# Plainview-Old Bethpage Central School District
# Strategic Long-Range Technology Plan

Excellence in Education

# A Vision for Student Achievement

***Learning Anytime, Anywhere, Together Using Technology***



*Plainview-Old Bethpage Central School District*
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## DISTRICT PROFILE

The combined hamlets of Plainview and Old Bethpage are centrally located in the heart of Long Island, approximately 35 miles east of New York City. P-OB is one of 38 communities within the Town of Oyster Bay, with a total population of approximately 31,037 residents living in 10,481 households. The adult population of the community is comprised predominately of business and professional people. The community has established a reputation for its support of excellence in education.

The Plainview-Old Bethpage Central School District operates one senior high school, two middle schools, four elementary schools, and one kindergarten center with an approximate enrollment of 5,200. Of the school system's employees, approximately 525 are professional staff, and 350 are support staff. P-OB students continue to perform impressively in all areas of schooling, including music, theatre, the fine arts and sports.

## MISSION STATEMENT

The mission of the Plainview-Old Bethpage School District is to provide an academically challenging and stimulating environment for all students, and to enable them to realize their full potential to be happy, ethical and analytical citizens of the world. We do this by:

- making tolerance, acceptance, respect, honesty and kindness expectations for all students, and for members of the Plainview-Old Bethpage school community;
- identifying each student's academic, social-emotional, aesthetic and physical needs, and striving to meet those needs; and
- encouraging communication between and among students, teachers, parents administrators, and community members.

## TECHNOLOGY VISION STATEMENT

The fundamental goal of the Plainview-Old Bethpage School District Central is to support student achievement so as to improve learning for all students. Identifying and meeting the learning needs of students is the foundational activity in all planning for technology integration. The diverse needs of all students and staff will determine the appropriately tailored instructional and administrative goals and strategies.

Like school districts throughout the country and all over the world, Plainview-Old Bethpage is presented with a multitude of challenges by rapidly emerging information technologies. When those challenges are viewed along with the *No Child Left Behind Act of 2001*, and the academic standards that the act has generated for stronger accountability for results, increased flexibility and local control, expanded options for parents, and an emphasis on teaching methods that have been proven to work, the mandate to act is clear.

Schools that are truly committed to preparing children for their inevitable future will no longer be permitted to act on what has been the prevailing assumption, i.e. that the job of students is to learn what adults already know. We as adults know that is not enough.

Similarly, our task is less concerned with preparing our children for jobs, since most jobs as we know them - jobs where someone else tells you what to do, where, when and with whom to do it, and then how well you are doing it - will no longer exist. Recent research has shown that people who engage in the lifelong learning process will find themselves empowered to be creative and to capitalize on unexpected opportunities - they will find it easier to keep up on local and national issues; and they may take full advantage of new, easily accessible commercial and government services.

Our challenge is to provide our children with the skills and the habits of mind that their futures demand. In addition to subject - specific knowledge and understandings, the *New Standards* explicitly target capabilities that permeate all fields and are essential for participation in school, work, family, and community life. These capabilities include the ability to manage resources, to manage information, to work with systems and technology, to be entrepreneurs and to creatively solve problems.

Emerging technologies and the *NYSED Content Standards* offer a multitude of opportunities. The work our children do - the data they collect, the ideas they generate, the stories they write, the art they create, the music they perform, the real problems they solve - will have a profound impact on the future. They urge us to have a larger view of school - one that is more accessible, more inclusive and more responsive. We are compelled to have communications systems that offer vastly expanded access to resources and information and permit more immediate contact, more focused interaction, and ultimately more collaboration between staff, students, parents and community.

This long-range plan presents a map for raising the level of student performance in all of our classrooms. The plan expands the uses of technology already in place to enhance our children's educational experiences and introduces new structures. It addresses our present and future needs while recognizing that the world and technology are rapidly changing.

Technology will be incorporated, in an appropriate manner, into every classroom and curricular in the district. It will not supplant the teacher or the human interaction that is so essential for learning; it is intended for use as a tool to enhance learning for all children.

Students will utilize powerful technology tools to express their ideas more clearly; to access information beyond anything available in traditional classrooms today; and to assist them in collaborating with other students around the globe on projects that have a real impact on the community. Technology also will assist students in visualizing abstract concepts, participate in rigorous simulations, gather data via scientific probes, analyze and manipulate data, compose music, create art; and create digital portfolios of their work.

All schools will have sufficient computers for student, teacher and support staff use. The goal of the plan moves toward equitable distribution of resources throughout the district. While these computers will be deployed primarily within classrooms, labs, and administrative offices, as determined by structural building access to electrical/data outlets, technology committees will participate in the planning for and implementation of appropriate cost effective software applications. Every room/location will be able to accommodate computer technology. The further development of newly renovated *Library Media Centers* in our buildings has also been included in our plan. Computers and communication devices will

continue to be connected to district-wide local and wide area networks where appropriate. Through these networks students will access automated library systems, online databases and multimedia instructional resources, file servers with educational software, printers, electronic mail and the Internet.

This plan includes five main goals that encompass key issues in the successful implementation of technology*:*

1. Ongoing Strategic Long-Range Technology Planning and Evaluation
2. Instructional Technology Goals & Strategies
3. Information Technology Infrastructure
4. Human Based Support Infrastructure
5. Curriculum Integration/Professional Development

The goals are intended to:

- Insure equity of access to technology resources throughout the district.
- Insure the timely resolution of technical problems by the re-structuring of human support resources at the building level; the expansion of centralized network resources to enhance network security, disaster recovery, and remote maintenance operations; and the development of sound maintenance protocols.
- Focus on the importance of professional development.
- Develop an implementation process that facilitates staff and parent/community participation.
- Establish the Library Media Centers as important hubs for technology use. ▪ Construct a long-term structure for governance of the technology plan.

On the pages that follow we show how we tap into the transformational power of technology to fundamentally reshape our schools and classrooms to accommodate these changes.

This transformation of teaching and learning will:

- **Bring the world to the classroom.** No matter what their socioeconomic or ethnic background, and no matter where they live, the learning field for all students can be leveled. Students are introduced to people, places, and ideas to which they might otherwise not be exposed;

- **Enable students to learn by doing.** Research has now confirmed what many instinctively knew - that children, who are actively engaged in learning, learn more;

- **Make parents partners in their children's education** by connecting the school with homes, libraries and other access portals;

- **Enable educators to better accommodate the varied learning styles and pace within the classroom.** This individualized instruction can be a key factor in student achievement.

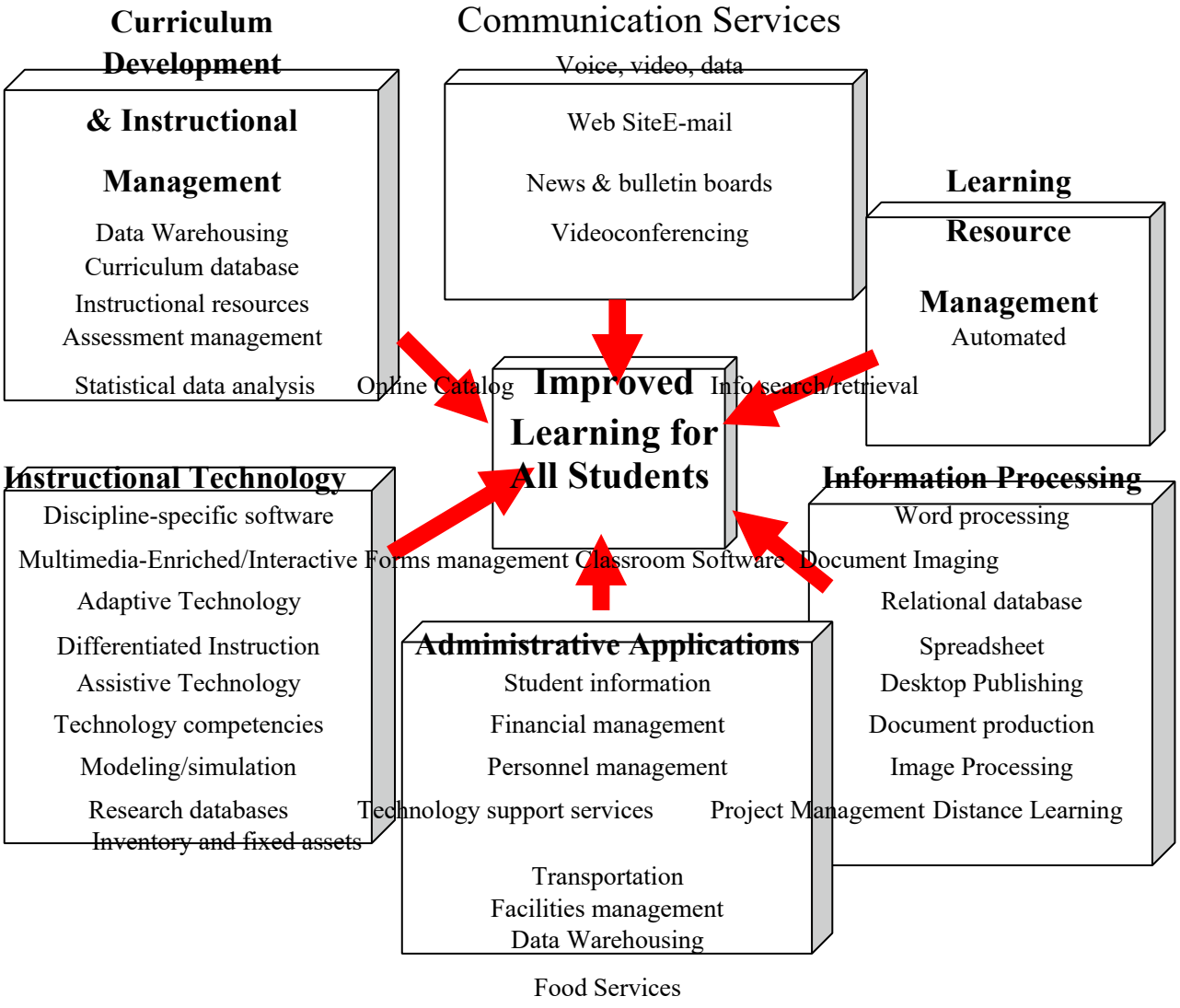
- **Encourage students to become lifelong learners** who can access, analyze, and synthesize information;

- **Encourage educators to become guides and coaches to students,** rather than be "the sage on the stage;" and

- **Make students proficient in the basic technological skills needed to take their place in society -** whether they enter the working world directly after high school or pursue further formal education.

# TECHNOLOGY INTEGRATION

## STUDENT ACHIEVEMENT CHART



Administrative Applications and Information Processing Applications will continue to be researched and evaluated based on the direct impact these initiatives will have on improved learning for all students per the chart above. The district is committed to updating all administrative communications and data management systems including student information, financial management, human resources, inventory, transportation, facilities management, data warehousing, food services document imaging/archiving, e-mail, PDA's, and web-based resources to support and enhance student achievement. Details of the current status and future goals are included on Appendix F and G of this document.

Based on research provided by the *Partnership for 21st Century Skills*, a unique alliance of education, business and government leaders working to fully address the education needs and challenges of work and life in the 21st century, Plainview-Old Bethpage recognizes the efficacy of the following *Critical Elements for Creating 21st Century Skills:*

1. **EMPHASIZE CORE SUBJECTS.** Knowledge and skills for the 21st century must be built on core subjects. No Child Left Behind identifies these as English, reading or language arts, mathematics, science, foreign languages, civics, government, economics, arts, history and geography. Further, the focus on core subjects must expand beyond basic competency to the understanding of core academic content at much higher levels.

2. **EMPHASIZE LEARNING SKILLS**. As much as students need knowledge in core subjects, they also need to know how to keep learning continually throughout their lives. Learning skills comprise three broad categories of skills:
    - information and communication skills
    - thinking and problem-solving skills, and
    - interpersonal and self-directional skills.

   Good teachers always have fostered these skills. The challenge now is to incorporate learning skills into classrooms deliberately, strategically and broadly.

3. **USE 21ST CENTURY TOOLS TO DEVELOP LEARNING SKILLS.** In a digital world, students need to learn to use the tools that are essential to everyday life and workplace productivity. Skilled 21st century citizens should be proficient in ICT (information and communication technologies) literacy, defined by the *Programme for International Student Assessment* (PISA) as "the interest, attitude and ability of individuals to appropriately use digital technology and communication tools to access, manage, integrate and evaluate information, construct new knowledge, and communicate with others in order to participate effectively in society."

4. **TEACH AND LEARN IN A 21ST CENTURY CONTEXT.** Students need to learn academic content through real-world examples, applications and experiences both inside and outside of school. Students understand and retain more when their learning is relevant, engaging and meaningful to their lives. In the global, networked environment of the 21st century, student learning also can expand beyond the four classroom walls. Schools must reach out to their communities, employers, community members and, of course, parents to reduce the boundaries that divide schools from the real world.

5. **TEACH AND LEARN 21ST CENTURY CONTENT.** Education and business leaders identified three significant, emerging content area that are critical to success in communities and workplaces: • global awareness
    - financial, economic and business literacy; and
    - civic literacy.

   Much of this content is not captured in existing curricula or taught consistently with any depth in schools today. An effective way to incorporate this content is to infuse knowledge and skills from these areas into the curriculum.

6. **USE OF 21ST CENTURY ASSESSMENTS THAT MEASURE 21ST CENTURY SKILLS.**
States and districts need high-quality standardized tests that measure students' performance of the elements of a 21st century education. However, standardized tests alone can measure only a few of the important skills and knowledge we hope our students will learn. A balance of assessments- that is, high-quality standardized testing for accountability purposes and classroom assessments for improved teaching and learning in the classroom – offers students a powerful way to master the content and skills central to success in the 21st century. To be effective, sustainable and affordable, sophisticated assessment at all levels must use new information technologies to increase efficiency and timeliness.

Supporting research, based on The *CEO Forum's School Technology and Readiness Report,* identifies six key recommendations to ensure the nation's investment in education technology improves student achievement and benefits education.

1. Focus education technology investment on specific educational objectives.
2. Make the development of 21st century skills a key educational goal.
3. Align student assessments with educational objectives and include 21st century skills.
4. Adopt continuous improvement strategies to measure progress and adjust accordingly.
5. Increase investment in research development and dissemination.
6. Ensure equitable access to technology for all students.

