applications that help students with disabilities learn in elementary classrooms (http://atto.buffalo.edu/). Recommendations are then forwarded to the Department of Technology for approval. Subsequently, decisions are made on any district-wide purchasing initiatives and implementations specific to these assistive technologies, including NIMAS compliance.

### Network Infrastructure/Capacity

The success of our Digital Learning initiatives is highly dependent on the availability of a stable, high-speed network infrastructure that can meet the "anytime, anywhere" demands of over 5,500 students and 700 staff members utilizing over 7000 networked devices.

The Hackensack Public Schools Department of Technology has and continues to develop a highly-capable, centralized network of schools and offices interconnected via District-owned Fiber connections. Main Distribution Frames (MDFs) in each building are connected to each Intermediate Distribution Frame via Fiber[1] as well. All classrooms and offices have at least one (1) CAT5e network connection with a 5- or 8- port switch to provide connectivity to multiple wired devices. 99% of classrooms also have a wireless access point that can support up to 30-40 mobile devices concurrently (optimally). Currently, the District has a 1 Gigabit internal network capacity down to the classroom level (for hard-wired devices)[2].

The District utilizes a "hub-and-spoke" topology with all buildings (spokes) connecting to the Hub located at the High School via private fiber connections. At the hub, we currently have a core switch capable of up to 10 Gb of network bandwidth that handles all District-wide routing, several physical and virtual servers, Storage Area Network devices for staff file storage and data backup, and content filtering/endpoint appliances to handle firewalling, threat management, and CIPA compliance. All buildings share a 1 Gb internet connection, which currently has an optimal 25% average utilization during

[1] Currently all internal fiber is capable of bandwidth up to 1 Gb. This will be upgraded in the summer of 2016 to 10 Gb where current fiber links can support the speed increase. Internal fiber links deemed insufficient for 10Gb bandwidth will be replaced during the 2016-2017 and 2017-2018 school years.

[2] Mobile device bandwidth depends on the device's wireless capability as well as the distance from and current throughput of the associated access point.

peak times (8:30 AM – 11:00 AM) with a secondary 150 Mb connection as fail-over at the Middle School.

### Wireless Connectivity

In support of the various 1-to-1 initiatives throughout the District (and computer-based State testing), between 2012 and 2015 Meraki cloud-based wireless access points were installed in almost every classroom in the District as well common spaces such as auditoriums, gymnasiums, cafeterias and outdoor fields. The goal was to outfit each area with an access point in order to better support one-to-one learning.

### Internet Usage Monitoring and Filtering

The District uses a centralized, "hub and spoke" network topology, which means all schools connect to the internet through a single internet connection located at the hub (located in the High School). At this endpoint, we monitor and filter all content and traffic using an endpoint solution to both ensure CIPA compliance and add an extra layer of security.

All District-owned devices that are assigned to staff or students (i.e. iPads, laptops, Chromebooks) are filtered even while "off" the District network by means of a proxy or agent depending on the type of device.

By default, staff members have less filtering than students when logged in using their Hackensack network account. They also have the option/ability to approve/unblock YouTube video content for viewing by students. Currently, staff can request to have individual websites/domains "unblocked" District-wide (for student use) through an online form. All requests are evaluated on an individual basis by the District Technology Coordinator or his designee and addressed within 24-48 hours or sooner if possible.

The District regularly re-evaluates (and improves) its content filtering system to better support the increased internet bandwidth and number of users/devices added each year and to ensure staff and students have adequate access to educational resources. While planning is encouraged when using digital resources, it is understood that personalized digital learning is a much more organic and dynamic process and therefore, requires flexible filtering that shifts more control to the educators in the classroom.

Internet and device usage is currently monitored through several methods. Both our firewall and content filter provide daily and weekly reporting on activity and trends; GoGuardian is utilized to monitor and safeguard District Chromebook usage in and outside the District network; and Gaggle provides Gmail and Google Drive CIPA

compliance for students as well as cyber safety monitoring. GoGuardian and Gaggle are both used to also ensure compliance with District Acceptable Use Policies.

### Security and Data Privacy

Security is a priority for the District as hackers have increased both the frequency and sophistication of attacks on educational institutions in recent years. Historically, education has lagged behind other industries in implementing safeguards for network and data security. However, as more and more of our daily lives rely on digital tools and resources, this is now an area that requires a significant amount of attention. While no system is impenetrable, safeguards can be put in place to mitigate exposure, risk and ultimately, loss.

### Anti-Virus/Mal-ware Protection

In addition to endpoint security, the District also utilizes an enterprise client-based anti-virus solution that protects all District PC/Mac computers and servers from potential mal-ware and viruses. The antivirus database is updated regularly, which is then replicated to all client computers for maximum security compliance. Scans are run on a daily basis and cannot be disabled by users. Additionally, the District uses third-party software on all PC/Mac computers to prevent malware-, virus-related and accidental/unauthorized operating system changes as well as installation of non-approved software. In order to ensure compliance with all applicable laws and to prevent intentional/unintentional mis-use of technology and/or network resources, all software installed on District devices must be approved and installed by the Department of Technology.

### Active Directory

The District currently has a Windows Server environment with Active Directory. All Windows-based computers in the District are on a single domain, which allows implementation of group-based security policies. All staff is assigned an Active Directory account for the domain, which is currently integrated with various services to provide Single-Sign-On (SSO) capability. Staff is also provided with access to a “Home” folder and District-wide shared drive for file storage and sharing. Students in grades 3-12 are also provided an Active Directory account.

## Mobile Device Management/Security

The District utilizes several mobile device management solutions (depending on the type of device) to monitor and manage all District mobile devices. These applications allow the District to enforce usage policies, remotely install or remove applications, and track stolen or lost devices. All traffic from District-provided mobile devices is also routed back to our network gateway and content filtering appliances at all times for security and CIPA-compliance reasons.

## District Policies

As digital learning evolves so must the policies in place that clearly define acceptable and inappropriate uses of available technology and services to ensure protection of student and staff rights as well as District property and services. The District currently has an acceptable use policy in place for both staff and students (6142.10). Additional policies were implemented to address the following:

- District-provided student mobile devices (3514.10)
- District-provided staff mobile devices (4219.26)
- Electronic communication by staff (4119.26)

Policies are reviewed at least once per year to ensure they are both relevant and adequate. Revisions and additional policies are recommended as needed to ensure adequate access to resources while simultaneously reducing the District's and its staff's and students' exposure to both liability and potential harm.

## "Going Paperless" as a Digital Learning Goal

In an effort to reduce costs and limit the District's environmental impact, the District plans to continue cutting paper consumption and print activity significantly over the next three years by encouraging a "paperless classroom" where teachers "digitize" as much of their resources/materials as possible. This push will be complimented by slowly reducing the number of inefficient stand-alone printers, utilizing rules-based printing software to monitor and optimize print activity throughout the District, encouraging double-sided printing (when possible) and providing training for staff on the use of built-in digital scanning, faxing, and network functions of District copiers/multi-function printers.

While this will ultimately lead to lower costs and maintenance, it will also ensure we are setting a positive example for our students on how to care for the environment responsibly.

## Technology Maintenance

An important goal of the district is to ensure the availability of technology resources and services to support/improve academic achievement.

All technology[3] through-out the District is maintained by the following personnel:

- Four (4) field technicians
- One (1) Administrative Assistant (High School One-to-One Claims Specialist)
- Network engineer
- District Technology Coordinator

Maintenance: Desktop and Laptop computers are routinely scanned for viruses, re-imaged and updated to ensure reliability. District-owned Apple iPads and Chromebooks are maintained via mobile device management solutions to ensure compliance with District acceptable-use policies and standards.

Technology staff perform regular preventative maintenance on desktops and projectors to improve their lifespan. Older generations of projectors and Smartboards that are no longer performing efficiently or are showing signs of failure are replaced on an ongoing basis. All traditional desktops/workstations will be evaluated for replacement based on the "Guidelines for Obsolescence" set forth in Appendix I.

Chromebooks and iPads are evaluated for replacement based on published End-of-Life schedules and State testing requirements.

Warranties: Desktops and laptops are covered by three-year on-site extended warranties purchased separately from the manufacturer or re-seller. All Apple devices such as iPads, iMacs, and MacBooks are minimally covered by the standard two-year AppleCare+ protection plans, which cover repairs and accidental damage. District-owned iPads and other mobile devices (with the exception of Chromebooks purchased after July 2015) assigned to staff or students in which the device may be taken off District property are covered by a third-party insurance plan purchased through an approved provider[4].

[3] District copiers and laserjet printers are currently maintained through a Managed-Print Services contract with United Business Systems (as of April 2016). This service provides toner as well as technical support by way of a 1-800 number available on each machine. Department of Technology staff does assist with installation of toners and troubleshooting if needed.

Chromebooks deemed “in need of repair” are repaired by a third-party service provider selected through the RFP/Bidding process.

Spares/Loaners: The Department of Technology maintains spares of certain types of equipment for emergency replacements and temporary loaning including desktops, laptops, printers, projectors, network switches, and iPads. It is recommended that all initiatives involving large purchases of technology for instructional use dedicate an additional 10% of inventory for replacement and loaning purposes.

**Technology Support**

Technology support in the district will be provided from two different approaches (Instructional and Technical) and at various levels within each approach.

Instructional Support: Support provided to aid in implementation of educational technologies during instruction including pedagogy, best practices, and resource development. This will be provided through the use of educational consultants, content-area supervisors, coaches, Library Media Specialists and Department of Technology staff. We plan to offer the following levels of instructional support:

I. Remote Support
    - By phone or email
    - Webinars/Tutorials
II. On-site support
    - Job-embedded or in-class coaching
    - Professional development workshops
    - Planning/Grade-level meeting support

Staff at each school will have access to a discussion forum for on-going support and a resource portal with links to resources including software, sample lessons, tutorials, and forms.

