I. PROGRAM DESCRIPTION

A. Overview

Computers along with software are tools to be used to stimulate thinking: for learning, creativity, productivity, research, communications, and entertainment.

As a learning tool, computers can help to develop skills, offer private tutoring, and allow children to experiment and investigate concepts through simulations, virtual education and online courses.

As a creativity tool the computer provides access to a large color palette and drawing tools. Graphics software offers students an array of tools so that is easier for them to express and explore their creativity in drawing pictures and producing visually interesting reports and presentations.

As a productivity tool, a computer can help students work more efficiently. Word processors, spreadsheets, and data base programs help them to organize their thoughts and revise their work as well as prepare for the world of work.

As a research tool, the computer offers the students access to information beyond that contained in the library. They can access information from on-line services as well as that available within CD-ROM technology. In addition to research analysis and organization, graphing and charting software is available to help organize and present the information gathered.

As a communications tool, the computer can assist the students in presenting written and/or visual information as well as enabling them to share this with other students electronically.

As an entertainment tool, the computer can entertain children with software that is fun as well as educational in nature.

It is the goal of this curriculum to enable the students to attain the necessary knowledge base to use the computer and its software to lend them support in various academic areas. It is important that the students acquire the ability to determine when to use appropriate tools to assist them in solving problems and performing activities.

Overriding all the tools and advantages of the computer system is a primary concern of this curriculum: safety. At every level of the curriculum is woven the concept of safety: on the Internet, in chat rooms, with email in all contacts. These guidelines will allow the students to accumulate more information about the computer as a tool, the use of the Internet with safe practices and technology together bringing classrooms into the 21st century.

II. GOALS

A. National

1. NT.K-12.1Basic Concepts and Understanding

Students demonstrate a sound understanding of the nature and operation of technology systems. Students are proficient in the use of technology.

2. NT.K-12.2 Social, Ethical and Human Issues

Students understand the ethical, cultural, and societal issues related to technology. Students practice responsible use of technology systems, information, and software. Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

3. NT.K-12.3 Technology Productivity Tools

Students use technology tools to enhance learning, increase productivity, and promote creativity. Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

4. NT.K-12.4 Technology Communication Tools

Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences. Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

5. NT.K-12.5 Technology Research Tools

Students use technology to locate, evaluate, and collect information from a variety of sources. Students use technology tools to process data and report results. Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

6. NT.K-12.6 Technology Problem-Solving and Decision-Making Tools

Students use technology resources for solving problems and making informed decisions. Students employ technology in the development of strategies for solving problems in the real world.

B. State Technology Goals

STANDARD 8.1 (COMPUTER AND INFORMATION LITERACY) ALL STUDENTS WILL USE COMPUTER APPLICATIONS TO GATHER AND ORGANIZE INFORMATION AND TO SOLVE PROBLEMS.

Strands and Cumulative Progress Indicators

By the end of Grade 4, students will:

A. Basic Computer Skills and Tools

1. Use basic technology vocabulary.

2. Use basic features of an operating system (e.g., accessing programs, identifying and selecting a printer, finding help).

3. Input and access text and data, using appropriate keyboarding techniques or other input devices.

4. Produce a simple finished document using word processing software.

5. Produce and interpret a simple graph or chart by entering and editing data on a prepared spreadsheet template.

6. Create and present a multimedia presentation using appropriate software.

7. Create and maintain files and folders.

8. Use a graphic organizer.

9. Use basic computer icons.

B. Application of Productivity Tools

Social Aspects

1. Discuss the common uses of computer applications and identify their advantages and disadvantages.

2. Recognize and practice responsible social and ethical behaviors when using technology, and understand the consequences of inappropriate use including:

- Internet access
- Copyrighted materials
- On-line library resources
- Personal security and safety issues

3. Practice appropriate Internet etiquette.

4. Recognize the ethical and legal implications of plagiarism of copyrighted materials.

Information Access and Research

5. Recognize the need for accessing and using information.

6. Identify and use web browsers, search engines, and directories to obtain information to solve real world problems.

7. Locate specific information by searching a database.

8. Recognize accuracy and/or bias of information.

Problem Solving and Decision Making

9. Solve problems individually and/or collaboratively using computer applications.

10. Identify basic hardware problems and solve simple problems.

Building upon knowledge and skills gained in preceding grades, by the end of Grade 8, students will:

A. Basic Computer Skills and Tools

1. Use appropriate technology vocabulary.

2. Use common features of an operating system (e.g., creating and organizing files and folders).

3. Demonstrate effective input of text and data, using touch keyboarding with proper technique.

4. Input and access data and text efficiently and accurately through proficient use of other input devices, such as the mouse.

5. Create documents with advanced text-formatting and graphics using word processing.

6. Create a file containing customized information by merging documents.

7. Construct a simple spreadsheet, enter data, and interpret the information.

8. Design and produce a basic multimedia project.

9. Plan and create a simple database, define fields, input data, and produce a report using sort and query.

10. Use network resources for storing and retrieving data.

11. Choose appropriate electronic graphic organizers to create, construct, or design a document.

12. Create, organize and manipulate shortcuts.

B. Application of Productivity Tools

Social Aspects

1. Demonstrate an understanding of how changes in technology impact the workplace and society.

2. Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse.