In addition, the International Society of Technology in Education is in the process of drafting a refreshed version of ISTE's NETS (National Education Technology Standards) for Students (1/4/07) Working Document – Copyright ISTE® 2006 - 2007

"What students should know and be able to do to learn effectively and live productively in an increasingly digital world **…"**

I. **Creativity and Innovation (new)**
Students think creatively, construct knowledge, and develop innovative products using technology. Students:
A. apply existing knowledge to generate new ideas and products.
B. use technology for creative self-expression.
C. use systems thinking to explore complex issues.
D. identify trends and forecast possibilities.

II. **Communication and Collaboration (4)**
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. Students:
A. collaborate, publish, and interact with peers, experts, and others employing a variety of digital media and formats.
B. communicate information and ideas effectively to multiple audiences utilizing 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.

III. **Research and Information Retrieval (5)**

Students access, retrieve, manage, and evaluate information using digital tools. Students:

A. locate, organize, analyze, evaluate, synthesize, and use information from a variety of sources and media.
B. evaluate and select information sources and technological tools based on the appropriateness to specific tasks.
C. process data and report results.

IV. **Critical Thinking, Problem-Solving and Decision-Making (6, 3)**

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

A. identify and define authentic problems and significant questions for investigation and plan strategies to guide inquiry.
B. plan and manage activities to develop solutions and complete projects.
C. collect and analyze data to identify solutions and make informed decisions.
D. use multiple processes and diverse perspectives to explore alternative solutions.

V. **Digital Citizenship (2)**

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

A. advocate and practice safe, responsible use of information and technology.
B. exhibit positive attitudes toward technology uses that support collaboration, learning, and productivity.
C. demonstrate personal responsibility for lifelong learning.
D. exercise proactive leadership for digital citizenship.

VI. **Technology Operations and Concepts (1, 3)**

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

A. understand and use technology systems.
B. identify and use applications effectively and productively.
C. troubleshoot systems and applications.
D. transfer current knowledge to learning of new technologies.

## TECHNOLOGY BELIEF STATEMENTS:

- The Curriculum must lead the technology.
- Technology is the *art of communication*.
- This plan has been designed to support our belief that today's technology is a necessary tool and resource in the classroom and that by effectively using technology student learning will be enhanced.

- The fundamental goal of the *P-OB Central Office of Technology* is to support student achievement. Identifying and meeting the learning needs of students is the foundational activity in all planning for technology integration. The diverse needs of all students and staff will determine the appropriately tailored instructional and administrative goals and strategies.

- Information technology and human-based support infrastructure goals will provide the foundation and scaffolding needed to support the deployment/integration of emerging technologies with district-wide curriculum and professional development initiatives designed to support student achievement.

- Technology is not an end to itself, but an essential, irreplaceable tool both students and faculty will need to function effectively in the 21st Century.

- The implementation of technology will change the way teachers teach and will therefore require appropriate staff development and training to insure that the district's investment in technology results in improved student achievement.

- Technology will be presented to faculty as a means to an end. The end result is not the faculty's mastery of technology, but the use of instructional technology to enable all students to achieve curricular objectives.

- The role of the teacher will change from a repository of expertise to a guide, helping students make sense of the information.

- The technology plan must provide equal access to learning for all students.

- Students will need to become ethical and discriminating users of information and information technologies.

- Technology will require students to be active and lifelong learners who can adapt to a changing global economy.

- The increasing availability of hyper textual links will encourage higher level thinking skills and inquiry-based learning.

- Technology is pervasive: We must provide students with the tools necessary for success in a technology rich environment.

- We envision our classrooms as active, creative places where emphasis is place on learning by doing.

- Technology is a tool that can provide another way for children to learn and make sense of their world.

- A Computer can be used in developmentally appropriate ways that are beneficial to children, or they can be misused, just as blocks or any other materials can be misused.

- Just as pencils do not replace crayons but rather provide additional means of expression, the computer does not replace another tool but adds to the array of tools available to our children to explore, create and communicate.

## TECHNOLOGY LONG-TERM GOALS AND OUTCOMES

***Specific curriculum integration and administrative information management goals*** *will be developed as part of the district's move to technology. The Technology Teams/Committees believe that the successful implementation of this technology plan will result in:*

### Enhanced use of problem solving and higher order thinking skills

Using technology as a tool, students' will synthesize and analyze data, form and test hypothesis, explore concepts in depth, access primary source materials, interact and cooperate with students around the world on real world problems and projects, as well as use simulations to do expensive, dangerous, or complicated research.

- Through the use of graphing tools students will analyze mathematical and scientific data in a way that makes abstract concepts more concrete. By reducing the mechanical aspects of the graphing process it allows students to manipulate variables and gain deeper understanding of the concepts being explored.
- Through the use of data gathering devices such as science probes connected to the computer students will explore the physical world in ways which would have been difficult without technology.
- Simulations will allow students to perform dangerous or expensive chemistry experiments, emulate space missions, recreate the western sojourn of the settlers during the 19th century, create modern cities with all their challenges, dissect frogs, deal with problems of immigration and operate a store. These are just a few examples of simulations that give students experiences that require them to use their problem solving and analytical skills.

### Improved communication and writing skills

- Through the use of word processing, desktop publishing, communications projects, on-line research, as well as multimedia research and publishing, students will have enhanced opportunities to develop their writing and communication skills.
- Students will revise and edit their work more easily through the use of word processing.
- By employing local and wide area networking students will write for larger audiences with the potential to impact others beyond the classroom walls.
- Through the use of networked DVD/CD-ROM reference tools and access to the Internet, students will access a treasure trove of research material ranging from rare artifacts located in museums around the world, to up to the minute information from news services and science centers.
- Telecommunications resources will connect students to outside experts who will assist them in developing their writing skills.

- Students will supplement their projects with multimedia resources such as sound animation, charts, graphs, and still images.

**Access to educational resources**

Through the use of enriched multimedia classrooms and on-line access to Internet resources, students and teachers will have access to resources from around the globe. These resources will include the great libraries, museums, and universities of the world, as well as experts in various disciplines who will participate with students and teacher electronically.

**A more interdisciplinary approach to curriculum and instruction**

Networking computers together both locally and globally facilitates group and team cooperation, grade articulation, and interdisciplinary activities. Students and teachers are able to share information, projects, communications, and research with others in their classroom or building, throughout the district or the world without having to leave the classroom.

- Teachers will be able to plan and implement interdisciplinary projects through the use of Internet communications applications.
- Students will be able to share files, research, and ideas with others in the building and throughout the world.

**Enhanced and refined technology-based skills across grade levels**

In the information based on global society of the 21st century, it will be critical that our students possess the skills to access, retrieve, manipulate, interpret, and synthesize a great volume of information presented in a variety of media.

- Student facility in the use of multimedia applications will provide an opportunity for enhanced visualization and modeling skills, provide new avenues for expression, and elevate the power of the written word to a new and more exciting level.

**Enhanced skills which can transfer to college and career environments**

Familiarity and expertise with technology is becoming a basic job skill in the global economy and a requirement for success in the higher education environment.

**Providing increased opportunities for students to be active participants in their learning**

Using technology in projects, research, exploration, publishing, communications, and multimedia presentations necessitates students taking a much more active role in their learning and allows the teacher freedom to spend more time with students on an individual basis and less time addressing the whole group in a lecture mode.

**Providing alternative forms of assessing student performance**

Through the use of electronic portfolios, multimedia research reports, individualized item analysis, performance based recordings of student work, electronic mail, and access to a district-wide *Data Warehouse,* teachers can enhance their assessment practices.

**Supporting new curricula and new approaches to curricula design**

Existing curricula will be supported and developed with the infusion of technology. Students and teachers will use technology to enhance classroom activities involving problem solving, critical thinking skills, and information retrieval. Students will engage in interdisciplinary activities and will be able to take courses that are not presently offered and pursue personal areas of interest in ways that are not available today.

**Access by special needs students**

Provisions will be made for the differentiated learning styles and levels of the special needs students. The focus will be on "*Assistive Technology"* and its' ability to eliminate barriers often faced by this population. In addition, the use of technology will help these students work better both independently and in cooperative groups.

## STUDENT OBJECTIVES

This long-range plan has been developed to support our belief that significant improvements in the quality and measure of student achievement can only come about if we reexamine the structure of teaching and learning in our schools. It is by now a well documented fact that schools must continue to provide students with new knowledge, and the ability to apply and demonstrate knowledge in a world that could be unpredictable. The plan directs the district's examination of teaching practices, including the teacher's role, the teacher's relationships with students, and the models for learning in a technology and information rich environment. Our basic premise is the recognition that transforming classrooms into active learning environments requires a fundamental change in the culture of schools.

In constructing the plan that mirrored this contemporary vision of schools we asked ourselves the following questions:

1. What behaviors and skills will be required for success in this new century?
2. What opportunities can we provide for students to solve real world problems?
3. What skills, knowledge and competencies will need to be emphasized in the New Learning Standards developed by the New York State Education department?

***Objective 1*** Empower staff to effectively use technology to enhance instruction and increase productivity.

***Objective 2*** Empower all students to use technology as a tool for effective communication, personal productivity, and lifelong learning. Strategies include ready access to technology resources and an emphasis on developing powerful skills and sense of personal comfort.

***Objective 3*** Investigate, pilot, and evaluate the use of instructional technologies and disseminate results.

Strategies include supportive partnerships, careful evaluation of potential resources, and the utilization of pilot or trial programs prior to widespread adoption.

*In order to achieve these strategic goals and objectives the Technology Committee recommends that:*

1. ***A permanent structure will be implemented which governs and administers the technology plan, as well as spurs the on-going application and exploration of emerging technologies.***

2. ***Students in all grade levels and in all disciplines have access to appropriate technology resources that will assist them in meeting or exceeding established District curriculum and instructional standards.***

3. ***All teaching staff, parents and interested community members receive on-going staff development in the use and application of current educational technology.***

4. ***A Technical support structure should be provided to insure the maximum reliability and timely repair of all equipment and software.***

5. ***The School Library Media Center will provide access to required information and literature for students, staff, and community members; guide students in the acquisition of skills necessary to manage and appreciate this wealth of material; and motivate students to read for pleasure and for information.***

6. ***The implementation plan will provide that technology be phased into buildings that have a commitment to integrating technology into the teaching/learning process, a stated direction and focus, as well as the teamwork that will be necessary for their success.***

7. ***Emergency Management Plan.***

**Each of these recommendations is discussed further in the sections that follow.**

## RECOMMENDATION 1: TECHNOLOGY TEAMS

***A permanent structure will be implemented which governs and administers the technology plan, as well as spurs the on-going development and exploration of emerging technologies.***

*Technology Teams* have been created to assist individual buildings to plan and assess the implementation of technology initiatives. Bringing about a transition of this magnitude can only be successful if there is a commitment at all levels of the school district. We envision three levels of management (l) district oversight; (2) building technology teams, and (3) parent/community-based teams.

### District Oversight:

At the district level, a *Director of Technology* in collaboration with the Superintendent of Schools, Assistant Superintendents, and K-12 representatives will be responsible for the implementation of the instructional and administrative goals of the plan. In addition to the technical maintenance of the district-wide networks, this individual will collaborate with the Offices of Business, Personnel, Curriculum and Instruction and Building Principals to facilitate the integration of technology as dictated by district curricula. The director will:

1. Maintain knowledge of new technologies and educational software.
2. Participate as a member of all *Technology Teams* and provide status updates, as well as recommendations regarding hardware, software, and support issues.
3. Facilitate the resources to support technology-related staff development activities for teachers and administrators in each building, as well as monitor and assess the on-going technology resources and staff development needs of staff.
4. Procure, monitor, and maintain contracts for instructional support and inventory.
5. Prepare and maintain documentation of all systems and coordinate inventory.
6. Make recommendations to the Superintendent and Technology Teams regarding acceptable use policies, standards for software, security, and system integration.
7. Manage the instructional/administrative technology budget.
8. Evaluate the effective use of technology to support and transform teaching and learning.

Working with the Director of Technology, *Technology Teams* will continue to be established to oversee the implementation and refinement of the recommendations, goals, and strategies of the longrange plan based on the needs of the staff, students, and curriculum. The teams will:

- Represent various constituents, such as the teachers, school administration, support staff, community residents, city agencies, and building representation.
- Address long-term curricular issues and technology strategies that can impact the district plan for student achievement.
- Review equipment, software and telecommunications standards, define acquisition processes, and maintain a clearinghouse of information and procedures. This will insure the efficiency and compatibility of the technology infrastructure throughout the district.
- Design and refine future project proposals.
- Assess consistency with District goals and modify goals/plans.

- Assist the buildings by responding to, reviewing and endorsing proposals.
- Allocate funding to support proposals.
- Ensure the integrity of all technology initiatives by making certain that all necessary components are addressed, using an appropriate rubric developed by the team.
- Serve as a resource to other Building Technology Teams in the creation and implementation of school related technology plan needs.
- Recommend to the Board of Education funding for approved projects.
- Assess results of the implementation of technology plans and initiatives and make recommendations for additional changes.

Parent/Community Technology Team: Comprised of a PTA representative from every building and SEPTA, the committee will meet with the Director of Technology to discuss district-wide technology related issues.

Building Technology Team: In each building, this committee will assess building needs for teaching and learning supported by technology. (In essence, this will be the technology component of the school wide improvement plan.) This is a school/building-based committee with representation on and accountability to the Building Principal. The committee invites proposals from departments of other school building teams/committees that emphasize using technology to improve student achievement; reviews, evaluates, and supports proposals; and moves them into the next phase of the process.

This governing body will maintain regular communication with the Building Principal and Director of Technology to ensure that technology initiatives are compatible with the school's and district's goals. The technology plan will serve to enhance and support efforts to continue to improve student achievement. The Building Principal is responsible for appointing the Building-based Technology Team, to assist in clarifying the building's needs. Upon approval by the Building Principal, needs will be presented to the Director of Technology for final review.

Technology is progressing at rates that make long-range technology planning extremely difficult. This plan is the result of our best thinking today. In addition, changes in teaching/learning and in the organization and structure of schools have added to the complexity of long-range planning for technology. Therefore it is imperative that the plan be assessed for possible revision each year.

In addition to administering the plan the Technology Teams and the Director of Technology will continue to explore and develop instructional opportunities presented by emerging technologies. There are a number of important technologies that will continue to be developed in this plan. These include distance learning, desktop video conferencing, IP telephony/unified messaging for staff and teachers, video distribution systems, wikis, blogs, pod-casting, etc. Technology Teams will continue the process of evaluating these and other emerging technologies.