Technical Support: Support provided to aid with technology and infrastructure issues including malfunctioning devices or computer systems, internet connectivity, software installation and support, and equipment setup. This will be provided primarily by the Department of Technology through a web-based help request system according to the following levels:

I. Remote Support
    - By phone or email (Helpdesk)
    - Remote desktop control/software deployment
II. On-Site Support
    - Field Technicians/Network Engineer
    - 1-to-1 Service Center (based in the High School)

## Telecommunication Services

Telephones:

As part of the overall District goal to improve security and communication in schools, the district upgraded its telecommunications system in the 2014-2015 school year to a full Voice over IP system that provides the district with the necessary and effective telecommunications it requires for the future. Phones were added in every classroom.

This upgrade also required infrastructure improvements to provide additional Ethernet connections in each area without an available secondary data connection.

Analog phone lines were maintained at each location for fax, alarm and emergency purposes.

Cellular/Wireless: A District cellular/wireless account is assigned to administrators as assigned by the Superintendent and District technical support staff for communication and security purposes. This service is currently provided by Verizon Wireless and will be continued.

## Physical Security

In line with the District's mission of "maintaining a safe and secure learning environment", the District will continue to implement and improve various physical security measures throughout District buildings, including:

- Surveillance cameras/systems at the High School, Middle School, and elementary schools
- Photo-Identification badges for all staff
- Visitor tracking/management systems at Middle School and High School
- Proximity card time-clock systems at each building for staff
- Unified access control systems at each building

# Teaching and Learning

Technology is merely a tool for instruction; how it is used is the determining factor of not just the success of the tool itself but of the overall teaching and learning process. Over the past three years we have focused primarily on increasing access to those tools and ensuring the infrastructure was in place to support them both technologically and instructionally. Over the next three, we plan to focus heavily on "how" they are used to improve and transform instruction. We will look at curriculum, professional development and even the physical learning environment to maximize the Value-Of-Investment (VOI) on all District technology purchases.

## Google Apps for Education

In 2013-2014 Hackensack became a Google Apps for Education (GAFE) district. All staff were given Google Apps accounts with access to all GAFE apps including Gmail, Calendar, Drive, Docs, Sheets, Slides and in 2014, Classroom.

In 2014 Students in grades 5-12 were all given Google Apps accounts under the hackensackstudents.org subdomain. This was expanded to include grades 3-4 in September 2015.

While no formal expectations were set, Google Apps usage increased dramatically over the past 3 years, especially with the introduction of Chromebooks and Google Classroom. Several educators have even participated in certification programs offered by Google to become "Certified Google Educators" and "Certified Google Trainers". These teachers in turn lead Google professional development efforts in their buildings.

Moving forward Google Apps will be a central focus of our digital learning with required and suggested strategies and activities in all District curriculum.

## Learning Management Systems (LMS)

A Learning Management System, or LMS, is a virtual classroom/workspace that allows a teacher to quickly delivery content and instruction to students on any device, enable discussion and extend learning beyond the school day. It is a fundamental piece to any successful one-to-one initiative and essential to "anytime, anywhere" learning.

Over the last 2-3 years there has been a consistent effort to encourage/promote use of an LMS such as Edmodo and Google Classroom in grades 5-12. These efforts have

steadily gained steam with over 50% of teachers in these grade levels adopting and using a platform to various degrees (based on need and level of comfort).

Use of an LMS will be strongly encouraged, if not required, for all teachers in grades 3-12 over the next 3 years.

### STEM Learning

STEM (**S**cience, **T**echnology, **E**ngineering and **M**ath) is a project-based, cross-disciplinary teaching and learning initiative were students identify and solve real-world issues through student-centered, open-ended, hands-on exploration, inquiry and teamwork.

The District currently utilizes STEM learning in its Gifted and Talented programs at the elementary and middle school levels and in its CTE courses at the high school level. But while many associate STEM with only Science and Math (or 3D Printers), STEM learning as a concept has widespread application in all grade levels and content areas. The Engineering Design Process, which is the foundation of all STEM lessons and projects, is a systematic approach to addressing any problem that can be applied very easily in Language Arts, Social Studies and Health to address any topic or issue.

The District plans to incorporate STEM Learning Concepts in all curriculum through project-based, student-driven digital learning opportunities.

### Coding

With the help of movements such as “Hour of Code”, Coding has become a popular topic in schools across the country as a way to address/integrate technological skills into everyday learning. The Hackensack School District has participated in “Hour of Code” activities since the initiative began and would like to expand them by including coding projects and activities as a part of the curriculum at every grade level. Coding as a method to introduce foundational computing concepts promotes creativity, critical thinking and problem solving while simultaneously increasing student engagement.

### “Game-ification”/Digital Badging

“Game-ification” is an approach to learning that seeks to raise student engagement and ownership of learning through game-based concepts familiar to students. Students are awarded points, badges or other rewards by completing tasks or mastering skills. This

encourages achievement through tangible rewards that can be shared with parents and peers. The District plans to incorporate Game-ification into its curriculum by including suggested milestones and reward options that teachers can implement in their classrooms.

## Digital Citizenship

With increased student access to digital tools and resources comes a responsibility to educate students on appropriate and ethical uses of technology to ensure students are able to learn, communicate and collaborate safely and responsibly.

Digital Citizenship curriculum has been implemented at the Middle School level over the past year as a pilot with a subset of students. This pilot will be expanded District-wide and will be led by the Library/Media Specialists in each building to ensure all students are receiving instruction regarding:

- Internet Safety
- Privacy and Security
- Relationships and Communication
- Cyberbullying
- Digital Footprint and Reputation
- Self-Image and Identity (Grades 3-12)
- Information Literacy
- Creative Credit and Copyright

## Mobile Hotspots for Students

Thanks to a grant provided by Bergen County in conjunction with JerseyOn and Sprint, partners of the federal ConnectEd initiative, which aims to provide next-generation broadband and high-speed wireless to 99% of America's students within five years, the District provided mobile hotspots to 170 ninth grade students at Hackensack High School during the 2015-2016 school year. Through the grant each qualifying student/family was provided a CIPA-compliant Sprint Wireless 4G LTE mobile hotspot with 3 GB of data per month at no cost for 4 years. The goal of the grant (and the ConnectEd initiative) is to close the digital divide by providing low-income families with the access they need to 21st century tools and resources for academic and economic success.

Recognizing that internet connectivity outside of school is vital to digital "anytime, anywhere" learning, the District will be evaluating this pilot to gauge its impact/success and consider its possible expansion.

# Needs Assessment

The District based its needs assessment on various sources of information including:

- An online survey at both the school- and district-level on technology needs;
- Informal observations;
- Anecdotal feedback from staff, students and parents;
- State and district reports;
- NJTRAx Technology Readiness Score
- Recommendations from the District Technology Planning Committee;
- Published guidelines from major initiatives or organizations such as PARCC and SETDA;
- Industry trends and best practices;
- Review of current and past work orders and help requests;
- Regular internal evaluation of services by the Department of Technology

A survey was conducted to assess the needs of educators in regards to digital learning, which included professional development, access to technology equipment, software, and support. Questions ranged from simple uses of basic technology tools to more advanced digital learning concepts and skills.

**Teaching and Learning Needs**

In support of instructional needs, the District, at a minimum, will need to:

- Increase access to student devices in Grades K-8, with most need in K-2.
- Increase professional development offerings focused on technology integration.
- Provide leveled/tiered, needs-based professional development opportunities.
- Incorporate SAMR and TPACK models in all District instructional PD offerings.
- Revise curriculum to better infuse digital learning practices and resources.
- Provide additional curriculum/standards-aligned digital resources.
- Provide just-in-time, job-embedded technology coaching to model effective digital teaching and learning practices and assist teachers with planning.
- Provide instruction to students on basic technology operations and skills.
- Provide for more common planning time in schedules for teachers to collaborate with grade level and content area peers.
- Revise District acceptable use policies to enable access to emerging technologies/resources while simultaneously safeguarding student data and privacy.

### Infrastructure Needs

In order to support increasing demand for network and web-based ("cloud") resources, the District, at a minimum, will need to:

- Increase core network capacity to 10-Gigabit (between buildings, MDF-to-MDF, by 2016-2017; within buildings, MDF-to-IDF, by 2017-2018)
- Upgrade wireless connectivity to AC-standard access points throughout each District building to meet the increasing bandwidth demands of mobile devices.
- Upgrade/Replace aging network technology in MDF's and IDF's as needed.
- Maintain a redundant, diversified internet connection at the Middle School to ensure maximum availability of resources and to prevent a network "single-point-of-failure". (For more information on improvements needed to guarantee availability of network resources, see "Facilities Infrastructure" below)
- Add/replace/upgrade file and storage servers to meet demands and ensure high availability of digital resources.
- Add additional fiber links between buildings to create a "mesh" topology for both redundancy and load-balancing purposes.

## Facilities Needs

To ensure maximum availability of resources, the District will need to improve its primary and secondary[5] hubs by upgrading or adding the following:

- Fire suppression system
- Additional battery backups to protect systems against power failures
- Emergency electrical power/generator for prolonged outages.
- Additional Security Measures
- Concrete or Tiled flooring
- Ventilation/Air conditioning

To meet growing demands on the building level, where it is necessary and funds allow, we will upgrade the Main and Intermediate Distribution Frames in some, if not all, of the areas above.

[5] Middle School IT Room has been designated as secondary hub for District.

## Technical and Instructional Support Needs

With the growing number of new technologies in the District, it is imperative that the following is done to ensure that all the needs of the schools are met:

- Establish a help desk with a telephone hot-line for basic troubleshooting and support.
- Hire one (1) additional technician to support schools.
- Create school-based Digital Learning Teams to support District Digital Learning Plan goals and objectives.
- Implement educational technology coaches or teacher leaders to provide on-site, just-in-time instructional support and job-embedded professional development to all schools on how to effectively transform teaching and learning through the use of technology.

