LAKELAND CENTRAL SCHOOL DISTRICT

LONG-RANGE TECHNOLOGY PLAN

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Summary and Introduction

The Lakeland Central School District continues to advance the use of technology in all aspects of instruction and operation to insure that we meet the needs of our twenty-first century learners. Eight years ago we committed resources to making Lakeland a leader in instructional technology and recognized that this goal could not be accomplished without a sweeping overhaul. We proposed and passed a bond that allowed our nine schools and administrative offices to be fully upgraded with the necessary infrastructure and equipment to meet the needs of all students and staff. Since that time, we have continued to enhance and expand that base with upgrades and additions as needed to maintain our leadership position in the county.

Lakeland has repeatedly been recognized for successful technology integration through various awards and honors. The President's Technology Award from the AASA (American Association of School Administrators) and four Pioneer Awards in five years from the Lower Hudson Regional Information Center are just a few of the accolades we have attained in recent years.

We are committed to advancing the use of technology to support our learners and we keep our eye on the horizon for new and emerging tools that support our goal.

Mission Statement

The Lakeland Central School District accepts the challenge of preparing students for a rapidly changing world, and provides the opportunity for all students to learn and succeed.

We encourage, promote and develop lifelong learning and educational excellence in a safe, secure, student-centered environment.

Our practices and policies are shaped by mutual respect, open and honest communication, ethical behavior, and personal responsibility.

Vision Statement

In order to be knowledgeable and productive members of our rapidly advancing technological world, the Lakeland Central School District is committed to the infusion of technology into all instructional and administrative programs. We recognize that technology must be a priority because it enhances and transforms our educational system and empowers all learners - both students and staff.

In the classroom, technology is a tool that improves student motivation and learning, while providing necessary skills for meeting new demands that students will face upon graduation.

For teachers, technology provides new tools for personal productivity. But more importantly, it encourages instruction that accommodates different learning styles, addresses critical thinking skills and problem solving and enables new types of learning that are collaborative and global.

The school district of today looks very different from yesterday's. Tomorrows will look different still. Lakeland must encourage and support new initiatives and think innovatively in order to keep pace and provide a dynamic environment for our learners to meet the challenges of the twenty-first century.

Current Status

Equipment and Services

At the present time, there are 2691 computers distributed throughout the buildings in the Lakeland district in the following manner:

- 4 desktop computers in each K-12 classroom (science classes have 6 computers)
- A teacher demonstration computer in each classroom connected to a large screen monitor to facilitate group instruction
- A networked printer in each classroom for both teacher and student use
- Computer controlled scientific measuring equipment for use in science laboratories
- Larger monitors, scanners, digital drawing tablets and digital cameras in art classrooms
- Midi keyboards and additional equipment appropriate for state of the art music classrooms
- VGA projectors and SmartBoards in each school building
- Laptop computers for use on fieldtrips and for classes held outside the physical building
- Scanners and digital cameras for use by staff and students in the Library/Media Centers
- Appropriate furniture as needed to support the equipment use
- Instructional and administrative servers in each building, except the Lakeland Alternative High School which shares Lakeland Copper Beech Middle School's servers through a fiber connection
- Computer labs in all buildings (secondary buildings have at least three labs)
- Assistive devices for students with special needs
- Stand alone computers in special education classrooms where specific software is required for student with special needs

Additionally, approximately 150 computers are used in administration.

All classrooms connect to a district-wide network with enhanced category 5 cabling and fiber backbones between wiring closets. Cisco switches are installed and support the infrastructure.

The district-wide network is supported through a connection of 21 servers all within a single domain/tree. All buildings are connected to each other and the Internet through T1 connections to the LHRIC (Lower Hudson Regional Information Center) with the exception of Lakeland Copper Beech Middle School and Walter Panas High School which is connected by 100mb fiber. Technicians from the LHRIC are employed to support the network, servers, switches and routers.

Program Status

To support the size of our network and installation, the district employs the following personnel:

- Director of Information Technology
- Director of Instructional Technology
- Assistant Director
- 2 network technicians (BOCES personnel)
- 5 computer aides
- 1 network/hardware technician
- 1 Webmaster

Under the current structure, the majority of training is offered in-house and is led by the Director of Instructional Technology. There are two strands of offerings under the current program: daytime classes for both the teaching and support staff and after-school and summer classes that are offered to certified staff for inservice credit. District initiatives drive the type of professional development offered.