3. Explain the purpose of an Acceptable Use Policy and the consequences of inappropriate use of technology.

4. Describe and practice safe Internet usage.

5. Describe and practice "etiquette" when using the Internet and electronic mail.

Information Access and Research

6. Choose appropriate tools and information resources to support research and solve real world problems, including but not limited to:

- On-line resources and databases
- Search engines and subject directories

7. Evaluate the accuracy, relevance, and appropriateness of print and non-print electronic information sources.

Problem Solving and Decision Making

8. Use computer applications to modify information independently and/or collaboratively to solve problems.

9. Identify basic hardware problems and demonstrate the ability to solve common problems.

10. Determine when technology tools are appropriate to solve a problem and make a decision.

STANDARD 8.2 (TECHNOLOGY EDUCATION) ALL STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE NATURE AND IMPACT OF TECHNOLOGY, ENGINEERING, TECHNOLOGICAL DESIGN, AND THE DESIGNED WORLD AS THEY RELATE TO THE INDIVIDUAL, SOCIETY,

AND THE ENVIRONMENT.

Strands and Cumulative Progress Indicators

By the end of Grade 4, students will:

A. Nature and Impact of Technology

STANDARD 5.2 (SCIENCE AND SOCIETY) ALL STUDENTS WILL DEVELOP AN UNDERSTANDING OF HOW PEOPLE OF VARIOUS CULTURES HAVE CONTRIBUTED TO THE ADVANCEMENT OF SCIENCE AND TECHNOLOGY, AND HOW MAJOR DISCOVERIES AND EVENTS HAVE ADVANCED SCIENCE AND TECHNOLOGY.

A. Cultural Contributions

1. Describe how people in different cultures have made and continue to make contributions to science and technology.

B. Historical Perspectives

1. Hear, read, write, and talk about scientists and inventors in historical context.

STANDARD 5.4 (NATURE AND PROCESS OF TECHNOLOGY) ALL STUDENTS WILL UNDERSTAND THE INTERRELATIONSHIPS BETWEEN SCIENCE AND TECHNOLOGY AND DEVELOP A CONCEPTUAL UNDERSTANDING OF THE NATURE AND PROCESS OF TECHNOLOGY.

1. Distinguish between things that occur in nature and those that have been designed to solve human problems.

B. Nature of Technology

1. Demonstrate how measuring instruments are used to gather information in order to design things that work properly.

C. Technological Design

1. Describe a product or device in terms of the problem it solves or the need it meets.

2. Choose materials most suitable based on their characteristics to make simple mechanical constructions.

3. Use the design process to identify a problem, look for ideas, and develop and share solutions with others.

B. Design Process and Impact Assessment

See above

C. Systems in the Designed World

See above.

Building upon knowledge and skills gained in the preceding grades, by the end of Grade 8, students will:

A. Nature and Impact of Technology

1. Describe the nature of technology and the consequences of technological activity.

2. Describe how components of a technological product, system, or environment interact.

3. Describe how one technological innovation can be applied to solve another human problem that enhances human life or extends human capability.

4. Describe how technological activity has an affect on economic development, political actions, and cultural change.

5. Explain the cultural and societal effects resulting from the dramatic increases of knowledge and information available today.

B. Design Process and Impact Assessment

1. Demonstrate and explain how the design process is not linear.

2. Use hands on activities to analyze products and systems to determine how the design process was applied to create the solution.

3. Identify a technological problem and use the design process to create an appropriate solution.

4. Describe how variations in resources can affect solutions to a technological problem.

5. Select and safely use appropriate tools and materials in analyzing, designing, modeling or making a technological product, system or environment.

C. Systems in the Designed World

1. Explain technological advances in medical, agricultural, energy and power, information and communication, transportation, manufacturing, and construction technologies.

2. Explain reasons why human-designed systems, products, and environments need to be monitored, maintained, and improved to ensure safety, quality, cost efficiency, and sustainability.

3. Explain the functions and interdependence of subsystems such as waste disposal, water purification, electrical, structural, safety, climatic control, and communication.

III. COURSE OF STUDY-OUTLINE

1. General Objective Statement – The objectives for each grade level are limited to those experiences, skills, and knowledge's that are newly introduced at that grade level. It should be noted that areas introduced previously to a particular grade are reinforced by subsequent grade levels.

2. Grades Kindergarten, First and Second

a) Purpose: This unit introduces the student to the world of computers. It is designed to provide the student with background information on what computers, basic functions, and safe use, the use of the computer as a productivity tool, beginning research, and problem solving.

b) Objectives

(1) The student will become aware of the technological community and the application implication of computers in today's society.
(2) The student will become aware of the basic structure of computer systems, how it processes information and how to use the operating system.
(3) The student will become familiar with and practice using a keyboard, mouse, hard drive, and disk.
(4) The student will acquire experience in the use of a computer as a word processor, an illustrator and a desktop publisher.
(5) The student will become familiar with saving and organizing material.
(6) The student will experience different types of computer programs and learn to evaluate them

c) Course Outline.(See Scope and Sequence for more details)

(1) Getting to know the computers
   1. Explain why computers need hardware and software and differentiate between them.
   2. Identify and explain the major parts of a computer system.
   3. List and describe various input/output devices.and begin to practice the proper care and handling of hardware and software.