# Goal, Strategies and Objectives for 2016-2019

**Goal**: **Implement model digital learning environments across all grade levels aligned to the Common Core State and ISTE NETS Standards by June 2019.**

**Strategies:**

- Provide ongoing, needs-based professional development to assist with the implementation of digital learning instructional/assessment practices that meet diverse student needs.
- Promote reflective digital teaching practices through use of the SAMR and TPACK Frameworks.
- Integrate STEM learning concepts at all grade levels.
- Create a culture of trust and innovation to support risk-taking and innovation by educators when using technology for teaching and learning.
- Ensure equitable and ubiquitous access to technology resources.
- Provide adequate and timely technical support.
- Provide job-embedded, just-in-time instructional coaching and support to teachers.
- Establish collaborative planning teams at each school to assist with determining and addressing needs.
- Provide additional common planning time between grade level and content area teachers.
- Increase collaboration between the Department of Technology and the Departments of Curriculum, Special Services and Bilingual/ESL to integrate technology effectively into instructional curriculum and initiatives.

**Objectives:**

### *Teaching and Learning*

**Objective 1:** Teachers in Grades PreK-12 increase the number of instructional lessons that integrate digital tools and resources aligned to NJ State Standard 8.0 throughout the school year.

**Objective 2:** Teachers in Grades PreK-12 will use student data to modify instructional strategies and personalize digital learning experiences as evidenced by lesson plans and observations.

**Objective 3:** Teachers in Grades PreK-12 will increase use of online tools to assess student proficiency/needs throughout the school year.

**Objective 4:** Teachers in Grades 3-12 will increase use of a learning management system as an instructional tool for delivering content throughout the school year.

**Objective 5:** Teachers in Grades 5-12 will increase the number of opportunities for students to direct their own learning through personalized learning experiences as evidenced through pre and post surveys.

### *Leadership and Infrastructure*

**Objective 6:** One curriculum per grade level, at minimum, is updated/revised to reflect digital learning and STEM-based skills, concepts and resources by June 2019.

**Objective 7:** All students, teachers, and administrators have equitable access to all appropriate digital learning tools and resources for instructional, assessment and administrative purposes by June 2018 as evidenced by surveys.

**Objective 8:** All students, teachers, and administrators have adequate access to instructional and technical support to meet digital teaching and learning needs throughout year as evidenced by surveys.

**Objective 9:** An environmentally-friendly, safe, secure and state-of-the-art technology, telecommunications and security infrastructure to support "anytime, anywhere" digital learning exists and is available 99% of the time throughout the year.

**Objective 10:** A sustainability plan is created by February 2017 to identify and secure current and future financing requirements to support the District's Digital Learning Plan and is updated annually to reflect plan revisions.

# Three-Year Activity Plan

| Activities | | | | | |
|---|---|---|---|---|---|
| **#** | **District Goal and Objective** | **Strategy/Activity** | **Timeline** | **Person Responsible** | **Documentation** |
| 1 | All | Establish school-based digital learning/curriculum planning teams to develop school digital learning plans that include a detailed implementation plan for professional development for teachers in all grade levels and content areas and to perform other technology/curriculum-related planning activities. (See Appendix II for a complete list of responsibilities) | Ongoing | Principals | -Meeting Agendas<br>-School Action Plan<br>-Roster of planning team |
| 2 | Goal 1 – Objectives 1-5 | Build teachers' capacity to utilize technology for instruction and assessment practices through targeted professional development strategies (See PD Opportunities).<br>• Provide ongoing, tiered professional development on new digital learning tools and their applications including assistive technologies for Bilingual/ESL and special needs students.<br>• Use PLCs to explore new digital learning technologies and pedagogical practices.<br>• Provide online portal with links to relevant resources, sample lessons and tutorials.<br>• Provide online discussion forum for digital learning. | Ongoing | -Curriculum Director/PD Coordinator<br>-Principals<br>-District Technology Coordinator<br>-Director of Special Education<br>-Director of Bilingual/ESL<br>-School-based Digital Learning Team | -PD calendar or list of PD offerings<br>-PD agendas/sign-in sheets<br>-PD session evaluations<br>-PLC agendas/sign-in sheets<br>-Portal screenshot<br>-Forum log |

| Activities | | | | | |
|---|---|---|---|---|---|
| **#** | **District Goal and Objective** | **Strategy/Activity** | **Timeline** | **Person Responsible** | **Documentation** |
| 3 | Goal 1 – Objectives 1-5 | Build administrators' capacity to evaluate effective digital teaching and assessment practices through targeted professional development strategies.<br>• Provide professional development on effective use of relevant new and existing digital learning tools and practices including assistive technologies for Bilingual/ESL and special needs students.<br>• Provide online discussion forum for technology integration. | Ongoing | -Curriculum Director/PD Coordinator<br>-District Technology Coordinator<br>-Director of Special Education<br>-Director of Bilingual/ESL | -PD calendar or list of PD offerings<br>-PD agendas/sign-in sheets<br>-PD session evaluations<br>-completed observations<br>-Forum log |
| 4 | Goal 1 – Objectives 1-5 | Provide professional development and support to enhance teachers' and administrators' technological literacy and digital learning skills.<br>• Promote use of SAMR and TPACK models with all professional development.<br>• Introduce "Pedagogy Wheel" as a guide for selecting appropriate digital learning tools | Ongoing | -Curriculum Director/PD Coordinator<br>-Principals<br>-District Technology Coordinator<br>-School-based Digital Learning Team | -PD calendar<br>-List of PD offerings<br>-PD session agendas<br>-PD session attendance<br>-PD session evaluation<br>-results of tech literacy and tech implementation assessments |
| 5 | Goal 1 – Objectives 1-5, 7 | Establish and maintain a virtual professional learning community for students, teachers, and administrators in order to facilitate communication, professional development, mentoring, and collaboration activities. | Ongoing | District Technology Coordinator | -list of user names<br>-usage logs<br>-screen shot of website |

| Activities | | | | | |
|---|---|---|---|---|---|
| # | District Goal and Objective | Strategy/Activity | Timeline | Person Responsible | Documentation |
| 6 | All | Identify or develop an assessment tool that will be administered each school year to gauge the impact of technology on professional development outcomes, development of leadership skills and creating a student-centered digital learning environment. | October 2016 to develop/identify and ongoing for administration | -District Technology Coordinator<br>-District Technology Planning Committee | -Survey results & recommendations |
| 7 | Goal 1 – Objectives 1-5, 7 | Secure and maintain a partnership with a local university/organization to provide sustained on-going support for the professional development of teachers and administrators in acquiring and implementing teaching, learning and leadership practices needed in Digital Learning environments. | Ongoing | -District Technology Coordinator<br>-District Technology Planning Committee | -Meeting minutes<br>-Log of PD sessions |
| 8 | Goal 1 – Objectives 1-5, 7 | Implement “teacher leader” professional development model where tech savvy teachers provide training and mentoring to their peers. | Ongoing | -District Technology Coordinator<br>-District Technology Planning Committee<br>-Principals | -District Job-embedded Professional Development Catalog |

| Activities | | | | | |
|---|---|---|---|---|---|
| **#** | **District Goal and Objective** | **Strategy/Activity** | **Timeline** | **Person Responsible** | **Documentation** |
| 9 | Goal 1 – Objectives 2-3 | Provide professional development and support to teachers and administrators on the use of formative assessment and data-driven decision making.<br>• Use data from formative assessments to target instruction and revise curriculum as needed<br>• Analyze summative data for each student stored on the District's student information and assessment management systems.<br>• Using digital learning tools and resources to design/conduct formative assessments and gather real-time data. | Ongoing | -Director of Curriculum<br>-District Data Facilitator/Coach<br>-District Technology Coordinator<br>-Principals | -PD calendar<br>-Agendas<br>-Session evaluations |
| 10 | Goal 1 – Objectives 2-3 | Maintain current PerformancePlus assessment system and process to collect, manage and analyze traditional (paper-based) student assessment data. | Ongoing | -District Technology Coordinator<br>-Director of Curriculum | -purchase order<br>-data reports |
| 11 | Goal 1 – Objective 3, 7 | Continue monitoring/assessing student progress in developing technology literacy skills (NJCCS 8.1) in grades 4 and 8 using NJTAP-IN 4th grade checklist and 8th grade rubric, respectively. | Ongoing | -District Technology Coordinator<br>-Director of Curriculum<br>-Principal<br>-Librarian<br>-Classroom Teachers | -Rubric results |
| 12 | Goal 1 – Objectives 1-5 | Provide professional development to teachers and administrators on how to use technology to improve communication with students and parents using the following tools:<br>• Gmail/GoogleApps<br>• Edmodo/Google Classroom | Ongoing | -District Technology Coordinator | -List of offerings<br>-Examples of notifications |

| Activities | | | | | |
|---|---|---|---|---|---|
| **#** | **District Goal and Objective** | **Strategy/Activity** | **Timeline** | **Person Responsible** | **Documentation** |
| 13 | Goal 1 – Objectives 1-7 | Maintain subscriptions as needed (based on annual VOI reviews) to the following digital learning applications for teacher/student use:<br>• BrainPop (K-8)<br>• RazKids (K-4)<br>• LearningA-Z (K-4)<br>• iRead (K-2)<br>• Voyager (5-8)<br>• Newsela (5-8)<br>• Discovery Streaming (K-12)<br>• TypingPal (K-12)<br>• SRI (K-12)<br>• SMI (5-8)<br>• Read180 (5-12 Special Needs and At-Risk students)<br>• SPI/System 44 (Bilingual students)<br>• Turnitin.com (9-12) | Ongoing | -District Technology Coordinator<br>-Director of Curriculum<br>-Supervisors<br>-Building Principals<br>-Director of Bilingual/ESL<br>-Director of Special Education | Purchase Orders<br>Usage Logs/Reports |
| 14 | Goal 1 – Objectives 1-6 | Identify/Design and implement Digital Citizenship curriculum at elementary, middle and high school levels. | Ongoing | -District Technology Coordinator<br>-Principal<br>-School Media Specialists<br>-Classroom Teachers | -Lesson plans |
| 15 | Goal 1 – Objectives 1-6 | Increase use of “Coding” and STEM learning concepts in all grade levels through curriculum revisions. | Ongoing | -Director of Curriculum<br>-Supervisors<br>-Building Principals | -List of offerings<br>-Results of student skills assessment |