Daytime classes for teachers are held on an as needed or on request basis. As we add new equipment to our infrastructure and enhance our resources with new software and databases, we provide staff development to

targeted curricular areas and/or grade levels, as fit. The goal is to empower teachers to use technology to enhance and enrich the curriculum while learning skills that also empower them to be more productive in their everyday classroom tasks.

Technology is ever changing, and so is our staff development program. The Instructional Technology Team (I-Team) comprising of the Director of Instructional Technology, the Director of Technology, librarians, computer facilitators, support engineers and teachers meet monthly to discuss current and future needs.

Current Budget (2007/2008)

The following is the 2007/2008 school year budget as approved by the voters in the Lakeland School District.

Item	Amount
Technical Support: Personnel (District)	$821,775
Staff Development	20,000
Computer Hardware/Repair	56,000
Supplies	63,000
Software	100,000
Contractual Services: BOCES, etc.	859,513
	$1,920,288

Proposed Budget (2008/2009)

The following is the 2008/2009 school year budget as approved by the voters in the Lakeland School District.

Item	Amount
Technical Support: Personnel (District)	$920,562
Staff Development	41,600
Computer Hardware/Repair	319,477
Supplies	76,500
Software	104,128
Contractual Services: BOCES, etc.	1,332,931
	$2,795,198

The technology infrastructure is supported through a combination of technical staff supplied by the district and through technical staff supplied by BOCES through a contract with the district. The BOCES contractual services not only include personnel costs to support the LAN operations, but also the Internet access fees and telecommunications costs for connection to the Internet and between the buildings.

Technology Objectives and Plans

Overview

The Lakeland Central School District recognizes that our educational system must provide students with the necessary tools and experiences to prepare them for the technologically advanced community they live in and for the one that will challenge them once they leave our community. In a world where information is abundant, instantaneous, and nearly effortless to attain, we must provide students with the tools to access this information (hardware), the knowledge of how to apply the tools (instruction), and, most importantly, the intellectual fuel to think critically and make rational decisions in a discriminate manner.

Our technology objectives must focus on educational goals and strategies that will help students become well-informed, imaginative and effective decision makers, capable of working collaboratively or independently. They must be able to create solutions to complex problems such as they will face in our rapidly evolving Information Age.

We must offer a program that:

- Provides an adequate and reliable infrastructure
- Provides timely resolution to technical problems
- Provides equitable access to hardware and software resources
- Is adequately funded in both hardware/software and staff development
- Provides well-designed, ongoing professional development
- Includes technology integration in all district initiatives and written curriculum

Each year we review our technology plan to insure that it continues to be relevant to our goals and objectives. We also regularly review our Acceptable Use and Internet Safety policies to insure that we provide a safe environment for our students and staff. Each new student and employee must sign off on this policy before they can log onto our network.

Equipment and Services & Relationship to District Goals

In order to effectively utilize our equipment, expansion of the infrastructure and telecommunications services will be necessary. Now that buildings are fully equipped, the current connection speeds will have to be increased to accommodate for the additional traffic that will occur. With the potential of over 500 computers in each of the secondary buildings, the existing connections will become saturated. This will call for a higher level of connectivity – most likely fiber optic connections. At the same time, the 200 plus computers at each elementary school will correspondingly result in the need for increased access speeds.

On average, a computer starts failing after five years and most warranties on equipment expire after three years. With the number of deployed computers in Lakeland, older equipment could dramatically increase the "Computer Hardware Repair" section in annual budgets. Additionally new software will require increased RAM, storage space and microprocessor speed. With these factors in mind, Lakeland began implementing a replacement schedule in the 2005-2006 school year.

Additionally, support staff will have to be added in the areas of network support, training and hardware maintenance. The district budget must be adjusted annually to accommodate these additional needs.

As our network has grown, so has our ability to use the resources to support our district goals and objectives. We are continuously looking for technology solutions to support our teachers, administrators, support staff and the community.