Finally, it should be noted that continuing research and planning will be done in order to achieve the goal of creating an integrated district-wide communications network. This network will create new opportunities for students and community members and will leverage investments made in schoolbased technologies for the benefit of all.

## Plainview-Old Bethpage Central School District Technology Teams

| K-12 Representatives |
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| Parent/Community Technology Committee |
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| Plainview-Old Bethpage John F. Kennedy High School Technology Committee |
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| P-OB Middle School Technology Committee |
| Mattlin Middle School Technology Committee |

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| Judy Jacobs Parkway Elementary School Technology Committee | Old Bethpage Elementary School Technology Committee |
| Pasadena Elementary Technology Committee l Representatives | Stratford Road Elementary School Technology Committee |

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## RECOMMENDATION 2: STUDENT ACCESS

***Students in all grade levels and in all disciplines are to have access to appropriate technology resources that will assist them in meeting or exceeding established District curriculum, and instructional standards.***

Staff and students should have easy and regular access to technology resources. These resources will be deployed in ways that support the variety of strategies teachers use to teach and students use to learn. This infrastructure will be accomplished in large part through well-designed, interlinked computer networks. In addition to access to technology within the school there should be more access to technology resources outside school locations via community partnerships.

Equipment, telecommunications, and software standards will be developed, reviewed, and maintained by the Technology Committees, PTA committees and the Director of Technology. The *Plainview-Old Bethpage CSD K-12 Technology Curriculum Guide,* created by teachers comprised of summer *Technology Curriculum Writing Teams,* should be continually reviewed and updated to guarantee an appropriate level of computer literacy for all students. Strategies to be used should employ:

- Curricula and STEAM-driven enriched classroom environments
- Teacher directed lessons within a classroom
- Independent Research and project-based student activities
- Peer teaching
- Computer research skills within the library media center
- Remedial assistance for students with special needs
- Research supported *adaptive technology* solutions and resources to support *curricular objectives* and *differentiated instruction*

It is important to note that the implementation of new technology is an on-going process and not a onetime infusion of hardware/equipment and software. Plans must be made to upgrade and replace hardware/equipment and software on a regular basis to insure reliable and up to date tools for students and teachers. Buying and/or leasing hardware in phases rather than all at once will insure that only part of the district's inventory of equipment will need to be upgraded at any time.

Obsolescence will be defined when the users' needs exceed the ability of the equipment and/or software to meet those needs. Old equipment will be repositioned for maximum utilization and upgrades will be scheduled to extend the life of some equipment and software.

## STUDENT ACCESS STANDARDS:

ELEMENTARY SCHOOL:

At the elementary level, grades K-4, technology will be led by the curriculum and integrated/infused through activities facilitated by classroom teachers, library media specialists, Project Challenge and MSTe teachers and supported by building-based computer technology teacher aides. Technology activities and projects will be led by the goals of the classroom curriculum at each grade level. In

alignment with *National Education Technology Standards*, a computer technology curriculum guide will provide teachers with a guide to integrate grade level appropriate technology skills into daily instructional activities.

A computer lab, with Internet access, will be housed adjacent to recently constructed library media centers located at each school. Typically, initial instruction will be provided in the computer lab/library media center and supported by computers located inside each classroom. The elementary schools will have the equivalent of at least two computers per classroom.

MIDDLE SCHOOL:

At the Middle School level, grades 5-8, technology is integrated into the curriculum through CEUs (Curriculum Enrichment Units) and classroom projects facilitated by classroom teachers, technology teachers, MST (Math, Science, Technology) and Project Challenge teachers and supported by buildingbased computer technology teacher aides. Technology activities and projects, incorporating research skills, are led by the goals of the classroom curriculum at each grade level. In alignment with *National Education Technology Standards*, a computer technology curriculum guide provides teachers with a guide to integrate grade level appropriate technology skills into daily instructional activities.

Two computer labs and one library media center, with Internet access, is located at each middle school. Typically, initial instruction is provided in the computer lab/library media center and supported by computers located inside each classroom. The middle schools will have the equivalent of at least two computers per classroom.

HIGH SCHOOL:

At the High School level, grades 9-12, technology is integrated into the curriculum through required and elective courses which are taught in specialized computer labs such as Business Education, Independent Research, Media Arts, Music, English, Social Studies, LOTE (Languages Other Than English), Math Computer Programming; Technology Education courses such as Design and Drawing for Production, Computer Aided Design, Computer Repair and Media Production.

The high school will provide multiple computer labs for independent research projects and content area related instruction.

DISTRICT-WIDE ACCESS STANDARDS:

- Regular and Special Education support/resource classrooms will employ instructional technology resources/computers to meet the needs of students including assistive technology devices and software to enhance differentiated instruction to support the learning of all students.

- Existing workstations will be upgraded and used as part of the network.

- All computer labs will have ergonomic work areas, security, and air-conditioning.

- Each departmental office, nurse, psychologist, guidance counselor and clerical will have a computer with Internet access

- All computer workstations will be networked to building and district resources including telecommunications resources such as the Internet.

- An Acceptable Use Policy for all network users will continue to be reviewed and developed. This policy will outline consequences for any user abusing computer privileges and to protect the district from computer use liability issues.

- Physical security including locks will be implemented and sensors considered. All rooms containing computers should have locks.

- Network security will be provided for faculty and student data, and standards for privacy will be continue to be reviewed and developed.

**MODEL ENVIRONMENTS:**

These configurations are provided as examples and are not meant to restrict building teams to the specific models; rather they offer a baseline for equivalency. Buildings, through the *Planning Process*, will deploy the technology in ways that best support the goals of the curriculum. The technical quality of the equipment, telecommunications, and software in the plan will be ensured by the Technology Committee and the Technology Director.

When the plan is fully implemented, all schools will have 1:1 access to mobile devices from grades K12 and cart-based access from grades K-4 in addition to computers in every classroom. These. These computers will be connected to district-wide WiFi and local area and wide area networks. Through these networks students will access multimedia resources, file serves with educational software, automated library systems, printers, electronic mail and the Internet.

**Scheduled Lab**

The scheduled lab is one in which a specific discipline or grade level is assigned a time period on a pre-planned basis. It consists of: (22-30) Workstations with Internet Access
(2) Printers
(1) Large screen display
(1) File Server

**Unscheduled Lab:**

The unscheduled lab is one which is available for teachers and students on an informal basis. Students may use the lab for independent work. Teachers may reserve the lab for formal instruction. Like the unscheduled lab, it consists of:
(22-30) Workstations with Internet Access
(2) Printers
(1) Large screen display
(1) File Server

**Classroom Clusters:** **(This is an equivalency ratio and is not intended to restrict the deployment of computers)** (2-4) Workstations with Internet Access

(1) Printer
(1) Large screen display

**Classroom Presentation Stations:**
(1) Workstation
(1) Printer
(1) Large screen display

**Library/Media Centers:**
Automated Card Catalog and Circulation
(2-5) Online Public Access Computers (OPACs)
(7-25) Research stations
Large screen displays

**Telecommunications:**
Classroom access to the Internet and other on-line resources
Classroom access to electronic mail and communications tools

**Building Resources:**
(1) Scanner(s)
(1) High-end printer(s)
(1) DVD/CD-ROM/Multimedia Video Servers
(1) Presentation hardware

**Classroom Applications*:**
Word processing, spreadsheet, database, and desktop publishing packages via Microsoft and Google Docs applications Multimedia toolset Electronic mail
Access to all building resources including the library system, video streaming, cable television programming, video conferencing and distance learning instructional activities/resources, and curriculum specific software
Access to student information system when appropriate Access
to grade reporting and assessment software
Access to all telecommunications resources including the Internet

*Instructional Multimedia Presentation System comprised of: Computer/DVD, document camera, projection screen, videoconferencing, video streaming, and sound field technology, designed to meet the diverse learning modalities and multi-sensory needs of all students (general ed, special ed, talented/gifted) in all classroom models (collaborative, self contained, project challenge, etc.)

**Assistive Technology Processes/Devices:**
The fundamental goal of the Plainview-Old Bethpage School District is to support student achievement so as to improve learning for all students. Identifying and meeting the learning needs of students is the foundational activity in all planning for technology integration. In response, the district had implemented assistive technology devices as tools to help meet these needs. The provision of district assistive technology devices and assistive technology services enables classified students with disabilities to:

- have greater control over their own lives;

- participate in and contribute more fully to activities in their home, school, and work environments, and in their communities
- interact to a greater extent with non-disabled individuals; and,
- otherwise benefit from opportunities that are taken for granted by individuals who do not have disabilities.
-

The District Office of Pupil Personnel Services provides for the:

1. evaluation of needs, providing for the acquisition of assistive technology devices by individuals with disabilities;
2. selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing, such assistive devices;
3. coordinating and using other therapies, interventions, or services with assistive technology;
4. training or providing technical assistance for an individual with disabilities; and,
5. training or providing technical assistance for professionals, employers, or other individuals who provide services to or are otherwise substantially involved in the major life functions of individuals with disabilities. District Assistive Technology Devices include:

- Interactive whiteboard devices have the ability to enhance the teaching/learning process by empowering teachers to appeal to the diverse needs of our students. In particular, the district has been utilizing SMART Boards in collaborative education classes where students of varying learning abilities and modalities are required to work in the least restrictive environment.
- The district is currently utilizing adaptive software-based assistive technology devices such as READ180; FASTFORWORD; FASTTMATH; READABOUT; FASTTMATH; ALPHA-SMART and DRAGON-NATURALY-SPEAKING software/devices that support differentiated instruction and student cognition in the development of math, problem solving, language, reading, speaking, and writing skills.

**District Assistive Technology Training Methodology:**

The district will continue to develop a collaborative model with the Kornreich Technology Center to create a plan for comprehensive Assistive Technology Services and teacher professional development.

The following Methodology was specifically prepared, designed, and written for the district by the Kornreich Technology Center.

I. Within the Plainview-Old Bethpage School District (POBCSD), the KTC will work at the Mattlin Middle School and Plainview-Old Bethpage Middle School, two special education classrooms at the Mattlin Middle School and the Plainview-Old Bethpage Middle School will be used to pilot the new service model. Among the interventions we expect to provide are:
   - Preliminary observations of the classes to meet the teaching staff and familiarize ourselves with the structure and culture of the classrooms.
   - Consistent visits to the classroom by KTC staff, initially for in-depth observation of the students.

   More active participation will gradually develop, in which we will work with classroom staff to:
   - identify and test ways to modify the classroom environments and the instructional materials being used to better suit the needs of all the students.

- o make suggestions for presentation of academic content that will be more accessible by students using a variety of traditional and non-traditional methods to access the curriculum work with individual students to identify the methods, including AT/ET, that give them best access to the curriculum
- o determine the need for customizing curriculum materials to individual students' needs, and design a systematic way of creating such materials and archiving them for use with future students.

- Technology assessments of individual students in the two pilot classrooms who may benefit from using technology beyond that being used by the class as a whole. These are similar to the kind of evaluations KTC has traditionally provided, except that they will generally take place at the school site, and will be conducted by an evaluator who is familiar with the student and his/her classroom environment. If complex technology is recommended, individual training with the student and support staff may also be provided.
- Provision of assistive and educational technology hardware and software owned or licensed by KTC (within the structure of software licensing agreements). Such technology will permit thorough trials of a variety of options in "real world" situations, before POBCSD purchases its own items for students or classrooms.
- Meetings with teachers and other staff in the targeted classroom on a regular (weekly or biweekly) basis. These meetings will be used to compare notes, problem solve, explain our interventions, etc. On occasion, interested staff from other classes in POBCSD may be invited to observe, or possibly to participate in, these meetings.

II. A primary focus of the proposed service model is the effective and timely dissemination of AT and ET information to teacher and related-services staff within the identified schools, derived from training activities described in Section I, above. However it has also been acknowledged that the aforementioned information will benefit the POBCSD as a whole; therefore, KTC leverages a variety of technologies, which allows its staff to deliver rich web based experiences for e-learning, professional development, and live online collaboration, to all identified POBCSD staff. Allowing KTC staff to:

- interact with POBCSD staff in the pilot classes in person or remotely, in formal sessions or impromptu events, within or outside the classrooms.
- archive sessions for sharing with district staff who are not in the pilot classrooms.
- Depending on content; text, audio, video, applications sharing or any combination thereof may be used for archiving and dissemination to other POB teachers and staff in an asynchronous eLearning format.
- deliver the live and archived events to appropriate District staff via eLearning technologies that allow participation at convenient times and locations. Participants only need access to a broadband internet connection to participate.
- create a growing library of assistive technology related content that can be used by POBCSD after the consultative arrangement with KTC has been reduced or discontinued.
- Additional benefits of KTC's ability to archive and deliver training in an eLearning ▪ format are as follows:
- Enables just-in-time, first time and "refresh me" training for teachers and district staff.
- Allows the district to choose what information is disseminated and eliminates the need for teacher and staff to travel to one place to receive training; therefore, teachers and staff will collaborate and participate synchronously with KTC and their peers in other POB schools without leaving their classroom. This will reducing the need for staff travel and the cost of paying for substitute teachers.
- Training will be performed once and viewed multiple times.

III. We will offer some services to the schools as a whole:

- Gather information about the school's holdings with regard to AT and ET. We will gather names of POBSD students formerly evaluated at KTC and compile a list of the hardware and software recommended for those students. Using that list as a starting point, we will continue to collect information on current holdings, as we encounter it. We will assess the items found, and make recommendations for upgrades and repair. After preliminary observations (see below) and meetings with staff, some additional purchases may be recommended initially, with possible further purchases as the school year progresses .
- We will meet with POBCSD's information technology staff to reduce duplication of effort, avoid conflicts with new tech being introduced by KTC, and remove barriers to full implementation of AT and ET.

IV. Some consultative activities may be conducted at KTC, or elsewhere outside the school buildings. KTC staff may research solutions and resources; acquire and assess new technology; create custom teaching/learning materials; meet among ourselves to discuss specific issues, prepare reports and other documentation, etc.

V. KTC will document its services and results in biweekly brief summaries that may be provided to school staff and/or POBCSD administration. Where appropriate, photo or video documentation may be created as an adjunct to written reports and as a resource for District staff when KTC is not available.

Summary

The description given above is necessarily somewhat general. This collaboration between KTC and POBCSD is intended to break new ground in special education. It is not yet possible to anticipate all the barriers and opportunities that we will encounter. We at KTC feel confident that our collaboration will result in intervention that is more effective for the students we both serve.