| Activities | | | | | |
|---|---|---|---|---|---|
| **#** | **District Goal and Objective** | **Strategy/Activity** | **Timeline** | **Person Responsible** | **Documentation** |
| 16 | Goal 1 – Objectives 1-5 | Provide training opportunities for parents on various digital learning topics to encourage giving students access at home, including:<br>• Digital learning and "Anytime, Anywhere" access<br>• Cyber-safety including (safeguarding identity and how to monitor/manage your child's online activity) | Ongoing | -District Technology Coordinator<br>-Bilingual/ESL Parent Liaison<br>-School-based Digital Learning Teams | -List of offerings |
| 17 | Goal 1 – Objectives 1-6 | Provide students with opportunities to choose appropriate digital learning tools, including assistive technologies, to complete tasks and apply them to real-world situations in ways that foster increased collaboration and innovative approaches in the preparation of work products and presentations. | Ongoing | -District Technology Coordinator<br>-Director of Curriculum<br>-Principal<br>-Classroom Teachers<br>-Librarian | -Classroom observations<br>-Lesson plans<br>-Examples of student work/products |
| 18 | Goal 1 – Objectives 1-6 | Encourage student participation in online learning communities with learners from other regions, states or countries to understand their perspectives on a local or global problem or issue, and propose possible solutions. | Ongoing | -District Technology Coordinator<br>-Principal<br>-School Librarians<br>-Classroom Teachers | -Lesson plans<br>-Examples of student work/products |
| 19 | Goal 1 – Objectives 1-6 | Develop and implement instructional activities that require students to access information efficiently and effectively, evaluate information critically, and use information accurately and creatively to solve problems. | Ongoing | -District Technology Coordinator<br>-Director of Curriculum<br>-Classroom Teachers<br>-School Media Specialists | -Sample completed research projects/activities<br>-Completed assessment rubrics |

| Activities | | | | | |
|---|---|---|---|---|---|
| **#** | **District Goal and Objective** | **Strategy/Activity** | **Timeline** | **Person Responsible** | **Documentation** |
| 20 | Goal 1 – Objectives 1-6 | Design and implement activities that foster understanding of the interdependence of various systems (i.e., social and economic) in other countries using technological tools. | Ongoing | -District Technology Coordinator<br>-Director of Curriculum<br>-Classroom Teachers<br>-School Media Specialists | -Sample lesson plans<br>-Sample digital products |
| 21 | Goal 1 – Objectives 1-6 | Design and implement activities that support understanding and appreciation of world cultures, including the evolution of cultures caused as a result of a technological society. | Ongoing | -District Technology Coordinator<br>-Director of Curriculum<br>-Classroom Teachers<br>-School Media Specialists | -Sample lesson plans<br>-Sample digital products |
| 22 | Goal 1 – Objectives 1-6 | Provide students with opportunities to synthesize and publish information about a local or global issue or event on a collaborative, web-based service. | Ongoing | -District Technology Coordinator<br>-Director of Curriculum<br>-Classroom Teachers<br>-School Librarian | -Published GoogleDocs, Prezi's, wiki's, blogs, podcasts, etc. |

| Activities | | | | | |
|---|---|---|---|---|---|
| **#** | **District Goal and Objective** | **Strategy/Activity** | **Timeline** | **Person Responsible** | **Documentation** |
| 23 | Goal 1 – Objectives 1-5, 7 | Provide schools with additional digital learning tools (Chromebooks, desktops/laptops, printers, interactive whiteboards, digital projectors, document cameras, etc.) for teaching, learning and assessment purposes, including:<br>• Chromebooks for incoming 9th grade students (phasing out existing Apple iPads) (2016-2017)<br>• Chromebooks for middle and elementary schools to develop 21st century skills and PARCC-readiness<br>• Additional 3D printers at middle and elementary schools (1 per school)<br>• Stem-based learning tools such as Robotics, Makey-Makey, and LittleBits kits to promote hands-on, collaborative learning through exploration and problem-solving/innovation.<br>• Mobile devices for classroom teachers to present/manipulate IWB's remotely. | Ongoing | -District Technology Coordinator | -Purchase orders |
| 24 | Goal 1 – Objectives 1-5, 7 | Continue upgrading/replacing obsolete and malfunctioning classroom technology such as:<br>• SMART Boards<br>• Projectors<br>• Desktop Computers (Grades K-1)<br>• Document Cameras (Hovercams) | Ongoing | -District Technology Coordinator | -Purchase orders |

| Activities | | | | | |
|---|---|---|---|---|---|
| **#** | **District Goal and Objective** | **Strategy/Activity** | **Timeline** | **Person Responsible** | **Documentation** |
| 25 | Goal 1 – Objectives 1-5, 7 | Explore creation of computer labs at Elementary schools and additional labs at Middle School and High School for technology courses and computer-based assessment readiness. | Sep 16-Nov 17 | -Director of Curriculum<br>-District Technology Coordinator<br>-Principals | -Meeting agendas/minutes |
| 26 | Goal 1 – Objectives 1-7 | Provide opportunities for students with special needs to participate in digital learning environments that include appropriate assistive technologies such as:<br>• Touch-sensitive devices for interaction and communication;<br>• Hearing aids and amplification devices that enable hearing-impaired students to hear what's going on in the classroom;<br>• Glare-reduction screens, screen magnifiers, and Braille note-taking devices that enable visually impaired students to participate more fully;<br>• Voice-recognition software that turns the spoken word into type on a computer screen so students unable to move their limbs can take part; and<br>• Technologies that enable severely disabled students to control their computers simply by following letters and commands on the computer screen with their eyes. | As needed based on IEP's | -Director of Special Services<br>-District Technology Coordinator<br>-Classroom Teachers | -IEP recommendations<br>-Purchase orders |

| Activities | | | | | |
|---|---|---|---|---|---|
| # | District Goal and Objective | Strategy/Activity | Timeline | Person Responsible | Documentation |
| 27 | Goal 1 – Objectives 1-5, 7 | Provide opportunities for Bi-lingual/ESL students to participate in digital learning environments that include appropriate assistive technology and/or applications such as:<br>• Translation/Dictation tools/applications<br>• Interactive Books<br>• Visual Brainstorming/Story-telling tools/applications<br>• Literacy-, Phonemic Awareness- and Comprehension-building applications | Ongoing | -Director of Bilingual/ESL<br>-District Technology Coordinator<br>-Classroom Teachers | -Purchase orders<br>-Lesson Plans<br>-Student Products |
| 28 | Goal 1 – Objectives 1-5, 8 | Maintain 1-to-1 Service Center at High School. | Ongoing | District Technology Coordinator | -completed work orders<br>-Satisfaction surveys |
| 29 | Goal 1 – Objectives 1-5, 7, 9 | Review and update District technology policies to reflect current trends and include emerging technologies to ensure students and staff have necessary access to educational resources while safeguarding data privacy. | Ongoing | District Technology Planning Committee | -Approved updated policies |
| 30 | Goal 1 – Objectives 1-5, 8 | Maintain and expand web-based District resource portal to provide additional online resources for instruction and professional development and information on emerging trends and best practices. | Ongoing | -District Technology Coordinator | -Screenshot of website |
| 31 | Goal 1 – Objectives 1-5, 8 | Sustain and expand number of field technicians to ensure availability of technical support to schools and offices. | Ongoing | District Technology Coordinator | -Employee contracts<br>-Completed work orders |

| Activities | | | | | |
|---|---|---|---|---|---|
| **#** | **District Goal and Objective** | **Strategy/Activity** | **Timeline** | **Person Responsible** | **Documentation** |
| 32 | Goal 1 – Objectives 1-5, 8 | Provide various technical support options including:<br>• Remote support<br>• Phone support (help desk)<br>• Online help-request system<br>• Managed-print services (printer repair and toner supply) | Ongoing | District Technology Coordinator | -Support Logs |
| 33 | Goal 1 – Objectives 1-5, 8 | Provide various instructional support options including:<br>• Digital learning specialists to provide instructional support and professional development to staff on how to effectively analyze/use data and integrate technology into instruction.<br>• Online/on-demand training/professional development.<br>• On-site professional development by District staff and/or consultants<br>• Online webinars | Ongoing | -District Technology Coordinator<br>-Director of Curriculum<br>-Coaches | -List of PD library/offerings<br>-Coaching logs |
| 34 | Goal 1 – Objectives 1-5, 7, 9 | Increase District internet bandwidth/capacity to 2 Gb by July 2017 to meet growing network demands and PARCC/SETDA standards. | Ongoing | District Technology Coordinator | -Purchase orders<br>-Utilization reports |
| 35 | Goal 1 – Objectives 1-5, 7, 9 | Upgrade/replace wireless network access points throughout all District buildings to newer AC-standard.<br>-High School (Summer 2016)<br>-Middle School (Summer 2017)<br>-Elementary Schools (Summer-Fall 2018) | FY 16-17<br>FY 17-18 | District Technology Coordinator | -Purchase orders<br>-Wireless connectivity tests |

| Activities | | | | | |
|---|---|---|---|---|---|
| # | District Goal and Objective | Strategy/Activity | Timeline | Person Responsible | Documentation |
| 36 | Goal 1 – Objectives 1-5, 7, 9 | Add a network monitoring appliance to properly monitor/manage internal network traffic to identify and prevent bottlenecks. | FY 16-17 | District Technology Coordinator | -Network performance reports |
| 37 | Goal 1 – Objectives 1-5, 7, 9 | Upgrade District-wide core network from 1 GB to 10 GB. | Ongoing | District Technology Coordinator | -Purchase orders<br>-LAN connectivity tests |
| 38 | Goal 1 – Objectives 8-9 | Continue to provide cellular service to designated District administrators and technical support staff for communication and security purposes. | Ongoing | District Technology Coordinator | -Invoices |
| 39 | Goal 1 – Objectives 9 | Maintain, upgrade, or add security systems and/or cameras throughout District buildings as needed to ensure safety of students and staff. | Ongoing | -District Technology Coordinator<br>-Director of Buildings and Grounds<br>-Principals | -Purchase orders<br>-Security reports |
| 40 | Goal 1 – Objectives 9 | Maintain District-wide time and attendance system with proximity card readers at each building to accurately monitor building staff attendance for security and auditing purposes. | Ongoing | -District Technology Coordinator<br>-Principals | -Time clock reports |
| 41 | Goal 1 – Objectives 9 | Maintain VoIP telephony system to improve security and communication throughout District buildings and with parents. | FY 17-18 | District Technology Coordinator | -Purchase order(s)<br>-Project plan/scope of work |
| 42 | Goal 1 – Objectives 1-5, 7, 9 | Maintain secondary internet connection from a different ISP at Middle School for redundancy/fail-over and load-balancing. | FY 17-18 | District Technology Coordinator | -Purchase orders |