The New York State Learning Standards, core content curriculum and student achievement drive our technology initiatives. We have designed instructional units for all grade levels that incorporate the infusion of technology to enhance and broaden existing curriculum. These units/lessons are continually assessed to insure that they are relevant and utilize the most current technologies and incorporate best practices in twenty-first century learning.

During the current school year our district became an International Learning Styles Center and we will be hosting a Learning Styles Institute during the summer of 2008. All students in the district have taken an online assessment to ascertain their learning style so that we can tailor instruction to those styles. Since technology is a big part of teaching and learning at Lakeland, we have identified and developed specific technology solutions to help meet the needs of all learners according to their learning style. We will be showcasing these tools and solutions at the summer institute and at a Learning Styles conference in Denmark in the summer of 2008.

During the 2007-08 school year, our district was involved in a program sponsored by our local Regional Information Center revolving around a federal initiative to prepare schools for the future. The program, School 2.0, is led by Mr. Tim Magner, Director of Instructional Technology for the federal Department of Education. Mr. Magner led a focus group for two days, and was attended by our Director of Instructional Technology and one of our high school principals. According to the School 2.0 website, "School 2.0… is designed to help schools, districts and communities develop a common education vision for the future and to explore how that vision can be supported by technology." The information learned at these sessions was shared with our other high school principal and the Director of Technology and we have formed our own School 2.0 group and have involved students and teachers in the initiative. The group will examine how technology and Web 2.0 tools can be used to enhance and update our educational system to make our schools competitive in the global economy. Our team was asked to be part of a panel that presented, with Mr. Magner, at a local technology conference. The district team will continue to meet in the 2008-09 school year to continue the dialog and to conduct research on emerging technologies and their potential impact on education. As we move forward in our technology planning, this group will complement the Instructional Technology Team, or will be merged with it, in order to develop a shared vision for our schools, district and community.

Our community continues to drive our programs and initiatives. We have been fortunate to have a community that supports our budgets year after year and that supports our efforts to keep Lakeland at the forefront of technology infrastructure and implementation. We have had a strong web presence for many years but aim to bolster that positron with new tools that have recently become widely available and affordable. We hired a full time webmaster who has been researching various web solutions. As a result, we recently signed with a new vendor who offers a dynamic and robust content management system which will allow us to greatly expand what we can do with our website as a powerful communication tool. The new system will be introduced during the 2008-09 school year and will greatly expand our communication capabilities.

Staffing and Training

The deployment of new hardware must coincide with a comprehensive professional development plan that meets the needs of all district employees: administrators, teachers, and support staff. The goal common to these groups is identical: the effective utilization of the relevant tools that empower individuals to be productive, efficient, and creative in their work. The district consistently allocates funds in our operating budget to insure that we can provide a comprehensive professional development program in technology. Some of this is budgeted in the form of salaries and some in a targeted budget line that allows for stipends for teacher/trainers, substitutes for teachers who are attending professional development session, funds for conferences and workshops and stipends to bring in speakers and facilitators.

When hiring new staff, they are expected to demonstrate knowledge of and skill in the specific technologies relevant to their position.

The different employees have quite different needs in terms of what tools they need to employ and master, and how they use the tools to advance and transform our system.

Administrators

Leadership plays a key role in successful school reform. In order to foster an environment and culture that is conducive to successful technology integration, we look to our administrators to set the example and provide the vision for its success in Lakeland. Proactive leaders who demonstrate the willingness to embrace and

encourage continuous innovation provide the momentum needed to move our teachers forward with technology-enriched learning environments.

With these goals in mind, Lakeland provides ongoing professional development for administrators that focuses on the following:

- Our new student management system, eSchool (being introduced in Sept. 2008)
- Our new website content management system, School World (being introduced in Sept. 2008)
- MyLearningPlan, the web-based professional development tracking tool (introduced in June 2008)
- Data-driven decision making
- Office applications
- Best practices for technology integration in the classroom
- Apple computer technology, specifically podcasting, a new initiative during the 2007-08 school year
- Emerging technologies

Staff development is offered:

- by the district's Director of Instructional Technology
- by the district's Webmaster
- by BOCES personnel
- by our district's curriculum chairpersons, through their data analysis workshops
- by Information Technology Aides for on-site troubleshooting and support
- by outside vendors, when necessary
- through our participation in the Technology Leadership Institute through the Lower Hudson Regional Information Center
- through participation in local technology conferences

We devote time at our Administrative Retreat to technology and data analysis initiatives. Additional training sessions are planned and scheduled at administrative meetings, after discussion of needs and new initiatives.