4. Describe and practice saving data...
5. Practice mouse movements.

(2) Use the operating system.
(3) Identify and use proper keyboarding techniques
(4) Become familiar with different types of applications
(5) Beginning Desktop Publishing
1. Become familiar with desktop publishing in the form of letterheads, greeting cards, signs, banners, and calendars
2. Use and export graphics in written material.
(6) Beginning word processing.
1. Describe the purpose and uses of word processing software.
2. Describe and use basic features and functions of word processing.
(7) Become familiar with a graphics program, and drawing to create a picture of personal design.
1. Produce and illustrate a piece of creative writing.
(8) Internet Use
1. Safety Issues
2. Reliable web sites
3. Ethics and use

3. Grades 3, 4 and 5

a) Purpose: This unit enables the student to refine the basic word processing and desktop publishing skills learned at the previous level and use the advanced functions: including a publishing program with which they will produce a newsletter. Painting will be used to create illustrations and designs.

b) Objectives

(9) The student will refine the keyboarding skills.
(10) The student will experience different types of computer programs and learn to evaluate them.
(11) The student will acquire experience in advance functions of word processing and desktop publishing.
(12) The student will become familiar with using a paint program to construct individual creations.
(13) The student will become familiar with the techniques of copying and pasting pictures with and without the clipboard.

c) Course Outline(See Scope and Sequence for more details)

(14) Refining skills and knowledge
1. Use proper keyboarding techniques and build speed.
2. Become familiar with different types of applications.
3. Review of skills: insert, delete, spell check, line space
4. create new document, change font, style and size,
5. moving group of words.

6. Review use of operating system and disk organization.

(15) Word processing and painting
1. Become familiar with a painting program to create a full color picture of personal design
2. Use advanced functions of word processing; such as, outline, footnotes, bibliographies, search and replace move

(16) Desktop Publishing
1. Copy and paste pictures within and between documents (using the clipboard).
2. Use desktop publishing to layout a newspaper or brochure.

(17) Research
1. Conceptualize key ideas to formulate search strategies to enhance research skills.
2. Become familiar with and use a variety of computerized reference materials.
3. Become aware of the ethical issues involved with computer use, software, and networks.

(18) Spreadsheet
1. Identify typical applications of spreadsheets.
2. Fill in spread sheets.
3. Create, compile and analyze a survey using spreadsheets and graphing programs.

4. Grade 6, 7 and 8

a) **Purpose:** The students are introduced to the computer as a productivity and research tool. The students will use various computerized research tools and hands on instruction in computer applications, including spreadsheet and data base management programs. Desktop publishing and graphics programs will also be explored. This unit enables the student to use computer applications in integrating projects requiring word processing, data base management, spreadsheet and graphing, and graphics. The students will use telecommunications systems. Multimedia will be used and the students will receive hands on experience in creating multimedia presentations.

a. **Objectives**

(1) The student will experience different types of computer programs and learn to evaluate them.
(2) The student will acquire experience in the use of a computer to do database and spreadsheet.
(3) The student will enhance research skills be developing the ability to use a variety of computerized reference materials.
(4) The student will understand the difference between graphics and graphing programs and use both.

(5) The student will acquire experience in using a desk-top publishing program to layout a newspaper; including, ads, illustrations, headlines, and stories.
(6) The student will acquire knowledge and experience in the function of modems and telecommunications software and information services.
(7) The student will become aware of the importance of eth**ics** in accessing and manipulating information and be able to identify the consequences of illegal use of hardware and software.
(8) The student will understand multimedia and the vocabulary.
(9) The student will design and produce a multimedia presentation. The student will refine the keyboarding skills.

b) **Course Outline(See Scope and Sequence for more details)**

(1) Refining skills and knowledge
    1. Use proper keyboarding techniques and build speed.
    2. Become familiar with different types of applications.
    3. Reviewing word processing skills.
    4. Review use of operating system and disk organization
    5. Refine desktop publishing skills.
(2) Data Base
    1. Define data bases, their applications and construction.
    2. Create and use a data base including keyword searches and logic operations.
(3) Spreadsheet
    1. Identify typical applications of spreadsheets.
    2. Construct spreadsheets.
    3. Create, compile and analyze a survey using spreadsheets and graphing programs.
(4) Research
    1. Conceptualize key ideas to formulate search strategies to enhance research skills.
    2. Become familiar with and use a variety of computerized reference materials.
    3. Become aware of the ethical issues involved with computer use, software, and networks.
(5) Desktop Publishing
    1. Identify steps in layout; including, text, graphics use of space, print size, and different fonts.
    2. Develop research, information handling, and writing skills using group work.
(6) Telecommunications
    1. Operate a telecommunications system
    2. Use a telecommunications system in conjunction to gather data for projects.
    3. Become aware of the ethical issues involved with telecommunications and databases.

4. Become aware of the importance of privacy, data integrity and ethics when using computers.
5. Identify the consequences of illegal use of software and data.

(7) Multimedia

1. Understand what hypermedia is and its vocabulary.
2. Study examples of multimedia, its advantages and its uses.
3. Use a scanner and a camera to import graphics.
4. Import sounds from disks, microphones, CD players and other sources.
5. Move graphics from different sources.
6. Demonstrate the use of buttons between cards.
7. Layout and design an original multimedia presentation using: text, graphics and sound from different sources.

IV. EVALUATION (See Scope and Sequence Chart)

1. General Evaluation Statement – 85% of the students will be able to understand and use knowledges, appreciations, skills and experiences of the previous levels at a rate of accuracy of 90% as measured by the teacher observation, drills, practices, and tests.