# District-wide Software Review, Adoption, and Acquisition Procedure:

The district is in the process of reviewing and inventorying software applications to be adopted and/or terminated for the next school-year's standardized computer software application image.

Specific types of instructional and administrative software packages for use in the district will be reviewed and adopted per the following acquisition procedure. This process will help ensure that the district is able to verify that all software will serve the needs for it was purchased, reduce expenditures via district-wide orders/site licenses, and provide for and align professional development resources prior to purchase.

Curriculum-driven instructional software applications will be identified and reviewed by technology teams *prior to purchase* to establish that all software has been:

1) Research-based/validated and meet the goals of the curriculum and/or assistive technology needs of the student as prescribed by an I.E.P.
2) Thoroughly reviewed/tested for student and teacher usability via a demo disk and site visit to another school district - if possible.
3) Thoroughly tested for network/computer compatibility.
4) Successfully piloted on a limited basis within the district prior to standardization

The process for evaluation and adoption of software will mirror, to the degree possible, the process and timeline for adopting other instructional resources such as textbooks. Content-area related departments, technology teams and administrative staff will convene on an as needed basis to review available software applications and make recommendations to the *Assistant Superintendent for Curriculum and Instruction* and the *Director of Technology*.

## Types of Software Applications:

Three general categories of software will be used at the district.

1) **Instructional Support Software**, which is designed to be used by students or by the teacher to support the goals of the curriculum. These applications should be researchbased and support adaptive technology and differentiated instructional activities.

   This type of software may cover a number of curricular areas such as reading or math. It can typically be used to test, instruct, reinforce and track student work over time. It can also be used by the teacher to *support* his/her instructional program as a *supplement* for instruction, reinforcement, remediation and as an extension of lessons.

2) **Productivity Software**, is used by the teacher and students to accomplish other tasks such as communication (word processing, e-mail. database, etc.), grade reporting, graphics manipulation, etc. Within the category of Productivity Software, the titles available can further be broken down into various subgroups:
   - Productivity Tools: Word processing, spreadsheet, database, office suite type packages

- Presentation: Used to allow students and teachers to create multimedia presentations
- Image Processing: Used to allow users to import and modify graphics and images
- Drawing/Painting: Used to allow the user to draw and paint images on the screen. Note this category is intended for a general purpose drawing/painting program.
- Keyboarding: Provides instruction in the skill of keyboarding
- Gradebook: Used to allow teachers to keep grades electronically. This is beneficial in reporting grades to the students and parents as well as to the central office for record keeping.

3) **Administrative Software**, includes specialized applications used by administrative and clerical staff to perform tasks that include payroll, accounting, transportation, food services, data warehouse, personnel job applications, etc.

## Plainview-Old Bethpage Core List of Software Applications

There are several types of standardized Instructional, Productivity, and Administrative software packages available and necessary for all schools which will be reviewed and selected for purchase district-wide. The rationale for this standardization include:

- Core software that should be available
- Reduced cost for district-wide orders due to larger volume purchases and site licenses
- Adaptive Technology Integrated Learning System consistency throughout the district ▪ Reduced Professional Development and Technical Support expenditures

## Core Software Selection Process

- Core software will be selected by the district based on the research, consensus, and recommendation of Technology Teams
- The Technology Team will obtain copies of software titles from the publisher of the software
- The recommendation of a software title will be based upon the teams' review and evaluation of the available titles
- Specific criteria for software selection will be developed at the initial meeting of the team
- Selected titles will be reevaluated using this process when deemed appropriate
- Periodic upgrades to selected titles may be purchased on the recommendation of the Director of Technology as required.
- Software recommendations made by the team must be thoroughly tested for usability, and network compatibility

## Guidelines for Selecting and Acquiring Instructional Support Software

The selection of Instructional Software will be driven by instructional needs by teachers, resource personnel, and principals who shall discharge this obligation consistent with the district's selection criteria and the following procedure:

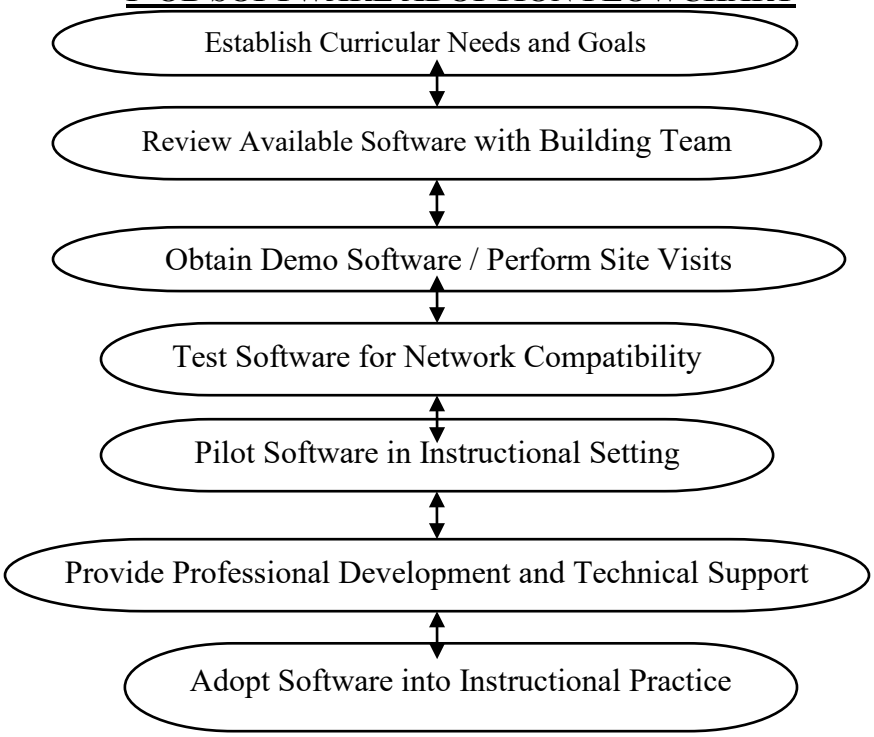
- The timeline for selection process should begin in the mid-school year prior to implementation to ensure all software meets teaching/learning and network compatibility criteria.
- Recommendation for the purchase may involve administrators, teachers, subject area chairpersons/coordinators, instructional supervisors and directors.
- In selecting instructional software, professional personnel will evaluate curriculum needs and will consult reputable, professionally prepared aids to selection and other appropriate sources recognized for their objectivity and wide experience.
- Professional personnel will prepare a formal rationalization memo requesting consideration of a software title not already in the district's software inventory. After the selection has been approved by the department chairperson, director, and principal, the rationale will be filed with the Office of Curriculum and Instruction and the Director of Technology.

**Criteria for Selection**

Staff members involved in the selection of instructional software will use the following criteria as a guide:

- Contribution the instructional software makes to the curriculum
- Contribution the instructional software makes to the interests of the students
- Research based
- Favorable reviews found in standard selection sources
- Favorable recommendation from teachers and resource personnel
- Professional repute and significance of the author or publisher
- Quality of content and presentation
- Cost commensurate with need and usage
- Timelines or permanence
- Accuracy and validity
- Ease of use
- Appropriateness for the type of hardware, system. And network on which it is to be used ▪ Quality of user documentation

**P-OB SOFTWARE ADOPTION FLOWCHART**




## RECOMMENDATION 3: STAFF DEVELOPMENT

***All teaching and administrative staff will receive on-going training and support in the use and application of current educational technology.***

The role of the teacher is evolving away from the position of presenter of knowledge and toward the instructional leader, facilitator, guide, and assessor of class progress. Technology is well suited to enhancing this new role. Teachers must learn, not only the new technology, but new skills in teaching, and how to incorporate them into the curriculum using technology. While machines become obsolete, teacher's skills do not. Teachers need to continually add to their professional repertoire of skills. As professionals, teachers are responsible for their individual and collective professional growth.

In order to effect meaningful changes in the ways students in the Plainview-Old Bethpage Schools learn, teachers must be part of designing their own training and staff development. The professional staff of the District has a strong desire to utilize technology and a desire for training and staff development.

**Classroom Teachers:** To assist teachers in making a positive instructional impact; in recognition of their willingness and eagerness for technology training; and in recognition of the significant time and learning required to acquire and refine these new skills; it is recommended that the staff development program be driven and guided by the following standards.

**Goals:**

1. All staff will utilize technology daily.

2. The district will make available at least eighteen hours of training for all teachers contiguous to the school day. All newly hired staff will be provided training opportunities in the use of technology as a tool and will be asked to demonstrate a familiarity with technology as measured by a set of criteria to be developed by the Technology and Staff Development Committees.

3. Staff development opportunities will be continuous, available and presented at several levels to meet the varied needs and technological strengths of a diversified professional community.

4. An on-going plan to provide staff opportunities to stay current with skills necessary to teach in a world that is continually changing will be developed by each building team.
   This staff development will take place during:
   - Required eighteen-hour after school training
   - Faculty meetings; Professional Hours; Early Release days, and Superintendent Conference days
   - Regular school days with substitute coverage
   - Summer curriculum writing committees
   - Reorganized instructional blocks of time

**STAFF DEVELOPMENT (CONTINUED)**

5. The staff development program will be continuously evaluated by observation of teacher instruction, the outcomes of student applications of technology, and staff input.

6. Staff will play a vital role in the development of the specific strategies used for staff development.

7. Staff will be encouraged to be risk takers in the creative use of technology for instructional purposes.

8. Staff member's annual professional goals will include broadening their expertise in technology.

9. Staff will share expertise and mentor each other.

**Instructional Support Structure:**

In addition to staff development opportunities for classroom teachers, a permanent structure for supporting the integration of technology into the curriculum will be developed. It will consist of the following:

- Full-time In-district Instructional Technology Professional Developer: To provide district-wide ongoing training support to assist teachers and administrators with the integration of technology into the curriculum

- Administrators and Supervisors: In this changing environment, an important component of the administrator's job will be to be an instructional leader who will encourage and support the introduction and continued changes in teaching and learning that the implementation of technology will bring in each building.

- Computer Resource Teachers (CRT): In addition to the Principal in each building there will be a Computer Resource Teacher and/or Library Media Specialist who is an existing member of the teaching staff who will receive additional training in order to support teachers in the technology integration process.

- Computer Technology Teacher Aides: To provide "just in time support," specially designated and experienced teacher aides will assist in first-line diagnosis and troubleshooting of technology related problems; day to day operation/maintenance of computer labs and classroom workstations- to help support the seamless integration of technology with curricular objectives.

## STAFF DEVELOPMENT DESIGN

**GOAL:** Improving student achievement through instructional technology

**Major Activities:**
- Skills Development
- Lesson/Unit Planning
- Questions and Sharing
- Demonstration Lessons
- Discussions

**Guiding Principles:**
- Learning must be relevant to classroom experience.
- Development is encouraged by doing.
- Good practice is modeled.
- Time is provided for reflection and collaboration.
- There is a strategy for ongoing communication

| ***STAFF DEVELOPMENT NEEDS*** | | |
|---|---|---|
| ***INSTRUCTIONAL***<br>• Good Practice<br>• Supports Standards<br>• Constructivist<br>• Active and Collaborative<br>• Instructional Software Applications | ***TECHNICAL***<br>• File Management<br>• Security<br>• Safety<br>• Account Management<br>• Software<br>• Hardware | ***LEADERSHIP***<br>• Vision Building<br>• Supervise<br>• Evaluate<br>• Collaborate |

| PHASE | EXPECTATION | SUPPORT |
|---|---|---|
| **Entry** | Teachers struggle to cope with technology and new learning environments, or have no experience at all. | Planning time to develop shared vision<br>Provide daily team planning time as a permanent feature of the schedule<br>Provide substitutes where possible<br>Create opportunities for staff to share experiences with non-participant colleagues |
| **Adoption** | Teacher moves from initial struggle to successful use of technology at a basic level. | Provide technical support to develop teachers' confidence<br>Estimated 30 hours |
| | | training |

| | | |
|---|---|---|
| **Adaptation** | Teacher moves from basic use to discovery of potential in a variety of applications. Teacher has good operational knowledge of hardware and can perform basic troubleshooting. | Develop flexible schedule to permit peer observation and team scheduling<br>Introduce and discuss alternative pedagogies<br>Train staff in use of tool software spreadsheets, databases, graphics, hyper media, communication<br>Introduce DVD/CD-ROM and scanner technologies<br>Estimated 45+ hours training<br>3 month experience<br>Just-in-time support |

| | | |
|---|---|---|
| **Appropriation** | Teacher has mastery over the technology and can use it to accomplish a variety of instructional and classroom management goals. Teacher has strong knowledge of hardware, local area networks and wide area networks. | Build awareness of alternative student assessment strategies, e.g., performance based on assessment and portfolio assessment strategies<br>Encourage and support conference attendance and teacher presentations 60+ hours training<br>2 years experience<br>Just-in-time support |

| | | |
|---|---|---|
| **Invention** | Teachers actively develop entirely new learning skills that utilize technology as a flexible tool. | Encourage collaboration between teachers and researchers<br>Encourage teachers to write about and publish their experience<br>Explore telecommunications as a way to keep teachers in contact with innovators outside the district<br>Create opportunities for teacher to mentor |

Plainview-Old Bethpage Central School district will identify and promote curricula and teaching strategies that integrate technology effectively into instruction utilizing research based models provided by ISTE *(International Society of Technology Education),* NSBA *(National School Boards Association),* and NYSCATE *(New York State Computer & Technology in Education Association).*

A permanent structure of organizational leadership will administer the district's technology plan, maintain a focus on the appropriate and meaningful use of technology and provide for an ongoing process that responds to the dynamic nature of technology.

Administrative technology will be used as a tool to communicate, manage, process and analyze information that can effectively address the district's technology needs. This leadership structure will manage all aspects of administrative technology including planning, budgeting, purchasing, installation, training, repair and maintenance. The overriding goal of this organizational structure is to identify and address the needs of Plainview-Old Bethpage Central School District's users.

Nassau BOCES Model Schools will continue to be a key partner in the professional development of our staff. Library Media Specialists will participate in on going support meetings with BOCES NSL staff and on site training. A full-time in-district Instructional Technology Professional Developer specializing in the integration of technology into instructional practices is recommended to help achieve the following goals.

To provide ongoing, sustained professional development for teachers, principals, administrators, and school library media personnel, in recognition of the significant time and learning needed to acquire and refine new skills, staff development programs will be guided by the following four characteristics.