Support Staff

The support staff provides the backbone of our administrative infrastructure. They keep our schools running smoothly and efficiently, provide accurate and timely communications to the outside world, and maintain accurate data in order for the district to run productively.

Lakeland provides ongoing professional development for support staff that focuses on the following:

- Management systems relevant to job (eSchool, Finance Manager, IEP Direct, etc.)
- Productive use of office applications relevant to job
- Internet access for retrieval of information relevant to job

This training is provided by:

- Director of Instructional Technology
- BOCES personnel, when appropriate
- Other outside vendors
- Information Technology Aides for on-site troubleshooting and support

The training is offered as daytime classes, one-on-one support, and customized classes, based on need. Occasional surveys are conducted to assess the needs of the individual departments, schools, and individuals.

Certified (Teaching) Staff

Our teachers are the key to transforming computers and peripherals into useful teaching tools. They guide the instruction and shape the instructional context in which technology is used. Teachers must be

comfortable with technology in order to apply it appropriately so that students gain from its inclusion in the mix of tools used in today's classroom.

The training provided to teachers helps them develop a vision that is built on the understanding that technology is a tool that can offer solutions to longstanding teaching and learning problems. They are encouraged to "think with technology" in order to approach old problems in new ways.

With the formation of the district's Instructional Technology Team several years ago, the professional development program for certified staff has been greatly expanded. The team consists of approximately 40 staff members from all buildings and includes administrators, librarians, teachers, and support staff. All grade levels and disciplines are represented. A primary goal of the team is to develop and implement a comprehensive staff development plan for technology integration in the classroom. The members of this team serve as peer leaders and coaches in their respective buildings, providing information, answering questions, and serving as liaisons between the buildings and district office technology personnel (Director of Instructional Technology and Director of Technology).

The team is committed to a program that not only deals with how to use technology tools, but also how to implement learning environments that effectively leverage these technology tools in today's changing world.

In order to successfully integrate the new tools into the existing curriculum the team has developed a set of Technology Benchmarks for Students (attached). These benchmarks provide a framework for teachers to incorporate technology into their lessons. As technology changes, these benchmarks must be modified and that is a goal of the Instructional Technology Team for the 2008-09 school year.

Through the efforts of the Instructional Technology Team, technology staff development is offered on Superintendent's Conference Days and on extended days when teachers are required to attend additional hours for professional development. These offerings allow staff members to take advantage of training opportunities during their contractual day.

In summary, the professional development for the teaching staff focuses on the following:

- Mastery of new web-based programs such as eSchool, MyLearningPlan, School World, etc.
- Skills required to insure that students master the Technology Benchmarks
- Curriculum integration
- Best usage and application of tools available in the district (ie, SMART Boards, Apple laptops, digital cameras, etc.)
- Use of technology to address other district goals (ie, Learning Styles, Literacy Across Content Areas, etc.)

The providers of the staff development are:

- Director of Instructional Technology
- BOCES staff
- Webmaster
- Information Technology Aides for troubleshooting and answering questions and addressing concerns
- Instructional Technology Team members
- Certified staff members who have demonstrated exemplary technology integration initiatives in their classroom
- Vendors

The staff development takes place:

- On Superintendent's Conference Days and extended days
- After school during inservice classes
- In one-on-one sessions, as requested
- In after-school mini-sessions
- During daytime classes, as scheduled by the Director of Instructional Technology

School Budget

Being a public school in New York State, operational budgets are prepared annually and presented to the voters for approval. Each year, during the implementation of this plan, the annual budget will be reviewed to accommodate the growth in the number of computers that are put into place, the necessary supplies, support services needed to keep the computers in operation, and the growth in infrastructure operational costs due the increase in technology usage.