2. Grades Kindergarten, 1 and 2
   a) 85% of the students will become aware of the technological community, computer systems, and how the computer processes information as measured by classroom oral activities, quizzes, practical tests and written rate of 90% accuracy
   b) 85% of the students will be able to identify and use the computer's operating system as demonstrated on a check list practical test at a rate of 90% accuracy.
   c) 85% of the students will be able to type using the correct method at a speed of 15 wpm as demonstrated on a speed test at a rate of 90% accuracy.
   d) 85% of the students will be able to use a personal disk to store and organize information as measured at a rate of 90% accuracy.
   e) 85% of the students will be able use basic word processing software to produce simple reports at a rate of 90% accuracy.
   f) 85% of the students will be able to use desktop publishing to produce cards, signs and banners with graphics as measured by assigned projects at a rate of 90% accuracy.

3. Grade 3, 4 and 5
   a) 85% of the students will be able to type using the correct method at a speed of 20 wpm as demonstrated on a speed test at a rate of90% accuracy.
   b) 85% of the students will be able to use advanced functions of word processing software and paint/draw software as shown by projects and

classroom demonstrations and measured by teacher tests and quizzes at a rate of 90% accuracy.

c) 85% of the students will be able to use desktop publishing software to copy/paste pictures, lay out different types of papers, and do a slideshow as measured by student projects teacher made drills at a rate of 90% accuracy.

4. Grades 6, 7 and 8
   a) 85% of the students will be able to type using the correct method at a speed of 45 to 60 WPM as demonstrated on a speed test at a rate of 90% accuracy.

   b) 85% of the students will be able to use advance functions of word processing, database, spreadsheet and desktop publishing as measured by drills, practices, tests and projects at a rate of 90% accuracy.

   c) 85% of the students will be able to identify, use and realize the ethical implications of telecommunication systems used for information and personal data at a rate of 90% accuracy as measured by drills, practices, classroom activities and tests.

   d) 85% of the students will be able to identify and produce a multimedia presentation using sound, graphics and text as measured by personal projects at a rate of 90% accuracy

5. Program Evaluation

Type of Evaluation	**Standard for Evaluation**
1. Annual classroom teacher and administrative assessment	I. Informal and formal evaluations with the teacher and administrator with the Personal Improvement Plan process.
2. District program evaluation process	II. Periodically according to the administrative schedule
3. Annual teacher review	III. Conducted by the technology committee using the attached survey
4. Student Review	IV. Conducted by teacher
5. Graduate/Receiving district review	V. Conducted by teacher

VI. SCOPE AND SEQUENCE

Key

With Help	H	Students can only do with assistance
Introduce	I	Students are introduced to skill
Develop	D	Students develop and practice their skills
Independent User	IU	Students become independent users and can teach others

Basic Computer/Technology Use	**K**	**1**	2	**3**	**4**	**5**	**Standard 4th**	**6**	**7**	**8**	**Standard 8th**
Identifies parts of the computer	I	D	D	IU	IU	IU	8.1.A.3	IU	IU	IU	8.1.A.1
Operates mouse	I	D	D	IU	IU	IU	8.1.A.3	IU	IU	IU	8.1.A.4
Starts and shuts down computer, monitor, and printer	I	D	D	IU	IU	IU	8.1.A.3	IU	IU	IU	8.1.A.2
Practices responsible use of technology	H	I	D	D	IU	IU	8.1.B.2	IU	IU	IU	8.1.B.3
Opens and quits an application	H	I	D	D	IU	IU	8.1.A.2	IU	IU	IU	8.1.A.5
Works with windows, icons, and menus	H	I	D	D	IU	IU	8.1.A.9	IU	IU	IU	8.1.A.2
Works independently or in pairs on computer	H	I	D	D	D	IU	8.1.B.9	IU	IU	IU	8.1.B.8
Communicates about technology using developmentally appropriate and accurate terminology	H	I	D	D	D	IU	8.1.A.1	IU	IU	IU	8.1.A.1
Works as part of a cooperative group with technology	H	H	I	D	D	D	8.1.B.9	IU	IU	IU	8.1.B.8
Discusses common uses of technology in daily life and the advantages and disadvantages those uses provide	H	H	I	D	D	D	8.1.B.1	IU	IU	IU	8.1.B.1
Uses keyboards and other common input and output devices efficiently and effectively	H	H	I	D	D	D	8.1.A.3	IU	IU	IU	8.1.A.3
Applies strategies for identifying and solving routine hardware and software problems			H	I	D	D	8.1.B.10	D	D	D	8.1.B.9
Makes informed decisions in choosing the most appropriate technology systems, resources, and services			H	H	H	{	8.1.B.5	D	D	D	8.1.B.6

File and Resource Management	**K**	**1**	2	**3**	**4**	**Standard 4th**	**5**	**6**	**7**	**8**	**Standard 8th**
Creates and follows rules for computer use in classroom, library, lab and on Internet	H	I	D	D	D	8.1.B.2	IU	IU	IU	IU	8.1.A.2
Logs in to network	H	I	D	D	D	8.1.A.7	IU	IU	IU	IU	8.1.A.10
Saves and finds files and folders	H	H	I	D	D	8.1.A.7	D	IU	IU	IU	8.1.A.10
Keeps documents separate from applications	H	H	I	D	D	8.1.A.7	D	D	IU	IU	8.1.A.10
Creates folders to store work and saves work in correct folder	H	H	H	I	D	8.1.A.7	D	D	IU	IU	8.1.A.10
Organizes folders for work in progress and final drafts in an organized system		H	H	H	I	8.1.A.7	D	D	D	IU	8.1.A.12
Shares files over network		H	H	H	I	8.1.A.7	D	D	D	IU	8.1.A.10
Describes hardware and software problems			H	H	I	8.1.B.10	D	D	D	IU	8.1.B.9
Installs and removes software			H	H	I	8.1.B.10	D	D	D	IU	8.1.B.8
Saves work in most formats and adds correct extensions to file names		H	I	D	D	8.1.A.7	D	IU	IU	IU	8.1.B.8
Organizes, manages, and secures technology in classroom		H	I	D	D	8.1.A.2	D	IU	IU	IU	8.1.B.10
Collaborates online and shares work in electronic portfolio			H	I	D	8.1.A.7	D	D	IU	IU	8.1.A.10