1. **Development is encouraged by doing:** The learning of new technologies will involve participants in experience-based opportunities, with learning resulting from doing and

exploring. Training will be task-based rather than skill-based wherever possible. Substantial shifts in working behavior depend upon active involvement, real-world experience and problem solving. Active involvement in exploration, which results from wrestling with experiences and attempting to integrate them into one's understanding, will lead training participants to feel more committed to the discoveries made and more comfortable with the process of changing their work style.

2. **Learning is relevant to job experience:** Training sessions and workshops will focus on actual job tasks, rather than generic skills whenever possible. Ideally, participants will have at least minimal experience with an application prior to a formal training session so that they can identify specific job-related tasks to learn. In effect, training participants should leave a workshop with an experience that they can immediately use in their job function. Importantly, staff members will also be encouraged to take reasonable risks in the creative use of technology for teaching and administrative purposes. This will help sustain motivation and encourage improvements in productivity and efficiency. Staff development opportunities will be presented at several levels to meet the varied needs and technological strengths of a diversified professional community.

3. **Time is provided for reflection and collaboration:** Teachers, administrators and support staff will be allotted time to work with new technology to realize its full potential. The district will implement new technologies in an incremental fashion with generous on-site support to create an effective learning environment for our users. Sufficient learning time and quality support will help users learn to exploit the benefits of a new system.

4. **There is a strategy for ongoing communication:** Efforts will continue to be made to provide users with opportunities to stay current with skills necessary to function in a world that is continually changing. Intensive training workshops will be supported with scheduled follow-up sessions that will provide users with opportunities to celebrate successes, share frustrations and learn new skills

The use of instructional technology as a tool to enhance the curriculum is the primary focus of our professional development plan. In addition to our collaboration with Nassau BOCES Model Schools program, and our district requirement of eighteen hours of teacher professional development per school year; additional funding will enable Plainview-Old Bethpage Central School District to help meet the diverse needs of our teachers through tailored activities designed to support technology integration strategies. A rich program of professional development will consist of several layers. These layers will address the variety of instructional, technical, and leadership needs of teachers across the district.

## STAFF DEVELOPMENT CURRICULUM AND INSTRUCTION INTEGRATION TIMELINE

During each phase of the plan, curriculum-driven building-level technology goals will guide principals to identify instructional staff members who will form a focus group for professional development. Teachers will receive direct staff development training from the District during the

summer institutes and throughout the school year as part of their 18-hour requirement. It is expected that selected teachers will have new computers and software in their classrooms and/or have significant access to shared technology resources such as computer labs.

| | Year 1 | Year 2 | Year 3 | Year 4 |
|---|---|---|---|---|
| **Group A** (25 % of faculty) | Initial training<br>• writing<br>• research | Additional training<br>• leadership<br>• math<br>• reading | Provide leadership<br>• additional training<br>• social studies<br>• science | Provide leadership<br>Additional training |
| **Group B** (25 % of faculty) | | Initial Training<br>• writing<br>• research | Additional training<br>• leadership<br>•• math reading | Provide leadership<br>Additional training<br>• social studies<br>• science |
| **Group C** (25 % of faculty) | | | Initial Training<br>• writing<br>• research | Additional training<br>• leadership<br>•• math reading |
| **Group D** (25% of faculty) | | | | Initial Training<br>• writing<br>• research |

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| **July 2018 to June 2019** | **PROFESSIONAL DEVELOPMENT SUPPORT TIMELINE**<br>• Core School-based Technology Team Members, representative of the goals of the Superintendent of Schools, Assistant Superintendents, principals, teachers, MST facilitators, instructional curriculum committees, clerical, parent and community representatives, will help set the course for curriculum reform, grade level technology scope and sequence curriculum guides, and professional development initiatives.<br>• District re-assesses student needs and begins to create/update K-12 curriculum framework/guidelines in alignment with NYS standards<br>• School based Technology Teams re-group to review building needs<br>• Curriculum-driven *Adaptive Instructional Software* is reviewed, piloted, tested for network compatibility and purchased in alignment with developing scope and sequence of technology skills and curriculum frameworks<br>• Instructional staff is surveyed to identify technology literacy skill levels<br>• Instructional staff is grouped into a 3 Tier Model of professional development needs<br>• Phase one of incremental professional development model begins<br>• BOCES Model Schools professional development supports ongoing required eighteen hours of training<br>• Core Technology Teams evaluate technology effectiveness of Phase One incremental professional development model<br>• Administrative staff is surveyed to identify technology literacy skill levels<br>• Ongoing MS Outlook email system training<br>• Ongoing Financial/Human Resource Management training<br>• Ongoing MS Office Professional training<br><br>**DELIVERY SYSTEM INFRASTRUCTURE:**<br>• 600 Mbps Metro-Ethernet service provides district-wide Internet access<br>• District NOC (Network Operation Center) located at POBMS, will provide a secure/ventilated demarcation point for district WAN and centralized file sever farm.<br>• District Fiber Optic WAN will accommodate higher speed data/telecommunication lines.<br>• School-based LAN will provide every classroom with two to five network connections for Internet and file server access to facilitate increased ease of sharing information and network resources among students, teachers and administrators.<br>• Updated Library Media Center computer labs and wiring closets<br>• Current classroom computers will be maintained and evaluated for upgrades/replacement cycles.<br>• Student management system file servers will be upgraded and existing SCHOOLWARE software applications will be replaced with a new Web based solution to enhance teacher usability and parent information/communication access via parent portals.<br>• Financial and Human Resource management database systems will be maintained and integrated with district-wide access capabilities.<br>• All PPS teaching staff required to write student IEPs will have the appropriate computer operating system, browser version, and internet access to application service provider IEP DIRECT, in temporary shared locations.<br>• District will expand its DATA WAREHOUSING initiatives with BOCES.<br>• Standardized instructional and administrative software applications will be license compliant and manageable for technical support/software upgrades.<br>• Building based PBX phone system (outside service line charges) will be re-evaluated to reduce monthly costs by consolidating phone lines with cost effective PRI ISDN circuits. |

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| | • K-12 Library Automation System installations/upgrades will be reviewed, including the evaluation and budgeting to integrate the K-Center library to Stratford Road's database.<br>• Improved district-wide email/intranet website applications will improve communication with parents, staff, and community to minimize paper/postage costs and improve feedback response time. Central Office forms and resources will be scanned to Adobe PDF (Portable Document Files) for on demand printing and distribution. District wide administration memoranda will be distributed via email attachments<br>• Continue to populate and implement MS Outlook based district email system<br>• School Messenger Emergency Notification System continues operation<br>• District-wide Library Automation Software is upgraded to Follett Destiny<br>• District-wide Transportation Management Software is upgraded to Transfinder<br>• District-wide Substitute Management Software is upgraded to AESOP<br><br>**HUMAN/SUPPORT INFRASTRUCTURE:**<br>• One 3-day per week network admin, three full-time technicians. One ½ time, and one office secretary<br>• New Data Processor position needs are evaluated<br>• Instructional Technology Professional Developers are hired specializing in the integration of technology position is recommended to support integration goals.<br>• An enhanced Computer Aid salary/benefit package and job description will continue to provide consistent front-line technical "just-in-time" support for instructional software applications, buildingbased hardware troubleshooting and ink cartridge inventory for computer labs, classroom computers, administration computers, and Library Media Specialists.<br>• Implement Operation Clean Sweep initiative; a proactive approach to building technical support |
| | **PROFESSIONAL DEVELOPMENT:** |
| **July 2019**<br><br>**to**<br><br>**June 2020** | • Core Technology Teams re-evaluate and adjust K-12 Scope & Sequence Curriculum Guide and begins to develop Best Practice Models based on the successful classroom practices of previous year<br>• Phase 2 of incremental professional development plan begins<br>• Professional Development activities/dates are scheduled for new school year<br><br>**DELIVERY SYSTEM INFRASTRUCTURE:**<br>• All schools will have remote access to student database resources for reporting, class list, and attendance queries, and parent communication via a new web based student management system<br>• Parent Portal for Student Management System Testing Begins<br>• Ongoing software standardization models, based on the consolidated needs of our students and administrative applications, will afford the purchase of "cost effective site license packages" and facilitate the development of scope and sequence curriculum guides for targeted professional development.<br><br>**HUMAN/SUPPORT INFRASTRUCTURE:**<br>• One 3-day per week network admin, four full-time technicians, one ½ time, and one office secretary<br>• A full-time in-district Instructional Technology Professional Developer specializing in the integration of technology position is recommended to support integration goals.<br>• District-wide building based "just in time" instructional/technical support positions will be added to help facilitate the classroom/computer lab integration of technology into the curriculum. These positions are critical to the culture changing success of classroom/computer lab technology integration into the curriculum. |
| | **PROFESSIONAL DEVELOPMENT:** |

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| **July 2020**<br><br>**to**<br><br>**June 2021** | • Core Technology Teams re-evaluate and adjust K-12 Scope & Sequence Curriculum Guide and continue to develop Best Practice Models<br>• Phase 3 of incremental professional development plan begins<br>• Professional Development activities/dates are scheduled for new school year<br>• Long-range Technology Plan is assessed and evaluated to meet emerging needs |

## TECHNOLOGY INTEGRATION ASSESSMENT

To monitor the successful integration of technologies into curriculum content instruction, the District will identify teachers who are using technology in classrooms and monitor the level of curriculum integration in two forms. A questionnaire and/or qualitative interviews will be used to assess the teachers' perception of their own level of technology implementation in addition to feedback from Building-based Technology Teams. Questions will investigate the level of use by students, the content areas being used, the nature of the technology used (Multimedia, Internet, etc.) and the teacher's perceived needs for additional support, staff development, and/or technology. In addition, teachers will be asked to keep a portfolio of student work which demonstrates technology implementation within their classrooms. The portfolio will be used formatively to identify how additional technology support can improve technology integration within District classrooms.

Using student scores on New York State assessments, utilizing a Data Warehouse, the District will monitor changes in student achievement over time within grades and content areas in which technology integration takes place. Under the assumption that effective technology integration will lead to improved student performance, patterns of progress will be monitored, and then compared to State student achievement rates and District historical data in the Data Warehouse. With the assistance of Nassau BOCES, the District will use the results of data analysis to evaluate the success of technology implementation efforts to modify and improve implementation and staff

## STAFF DEVELOPMENT ASSESSMENT RUBRIC:

**OUTCOME:**
The staff will be computer literate and serve as facilitators and mentors rather than as lecturers and purveyors of information.

**INDICATORS:**
Teachers will be able to utilize technology-based skills and software applications.

Teachers will develop a variety of interdisciplinary tasks and projects designed to give all students:

1. Opportunities to develop technical competencies.

2. Opportunities to work in groups to solve problems.

3. Opportunities to investigate real situations.

4. Opportunities to utilize a global wide variety of information via networks and telecommunications.

Teachers will develop alternative ways of assessing student performance.

**STAFF RUBRIC:**

**4**

The teacher will be able, without assistance; to utilize all the technology based skills and software applications available to him/her to assist students in their use of technology, to create a variety of interdisciplinary tasks and projects and to develop alternative ways of assessing student performance.

**3**

The teacher will be able to utilize all the technology based skills and software applications available to him/her to assist students in their use of technology, to create a variety of interdisciplinary tasks and projects, and to develop alternative ways of assessing student performance, but may not be able to do all of this without some assistance from the CRT.

**2**

The teacher is able to utilize some of the available technology and software but is not able to do so without assistance from others.

**1**

The teacher is not able to utilize available technology and software.

## STUDENT EVALUATION/ASSESSMENT RUBRIC

**OUTCOME**:
Student is computer literate.

**INDICATORS**:
The student will be able to utilize technology based skills and software applications.

The student will be able to utilize technology to gather, analyze, synthesize and manipulate information to integrate the various content areas and facilitate critical thinking and problem solving.

The student will be able to utilize technology to communicate in a variety of ways for a variety of purposes.

**STUDENT RUBRIC:**

**4**

The student is able, without assistance, to accomplish all of the tasks and make use of all of the software on the task list to complete his/her assignments, projects, demonstrations and portfolios in the various content areas.

**3**

The student is able to accomplish all of the tasks and make use of all of the software on the task list to complete his/her assignments, projects, demonstrations and portfolios in the various content areas, although she/he may need minimal help.

**2**

The student is able to accomplish some of the tasks and make use of some of the software on content areas but is not able to do so without assistance.

**1**

The student is unable to accomplish the tasks and utilize the software to complete his/her assignments.

## RECOMMENDATION 4: TECHNICAL SUPPORT

***Technical support should be provided to ensure the maximum reliability and timely repair of all equipment and software.***

Technical support should be provided at a level commensurate to the quantity of computers at a given facility or the finite number of network present at that facility.

The technical support should be established as an ongoing objective and reviewed periodically to adjust to technological changes and equipment additions.

The technical support team must be multi-phased, addressing the following basic components:
Platform proficiency, operating system knowledge, network administration, software proficiency, application understanding, troubleshooting and problem solving capability.

The technical support team must function not only as problem solvers but also as technical advisors for the purchase of new equipment, upgrading present resources and as staff development assistants.

BASIC BUILDING REQUIREMENTS

RESOURCE AND SUPPORT:

*Library Media Specialists* and *Computer Technology Teacher Aides* will act as technology resource contact persons for each building. Aides will provide first line response for instructional/administrative software support, technical issues, troubleshooting and will be the point person for all repair needs. This team should be knowledgeable in software applications and network operations.

MAINTENANCE:

A network administrator will work in conjunction with the building level resource person/s to coordinate all aspects of preventive and ongoing maintenance.

REPAIR:

In-house district-wide resource persons shall affect emergency hardware and software repairs, supported by a district network administrator for major repairs.

DISTRICT REQUIREMENTS:

1- One Network Systems Engineer who will analyze network needs, and design, implement and support network solutions on one or more platforms via WAN and LAN architecture. This individual will help manage a team of technicians and provide support for trouble-shooting network usage, equipment and repair request operations. Certification: Network Specialist II or III, CISCO, MCSE.

2- Three Workstation/Lower Network level technicians will install and maintain local area network hardware, software and standalone workstations. They will be responsible for daily repair request, hardware/software analysis, adding users, troubleshooting computer lab/classroom network problems and peripheral issues, resolving LAN connectivity, and maintaining LAN

wiring closets, backup routines and internal connections. These individuals will have expertise with current operating system and software applications. District technicians must possess the skills required to maintain all district networks and support all building resource persons as well as affect hardware repairs

3- Two full time secretarial positions assigned to the Central Office of Technology will provide district-wide help desk services, clerical software application training/support, inventory/supplies tracking, software license and parts tracking, repair request tracking, purchase requisitions, equipment receiving and delivery procedures, data entry, word processing services, E-Rate application filing, etc.