Current Implementation

Each of our schools currently has the following number of computers:

School	Classrooms	Computers
Ben Franklin Elem.	39	225
George Washington Elem.	32	204
Lincoln-Titus Elem.	31	197
Thomas Jefferson Elem.	31	196
Van Cortlandtville Elem.	52	247
Lakeland Copper Beech Middle	98	623
Lakeland High School	77	473
Walter Panas High School	67	461
Lakeland Alternative High School	5	25

Additionally, each classroom has a network printer.

Equipment Implementation History/Plan

Building (or area)	Approximate Dates
Lakeland Copper Beech Middle School	spring, 2001; summer 2006
Lakeland Alternative High School	spring, 2001; summer 2008
Lakeland High computer labs	summer, 2001; summer 2005
Walter Panas High computer labs	summer, 2001; summer 2005
Lincoln-Titus Elementary	fall, 2001; summer 2007
Van Cortlandtville Elementary	fall, 2001; summer 2007
George Washington Elementary	winter, 2002; summer 2007
Ben Franklin Elementary	spring, 2002; summer 2007
Thomas Jefferson Elementary	spring, 2002; summer 2007
Lakeland High classrooms	fall, 2002; summer 2008
Walter Panas High classrooms	fall, 2002; summer 2008
Specialty subject areas (Art, Music, etc.)	spring, 2003; summer 2008

Equipment Replacement Schedule (Proposed)

The Lakeland voters in the form of annual budgets ultimately determine the actual installation of replacement equipment into classrooms. Possible fund sources include yearly IPA (Installment Purchase Agreement) through BOCES or a new bond referendum. Exact equipment will be assessed annually through the "Evaluation Process". At the present time, the following equipment replacement schedule is presented using original installation dates and warranty expiration.

Building (or area)	Approximate School Year
All elementary computer labs (5)	2004-2005
All secondary administrative servers (4)	2004-2005
Estimated number of computers	**125**
Lakeland Copper Beech Middle School computer labs (3)	2005-2006

Lakeland High computer labs (3)	2005-2006
Walter Panas High computer labs (3)	2005-2006
All elementary instructional servers (5)	2005-2006
Estimated number of computers	**410**
Lakeland Copper Beech Middle School classrooms	2006-2007
All secondary instructional servers (4)	
Estimated number of computers	**410**
Lincoln-Titus Elementary	2007-2008
George Washington Elementary	2007-2008
Thomas Jefferson Elementary	2007-2008
Benjamin Franklin Elementary	2007-2008
Van Cortlandtville Elementary	2007-2008
Estimated number of computers	**1100**
Walter Panas High School	2008-2009
Lakeland High School	2008-2009
Lakeland Alternative High School	2008-2009
Estimate number of computers	**980**
Lakeland Administration	2009-2010
Lakeland Transportation	2009-2010
All secondary instructional servers (3)	2009-2010
All district office servers (2)	2009-2010
Infrastructure Updates	2009-2010
Estimate number of computers	**200**
Revaluate and Repeat Replacement based on above schedule	2010-2011

A percentage of the retired equipment will be stored for the purpose of replacing any equipment that is off warranty and fails. This equipment will be used as a temporary stopgap until the equipment is replaced based in the schedule above. The process will save Lakeland on replacement parts on outdated equipment.

Wide Area Network Upgrades (Proposed)

As more equipment and resources are placed on the district wide network, Internet access has become saturated. It is necessary to assess Internet line usage on a regular basis in order for future planning. The Lakeland school district currently uses Southern Westchester BOCES as its Internet provider.

Building	Current	Upgrade	School Yr.
Lakeland Copper Beach MS	100mb (fiber)	100mb (fiber)/DW Fiber	2007-2009
Benjamin Franklin Elementary	T1	DW Fiber	2007-2009
George Washington Elementary	T1	DW Fiber	2007-2009
Lincoln Titus Elementary	T1	DW Fiber	2007-2009
Thomas Jefferson Elementary	T1	DW Fiber	2007-2009
Van Cortlandtville Elementary	T1	DW Fiber	2007-2009
Lakeland High	T1	DW Fiber	2007-2009
Walter Panas High	100mb (fiber)	100mb (fiber)/DW Fiber	2007-2009

By the end of 2009 the district will have all building connected by fiber with gigabit speed.