Social and Ethical Use	K	1	2	3	4	Standard 4th	5	6	7	8	Standard 8th
Understands and follows rules and procedures for technology use	I	D	D	D	IU	8.1.A.2	IU	IU	IU	IU	8.1.B.2
Works cooperatively and collaboratively with others when using technology in classroom	I	D	D	D	IU	8.1.B.9	IU	IU	IU	IU	8.1.B.9
Demonstrates positive social and ethical behaviors when using technology	H	I	D	D	D	8.1.B.2	IU	IU	IU	IU	8.1.B.5
Practices responsible use of technology systems and software	H	H	I	D	D	8.1.B.2	D	IU	IU	IU	8.1.B.2
Discusses responsible use of technology and information and describes consequences of inappropriate use including viruses and spyware	H	H	H	I	D	8.1.B.4	D	D	IU	IU	8.1.B.4
Demonstrates knowledge of current changes in information technologies and the effect those changes have on the workplace and society		H	H	H	I	8.2.A.1	D	D	D	IU	8.2.A.5
Exhibits legal and ethical behaviors when using information and technology, and discusses consequences of misuse		H	H	H	H	8.1.B.4	I	D	D	D	8.1.B.3
Understands and follows proper use of copyrighted material and uses netiquette when using email			H	H	[	8.1.B.4	D	D	D	D	8.1.B.2
Cites resources properly							H	I	D	D	8.1.B.2
Identifies capabilities and limitations of emerging technology resources and assesses the potential of these systems and services to address personal, lifelong learning, and workplace needs				H	H	8.2.B.1	H	H	I	D	8.2.A.1
Access and use primary and secondary sources of information for an activity					H	8.1.B.7	H	H	I	D	8.1.B.6
Makes informed choices among technology systems, resources, and services							H	H	H	I	8.1.B.7
Analyzes advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole				H	H	8.2.B.1	I	D	D	D	8.2.B.2
Demonstrates and advocates for legal and ethical behaviors among peers, family, and community regarding the use of technology and information				H	H	8.1.B.4	I	D	D	D	8.1.B.4

Word Processing	**K**	**1**	2	**3**	**4**	**Standard 4th**	**5**	**6**	**7**	**8**	**Standard 8th**
Describes pictures, stories, or ideas	H	I	D	D	D	8.1.A.4	IU	IU	IU	IU	8.1.A.11
Learns keyboard placement	H	I	D	D	D	8.1.A.3	IU	IU	IU	IU	8.1.A.3
Formats a document	H	H	I	D	D	8.1.A.4	D	IU	IU	IU	8.1.A.5
Inserts and edits text	H	H	I	D	D	8.1.A.4	D	D	IU	IU	8.1.A.4
Types 20 words per minute	H	H	H	I	D	8.1.A.3	D	D	D	IU	8.1.A.3
Formats paragraphs		H	H	1	D	8.1.A.4	D	D	IU	IU	8.1.A.5
Creates bullet and number lists		H	H	H	I	8.1.A.4	D	D	D	IU	8.1.A.5
Uses spell checker and thesaurus		H	H	I	I	8.1.A.4	D	D	D	IU	8.1.A.5
Inserts a graphic and wraps text		H	I	I	I	8.1.A.4	D	D	D	IU	8.1.A.5
Uses word processor for first and final drafts		H	H	I	I	8.1.A.4	D	D	D	D	8.1.A.5
Uses ruler, margins, and tabs			H	H	H	8.1.A.4	I	D	D	D	8.1.A.5
Uses outlining feature				H	H	8.1.A.4	I	D	D	D	8.1.A.5
Inserts headers and footers				H	H	8.1.A.4	H	I	D	D	8.1.A.5
Creates and formats tables				H	H	8.1.A.4	H	I	D	D	8.1.A.5
Inserts section, column, and page breaks				H	H	8.1.A.4	H	I	D	D	8.1.A.5
Creates newsletter							H	I	D	D	8.1.B.8
Transfers and merges files into document							H	I	D	D	8.1.A.6
Types 45-60 words per minute							H	I	D	D	8.1.A.3
Save as web page with links							H	H	I	D	8.1.B.6
Use good design techniques							H	H	I	D	8.1.B.10