| Activities | | | | | |
|---|---|---|---|---|---|
| # | District Goal and Objective | Strategy/Activity | Timeline | Person Responsible | Documentation |
| 43 | Goal 1 – Objectives 1-5, 7, 9 | Add additional virtualized servers at High School and Middle School hubs to support future initiatives and provide redundancy. | Ongoing | District Technology Coordinator | -Purchase orders |
| 44 | Goal 1 – Objectives 1-5, 7, 9 | Add additional storage at High School and Middle School hubs for storage of staff/student files and replication of existing data. | Ongoing | District Technology Coordinator | -Purchase orders<br>-Disk space usage reports |
| 45 | Goal 1 – Objectives 1-5, 7, 9 | Add emergency power generator at High School to supply District Hub during prolonged outages. | FY 16-17 | District Technology Coordinator, Director of Buildings and Grounds, Business Administrator | -Board Resolution/Purchase Order<br>-Generator Report |
| 46 | Goal 1 – Objective 10 | Evaluate initiatives to determine VOI and develop 2-year sustainability/funding plan. | Annual | District Technology Coordinator, District Technology Planning Committee, Director of Curriculum, Business Administrator, Superintendent | -VOI Report<br>-Funding Plan (16-17) |

# Professional Development Strategies

## Educators

The District will expand teachers' and administrators' expertise in how to use Digital Learning tools and more importantly, how to wisely enable students to apply them in their learning by providing staff with professional development that is:

- Ongoing/Sustained;
- Just-in-time;
- Job embedded;
- Needs-based;
- Tiered (Beginner/Advanced);
- Instructionally-focused (less technical, more pedagogical); and
- Aligned to District curriculum and/or Common Core State Standards as well as ISTE NETS standards for teachers and administrators (Appendix IV and V on pages 60 and 62, respectively).

Professional development will be provided in-person or through the use of live/recorded webinars. The District will also identify tech savvy teachers and administrators at each building that will provide training and mentoring to their peers via a "teacher leader" model, and school-based digital learning teams will further facilitate professional development at the school-level by meeting regularly to assess progress and needs. This will be complemented by on-demand training resources and webinars available through the District Resource Portal (http://www.hpsnet.org).

All professional development activity in the District is cataloged and logged using PDPlanner, an online professional development management system. Through this system, evaluation feedback can be gathered from event participants to review overall effectiveness and relevance of the topic/material presented as well as any suggestions for additional or future sessions.

## Technical Staff

The Department of Technology will continue to support the professional growth of its own technical staff through online training resources, monthly staff meetings and vendor-conducted webinars. Additionally, the Department of Technology will continue to contract with corporations and training entities targeting products and services from major vendors to provide on-site and off-site training for both its technical support staff and network engineer.

In addition to technical training, the District Technology Coordinator will provide staff development of process methodologies including but not limited to ITIL, CoBIT, and Six Sigma.

## Application of Assistive Technologies

Staff from the departments of Special Services, Bilingual/ESL and Technology, visit schools regularly and help in assistive technology implementation wherever it is needed. Professional Development will be provided by vendors of specialized technologies and in-district staff when possible. Online resources such as implementation guides and video tutorials are also available for on-demand viewing.

Teachers can make requests for support to their school-based Digital Learning Team which will review the student's needs, consider teacher recommendations, and reevaluate resources as needed. Fulfillment of these requests is coordinated by either the Department of Special Services or Bilingual/ESL (depending on the specialized program) and the Department of Technology.

| Professional Development Opportunities for 2016-2019 | | |
|---|---|---|
| **Educators' Proficiency/ Identified Need** | **Professional Development Opportunities** | **Support** |
| Teachers:<br><br>1. Facilitate and inspire student learning and creativity;<br>2. Design and develop digital-age learning experiences and assessments;<br>3. Model digital-age work and learning;<br>4. Promote and model digital citizenship and responsibility;<br>5. Engage in professional growth and leadership.<br><br>(NETS-T, 1-5) | Teachers in grades K-12 will learn best practices for how to integrate popular Digital Learning tools into lesson plans. Topics will include:<br><br>• Integrating a Smartboard into daily instruction as a student-driven tool<br>• Creating a student-centered, peronalized learning experience using web-based tools such as GoogleDocs or free versions of other apps such as Prezi, SlideShare, Nearpod, Quizlet, Classbadges and Kahoot!.<br>• Using cloud-based storage tools such as GoogleDrive to share and transfer files easily and safely<br>• Creating an online classroom with Google Classroom<br>• Using Google Forms as a formative assessment tool<br>• Leveraging the Genesis Student Information System<br>• How to access and implement District resources such as United Streaming/Discovery Education, PerformancePlus, RazKids, Reading A-Z, BrainPop, Voyager, iRead, SRI, SMI, SPI, Read180, System44, ThinkCentral and Successnet depending on grade level/population.<br>• Using mobile devices such as iPads or Chromebooks for student-centered learning | Trainings will be provided in-person and/or via live/recorded webinar by a combination of staff from the departments of Technology and Curriculum as well as outside organizations, universities and vendors to groups or individuals (who will turn-key information).<br><br>All training will be tiered for beginner and advanced levels when appropriate. Individuals will have the opportunity to advance through all levels at their own pace.<br><br>Additional support can be requested from the school-based Digital Learning Team. |

| Professional Development Opportunities for 2016-2019 | | |
|---|---|---|
| **Educators' Proficiency/ Identified Need** | **Professional Development Opportunities** | **Support** |
| Teachers:<br><br>1. Facilitate and inspire student learning and creativity;<br>2. Design and develop digital-age learning experiences and assessments;<br>3. Model digital-age work and learning;<br>4. Promote and model digital citizenship and responsibility;<br>5. Engage in professional growth and leadership.<br><br>(NETS-T, 1-5) | Teachers in grades K-12 will learn best practices for how to integrate popular Digital Learning strategies into lesson plans. Topics will include:<br><br>• Exploring/Unpacking the ISTE NETS standards for students and teachers<br>• Applying the SAMR and TPACK Models<br>• "Game-ification"/Digital Badging<br>• Creating and administering online assessments, analyzing student data and implementing intervention strategies.<br>• Addressing Cyber- safety, ethics, and bullying<br>• Extending/"flipping" the classroom<br>• How to incorporate "blended learning" when creating/developing lessons<br>• Using email and other communication methods to keep parents informed and involved<br>• Classroom management in a 1:1 environment | Trainings will be provided in-person and/or via live/recorded webinar by a combination of staff from the departments of Technology and Curriculum as well as outside organizations, universities and vendors to groups or individuals (who will turn-key information).<br><br>All training will be tiered for beginner and advanced levels when appropriate. Individuals will have the opportunity to advance through all levels at their own pace.<br><br>Additional support can be requested from the school-based Digital Learning Team. |

| Professional Development Opportunities for 2016-2019 | | |
|---|---|---|
| **Educators' Proficiency/ Identified Need** | **Professional Development Opportunities** | **Support** |
| Teachers:<br><br>5. Engage in professional growth and leadership.<br><br>(NETS-T, 1-5) | Use a "teacher leader" model to facilitate professional development throughout schools. | Through this plan, schools will create school-based Digital Learning teams, which will regularly assign (based on content-area and/or level of expertise) teachers and/or administrators that will receive extensive training to be able to turn-key information and best practices to staff within their buildings. Principals will allow for turn-key training to occur during any of the following times:<br><br>• Planning meetings<br>• Staff meetings<br>• PLC's<br>• In-services<br>• In-class (Coaching) |

| Professional Development Opportunities for 2016-2019 | | |
|---|---|---|
| **Educators' Proficiency/ Identified Need** | **Professional Development Opportunities** | **Support** |
| Teachers:<br><br>Teachers model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments.<br><br>(NETS-T 1d)<br><br>Teachers participate in local and global learning communities to explore creative applications of technology to improve student learning.<br><br>(NETS-T, 5a)<br><br>Teachers contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community.<br><br>(NETS-T, 5d) | <u>Participation in Online Teacher Learning Communities</u><br><br>Teachers will be able to create/join a virtual learning community (using Edmodo, Google Classroom and/or Google Groups) and have access to an online learning community that includes links to videos that addresses the best education research regarding instruction, leadership, differentiation, diverse learners and technology in order to boost student learning and engagement and improve educator practice. | District will provide access to relevant training videos to all instructional staff for self-paced learning through the District resource portal. Certain technology topics will be featured District-wide regularly in alignment with the goals of this plan. |

| Professional Development Opportunities for 2016-2019 | | |
|---|---|---|
| **Educators' Proficiency/ Identified Need** | **Professional Development Opportunities** | **Support** |
| Teachers:<br><br>Teachers model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments.<br><br>(NETS-T 1d)<br><br>Teachers participate in local and global learning communities to explore creative applications of technology to improve student learning.<br><br>(NETS-T, 5a)<br><br>Teachers contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community.<br><br>(NETS-T, 5d) | <u>Participation in "PLC's"</u><br><br>Teachers will participate in school-level professional learning communities that focus on the effective use of instructional technology in daily lessons to support academic achievement and development of student technology knowledge and skills (as per ISTE NETS-S). | District and school administrators will provide PLC opportunities and share/showcase products/outcomes District-wide. |