Emerging Technologies and Considerations

New technologies are emerging regularly. These are evaluated in the context of our district and educational goals to see how they support district initiatives. The Lakeland community, through the normal budget process, will ultimately determine what new technologies to include in the budget to support instruction. New equipment can be funded by various means, including yearly IPA's (Installment Purchase Agreement) through BOCES or a new bond referendum. Exact equipment will be assessed annually through the "Evaluation Process".

Current Considerations

One to One Laptop Initiative – The district is doing a feasibility study during the 2008-09 school year to assess the value of a 1:1 laptop program for our high school students. A group of teachers and administrators began this work during the 2007-08 year with a visit to a local district with such a program in place. We recognize that every student will have some kind of portable device eventually, and we want to be prepared with the best solution early on. We are preparing teachers for this inevitability by providing all high school teachers with a laptop, rather than a desktop computer for the 2008-09 school year. This will ensure that the teaching staff is comfortable with the technology before rolling it out to students at a later date. Research has shown that providing teachers with adequate time and staff development in such ventures paves the way to success with a full implementation.

District-wide Wireless Internet Access – To prepare for the inevitability of a 1:1 situation at some point in the future, we are preparing the high schools with wireless infrastructure during the 2008-09 school year. All high school teachers will have a laptop during this year and they will be wireless compatible, so we strive to have an infrastructure in place by the end of the year that will allow them to connect wirelessly from any location in our high schools.

Wireless laptop lab carts – A pilot program was implemented during the 2005-2006 school year. A mobile cart of 24 wireless laptops was installed at Lakeland High School. With the success of this pilot the district purchased an additional cart for Lakeland High School and also incorporated an Apple laptop cart at each elementary during the 2007-2008 school year. During the 2008-2009 school year, the district will be purchasing a cart for each major subject area at the high school level. By adding additional building carts we will be creating a lab within the classroom environment.

Classroom Smartboards – SMART Boards were introduced during the 2005-2006 school year. Currently, there are 54 SMART Boards in the district, some mounted in classrooms and some portable models for sharing amongst the teaching staff. The 77" touch screen white board creates an interactive classroom. The success of the pilot has driven the district to add more SMART Boards each year, through an application process. We added 18 SMART Boards during the 2007-08 school year and will add 40 during the 2008-09 year. Teachers compete for these SMART Boards through a competitive application process and are expected to be leaders and turnkey trainers if they are successful in their application. They also become the evaluators of future applications.

Student Information System upgrade – An updated version of the district's current Student Information System is being implemented during the 2008-09 school year. During the 2007-2008 school year the district trained staff in the new system and used it to develop the schedule for the next year. Features of the new system include an integrated teacher gradebook and on-line parent communications portal. With the new software, parents will be able to see their child's progress in real-time, including attendance, discipline referrals, interim reports and report card information. The update will eliminate the need for teachers to learn and use three different applications to provide the same parent communication. Through the use of an all-encompassing application the district will save approximately $20,000 annually on applications that will no longer be needed.

Additional Digital Surveillance – Security of our students, staff and visitors is a top priority. During the 2008-2009 school year, updated replacement surveillance servers are being install.

Video Production – During the 2007-2008 school year the district added a video production studio at Lakeland High School. This studio will be used for student instruction during the 2008-09 school year, similar to the way Walter Panas High School's studio is used. Television broadcasts for the Yorktown side of the district will be developed and shown from this location. In addition, the Board of Education room at the District Office was renovated during the 2007-08 school year, and was equipped with state-of-the-art video production equipment to enhance our public broadcasts of board meetings.

Black Fiber Infrastructure – During the 2007-2008 school year the district will be requesting an RFP for a district wide black fiber project. This project entails connecting all buildings within the district with a fiber backbone. When this project is complete, the district will be one large campus. This will allow the district to consolidate resources, saving the district money over time. Also, the district will be able to offer "distance learning" classes where students from one building can take a class offered in another.