Graphics and Publishing	K	1	2	3	4	Standard 4th	5	6	7	8	Standard 8th
Creates pictures with Kid Pix	I	D	D	IU	IU	8.1.A.4	IU	IU	IU	IU	8.1.A.8
Inserts images into documents	H	I	D	D	IU	8.1.A.6	IU	IU	IU	IU	8.1.A.6
Creates flyers using draw tools	H	I	D	D	IU	8.1.A.8	IU	IU	IU	IU	8.1.B.10
Imports and modifies graphics	H	H	I	D	IU	8.1.A.8	IU	IU	IU	IU	8.1.A.6
Uses draw tools to create objects	H	H	I	D	D	8.1.B.9	IU	IU	IU	IU	8.1.A.4
Knows difference between draw and paint	H	H	H	I	D	8.1.B.9	IU	IU	IU	IU	8.1.B.6
Rotates, duplicates, groups, aligns, and resizes objects	H	H	H	I	D	8.1.A.2	D	IU	IU	IU	8.1.A.5
Captures images from the Internet and follows copyright laws for use of images			H	H	I	8.1.B.7	D	D	D	D	8.1.B.2
Works with text objects in draw mode		H	I	D	D	8.1.A.4	D	D	D	D	8.1.A.4
Create a brochure or newsletter			H	H	H	8.1.A.6	I	D	D	D	8.1.B.10
Works with paint tools to modify photos and to create original art	H	H	I	D	D	8.1.A.8	D	D	IU	IU	8.1.A.5
Uses effective and professional design techniques					H	8.1.B.9	H	I	D	D	8.1.B.10

Presentation Tools	**K**	**1**	2	**3**	**4**	**Standard 4th**	**5**	**6**	**7**	**8**	**Standard 8th**
Creates separate Kid Pix pictures to save to folder	H	I	D	D	IU	8.1.A.6	IU	IU	IU	IU	8.1.A.5
Adds transitions and sounds to Kid Pix Slide Show	H	I	D	D	IU	8.1.A.6	IU	IU	IU	IU	8.1.A.8
Saves slide show in folder with pictures and as stand-alone slide show	H	H	I	D	D	8.1.A.6	D	IU	IU	IU	8.1.A.8
Plans and storyboards ideas for presentation (PowerPoint)	H	H	H	I	D	8.1.A.8	D	D	IU	IU	8.1.A.11
Develops outline for slide show			H	H	I	8.1.A.8	D	D	D	IU	8.1.A.11
Applies designs, backgrounds, font styles, and colors for all slides			H	I	D	8.1.A.6	D	D	D	IU	8.1.A.8
Imports animations, video, and sound			H	H	H	8.1.A.6	I	D	D	D	8.1.A.8
Connects computer to TV or projector for presentation			H	H	H	8.1.A.6	I	D	D	D	8.1.A.8
Creates custom animations			H	I	D	8.1.A.6	H	I	D	D	8.1.A.8
Applies good design principles			H	I	D	8.1.A.6	H	I	D	D	8.1.A.8
Determines target audience, goal, and purpose of presentation			H	I	D	8.1.A.6	D	D	D	IU	8.1.A.8
Practices timing and provides feedback for peers			H	I	D	8.1.A.6	D	D	D	IU	8.1.A.8
Includes graphs, charts, sound, animation, in non-linear presentation	.	.	H	H	I	8.1.A.6	D	D	D	IU	8.1.A.8

Spreadsheets	**K**	**1**	2	**3**	**4**	**Standard 4th**	**5**	**6**	**7**	**8**	**Standard 8th**
Creates a graph to compile data collections using a basic graphing program		H	I	D	IU	8.1.A.5	IU	IU	IU	IU	8.1.A.7
Uses existing spreadsheet to sort and find data		H	I	D	D	8.1.A.5	IU	IU	IU	IU	8.1.A.7
Collects data and creates new spreadsheet		H	I	D	D	8.1.A.7	IU	IU	IU	IU	8.1.A.7
Collects, inputs, analyzes, organizes and displays data graphically		H	I	D	D	8.1.A.7	D	D	IU	IU	8.1.A.7
Creates simple formulas and charts			H	I	D	8.1.A.7	D	D	IU	IU	8.1.A.7
Explains what the data represents		H	H	I	D	8.1.A.5	D	D	D	IU	8.1.A.7
Uses the appropriate chart for activity and data		H	H	H	I	8.1.A.7	D	D	D	IU	8.1.A.7
Adds and formats appropriate labels and legends			H	H	I	8.2.C.2	D	D	D	IU	8.2.C.2
Collects data to use in complex formulas in charts or graphs							I	D	D	IU	8.2.A.3
Includes charts or graphs in presentations or publications							I	D	D	D	8.2.B.1
Formats and changes axis scale, chart area, data series or appearance of charts							H	H	I	D	8.2.B.2
Formats and prints spreadsheets to use as templates and forms							H	H	I	D	8.2.B.3

Databases	**K**	**1**	2	**3**	**4**	**Standard 4th**	**5**	**6**	**7**	**8**	**Standard 8th**
Defines terms such as records and fields			H	H	D	8.1.A.1	D	D	IU	IU	8.1.A.1
Enters text and data into appropriate fields	H	H	I	D	D	8.1.A.3	D	IU	IU	IU	8.1.A.9
Creates a simple database with one layout	H	H	H	I	D	8.1.A.3	D	IU	IU	IU	8.1.A.9
Formats text and numbers in fields	H	H	H	I	D	8.1.A.8	D	D	IU	IU	8.1.A.9
Sorts, matches, finds and replaces data		H	H	H	I	8.1.B.8	D	D	D	IU	8.1.A.9
Creates a database with different layouts		H	H	H	I	8.1.B.9	D	D	D	IU	8.1.A.9
Adds header and footer			H	H	I	8.1.A.3	D	D	D	IU	8.1.A.5
Generates a variety of reports using same database			H	H	H	8.1.B.9	I	D	D	D	8.2.A.4
Uses print preview and adjusts margins for printing				H	H	8.1.B.8	H	I	D	D	8.1.A.6
Merges data into another document				H	H	8.1.B.9	H	I	D	D	8.1.A.6
Imports and exports data from other applications				H	H	8.1.B.6	H	I	D	D	8.1.B.6
Participates in student project that creates a database that other students can use					H	8.2.B.1	H	H	I	D	8.1.B.8
Describes educational uses of databases							H	H	H	I	8.2.A.2
Creates new databases related to topic and manipulates a variety of data for project							.	H	H	I	8.2.A.5