| Professional Development Opportunities for 2016-2019 | | |
|---|---|---|
| **Educators' Proficiency/ Identified Need** | **Professional Development Opportunities** | **Support** |
| Teachers:<br><br>Teachers contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community.<br><br>(NETS-T, 5d) | Sponsor participation of teacher members of the District Technology Planning Committee in New Jersey-based technology conferences such as:<br><br>• NJAET<br>• NJECC<br>• NJASL<br>• NJASA/Techspo | District pays for travel expenses and substitutes (if needed). |
| Administrators:<br><br>Ensure effective practice in the study of technology and its infusion across the curriculum.(NETS-A 2d) | Administrators are provided professional development on the effective integration/use of the following:<br><br>• Interactive Whiteboards<br>• Google Apps (Drive, Classroom Docs, Drive, Forms, etc.)<br>• SAMR/TPACK Frameworks<br>• Chromebooks<br>• iPads<br>• Copiers/Multifunction Machines<br>• Telecommunication Services | Professional development will be provided to school administrators by the District Technology Coordinator, Director of Curriculum, content-area supervisors and other professional development providers on a need-basis either in-person or through webinar. |

| Professional Development Opportunities for 2016-2019 | | |
|---|---|---|
| **Educators' Proficiency/ Identified Need** | **Professional Development Opportunities** | **Support** |
| Administrators:<br><br>Ensure effective practice in the study of technology and its infusion across the curriculum.<br><br>(NETS-A, 2d) | District-level administrators participate in professional development activities for teachers and administrators in order to adopt successful Digital Learning practices into curriculum and lesson plans. | Curriculum director and supervisors will attend administrator and teacher professional development sessions and will participate in online discussions. |
| Administrators:<br><br>1. Visionary Leadership<br>2. Digital Age Learning Culture<br>3. Excellence in Professional Practice<br>4. Systemic Improvement<br>5. Digital Citizenship<br><br>(NETS-A 1-5) | Provide professional development to school administrators on how to develop a school-based Digital Learning action plan that addresses the ISTE NETS standards for students, teachers and administrators and is aligned to District goals. | Professional development will be provided by the District Technology Coordinator and supported through live webinars to guide development of plans. Plans will guide District and school budget planning and professional development priorities. |
| Administrators stay abreast of educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning.<br><br>(NETS-A 3d) | Sponsor participation of administrators and members of the District Technology Planning Committee in local and national technology conferences such as:<br><br>• NJAET<br>• NJECC<br>• NJASL<br>• NJASA/Techspo<br>• ISTE | District pays for travel expenses. |

# Reflect and Adjust

Potential barriers to success:

- Administrator/Teacher buy-in of vision, plan and/or initiatives (resistance to change)
- Funding changes
- Adequate staffing (both instructional and technical)
- Competing initiatives both in-District and State-mandated

The District will regularly evaluate progress of its Digital Learning Plan in the following ways:

A. The Technology Department will conduct internal annual reviews of services based on:
    - online surveys of staff, students and parents;
    - anecdotal feedback and observations;
    - past work orders/help requests; and
    - usage logs

B. Monthly meetings between Director of Curriculum, department supervisors, building administrators and the District Technology Coordinator to review and refine initiatives.

C. All new and existing initiatives will be reviewed according to the CoSN Value of Investment Methodology (pg. 50).

D. District Technology Planning Committee will meet several times a year (see proposed schedule below) to review digital learning plan progress and refine activity and professional development plans.

    Review will be based on:
    - Feedback from school-based digital learning teams
    - Feedback from professional development activities
    - Feedback from Technology Department review
    - Feedback from monthly administration meetings
    - Relevant changes in digital learning technology and pedagogy (equipment and best practices)
    - Requirements of District, state and federal initiatives

**Proposed changes/additions will be submitted for Board review and approval as needed.**

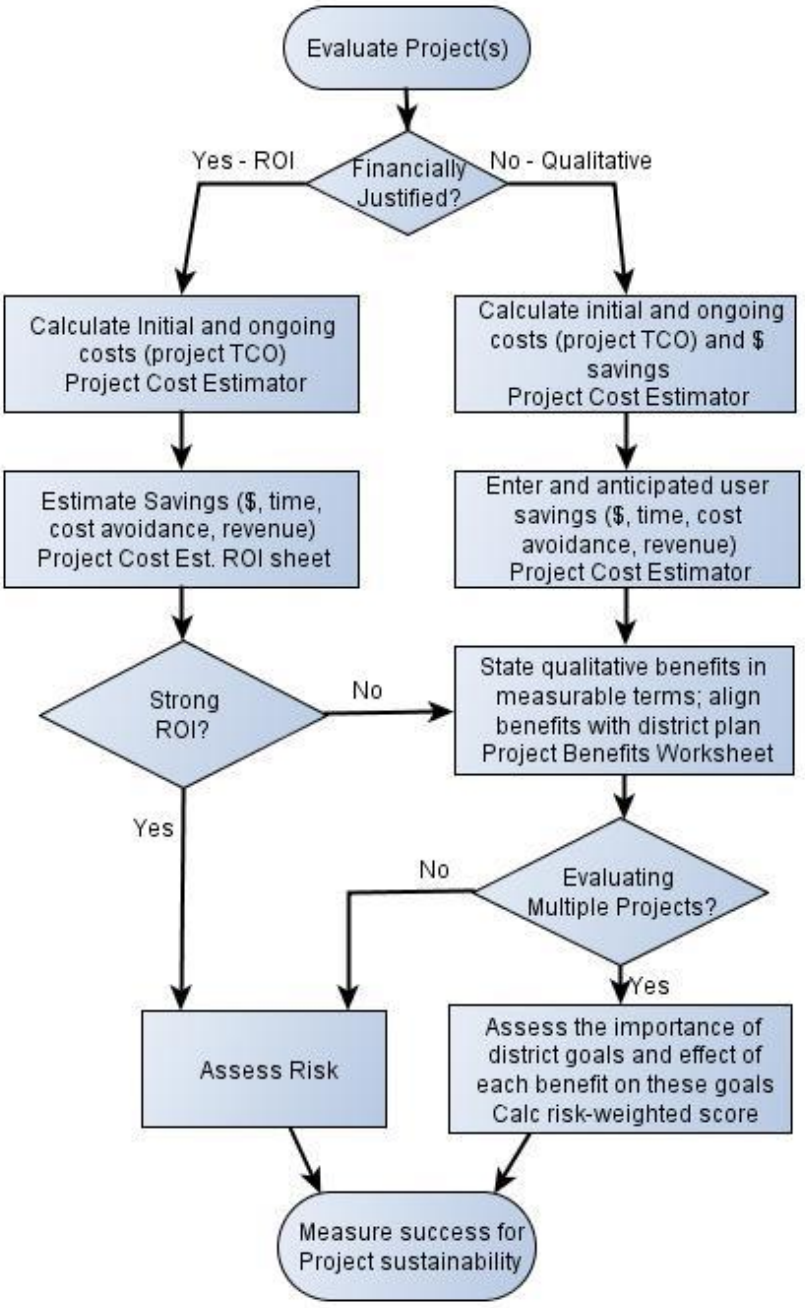
## Proposed Timeline for Review of Digital Learning Plan Activities

| Date* |
|---|
| October 6, 2016 |
| February 9, 2017 |
| June 7, 2017 |
| October 11, 2017 |
| February 8, 2018 |
| June 6, 2018 |
| October 11, 2018 |
| February 7, 2019 |

*Dates may be subject to change.

# Budget

All District budgets are created using “zero-based” budgeting, ensuring that all requested items are evaluated and justified annually. This process will also be extended to all technology initiatives through the CoSN VOI Methodology (pictured below).



| 2016-2019 Digital Learning Funding Plan (Year 1) | | | | | | |
|---|---|---|---|---|---|---|
| Item | Description | Recurring | E-Rate Eligible | Federal Funding | Local Funding | Misc. (e.g. Donations, Grants) |
| **Teaching and Learning** | | | | | | |
| **Digital Learning Tools** | | | | | | |
| HMH Read180 Upgrade | One-time fee to upgrade licenses from Next Gen to Universal | | | $ 148,365 | | |
| HHS Read180/System 44 Hosting | Annual licensing for HMH products | | | $ 5,000 | | |
| HMS Read180/System 44 Hosting | Annual licensing for HMH products | | | $ 4,500 | | |
| Elementary SRI Hosting | Annual licensing for HMH products | | | $ 9,600 | | |
| PerformancePlus | Assessment System | Y | | | $ 20,000 | |
| Discovery Education Streaming | On-demand library of video content/lessons for all subjects | Y | | | $ 10,500 | |
| FitStat | PhysEd Software | Y | | | $ 1,000 | |
| Cambium Learning Voyager | Math intervention software for Middle School | Y | | $ 11,000 | | |
| Brain Pop | On-demand animated videos for all subjects | Y | | | $ 10,000 | |
| RazKids/ReadingA-Z | Language Arts K-4 web-based software | Y | | | $ 20,000 | |
| Turnitin.com | High School web-based application for submitting and grading assignments | Y | | | $ 7,000 | |
| TypingPal | Typing support for students K-12 | Y | | | $ 3,740 | |
| Academy of Math | Math intervention software for High School | Y | | $ 500 | | |
| SMART Learning Suite | SmartBoard Instructional software | Y | | | $ 12,000 | |
| Vision Support (Lab Software) | Software for monitoring/managing lab computers during instruction | Y | | | $ 1,800 | |
| **Technology Supplies/Equipment** | | | | | | |
| Desktops/Laptops | Replacement desktops for teachers, students (K-1) and labs | | | | $ 75,000 | |
| Monitors | Replacement widescreen monitors | | | | $ 15,000 | |
| Projectors | Replacement SMARTBoard projectors | | | | $ 72,000 | |
| SMART Boards w/Proj | | | | | $ 52,800 | |
| SMART Board Only | | | | | $ 4,000 | |
| SMART Panels | | | | | $ 45,000 | |
| Chromebooks (9th Grade) | HHS 1-to-1 Incoming 9th Grade Devices | | | | $ 276,000 | |
| Chromebooks w/carts (5-8) | | | | | $ 110,000 | |
| Chromebooks w/carts (K-4) | | | | | $ 192,000 | |
| Replacement Chromebooks | | | | | $ 18,000 | |
| 3D Printers | 3D Printers for K-8 | | | | $ 6,000 | |
| STEM Kits | Makey Makey/Little Bits | | | | $ 5,000 | |
| Document Cameras | | | | | $ 3,500 | |
| Printers | | | | | $ 4,500 | |
| Copiers - Leases | | | | | $ 84,000 | |
| Mice | | | | | $ 2,000 | |
| Headsets | | | | | $ 5,000 | |
| Cables, Projector Bulbs, Computer Parts | | | | | $ 30,000 | |
| **Misc Services (related to Instr.)** | | | | | | |
| Managed Print Services | Supplies and service for all desktop printers | Y | | | $ 60,000 | |
| Copier Supply/Service | | Y | | | $ 69,000 | |
| Curriculum Writing | Updating District curriculum | | | | $ 20,000 | |
| **Professional Development** | | | | | | |
| Coaching - Stipends | Stipends for in-class coaching by digital learning specialists | Y | | | $ 48,000 | |
| Coaching - External | Outside consultants to provide job-embedded coaching | | | | $ 16,000 | |
| Consultants | Digital learning PD by outside consultants | | | | $ 25,000 | |
| Substitutes | Coverage for teachers involved in PD | | | | $ 14,000 | |
| Conferences | Conference fees for participants | | | | $ 2,000 | |
| **Infrastructure and Leadership** | | | | | | |
| **Network** | | | | | | |
| Firewall Replacement/Upgrade | | | Y | | $ 70,000 | |
| Firewall Subscription | | | | | $ 4,400.00 | |
| Content Filter Licensing | | | | | $ 11,000.00 | |
| MDF/IDF POE Switches | | | | | $ 30,000 | |
| Desktop Switches | | | | | $ 5,000 | |
| High School Wireless Access Points | | | Y | | $ 154,000 | |
| High School Wireless AP Replace | | | | | $ 30,000 | |
| Network Drops | Additional Network Drops | | | | $ 3,000 | |
| UPS Replacements and Supplies | | | | | $ 5,000 | |