4- Ten Computer Technology Teacher Aides to provide "just in time support." Specially trained teacher aides will assist in software application support, first-line diagnosis and troubleshooting of technology related problems; day to day operation/maintenance of computer labs and classroom workstations- to help support the seamless integration of technology with curricular objectives.

5- A Director of Digital Instruction and building-based Digital Coaches Consultants and one fullwill meet the district's goals to support the integration of technology into the curriculum.

## RECOMMENDATION 5: SCHOOL LIBRARY MEDIA CENTER

***The School Library Media Center will provide access to required information and literature for students, staff, and community members; guide students in the acquisition of skills necessary to manage and appreciate this wealth of material; and motivate students to read for pleasure and for information.***

The library media centers need to integrate technology into their programs in order to provide access to electronic information. Integrating technology into the library media program means restructuring how we teach students; how we manage space, instructional materials and references; and how we schedule and staff the program. We can presently provide students with the skills and knowledge to access print and non print information. We now need to continue to prepare students, teachers and families with the skills and knowledge needed to retrieve electronic sources of information.

Libraries of the past provided access to resources within their four walls. The challenge for tomorrow's libraries is to provide access to unlimited resources in an information rich environment. Integrating technology is a major step in meeting the challenge. Two writers (Barron and Bergen, Phi Delta Kappan, March 1992) have called the restructured school library "information utility", designed to meet a school's needs for information and materials in the Information Age.

To be effective, they tell us, we must meet the following challenges:

- Promote information literacy; principally by teaching skills within the context of a subject area.
- Prepare students for learning in a global society and foster a positive image of the library.
- Provide access to and assistance with, the available technologies.
- Provide access to resources beyond the school such as on-line databases, etc.
- Function as an integral resource for all content area instruction.
- Foster lifelong learners and users of library and information technology resources.

In order to provide the "means" to help mold independent, life long learners in today's information age; our vision for the Plainview-Old Bethpage Schools' Library Media Centers requires:

1. Fully automating the circulation and catalog systems in all school library-media centers.

1. Providing the ability to access information and literature using today's technology standards (on-line database services, cable services, multimedia, videotape, and DVD based materials).

3. Scheduling that is flexible enough to support the completion of outcomes based projects and school-wide circulation of print and non-print materials.

4. Adequate staffing to support the needs of students, staff and the community.

5. Providing staff development, as required, to ensure efficient and appropriate access to technology.

6. Providing a facility that has adequate and appropriate space for all the appropriate resources and activities of the library-media program.

7. Providing classroom and home access to library media center resources.

***See Appendix E of this document for an updated listing of school-by-school Web-based Research Databases and descriptions.**

## RECOMMENDATION 6: IMPLEMENTATION PLAN

***The implementation plan will ensure that technology will be equitably phased into buildings that have a commitment to integrating technology into the teaching/learning process, a stated direction and focus, as well as the teamwork that will be necessary for their success.***

Districts have a better chance of success in infusing technology into schools that show commitment, teamwork and direction. This effort requires a planning process and implementation tool that assists the schools and District in accomplishing these goals.

Future applications of technology should identify ways in which it will be used to accomplish specific educational goals and should demonstrate how technology will be used to produce desired outcomes.

Applications for new technology should identify members of the implementation team and describe how the members will work as a team throughout the implementation process.

Future plans should be divided into relatively equivalent implementation phases. Phasing will allow staggering of hardware purchases and insure that all equipment will not become obsolete at one time. In addition, staggering the implementation in three phases will make staff development more manageable and insure that the integration of technology does not completely overwhelm the school.

***Budgeting should be based on a ratio of two to four computers per classroom connected to a local and wide-area network.*** Model technology-rich, teaching/learning environments should be developed by teams and should be used as guidelines in the implementation.

## TECHNOLOGY IMPLEMENTATION GOALS AND STRATEGIES

**Goal 1**

Maintain Internet bandwidth upgrade to enable/support Instructional Web-based resources, video streaming/videoconferencing instructional resources and to provide ample capacity support 1:1 mobile device initiatives.

**Strategies**

- Participate in county-wide BOCES consortium bid for ISP (Internet Service Providers) to foster competitive pricing and quality of service
- Upgrade all district-wide infrastructure to provide high-speed 10-Gig network connectivity

**Goal 2**

Enhance daily district communication with parents and to provide an emergency management alert notification system.

**Strategies**

- Maintain ASP (Application Service Provider) communication system model and expand communication options
- Organize implementation strategies with administration and technology teams

**Goal 3**

Student Information Management system upgrade to implement Web-based unified attendance, grade book, health records, parent portal, state reporting, automated student attendance school-home communication, etc.

**Strategies**

- Expand on system module capabilities such as patent portal

**Goal 4**

Continue implementation of a hybrid Cloud-based and centralized file storage solution such as a SAN (Storage Area Network) and/or NAS (Network Attached Storage) to meet the growing district-wide instructional/administrative data needs of the district and to provide a redundant site backup for disaster recovery

**Strategies**

- Create a baseline for data storage requirements
- Maintain primary system at District NOC (Network Operation Center) and redundant system at POBJFKHS MDF (Main Distribution Frame)

**Goal 5**

Software Infrastructure Plan/licensing implementation continued to reduce expenditures and network incompatibility issues

**Strategies**

- Continue software purchasing guidelines and specifications

**Goal 6**

Improve core network transmission capabilities to enhance Instructional and Administrative applications

**Strategies**

- Meet with technology teams to establish network response needs and potential bottlenecks
- Test network speed to establish that 1 Gbps WAN and 100 Mbps to desktop standards are met
- Upgrade identified centralized NOC file servers and district-wide IDF/MDF network switches

**Goal 7**

Upgrade centralized NOC file servers and databases to support instructional and administrative building implementations

**Strategies**

- Monitor file server usage and needs
- Redundant NOC/MDF to be located at POBJFKHS to provide network load balancing, mirroring, and emergency backup for improved network performance and interruptible service
- SIF (Schools Interoperability Framework) implementation to link district-wide database-driven information systems such as Library Automation, Transportation, and Pupil Personnel Systems, etc.

**Goal 8**

Upgrade/maintain network switches to meet network usage demand

**Strategies**

- Monitor district-wide switches in all IDF and MDF locations
- Redundant NOC/MDF to be located at POBJFKHS to provide network load balancing, mirroring, and emergency backup for improved network performance and interruptible service

**Goal 9**

Create multimedia-enriched learning environments to enhance, support and transform the teaching and learning process. **Instructional Multimedia Presentation System comprised of: Computer/DVD, document camera, projection screen, videoconferencing, video streaming, and sound field technology, designed to meet the diverse learning modalities and multi-sensory needs of all students (general ed, special ed, talented/gifted) in all classroom models (collaborative, self contained, project challenge, etc.)

**Strategies**

- Meet with building technology teams to establish initial installation locations and designs
- Install ceiling mounted projectors and electrical infrastructure
- Review all audio and educational technology needs
- Review instructional effectiveness of interactive whiteboard pilot
- Centralized video-on-demand multimedia server implementation with broadcast TV IP and/or modulators to enable the distribution of IP-based video, television, and closed circuit school produced morning announcements/news and student productions to classroom multimedia presentation systems

**Goal 10**

Maintain data/electrical infrastructure to support content-area related computer labs and administrative computer network access

**Strategies**

- Meet with building technology teams to establish/review installation locations

**Goal 11**

Enhance district-wide communication systems

**Strategies**

- IP Telephony implementation/unified messaging to reduce costs, replace and consolidate telecommunication lines and integrate with current e-mail and new voice mail systems

**Goal 12**

Implement/enhance district-wide document management capabilities and systems

**Strategies**

- Document Imaging Implementation to reduce paper usage and create a searchable repository of mission critical documents and archiving

**Goal 13**

Review district-wide use of information technology resources to better manage and reduce unnecessary expenditures

**Strategies**

- Assess the use and implementation of district-wide printers to better leverage the network, and redeploy
- Assess the use of printer supplies, ink, toner, etc.

**Goal 14**

Implement training programs and appropriate incentives for teachers to enhance teaching and learning through the use of educational technologies.

**Strategies**

- Establish guidelines and specifications for teacher professional development
- Offer incentives for each educator who completes a designated course of study
- Employ a Full-time In-district Instructional Technology Professional Developer and/or dedicated curriculum/technology integration specialists

**Goal 15**

Educators and administrators will have access to technologies that provide for the maintenance, reporting, and analysis of student and administrative data.

**Strategies**

- Adopt a comprehensive, standard software package to support student and administrative data management, analysis, reporting.
- Develop SIF School Interoperability Format technology
- Continue subscription and training to the Nassau BOCES Data Warehouse

**Goal 16**

Enhance network user functionality and reduce maintance expeditures and equipment refresh cycles..

**Strategies**

- Implement internal Cloud Computing technology via virtualized server/desktop and Software-AsA-Service (SAS) strategies.

## RECOMMENDATION 7: EMERGENCY MANAGEMENT PLAN

The district will continue a county-wide collaborative dialogue in order to help develop a comprehensive understanding of the emergency management issues and to begin a dialogue to help districts develop a process of addressing these potential issues in relation to its impact on instruction and future technology planning, budget cycles, and implementation strategies.

In pursuit of the Board of Education's goal to employ the efficacy of technology to enhance communication with parents and maintain safe learning environments for students, the district has begun the implementation of a new *Parent Emergency Notification System* called ***School Messenger.***

The district will utilize ***School Messenger*** to record and send emergency *phone*, *e-mail*, *text messaging*, and *TTY (for the hearing impaired)* messages to parents and staff members in the event of school closings or delayed openings due to inclement weather or emergency conditions *in a manner of minutes*. In the event of lockdown situations, etc., this new system will enable the district to provide time-sensitive information that will help reassure parents that their children are safe.

In addition, a future *parent website portal* to ***School Messenger*** will provide parents with the ability to access emergency notifications and to conveniently review/update family emergency contact information *online*.

In the unfortunate event of a national and/or local pandemic situation such as the Avian Flu, or recent catastrophic impact of Hurricane Katrina in New Orleans, the district would be faced with implementing a new paradigm for educating our students. There may be large segments of our student population that will be required to be quarantined in hospitals and/or in residences throughout our Plainview-Old Bethpage community. In event, the district would be required to provide these students with access to daily instructional experiences/activities, homework and educational resources to continue to meet the district's curricula goals, maintain the continuity of their educational programs, and meet state standard and attendance mandates.

One solution to this imminent and unprecedented situation will be to continue to leverage the efficacy of technology to communicate effectively with our home/hospital bound students via the Internet. We envision these students videoconferencing from these remote locations via seamless state-of-the-art classroom technology devices that can provide virtual real-time audio and visual classroom experiences; web-based driven curricula/homework resources to help supplement their educational needs; and a robust integrated student management/parent communication system to provide real-time bi-directional communication, emergency alerts, online mentor programs, monitoring of student medical issue/status, etc.

This foresightedness will help districts county-wide become more prepared by justifying the necessary proactive decisions/expenditures and installations progressively instead of being caught off-guard in the future with limited resources and/or necessary implementation time.

## CURRENT TECHNOLOGY STATUS and ASSESSMENT

Over the past three years, Plainview-Old Bethpage School District has been building an infrastructure to provide all students and staff with a base level of access to information technology and associated support services. In furtherance of this goal, telecommunications and computer technologies have been pervasively deployed throughout the district and now span all educational and administrative program areas. Resources have been devoted to staff development and curriculum integration to help assure that maximum use can be made of the district's technologies.

Several key measures of technological deployment within Plainview-Old Bethpage School District are summarized below. As you read the following summary, keep before you our goal - creating challenging learning environments that encourage students to achieve at higher standards.

## TECHNOLOGY PLAN IMPLEMENTATION STATUS SUMMARY:

*Phase One* of the plan timeline began with an assessment of existing technology resources, staff needs, infrastructure, student management systems; and support personnel; the creation of key technology teams; the capital project construction/installation of automated *Library Media Centers* at all Elementary Schools, Middle Schools, and library automation system upgrades at the High School; the relocation/construction of a secure *Central Office of Technology*; the implementation of a centralized server farm; the installation/implementation of a new financial management/human resource system; the hiring of district-wide building-based *Computer Technology Teacher Aides*; the implementation of instructional LCD presentation systems; instructional computer furniture upgrades; the POBJFK HS Special Ed classroom LAN installation and implementation of a new *Office of Pupil Personnel IEP* data management system; the capital project design and bid specifications for the installation of district-wide *Local Area Networks* for classroom grades 1 through 8; the computer/printer upgrade for all administrative offices, guidance counselors, social workers and nurses; the implementation of a three year clerical migration/training plan from Corel WordPerfect to the Microsoft Word/Office Suite and standardization of district-wide administrative/instructional software applications; the implementation of *BOCES Model Schools Professional Development* workshops integrated with the required 18 hour training for certified teaching staff; the implementation of *BOCES AOS* training for clerical/administrative software applications; the implementation of a *BOCES* COGNOS-based *Data Warehouse;* the construction/implementation of content-area related *Data Warehouse* analysis teams; and ongoing telecommunication line costs including T1 line Internet access, ISDN, and *Intellipath Consortium* telephone usage. The design and installation of a district-wide *Gigabit Ethernet Fiber Optic Wide Area Network* and cut-over of *Local area Networks.*

**Current Technology Status:**

During the term of the last technology plan, the district technology infrastructure changed dramatically. The district transformed from antiquated electrical and data cabling, files servers and computers barely able to handle minimum workloads to a state-of-the-art fiber-optic backbone and network equipment.

The Central Office of Technology operates a centralized multi-server farm network, data storage and antivirus services. Servers perform the following functions: file and print sharing; library management (Follett and Mandarin); software management; e-mail; internet access; Web site hosting; DHCP; DNS and SMPT.

**Wide Area Network:** The physical plant of Plainview-Old Bethpage School District consists of seven buildings including eight schools, two separate administrative offices, and buildings and grounds facilities, etc. All buildings are connected, via Gigabit Ethernet over 12-strands of fiber optic cable and multi-layer switches, to the Central Office of Technology located at Plainview-Old Bethpage Middle School. This location serves as the district NOC (Network Operation Center).