Internet	**K**	**1**	2	**3**	**4**	**Standard 4th**	**5**	**6**	**7**	**8**	**Standard 8th**
Knowledge o the hIstory of the Internet	H	H	I	D	D	8.2.B.1	D	D	D	D	8.1.B.7
Uses sites the teacher points to	I	D	D	D	D	8.1.B.6	IU	IU	IU	IU	8.1.B.4
Launches a browser and uses the tool bar	H	I	D	D	D	8.1.B.6	IU	IU	IU	IU	8.1.B.6
Navigates by clicking on links on web pages	H	I	D	D	D	8.1.B.6	IU	IU	IU	IU	8.1.B.6
Explains the parts of a URL	H	H	I	D	D	8.1.B.6	D	IU	IU	IU	8.1.B.6
Types URLs correctly	H	H	I	D	D	8.1.B.6	D	IU	IU	IU	8.1.B.6
Add bookmarks/favorites	H	H	I	D	D	8.1.B.6	D	IU	IU	IU	8.1.B.6
Uses proper netiquette	H	H	I	D	D	8.1.B.3	D	IU	IU	IU	8.1.B.5
Returns to site using history, back button, or bookmark/favorite	.	H	H	I	D	8.1.B.6	D	D	IU	IU	8.1.B.6
Uses keyword and natural language searches	.	.	H	H	I	8.1.B.6	D	D	D	IU	8.1.B.6
Evaluates site and information for validity and accuracy	.	.	.	H	H	8.1.B.8	I	D	D	D	8.1.B.7
Sets home page and configures page setup to print title, URL, and date	.	.	.	H	H	8.1.B.6	I	D	D	D	8.1.B.6
Edits bookmarks/favorites and organizes them into folders	.	.	.	H	H	8.1.B.6	H	I	D	D	8.1.B.6
Downloads files and plug-ins	.	.	.	.	H	8.1.B.6	H	H	I	D	8.1.B.8
Copies and pastes text or images and cites source correctly	.	.	.	.	H	8.1.B.6	H	H	I	D	8.1.B.6
Explains difference between search engines, subject directories, and metasearch engines	.	.	.	.	H	8.2.C.1	H	H	I	D	8.2.C.1

Multimedia	**K**	**1**	2	**3**	**4**	**Standard 4th**	**5**	**6**	**7**	**8**	**Standard 8th**
Creates linear slide show	H	H	I	D	D	8.1.A.6	IU	IU	IU	IU	8.1.A.8
Creates original art to include in project	H	H	I	D	D	8.1.B.9	IU	IU	IU	IU	8.1.A.8
Reviews sample linear and non-linear multimedia projects		H	I	D	D	8.1.B.1	D	IU	IU	IU	8.1.A.8
Creates and modifies text objects	H	I	D	D	D	8.1.A.4	D	D	IU	IU	8.1.A.5
Imports and modifies graphics, backgrounds, and clipart		H	H	I	D	8.1.B.7	D	D	IU	IU	8.1.A.8
Combines text, paint and draw as part of multimedia project		H	H	I	D	8.1.A.6	D	D	IU	IU	8.1.A.8
Plans and storyboards multimedia project		H	H	H	I	8.1.A.8	D	D	D	IU	8.1.A.11
Creates simple non-linear project				H	I	8.1.A.6	D	D	D	IU	8.1.A.8
Changes preferences and card size				H	H	8.1.A.9	I	D	D	D	8.1.A.8
Uses new button actions and advanced features in non-linear programs				H	H	8.1.A.6	I	D	D	D	8.1.A.8
Imports and modifies images from Internet, digital camera, and scanner			H	I	D	8.1.A.3	D	D	D	D	8.1.A.4
Works as part of team to create multimedia project			H	I	D	8.1.B.9	D	D	D	D	8.1.A.8
Uses advanced drawing and painting programs to create original art		H	H	I	D	8.1.A.6	D	D	D	D	8.1.A.8
Records and edits sound and movies, animations, and VR							H	H	I	D	8.1.A.8