| 2016-2019 Digital Learning Funding Plan (Year 1) | | | | | | |
|---|---|---|---|---|---|---|
| Item | Description | Recurring | E-Rate Eligible | Federal Funding | Local Funding | Misc. (e.g. Donations, Grants) |
| WAN Fiber Maintenance | Repairs as needed to District private fiber network | Y | | | $ 15,000 | |
| LAN Fiber Replacement | Upgrade internal fiber to support 10Gb | | Y | | $ 80,000 | |
| **Misc Equipment/Projects** | | | | | | |
| HHS Generator for Hub | | | | | $60,000 | |
| Jackson Ave Auditorium Upgrade | | | | | $25,000 | |
| Fairmount Auditorium Audio | | | | | $10,000 | |
| HHS/HMS Media Center Projectors | | | | | $9,000 | |
| HHS Auditorium Proj | | | | | $4,500 | |
| **Internet** | | | | | | |
| Lightpath Internet - 1 Gb | District primary internet | Y | Y | | $ 50,400 | |
| ECDC Internet | | Y | Y | | $ 1,900 | |
| Secondary Internet - 150 Mb | | Y | | | $ 2,500 | |
| **Filtering** | | | | | | |
| Lightspeed | Content filtering licensing | Y | | | $ 11,500 | |
| **Management/Security Software** | | | | | | |
| Genesis Student Information System | | Y | | | $ 28,800 | |
| School Messenger | | Y | | | $ 13,000 | |
| Microsoft Office Subscription | | Y | | | $ 18,000 | |
| Deepfreeze | | Y | | | $ 6,500 | |
| Lightspeed MDM | iPad Management | Y | | | $ 4,700 | |
| SchoolDude Work Order Sys | | Y | | | $ 6,000 | |
| Antivirus Renewal | | Y | | | $ 8,000 | |
| Email Archival | Old email system | Y | Y | | $ 8,200 | |
| District Website Hosting | | Y | Y | | $ 9,800 | |
| Microsoft Licensing | Server CALs | Y | | | $ 3,400 | |
| Oracle Licensing | Genesis DB Maintenance/Support | Y | | | $ 2,000 | |
| Gaggle Google Monitoring | CIPA Compliance/Monitoring of Student Google Drive and Gmail accounts | Y | | | $ 20,000 | |
| GoGuardian Chromebook Monitoring/Tracking | Usage, CIPA Compliance, Suspicious search alerts, Anti-theft | Y | | | $ 30,000 | |
| VMWare Licensing/Support | Virtual server support | Y | | | $ 2,000 | |
| Maxxess Access Control Licensing/Support | | Y | | | $ 5,000 | |
| Exacqvision Camera System Licensing/Support | | Y | | | $ 10,000 | |
| Sucuri Web Proxy for Web Server | Firewall for webserver | Y | | | $ 500 | |
| Uniflow Support | | Y | | | $ 1,650 | |
| T-Pass Visitor Management Support | High School and Middle School | Y | | | $ 1,400 | |
| Student Sync | Syncs Genesis with AD/Google | Y | | | $ 3,000 | |
| **Maintenance** | | | | | | |
| Projector Service | | Y | | | $ 4,000 | |
| Proj/SMART Warranty Labor | | Y | | | $ 1,900 | |
| Chromebook Repairs | | Y | | | $ 25,000 | |
| UPS Repair Shipments | | Y | | | $ 3,000 | |
| Device Theft Deductibles | | Y | | | $ 4,500 | |
| SmartBoard Warranty Replacements | | Y | | | | |
| Camera System Maintenance | | Y | | | $ 30,000 | |
| Access Control Maintenance | | Y | | | $ 15,000 | |
| **Telecommunications** | | | | | | |
| Hosted VoIP Service | | Y | Y | | $ 128,400 | |
| Analog Phones - Earthlink | Faxes, Alarms, Elevator lines | Y | Y | | $ 24,000 | |
| Analog Phones - Verizon | Faxes, Alarms, Elevator lines (BOE and HMS) | Y | Y | | $ 7,200 | |
| Cellular Service - Verizon | | Y | Y | | $ 8,400 | |
| ATC Voice/Data | Analog Maintenance/Support as needed | Y | | | $ 3,000 | |
| **Misc Supplies** | | | | | | |
| Prox Badges and Accessories | ID cards for staff | | | | $ 3,000 | |
| Office Desktops | Upgrade remaining office desktops to Windows 7 | | | | $ 32,000 | |
| **Other Services** | | | | | | |
| IT Training - CBTNuggets | On-demain library of training videos for IT Staff | Y | | | $ 2,000 | |
| IT Audit | Inventory audit | | | | $ 10,000 | |
| Network Security Audit | | | | | $ 5,000 | |
| E-Rate Consultant | | Y | | | $ 6,500 | |

| 2016-2019 Digital Learning Funding Plan (Year 1) | | | | | | |
|---|---|---|---|---|---|---|
| Item | Description | Recurring | E-Rate Eligible | Federal Funding | Local Funding | Misc. (e.g. Donations, Grants) |
| **Personnel (without benefits)** | | | | | | |
| District Technology Coordinator | | Y | | | $ 134,000 | |
| Network Engineer | | Y | | | $ 120,000 | |
| Technician I (Network Technician) | | Y | | | $ 73,051 | |
| Technician II | | Y | | | $ 70,200 | |
| Technician III | | Y | | | $ 53,900 | |
| Technician IV | | Y | | | $ 45,000 | |
| **Totals for 2016-2017** | | | | **$ 178,965** | **$ 2,913,041** | **$ -** |

Years 2 and 3 of the funding plan will be developed as part of the sustainability plan and will be updated through the Digital Learning Plan review process based on VOI analysis and /or changes to goals, objectives and technology.

## Appendix I

# Guidelines for Obsolescence

In devising guidelines for planned obsolescence the following facts are considered:

The software that is needed determines the specifications of the hardware required:

- ✓ Software drives Hardware
- ✓ Newer hardware has requirements that obsolete old software.
- ✓ Hardware and Operating Systems drive available software.

For the District to operate cohesively and to reduce support burdens we need standardization such as:

- ✓ Standardized Operating Systems
- ✓ Standardized Antivirus Software
- ✓ Standardized E-mail Platform
- ✓ Standardized Office Productivity Platform

***Hardware:***

Computer technology can be divided into “generations or stages”. These are listed from newest to oldest.

***Premium Stage:***

This generation is high cost. It is marketed towards high-end software requirements. This generation will soon be “industry standard” and significantly cheaper. There must be a specific curricular reason for the district/school/office to purchase this generation of equipment since it will soon be Industry Standard.

***Current Industry Standard:***

The standard is CPU technology that the industry is producing in quantity for the corporate/consumer market. Historically a computer of this generation is between $800 and $1000. This cost should include a three year warranty, which is a district recommendation for all new computer purchases. Equipment of this generation has a good cost vs. life expectancy ratio for the district.

***One Generation Old:***

One generation from the Current Industry Standard. Evaluation of this generation depends on the leap of technology between this and the current industry standard generation. In general, speed is most likely the issue for this generation running the

latest software. In some cases spending the money to upgrade this generation (i.e. RAM) may make sense.

***Two Generations Old:***

Current software will most likely not run on this generation. In most cases this generation is not cost effective to upgrade or repair (depending on the component).

***Three Generations Old:***

Current software will not run on this generation. Usefulness in district is limited and must be carefully evaluated considering support resources (i.e. personnel). This generation may be considered obsolete.

The above stages comprise a typical "**lifecycle**" of a computer.

The lifecycle of a computer begins with a **planning stage**. During this stage of the computer's lifecycle, the requirements for the new computer are identified. This is an important step in the process and should not be overlooked. There is no set timetable for this stage, but it should take long enough to fully plan for the arrival and foreseeable future of this computer.

The second stage of the computer's life is the **setup and early use stage**. This stage will identify most of the problems with the new system. This stage is also the most expensive of the entire process. This is when the computer and required accessories are purchased. This stage lasts about 6 months to a year, and starts when the computer arrives.

The third stage of the cycle is the **use stage**. This stage is where the computer is to be considered viable and updates are usually warranted if the need arises. This stage lasts about 3 years, assuming a 5 year lifespan (based on NJ guidelines).

The fourth stage of the cycle is the **late use stage**. This stage is where the computer is past the warranty period, but still has some use left. Any updates to the system should be very carefully evaluated, as it may be more profitable to wait for a new system. This period lasts 1 to 2 years, depending on lifespan.