Future Considerations

Instruction driven software (on-going)
Administrative software (on-going)
IP telephony
Video on-demand

Current Considerations – Financial Implications (estimated)

Project	Est. Cost	Possible Funding Sources
Replacement Plan - annual	$500,000 – $750,000	IPA, BOCES aid, district funds
Wireless Mobile Carts	$25,000 per cart	IPA, BOCES aid, district funds
"Smart Board" Technology	$4,000 per room	IPA, BOCES aid, district funds
Video Production	$100,000	district funds
Black Fiber Infrastructure	$200,000	BOCES aid, district funds
Student Information System upgrade	$140,000	IPA, BOCES aid, district funds
Additional Digital Surveillance	$50,000	district funds, BOCES aid

- Currently, BOCES aid is approximately 50%
- A bond referendum is a possible funding source for all considerations

Evaluation Process

The implementation of a large-scale technology initiative such as the one Lakeland has undertaken requires that the process be evaluated on a continuing basis. Not only is the technology advancing and changing as rapidly as we can implement what is "current," but also the instructional models that are being used to integrate technology into instruction are developing and evolving as quickly as we can adopt them. Planners need to strategize and look ahead to what is coming as well as to look back on what has been done to adapt and learn from past successes and failures.

The Instructional Technology Team provides valuable data and input regarding our program's implementation and impact. As the team represents all buildings and includes not only teachers, but also administrators, the feedback is broad-based, local and honest.

Meetings, with clear agendas and goals, will continue to be held on a regular basis. New representatives to the team are solicited each school year.

Other administrators, through classroom observations, and discussions at administrative and staff meetings, can provide additional information that moves us forward and causes us to rethink strategies as we proceed with our technology plan.

In the fall the team conducts a widespread staff development needs assessment. The vehicles used in the assessment include a combination of surveys, faculty meetings, grade level meetings and one-on-one informal

contacts. While surveys do provide valuable data in terms of what is needed, by whom and in what form, more informal methods often provide a better gauge to assess our progress in meeting the training needs of the professional staff.

In order to begin to assess how technology impacts student performance, we must insure that it is being utilized equally across the district. Our program can be easily and equitably adopted by teachers in all buildings, in all classrooms. The adoption of the Technology Benchmarks for Students helps us attain the implementation of the program district-wide. With clear expectations for technology's use, the impact on student learning should be evident.

The Director of Instructional Technology meets with and works with different grade levels to produce lessons/activities that support the benchmarks. These activities support the current curriculum and are available to all teachers on-line as they are completed.

All teachers are expected to demonstrate in at least one of their formal classroom observations that they are integrating technology into their curriculum in a meaningful manner. Through the administrators' training initiatives we insure that standards for achieving this effective integration are clear and consistent district-wide.

With these benchmarks and the accompanying lessons/activities in place, accountability for implementation is facilitated. The Instructional Technology Team conducts formal and informal surveys to assess the adoption and implementation of the benchmarks.

Our webpage provides evidence that our technology planning and implementation are successful and meet the needs of all of our learners. We publish projects, student work, podcasts and our technology benchmarks on our webpage and this work is a testament to our commitment to technology as a learning tool and the importance it plays in our instruction.

The budget process begins early, and therefore forces us to assess the effectiveness of funds allocated for technology. Input from the Instructional Technology Team's formal and informal assessments helps us to appraise the adequacy of our funding in different areas: technical support, software, staff development, supplies, etc. Together with real data from our Business Administrator, we are able to make adjustments as we approach each fiscal year.

Above all, we must be visionaries and prepare ourselves for the changes we know will come with each year. New technologies are emerging that will force us to regroup, to rethink, and to be flexible and face new decisions with pliancy.

We look forward to these challenges, as they keep our system alive and vibrant.