**Telephone Service:** Internet voice technology ("VoIP") has been implemented district-wide.

**Internet Access:** A 600Mbps circuit has been fully implemented and will continue for 2019-120. All student and staff Internet access is filtered in accordance with the Children's Internet Protection Act and student use is governed by Internet Safety and Acceptable Use policies. Over four-hundred web accessed e-mail accounts are currently maintained for staff use. The district maintains a Web Site to provide school district information to the community. The primary district home page can be accessed at http://www.pob.k12.ny.us.

**Network Cabling and Protocols:** All schools and administrative facilities are wired with horizontal CAT 5e and/or 6 and 6e UTP network cabling to accommodate 1000Mbps and 1000Base-SX fiber optic multimode vertical backbone cabling. All cabling is in compliance with TIA/EIA-568-A and TIA/EIA569 standards. The current network transport speed standard is 100 Base-T operating over a Gigabit Ethernet backbone. Dynamic VLANs will continue to be implemented for each school location. The network supports TCP/IP, IPX, etc. The primary support hardware includes Dell 2650 servers, CISCO multilayer switches. All networks are secured by a Palo Alto firewall.

**Operating and Application Software:** The primary operating system used in the district is Windows. Additional major applications include: Microsoft Office including Word, Excel, PowerPoint and Access, Microsoft 365/Outlook; Microsoft Visual Basic.Net Pro; Adobe Creative Cloud, Photoshop, Illustrator, and Premiere; Inspiration and Kidspiration, UltraKey, Quark, Early Childhood Connections Package; Elementary Curriculum Connections Package, and WISC-III-WIAT-II Writer.

Web-based applications include: Google Docs, e-Textbooks, Library Research Databases , MyLearningPlan.com and IEP-Direct.

**Current Internet Access:**

- All District-wide Classrooms K-12
- All Existing Computer Labs
- All Library Media Center Clusters

- All Project Challenge Classroom Clusters
- Pupil Personnel Staff (per room where current infrastructure exists or centralized location for IEP DIRECT access)
- All Administration Computers

## TECHNOLOGY PLAN EVALUATION

To monitor the successful integration of technologies into curriculum content instruction, the District will identify teachers who are using technology in classrooms and monitor the level of curriculum integration in two forms. Principal staff observations, qualitative interviews, and/or questionnaires will be used to assess the teachers' perception of their own level of technology implementation. These observations/inquiries will investigate the level of use by students, the content areas being used, the nature of the technology used (Google Docs, Interactive Whiteboards Internet, software, etc.) and the teacher's perceived needs for additional support, staff development, and/or technology. In addition, teachers will be encouraged to keep a portfolio of student work which demonstrates technology implementation within their classrooms. The portfolio will be used formatively to identify how additional technology support can improve technology integration within District-wide classrooms. Building principal observations will play a key role in evaluating the impact of technology on teaching and learning by utilizing student and staff rubrics designed to help evaluate the effectiveness of this technology plan.

Using student scores on New York State Education Department assessments, utilizing a Data Warehouse, the District will monitor changes in student achievement over time within grades and content areas in which technology integration takes place in each content area. Under the assumption that effective technology integration will help support improved student performance, patterns of progress will be monitored, and then compared to state student achievement rates and District historical data in the Data Warehouse. With the assistance of Nassau BOCES, the District will use the results of data analysis to evaluate the success of technology implementation efforts to modify and improve implementation and staff

The implementation of Plainview-Old Bethpage School District's Technology Plan is a continuous process requiring ongoing evaluation. Effective evaluation requires tech planners to rethink and update objectives, priorities and strategies as implementation progresses. Ongoing evaluation also allows planners to identify and modify aspects of the Plan that are no longer applicable, advisable, or feasible.

# APPENDIX

## TECHNOLOGY BUDGET & FUNDING

| BUDGET ACCOUNT | DESCRIPTION | 2015-2016 ACTUAL | 2016-2017 ACTUAL | 2017-2018 BUDGET | 2018-2019 PROPOSED | DETAIL |
|---|---|---|---|---|---|---|
| 2630-250-41-00-00 | Equipment | 506,254.00 | 689,241.00 | 381,411.00 | 780,094.00 | Peripherals K-L Interactive wireless dev computers, LAN/WAN |
| 2630-250-59-00-00 | Equipment | 0.00 | 0.00 | 956.00 | 956.00 | Equipment to students |
| 2630-412-41-00-00 | Mobile Device Repairs | 0.00 | 0.00 | 20,000.00 | 20,000.00 | Repairs for mo |
| 2630-427-41-00-00 | Contractual and Other | 314,328.00 | 97,218.00 | 116,922.00 | 102,329.00 | Specialized se licenses, warra |
| ~~2630-460-41-00-00~~ | ~~Software~~ | ~~138,214.00~~ | ~~103,013.00~~ | ~~223,579.00~~ | ~~226,943.00~~ | ~~Districtwide~~ software |
| 2630-460-59-00-00 | Software | 4,125.00 | 1,761.00 | 1,992.00 | 1,992.00 | Software to students |
| 2630-490-41-00-00 | BOCES Technology Services | 1,433,480.00 | 1,870,301.00 | 2,182,400.00 | 2,179,352.00 | BOCES services /netwo CISCO/IP har 1:1 Chromebo |
| 2630-506-41-00-00 | Supplies - Computer | 102,186.00 | 85,076.00 | 113,845.00 | 113,845.00 | Computer cartridges, |
| 2630-525-41-00-00 | Supplies - Parts | 21,527.00 | 17,000.00 | 17,000.00 | 17,000.00 | Parts for co memory, infrastructure |
| | Total GENERAL FUND | 2,520,114.00 | 2,863,610.00 | 3,058,105.00 | 3,442,511.00 | |
| | | | 14% | 7% | 13% | |

| GRADE | | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 |
|---|---|---|---|---|---|---|---|
| 5 | | *9/1/2016* ***YEAR 1*** ↘ | **Purchase New** ***C738T YEAR 1*** ***of Four Year Cycle*** ↘ | **Purchase New** ***SPIN 11? YEAR 1*** ***of Four Year Cycle*** ↘ | | | |
| 6 | | *12/15/2015* ***YEAR 2*** ↘ | ***YEAR 2*** ↘ | ***YEAR 2*** ↘ | ***YEAR 2*** ↘ | | |
| 7 | | *12/15/2015* ***YEAR 2*** ↘ | ***YEAR 3*** ↘ | ***YEAR 3*** ↘ | ***YEAR 3*** ↘ | ***YEAR 3*** ↘ | |
| 8 | | *9/1/2016* ***1 YEAR OLD*** *(Use for (12) Elementary Carts and loaner/spares at end of school year)* | ***YEAR 3*** *(Use for loaners/ Spares at end of school year and/or 12th Grade migration?)* | ***YEAR 4*** **Obsolete by end of School Year** | ***YEAR 4*** **Obsolete by end of School Year** | ***YEAR 4*** **Obsolete by end of School Year** | ***YEAR 4*** **Obsolete by end of School Year** |
| **GRADE** | | | **2017-18** | **2018-19** | **2019-20** | **2020-21** | **2021-22** |
| 9 | | | **Purchase New** ***C738T YEAR 1*** ***of Four Year Cycle*** | **Purchase New** ***SPIN 11 YEAR 1*** ***of Four Year Cycle*** ↘ | | | |

## PLAINVIEW-OLD BETHPAGE CENTRAL SCHOOL DISTRICT
## Proposed 1:1 Chromebook Middle and High School Use Cycle Plan

- Plan based on a four year life expectancy for each individual student Chromebook.
- **Incoming Grade 5:** Purchase Model C738T Chromebook as first year of four year use cycle.
- **Incoming Grades 6, 7, and 8:** Students move up with currently assigned C738T Chromebook. - **Outgoing Grade 8 School Year 2016-17:** C738T Chromebooks to be used for (12) carts for Elementary Schools and loaners/spares.
- **Outgoing Grade 8 School Year 2017-18:** C738T Chromebooks used for loaners/spares or 12th Grade migration?
- **Incoming Grade 9:** Purchase Model C738T as first year of four year use cycle.
- **Incoming Grade 10:** Purchase Model R751T (Spin 11) as first year of use cycle.

(*Note: Spin 11 is currently in development and may not be available until after the start of the 2017-18 school year. This delay may also provide an opportunity to complete building-wide infrastructure upgrades based on pending*

*NYSED approval Smart Bond funding and offer additional time for POBJFKHS faculty training*)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | ↘ | | | | |
| **10** | | | **Purchase New *SPIN 11 YEAR 1*** ↘ | ***YEAR 2*** ↘ | ***YEAR 2*** ↘ | | |
| **11** | | | | ***YEAR 2*** ↘ | ***YEAR 3*** ↘ | ***YEAR 3*** ↘ | |
| **12** | | | | | ***YEAR 3*** *Use for loaners/ Spares at end of school year)* | ***YEAR 4*** **Obsolete by end of School Year** | ***YEAR 4*** **Obsolete by end of School Year** |

# PLAINVIEW-OLD BETHPAGE CENTRAL SCHOOL DISTRICT

**PROJECTED FIVE YEAR INTERACTIVE BOARD REFRESH PLAN** (Revised per budget reduction)

***Important Note**: The scope of this budgeting initiative is meant to be proactive and takes into account that interactive display technology is likely to change over the projections made below and that any new technologies and costs will need to be reevaluated on an ongoing basis. The primary goal of this plan is to provide an annual refresh budget that will be required to help ensure our classroom instructional technology interactive board tools do not become obsolete in any one school/budget year.*

**Smart Board/Projector Criteria for Targeted Refresh Location**:

- Age factor of currently installed Smart Board and Projector based on purchase/installation date;

| SCHOOL | TOTAL Targeted Smart Boards Per Building | Year 1 *2018-19 Refresh* | Year 2 *2019-20 Refresh* | Year 3 *2020-21 Refresh* | Year 4 *2021-22 Refresh* | Year 5 *2022Refresh* |
|---|---|---|---|---|---|---|
| JFKHS | *87 - 4 (FP) =* ***83*** | **(12) + 1 mobile** | 11 | 11 | 11 | 11 |
| MMS | *73 - 6 (Ren) =* ***67*** | **(8) + 6 renovated + 1 mobile** | 9 | 9 | 9 | 9 |
| POBMS | *71 - 4 (Ren) =* ***67*** | **(8) + 4 renovated + 1 mobile** | 9 | 9 | 9 | 9 |
| Old Beth | ***28*** | **(4)** | 4 | 4 | 4 | 4 |
| JJ Parkway | *32 - 3 (FP)=* ***29*** | **(4) + 2 new install** | 4 | 4 | 4 | 4 |
| Stratford | *46 - 7 (FP) - 5 (Grant)* **= *35*** | **(4) + 1 new install** | 4 | 4 | 4 | 4 |
| Pasadena | *34 - 4 (FP)=* ***29*** | **(4) + 1 new install** | 4 | 4 | 4 | 4 |
| | **Total Refreshed Smart Boards:** | **(45)** | **(45)** | **(45)** | **(45)** | **(45)** |
| | **Estimated Yearly Expenditures: Unit Cost: $5,310** | **$419,490 ($238,950)** | **$392,940 ($238,950)** | **$392,290 ($238,950)** | **$392,920 ($238,950)** | **$377,010 ($238,950** |
| **B&G Install Day Rate**<br>**B&G Install OT Rate**<br>**B&G Install Day Rate**<br>**B&G Install OT Rate**<br><br>**1/3 of locations:**<br>**B&G Electric Day Rt.**<br>**B&G Electric OT Rate** | $289.20 x 60 =<br>$433.84 x 60 =<br>$289.20 x 79 =<br>$433.84 x 79 =<br>$148.45 x 20 =<br>$202.68 x 20 =<br>$148.45 x 26 =<br>$202.68 x 26 = | $17,352.00<br>$26,030.40<br>$22,846.80<br>$34,273.00<br><br>$ 2,969.00<br>$ 4,053.00<br>$ 3,859.70<br>$ 5,269.68 | $ TBD | $ TBD | $ TBD | $ TBD |

- ongoing maintenance issues impacting instruction that supersede age factor; - special needs determined by building principal that supersede age factor.

**Target Refresh Location Selection Process**:

- Office of Technology provides a listing of inventory-driven age factor identified interactive boards to each building-based Computer Aide and building Principal;
- lists are reviewed with Computer Aides, Technicians, and Principals and revised as needed based on any superseding criteria and resubmitted to the Office of Technology as targeted locations;
- final refresh costs are reviewed by the Offices of Technology, Business, and B&G to establish appropriate refresh costs, funding codes and submitted to the Superintendent and BOE for final approval.

## Smart Schools Investment Plan

## September 2016-2021

**Background:** The SMART SCHOOLS BOND ACT OF 2014 was passed in the 2014- 15 Enacted Budget and approved by the voters in a statewide referendum held during the 2014 General Election on Tuesday, November 4, 2014. This bond act authorized the issuance of $2 billion of general obligation bonds to finance improved educational technology and infrastructure to improve learning and opportunity for students throughout the State. The entire text of the Smart Schools Bond Act Implementation Guidance can be found at http://www.p12.nysed.gov/mgtserv/smart_schools/docs/Smart_Schools_Bond_Act_Guidance_04.27.15_Final.pdf

Plainview-Old Bethpage's portion of this funding is $1,637,283

This document provides the district's recommendation for use of these funds, as well as a top-level implementation plan.

**Recommendation:** Utilize the funds to upgrade our school connectivity/wireless and wired networks

**Rationale:** In alignment with ISTE (International Society for Technology Education) National Education Technology Standards (NETS), the Plainview-Old Bethpage Central School District's Strategic Long-range Instructional Technology Plan presents a map for raising the level of student performance in all teaching and learning environments inside and outside the District. The goals of the plan extend the uses of the technology already in place to enhance our children's educational experiences and introduces new structures leading towards the transformation of teaching and learning through technology.

The Overarching goal of the plan is to support student achievement by:

1. Ensuring equity of access to technology resources/tools throughout the district
2. Ensuring the timely resolution of technical problems, the upgrading/scalability of all WiFi/LAN/WAN/Cloud network infrastructure and expansion of centralized network resources to enhance usability, security, disaster recovery, remote access, and sound maintenance staff protocols
3. Focus in on the importance of professional development and the infusion of technology into all teaching and learning environments
4. Engaging/informing all stakeholders through mediums of digital communication
5. Developing transformational 21st century skills based STEAM-driven teaching and learning environments
6. Ongoing development of strategic long-range technology planning to support the ever-evolving 21st century needs of students/staff/parents/community members.