The last stage of the lifecycle is the **replacement stage**. This stage covers what is going to occur to the outgoing station. This stage matches very closely to the first stage of the next computer, and might be considered the same.

Our "planned obsolescence" takes into account the "**lifecycle**" of a computer and the five "**generations**" of computers. This "Obsolescence Plan" drives the budget process.

There is a simple formula that can be used to determine the annual budget for computer equipment. The recommendation of this plan for schools, departments, offices, and

district-wide is to purchase computers on a rotating schedule, based on the expected lifespan of each computer. This will ensure that the computers in each location are all within their lifespan, and the budget will not be over burdened in a particular year.

How this works is based on the following formula:

$$Annual Replacement = \frac{Number of Computers}{Expected Years of Service}$$

This means that if you have 10 computers, and expect them to last 5 years, then you should replace the 2 oldest computers every year.

$$\frac{10 Computers}{5 Expected Years of Service} = Replace 2 Computers per Year$$

Eventually, this regular replacement will ensure a stable, predictable computing environment. A stable environment will reduce costs dramatically.

These guidelines are merely a recommendation for assessing needs and planning for the replacement of equipment. They are flexible and not mandated. Other variables may affect budget plans during a school year. Priorities may also change from year to year based on local, state and federal initiatives and new technologies and best practices may emerge that do not fit these guidelines.

## Appendix II

# School-Based Digital Learning/Curriculum Teams

**Purpose:** To assist in the systematic integration of digital learning teaching and learning practices throughout their school in alignment with the ISTE NETS standards for students, teachers, and administrators, Common Core State Standards, and the District 3-Year Digital Learning Plan.

**Suggested Team Members:**

- Administrator
- Library Media Specialist
- Professional Development Coordinator
- Technology Teacher
- 2 Content Area Teachers

Any of the above members may be substituted where position is vacant or non-existing. Additional members may be added at the discretion of the school administration. Student representation is also recommended.

**Goals and Responsibilities:**

- Develop 3-Year school-specific goals and objectives aligned to District 3-Year Digital Learning Plan.
- Develop and execute annual Digital Learning Plan aligned to school and district plan goals and objectives which specifies all activities and strategies to be conducted throughout school year including person(s) responsible and evaluation methods.
- Meet regularly to plan technology integration, assess progress, allocate resources, and address teacher and student needs.
- Plan and conduct professional development activities including but not limited to workshops, in-services, in-class coaching, and professional learning communities to meet needs of staff.
- Maintain and manage inventory of technology resources.
- K-8 Only: Implement NJTAP-IN 4$^{th}$ grade checklist or 8$^{th}$ grade rubric.

ISTE Standards

International Society for Technology in Education

# ISTE Standards Students

## 1. Creativity and innovation

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

a. Apply existing knowledge to generate new ideas, products, or processes

b. Create original works as a means of personal or group expression

c. Use models and simulations to explore complex systems and issues

d. Identify trends and forecast possibilities

## 2. Communication and collaboration

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media

b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats

c. Develop cultural understanding and global awareness by engaging with learners of other cultures

d. Contribute to project teams to produce original works or solve problems

## 3. Research and information fluency

Students apply digital tools to gather, evaluate, and use information.

a. Plan strategies to guide inquiry

b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media

c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks

d. Process data and report results

## 4. Critical thinking, problem solving, and decision making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

a. Identify and define authentic problems and significant questions for investigation

b. Plan and manage activities to develop a solution or complete a project

c. Collect and analyze data to identify solutions and/or make informed decisions

d. Use multiple processes and diverse perspectives to explore alternative solutions

# Appendix III

## 5. Digital citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

a. Advocate and practice safe, legal, and responsible use of information and technology

b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity

c. Demonstrate personal responsibility for lifelong learning

d. Exhibit leadership for digital citizenship

## 6. Technology operations and concepts

Students demonstrate a sound understanding of technology concepts, systems, and operations.

a. Understand and use technology systems

b. Select and use applications effectively and productively

c. Troubleshoot systems and applications

d. Transfer current knowledge to learning of new technologies



Connected learning.**Connected world.**™

iste.org/standards

ISTE Standards

International Society for Technology in Education

# ISTE Standards Teachers

Effective teachers model and apply the ISTE Standards for Students (Standards•S) as they design, implement, and assess learning experiences to engage students and improve learning; enrich professional practice; and provide positive models for students, colleagues, and the community. All teachers should meet the following standards and performance indicators.

## 1. Facilitate and inspire student learning and creativity

Teachers use their knowledge of subject matter, teaching and learning, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments.

a. Promote, support, and model creative and innovative thinking and inventiveness

b. Engage students in exploring real-world issues and solving authentic problems using digital tools and resources

c. Promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes

d. Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual environments

## 2. Design and develop digital age learning experiences and assessments

Teachers design, develop, and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the Standards•S.

a. Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity

b. Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress

c. Customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources

d. Provide students with multiple and varied formative and summative assessments aligned with content and technology standards, and use resulting data to inform learning and teaching

## 3. Model digital age work and learning

Teachers exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society.

a. Demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations

b. Collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation

c. Communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital age media and formats

d. Model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning

## 4. Promote and model digital citizenship and responsibility

Teachers understand local and global societal issues and responsibilities in an evolving digital culture and exhibit legal and ethical behavior in their professional practices.

a. Advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources

b. Address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources

c. Promote and model digital etiquette and responsible social interactions related to the use of technology and information

d. Develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools

## 5. Engage in professional growth and leadership

Teachers continuously improve their professional practice, model lifelong learning, and exhibit leadership in their school and professional community by promoting and demonstrating the effective use of digital tools and resources.

a. Participate in local and global learning communities to explore creative applications of technology to improve student learning

b. Exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others

c. Evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning

d. Contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community



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iste.org/standards

ISTE Standards

International Society for Technology in Education

# ISTE Standards Administrators

## 1. Visionary leadership

Educational Administrators inspire and lead development and implementation of a shared vision for comprehensive integration of technology to promote excellence and support transformation throughout the organization.

a. Inspire and facilitate among all stakeholders a shared vision of purposeful change that maximizes use of digital-age resources to meet and exceed learning goals, support effective instructional practice, and maximize performance of district and school leaders

b. Engage in an ongoing process to develop, implement, and communicate technology-infused strategic plans aligned with a shared vision

c. Advocate on local, state and national levels for policies, programs, and funding to support implementation of a technology-infused vision and strategic plan

## 2. Digital age learning culture

Educational Administrators create, promote, and sustain a dynamic, digital-age learning culture that provides a rigorous, relevant, and engaging education for all students.

a. Ensure instructional innovation focused on continuous improvement of digital-age learning

b. Model and promote the frequent and effective use of technology for learning

c. Provide learner-centered environments equipped with technology and learning resources to meet the individual, diverse needs of all learners

d. Ensure effective practice in the study of technology and its infusion across the curriculum

e. Promote and participate in local, national, and global learning communities that stimulate innovation, creativity, and digital age collaboration

## 3. Excellence in professional practice

Educational Administrators promote an environment of professional learning and innovation that empowers educators to enhance student learning through the infusion of contemporary technologies and digital resources.

a. Allocate time, resources, and access to ensure ongoing professional growth in technology fluency and integration

b. Facilitate and participate in learning communities that stimulate, nurture and support administrators, faculty, and staff in the study and use of technology

c. Promote and model effective communication and collaboration among stakeholders using digital age tools

d. Stay abreast of educational research and emerging trends regarding effective use of technology and encourage evaluation of new technologies for their potential to improve student learning

## 4. Systemic improvement

Educational Administrators provide digital age leadership and management to continuously improve the organization through the effective use of information and technology resources.

a. Lead purposeful change to maximize the achievement of learning goals through the appropriate use of technology and media-rich resources

b. Collaborate to establish metrics, collect and analyze data, interpret results, and share findings to improve staff performance and student learning

c. Recruit and retain highly competent personnel who use technology creatively and proficiently to advance academic and operational goals

d. Establish and leverage strategic partnerships to support systemic improvement

e. Establish and maintain a robust infrastructure for technology including integrated, interoperable technology systems to support management, operations, teaching, and learning

## 5. Digital citizenship

Educational Administrators model and facilitate understanding of social, ethical and legal issues and responsibilities related to an evolving digital culture.

a. Ensure equitable access to appropriate digital tools and resources to meet the needs of all learners

b. Promote, model and establish policies for safe, legal, and ethical use of digital information and technology

c. Promote and model responsible social interactions related to the use of technology and information

d. Model and facilitate the development of a shared cultural understanding and involvement in global issues through the use of contemporary communication and collaboration tools



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**Appendix V**

# Board Resolution

## RESOLUTION OF THE BOARD OF EDUCATION OF THE SCHOOL DISTRICT OF HACKENSACK

**D-28 Resolution to Adopt 2016-2019 District Digital Learning Plan**

WHEREAS, the mission of the Hackensack School District includes developing students that are "effective communicators, quality producers, self-directed lifelong learners, community contributors, collaborative workers and complex thinkers"; and

WHEREAS, a District goal is "to continue to increase the use of instructional technology to focus instruction;" and

WHEREAS, the 2016-2019 District Digital Learning Plan, formerly referred to us the District Technology Plan, will guide the District in implementing innovative, student-centered digital learning environments that transform the teaching and learning process; and

WHEREAS, the District Digital Learning Plan will also guide the development of professional development opportunities for teachers and administrators to become leaders in implementing effective digital teaching and learning practices;

THEREFORE, LET IT BE RESOLVED, that Hackensack Board of Education approves the 2016-2019 District Digital Learning Plan.

| | |
|---|---|
| Moved by: | M. Stein |
| Seconded by: | D. Carola |
| Yes: | 7 |
| No: | 0 |
| Absent: | 2 |
| Abstained: | 0 |

I certify that this is a true and correct copy of minutes passed at the meeting of the Hackensack Board of Education held June 27, 2016.

Louise B. Davis, Interim School Business Administrator/Board Secretary