I = Introduced	D = Developing	U = Utilized

Lakeland School District Technology Benchmarks for Students	Student Standards by Grade Level K 1 2 3 4 5 6 7 8 9 10 11/12
I: The student is an information navigator.	
A. Information Acquisition: Use online and electronic resources to communicate, collaborate, and retrieve information	
1. Use the Internet and other electronic resources for research and digital media retrieval	I I I D D D U U U U U
2. Use electronics to communicate and collaborate with others. For example, communicate with outside groups, classes, and experts via e-mail, the Internet and/or video conferencing	I I I D D D D D U U U
II: The student is a critical thinker and analyzer using technology.	
A. Source Verification: Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems	
1. Evaluate and critique the quality and credibility of electronic information	I I D D D D U U
-	K 1 2 3 4 5 6 7 8 9 10 11/12
III: The student is a builder of knowledge using technology, media and telecommunications.	
A. Input and Output Devices: Use input and output devices to successfully use modern technologies	
1. Use a variety of input and output devices such as keyboards, scanners, cameras, microphones, printers, projectors, CD-ROMs	I I I I D D D D D U U U
B. Productivity Tools: Use a variety of technology resources and applications to facilitate learning throughout the curriculum and support personal, academic and professional productivity	
1. Use word processing applications	I I I D D D D U U U U
2. Use spreadsheet applications	I I I I D D D D

---	3. Use database applications								I	I	D	D
	4. Use draw and paint applications	I	I	D	D	D	D	D	D	U	U	U	U
	5. Integrate two or more applications				I	I	D	D	D	U	U	U	U
-		K	1	2	3	4	5	6	7	8	9	10	11/12
IV: The student is an effective communicator through a variety of appropriate technologies/media.													
--- --- --- -	**A. Publishing:** Design, develop, publish, and present multimedia and online products using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom												
-------- -------- ---	1. Create multimedia and/or online projects			I	I	I	D	D	D	D	D	D	U
	2. Present multimedia and/or online projects to audiences inside and outside the classroom			I	I	I	D	D	D	D	D	D	U
	3. Print, post, publish and/or distribute technology products	I	I	I	D	D	D	D	D	D	U	U	U
-		K	1	2	3	4	5	6	7	8	9	10	11/12
V: The student is a discriminating selector of appropriate technology for specific purposes.													
--- --- --- -	**A. Tool Selection and Use:** Determine when technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems.												
-------- -------- ---	1. Make appropriate technology resource choices according to learning purposes and outcomes					I	I	D	D	D	U	U	U
-		K	1	2	3	4	5	6	7	8	9	10	11/12
VI: The student is a technician.													
--- --- --- -	**A. Terminology and Usage:** Understand and communicate, using accurate terminology, common uses of technology in daily life and the advantages and disadvantages those uses provide												
-------- -------- ---	1. Demonstrate an understanding of terminology related to technology	I	I	I	D	D	D	D	U	U	U	U	U
--- --- --- -	**B. Basic Operations and Networking:** Understand and effectively utilize a networked computer system												

---	1. Access, print, save and retrieve resources using the network		I	I	I	I	I	D	D	U	U	U	U
---	2. Use basic operating system features. For example, using help menus and control panels				I	I	D	D	D	U	U	U	U
---	**C. Troubleshooting:** Apply strategies for identifying and solving routine hardware and software problems												
---	1. Employ basic technology troubleshooting and maintenance techniques				I	I	I	D	D	D	D	D	D
VII: The student is a responsible citizen, worker, learner, community member and family member in a technological age.													
---	**A. Ethics:** Advocate and apply positive social and ethical behaviors when using technology and identify the consequences of misuse												
---	1. Understand and apply the basic workings of the copyright law and appropriate usage of materials, including citing resources				I	I	D	D	D	D	U	U	U
---	2. Demonstrate appropriate behavior for technology use and show respect for technology equipment	I	I	D	D	D	D	D	D	U	U	U	U
---	3. Apply and advocate the Lakeland School District Acceptable Use Policy	I	I	D	D	D	D	D	D	U	U	U	U
---	**B. Adapting to Changes in Technology:** Demonstrate knowledge of and make informed choices among technology systems, resources, and services. Assess the advantages and disadvantages of these systems in the workplace and in society as a whole												
---	1. Understand the relationship that technology has to career opportunities, history, and to today's society and world				I	I	I	I	I	D	D	D	D

Acknowledgment: We wish to thank the Kent School District in Kent, Washington for providing the model on which we built our Technology Benchmarks for Students. They created an excellent framework, which we modified and adapted to our own goals. Permission was granted by Kent to use their Technology Learning Outcomes with our modifications.

Lakeland Central School District