Web Authoring	**K**	**1**	2	**3**	**4**	**Standard 4th**	**5**	**6**	**7**	**8**	**Standard 8th**
Contributes images and content to web page someone else is creating		H	I	D	D	8.1.A.4	IU	IU	IU	IU	8.1.A.5
Creates page with text and/or links		H	H	I	D	8.1.A.5	D	IU	IU	IU	8.2.B.5
Uses template to place text and links		H	H	I	D	8.1.A.5	D	IU	IU	IU	8.1.A.4
Evaluates sites for accuracy, relevance, appropriateness, comprehensiveness, and bias of information sources		H	H	I	D	8.1.B.6	D	D	IU	IU	8.1.B.7
Creates a web page using a WYSIWG authoring program		H	H	H	I	8.1.A.4	D	D	D	IU	8.1.A.4
Changes background and colors, imports images, inserts and modifies text		H	H	H	I	8.1.A.4	D	D	D	IU	8.1.A.4
Storyboards, plans, and creates organized folders for images and website			H	H	H		I	D	D	D	8.1.A.11
Saves page, gives it a title, and makes sure images are in correct folder			H	H	H		I	D	D	D	8.1.A.10
Creates anchors or targets to links on page and links to other pages, email, and sources			H	H	H		I	D	D	D	8.1.A.4
Creates and formats tables				H	H		H	I	D	D	8.1.A.4
Understands elements of good web design				H	H		H	I	D	D	8.2.B.3
Evaluates sites for accuracy, relevance, appropriateness, comprehensiveness, and bias of information sources concerning real-world problems				H	H		H	I	D	D	8.1.B.7
Uses information literacy skills to find, use, evaluate, and cite appropriate sources					H		H	H	I	D	8.1.B.7
Works collaboratively in group to develop web site that group manages themselves					H		H	H	I	D	8.1.B.8
Views and modifies source							H	H	H	I	8.1.B.7
Uses different plug-in, inserts metatags, creates and inserts animated gifs, movies, and sound								H	I	D	8.1.B.10
Uses elements of good web design and navigation								H	I	D	8.1.B.7
Uses HTML, Java, Javascript, Flash, and/or Shockwave to create special effects on website									H	I	8.1.B.7
Creates a web portfolio and participates in collaborative Web Project that compiles, synthesizes, produces, and disseminates information, models, and other creative work									H	I	8.1.B.7
Investigates and applies expert systems, intelligent agents, and simulations in real-world situations									H	I	8.1.B.7

Electronic Collaboration	**K**	**1**	2	**3**	**4**	**Standard 4th**	**5**	**6**	**7**	**8**	**Standard 8th**
Gathers information and communicate with others using telecommunications with support from teachers, family members, or student partners	H	I	D	D	D	8.1.B.1	IU	IU	IU	IU	8.1.B.8
Use telecommunications and online resources including email and discussion boards to participate in collaborative problem-solving activities	H	H	H	I	D	8.2.C.3	D	IU	IU	IU	8.2.C.2
Reviews and evaluates online discussion boards		H	H	I	D	8.2.C.3	D	IU	IU	IU	8.1.B.7
Uses email and follows netiquette protocol		H	H	H	H	8.1.B.3	I	D	D	D	8.1.B.5
Communicates with others online in support of direct and independent learning		H	H	H	I	8.1.B.9	D	D	D	IU	8.1.B.8
Collaborates with peers, experts, and others using collaborative online tools to investigate curriculum-related problems, issues, and information		H	H	H	I	8.2.C.1	D	D	D	IU	8.2.B.4
Develops solutions in collaborative online environment for audiences inside and outside the classroom			H	H	H	8.2.C.3	I	D	D	D	8.2.C.2
Plans collaborative project with group			H	H	H	8.2.C.3	I	D	D	D	8.1.B.8
Reviews and evaluates both asynchronous and synchronous online tools				H	H	8.1.B.10	H	I	D	D	8.1.B.7
Participates responsibly in several types of online activities including an online course, videoconference, a chat, and a threaded discussion				H	H	8.1.B.10	H	I	D	D	8.2.B.5
Selects appropriate online tools for research, information analysis, problem-solving, and decision-making in content learning				H	H	8.2.C.3	H	I	D	D	8.1.B.6
Evaluates and uses online collaborative tools including distance learning and distributed education for lifelong learning opportunities				.	H	8.2.C.3	H	H	I	D	8.1.B.7

Integration and Projects	K	1	2	3	4	Standard 4th	5	6	7	8	Standard 8th
Creates developmentally appropriate multimedia products with support from teachers, family members, or student partners	H	I	D	D	D	8.1.B.9	IU	IU	IU	IU	8.1.A.8
Uses technology resources for problem solving, communication, and illustration of thoughts, ideas, and stories	H	I	D	D	D	8.2.C.3	D	IU	IU	IU	8.2.C.1.2.3
Works responsibly, independently, and as part of group in developing project		H	I	D	D	8.1.B.9	D	IU	IU	IU	8.1.B.8
Uses technology for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom		H	H	I	D	8.2.C.3	D	D	IU	IU	8.1.B.8
Determines when technology is useful and selects the appropriate tools and technology resources to address a variety of tasks and problems		H	H	H	I	8.1.B.5	D	D	D	IU	8.1.B.6
Uses information literacy skills to research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of information sources concerning real-world problems			H	H	H	8.1.B.8	I	D	D	D	8.1.B.7
Saves, finds, and retrieves work in different formats via email, network, and online sources for project work			H	H	H	8.1.B.6	I	D	D	D	8.1.B.10
Takes on specific role and manages different group activities and rotation strategies as part of project				H	H	8.2.A.1	H	I	D	D	8.2.C.1,2,3
Designs, develops, publishes, and presents real-world products using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom					H	8.2.C.3	H	H	I	D	8.2.C.1,2,3
Selects appropriate technology tools for research, information analysis, problem-solving, and decision-making in content learning as part of project-based learning					H	8.2.C.2	H	H	I	D	8.2.C.2
Compiles projects in electronic portfolio			H	I	D	8.2.C.1	D	D	D	D	8.1.A.10