Using our Smart Schools allocation to support school connectivity, Plainview-Old Bethpage will be able to address items 1, 2, 4 and 5 of the above goals list. The cost elements of this proposal were originally identified in our Technology Plan. Funding these cost elements through the Smart Schools allocation will relieve district residents of the local tax costs of implementing those aspects of the plan.

The fundamental vision and goal of the Plainview-Old Bethpage Central School District is to support student achievement so as to improve learning for all students. Indentifying and meeting the learning needs of students is the foundational activity in all planning for instructional technology

integration. Like school districts throughout the country and all over the world, Plainview-Old Bethpage is presented with a multitude of challenges by rapidly emerging information technologies. When those challenges are viewed along with academic standards, stronger accountability for results, expanded options for parents, and an emphasis on teaching methods that have been proven to work – the mandate to act is clear. Our challenge is to provide our children with the skills and habits of mind that their futures demand. These capabilities include the ability to research, manage resources and information, to communicate, to work with systems of technology, to be entrepreneurs and to think critically and creatively solve problems. The work our children do – the data they collect, the ideas they generate, the stories they write, the art they create, the music they perform, the real problems they solve – will have a profound impact on the future.

**Elements:**

**Wireless network:** The goal when installing our current wireless network, beginning in 2013, was to provide limited Wi-Fi coverage district-wide, meaning that mobile computing devices such as laptops, Chromebooks and iPads could be used online anywhere in the district. As we expand the number of these devices in the classrooms, we are finding that we need density as well. As stated in the district's technology plan, the implementation of additional wireless access points and upgraded infrastructure will provide the district with the capacity to support more devices while increasing ubiquitous access in all teaching/learning environments. Infrastructure upgrades are prerequisite to support 1:1 initiatives and network redundancy needs that will provide students with seamless technology experiences while enhancing engagement in all curricula-driven instructional activities. More access points are required to support the number of simultaneous connections currently in use (and planned for the near future). Additionally, a wireless network that can accommodate computer-based testing of large numbers of students simultaneously will be required as these types of tests become required by the State Education Department (expected as early as the 2016-2017 school year). Rather than purchase all new access points, we plan to redeploy existing access points, where appropriate, to minimize cost and maximize density. **Wired network:** To accommodate the expansion of our wireless network, we will require additional wired switching equipment to provide the aggregate bandwidth, network throughput, power over Ethernet (POE) in addition to fiber optic data cabling prerequisite to supporting our WiFi capacity and expansion needs.

Each wireless access point must tie into our wired network and we simply do not have the port density required. Additionally, our existing wired network is due for replacement/refresh, as the majority of these devices were installed as early as 2008.

**Schedule:** Actual dates are to be determined as this project requires pre-approval by the New York State Education Department prior to the start of work. Cost: The expected total cost of the project is $1,637,283 funded by Smart Schools.

**Future Investments to Support Network:** Hardware purchased with Smart Schools will have a 5year+ life cycle. The district has been making annual investments to upgrade its network switches, servers and other associated hardware. The devices purchased will be entered into the replacement rotation. Since the district has contributed a significant level of locally raised funding to support and improve the network on an annual basis, the new purchases will dove-tail well into the replacement cycle on the 5-year horizon.

**I=Introduction of Skills M=Skills Mastered R=Skills Reinforced**

# K-12 Technology Skill Integration Guidelines Summary

| BASIC COMPUTER OPERATIONS AND CONCEPTS | K-2 | 3-5 | 6-8 | 9-12 |
|---|---|---|---|---|
| ***Students will learn and be able to:*** | | | | |
| Identify basic computer hardware | I | R | M | R |
| Turn computer on and off properly | I | M | R | R |
| Use a mouse | I | M | R | R |
| Open and close computer programs | I | R | M | R |
| Use basic computer vocabulary | I | R | M | R |
| Identify basic computer functions | I | R | M | R |
| Insert and remove disks and CDs | I | R | M | R |
| Use right mouse button | I | R | M | R |
| Use Save and Save As commands | I | R | M | R |
| Print | I | R | M | R |
| Demonstrate proper handling of disks and CDs | I | R | M | R |
| Log in and out of network | I | R | M | R |
| Toggle between two open programs | | I | R | M |
| Skilled in using scanners | | I | R | M |
| Skilled in using digital cameras | | I | R | M |
| Understand file attributes | | I | R | M |
| Understand Operating System basics Understand | | I | R | M |
| Directory folder structure | | I | R | M |
| Understand file attributes | | I | R | M |
| Understand advanced hardware components | | | I | R |
| Understand networking concepts | | | I | R |
| **SOCIAL, ETHICAL, AND HUMAN ISSUES** | **K-2** | **3-5** | **6-8** | **9-12** |
| ***Students will learn and be able to:*** | | | | |
| Demonstrate appropriate use of computers; (refer to AUP policy for details | I | R | R | M |
| Demonstrate appropriate computer etiquette (refer to AUP policy for details | I | R | R | M |
| Respecting the privacy of all users | I | R | M | R |
| Obey copyright laws regarding student generated material | | I | R | M |
| Appropriately cites resources using prescribed formats | | | | |
| Use appropriate judgment upon entering Internet sites | | I | R | M |
| Citing material taken from another source, under issues of plagiarism as they apply to information technology | | I | R | M |
| Understand and observe information technology licensing restrictions | | I | R | M |

| | | | | |
|---|---|---|---|---|
| Understand that appropriate school speech extends to electronic publication and communication | | **I** | **R** | **M** |
| Accurately identify sender of transmitted materials and understand that appropriate school speech extends to electronic publication and communication | | **I** | **R** | **M** |
| Demonstrate proper use of transferring files from home to school | | | **I** | **M** |



| **TECHNOLOGY PRODUCTIVITY TOOLS** | **K-2** | **3-5** | **6-8** | **9-12** |
|---|---|---|---|---|
| **KEYBOARDING** | | | | |
| ***Students will learn and be able to:*** | | | | |
| Become familiar with common keyboard keys | **I** | **R** | **R** | **M** |
| Use alpha keyboard keys | **I** | **R** | **M** | **R** |
| Use special keys such as, enter, spacebar, caps lock, shift keys | **I** | **R** | **M** | **R** |
| Use special keys such as, arrows, delete, backspace, escape, num lock, numeric pad | **I** | **R** | **M** | **R** |
| Use left/right hand zones and basic home row finger placements | **I** | **R** | **M** | **R** |
| Use proper typing technique with efficiency and accuracy without looking at the keyboard | | **I** | **R** | **M** |
| **WORD PROCESSING** | **K-2** | **3-5** | **6-8** | **9-12** |
| ***Students will learn and be able to:*** | | | | |
| Open, view, name, save, save as, close, reopen files | **I** | **R** | **M** | **R** |
| Print document, use print preview, print selected, # of copies | **I** | **R** | **M** | **R** |
| Use simple text editing skills | **I** | **R** | **M** | **R** |
| Perform basic formatting tasks including font style, color, bold, italic, underline, alignment | **I** | **R** | **M** | **R** |
| Use the delete and backspace appropriately | **I** | **M** | **R** | **R** |
| Insert graphics from Clip Art | **I** | **R** | **M** | **R** |
| Rename, move files | | **I** | **M** | **R** |
| Select and unselect text | | **I** | **M** | **R** |
| Use embedded tools; spell check & thesaurus | | **I** | **M** | **R** |
| Cut, copy, paste within a document | | **I** | **M** | **R** |
| Use page setup options | | **I** | **M** | **R** |
| Compose and edit a document with appropriate formatting | | **I** | **R** | **M** |
| Use formatting functions and numbering, indents, page breaks, margins and columns | | **I** | **R** | **M** |
| Use borders/drawing tools/graphics | | **I** | **R** | **M** |
| Insert graphics from outside source | | **I** | **R** | **M** |

| | | | | |
|---|---|---|---|---|
| Use a word processor in real world context to: write a poem, type reports, create bibliography, create outlines, letters, newspapers, and footnotes. | | I | R | M |
| Change line spacing | | | I | M |
| Change other pagination features (paper size, page orientation | | | I | M |
| Create and insert tables | | | I | M |
| **SPREADSHEET** | **K-2** | **3-5** | **6-8** | **9-12** |
| ***Students will learn and be able to:*** | | | | |
| Identify intended use | I | M | R | R |
| Create simple spreadsheets with rows and columns | I | M | R | R |
| Specify data organization | I | M | R | R |
| Enter values and labels on spreadsheet | I | M | R | R |
| Change size of cell, font attributes, and align cell contents | I | R | M | R |
| Open a save spreadsheet file and exit an application | I | M | R | R |
| Enter data in a cell, move from cell to cell | I | M | R | R |
| Select and edit data, cut, copy, paste within cells | | I | M | R |
| Insert and delete rows and columns | | I | M | R |
| Perform simple calculations within a spreadsheet | | I | M | R |
| Sort data, manipulate print attributes, remove gridlines | | I | R | M |
| Explain the rationale for choosing charts/tables or graphs to best represent data | | I | R | M |
| Determine and create appropriate types of graph to best represent data | | I | R | M |
| Incorporate graphs in word processing | | | I | M |
| Use spreadsheets to explore various formulas/functions and relationships | | | I | M |
| **PRESENTATION SOFTWARE** | **K-2** | **3-5** | **6-8** | **9-12** |
| ***Students will learn and be able to:*** | | | | |
| Open and exit presentation application | I | M | R | R |
| Create a new slide or presentation and open a saved slide or presentation | I | M | R | R |
| Create a background or layout and change order of slides | I | M | R | R |
| Cut, copy, paste within a presentation | I | M | R | R |
| Insert or delete slides | I | M | R | R |
| Arrange objects on the slide | I | M | R | R |
| Save a presentation | | I | M | R |
| Print a presentation as handouts | | I | M | R |
| Add slide transitions to the slide show | | I | M | R |
| Present presentation to an audience | | I | R | M |
| Use text special effects such as Word Art | | I | M | R |
| Insert graphics, clip art and/or digital pictures | | I | M | R |
| Add animation to text and graphics | | I | M | R |

| | | | | |
|---|---|---|---|---|
| Edit color schemes and layout arrangement | | | I | R |
| Insert movie clips and recorded sound | | | I | R |
| Edit clip art | | | I | R |
| Use presentation in a real world context to create outlines, slide shows, handouts | | | I | R |
| **DESKTOP PUBLISHING** | **K-2** | **3-5** | **6-8** | **9-12** |
| ***Students will learn and be able to:*** | | | | |
| Open and exit desktop publishing application | I | M | R | |
| Save a desktop publishing file | I | M | R | |
| Use drawing tools such as lines, boxes, and ellipses | I | M | R | |
| Use color to fill or outline | I | M | R | |
| Use text boxes | I | M | R | |
| Arrange objects on the layout | I | M | R | |
| Use graphics to enhance layout | I | M | R | |
| Print a desktop publishing project | I | M | R | |
| Cut, copy and paste objects | | I | R | M |
| Use text special effects such as Word Art | | | I | R |
| Group objects together | | | I | R |
| Layer objects | | | I | R |
| Insert a border | | | I | R |

| | | | | |
|---|---|---|---|---|
| Use column guides | | | I | R |
| Create a background | | | I | R |
| Utilize good layout techniques | | | I | R |
| Rotate objects | | | I | R |
| **DATABASE** | **K-2** | **3-5** | **6-8** | **9-12** |
| ***Students will learn and be able to:*** | | | | |
| Identify intended use | | | I | M |
| Access information from simple electronic database | | | I | R |
| Create a personal database, save and print a database | | | I | R |
| Name fields | | | I | R |
| Set field attributes | | | I | R |
| Enter and edit data | | | I | R |
| Create a database using student-collected data and generate a document to display the information | | | I | R |
| Customize a database | | | I | R |
| Sort data | | | I | R |
| Search for specific data by field | | | I | R |
| Create and print reports | | | I | R |
| Add and delete records to a file | | | I | R |

| | | | | |
|---|---|---|---|---|
| Add and delete fields to a record | | | I | R |
| Communicate and access information using a database | | | I | R |
| **WEB PAGE DESIGN** | **K-2** | **3-5** | **6-8** | **9-12** |
| Create a basic web page using a template design | | | | I |
| Create a background for a web page | | | | I |
| Add text to a web page | | | | I |
| Add graphics (still and animated) to a web page | | | | I |
| Change font attributes | | | | I |
| Create hyperlinks | | | | I |
| Understand concepts of FTP | | | | I |
| **COMPUTER NETWORKING and TELECOMMUNICATION SKILLS** | **K-2** | **3-5** | **6-8** | **9-12** |
| ***Students will learn and be able to:*** | | | | |
| Demonstrate appropriate log-in | I | M | | |
| Demonstrate appropriate use of network printing | I | M | | |
| Saving files to individual home directories | I | M | | |
| Accessing information for a directory | I | M | | |
| Access the Internet browser and maneuver around the www | I | R | M | |
| Use toolbar in the browser | I | R | M | |
| Refer to and utilize Acceptable Use Guidelines | I | R | M | |
| Enter an address to locate information | | I | R | M |
| Add sites to the favorites and manipulate folders | | I | R | M |
| Log on to the electronic mail system | | | I | M |
| Send and receive electronic mail | | | I | M |
| **TECHNOLOGY PROBLEM-SOLVING, RESEARCH, DECISION-MAKING SKILLS** | **K-2** | **3-5** | **6-8** | **9-12** |
| ***Students will learn and be able to:*** | | | | |
| Access and retrieve information from a variety of sources | | I | M | R |
| Locate information on a subject using electronic encyclopedias | | I | M | R |
| Locate information outside the library media center using online database | | I | M | R |
| Identify and differentiate between primary and secondary sources | | I | M | R |
| Identify a variety of potential sources of information | | I | R | M |
| Search the Internet by utilizing search strategies: keywords, concepts, subjects headings | | I | R | M |
| Determine the reliability of information found on an internet site | | I | R | M |
| Demonstrate information organization skills; use cut/copy/paste and downloading features to take notes from Internet sites on information in various subjects | | I | R | M |
| Differentiate among fact, opinion, propaganda, point of view, and bias of an internet site | | | I | M |

| | | | | |
|---|---|---|---|---|
| Utilize multiple search engines to locate information for research | | | **I** | **M** |
| Produce research project incorporating information retrieved from three or more different types of sources | | | **I** | **M** |
| Demonstrate information analysis skills by comparing two or more sources and identifying trends in data | | | **I** | **M** |
| Research and evaluate the accuracy and appropriateness of electronic information sources concerning real-world problems | | | **I** | **M** |
| Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems | | | **I** | **R** |