Darien Public Schools
Instructional Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Introduction

The **Darien Instructional Technology Scope and Sequence** outlines concepts, skills and processes using technology hardware and software that students will develop K-12. It complements the Darien K-12 Technology Standards and the Darien Technology Plan 2006-2009. It also aligns with standards established by the Connecticut State Department of Education and the International Society for Technology in Education.

A scope and sequence was determined to be the most effective format for presenting targeted technology objectives because most technology instruction will be presented to students through the content areas. In the coming years, teachers will be folding technology concepts, skills and processes into units of content curriculum and students will learn and practice using the technology as part of a project or activity in literacy, mathematics, science or social studies. For example, in third grade, students will develop word processing skills as they produce final copies of narratives they have written for a class book or, in seventh grade, students will create a spreadsheet to compare data collected as part of a science experiment. Over time, the scope and sequence can be easily adjusted to reflect changes in hardware, software, and student competencies.

Technology objectives are targeted in the following areas:

- Basic Operations and Concepts
- Social, Ethical, and Human Issues
- Technology Productivity Tools
- Technology Communication Tools
- Technology Research Tools
- Technology Problem-Solving and Decision-Making Tools

The guide for implementing each objective is expressed in three stages:

- Exposure: At this level, teachers model the use of targeted concepts, skills and processes for students.
- Practice: At this level, students begin and continue to practice the use of targeted concepts, skills and processes.
- Independence: Students are able to employ the targeted concepts, skills and processes independently.

There is overlap in these three stages throughout the scope and sequence to accommodate expected variety in students' readiness for and ability to perform targeted outcomes.

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Basic Operations and Concepts	K	1	2	3	4	5	6	7	8	9-12
Computer Operations										
Students use correct posture and position at computer.	EP	P	P	P	PI	I	I	I	I	I
Students use developmentally appropriate terminology to communicate about technology.	E	EP	P	P	PI	I	I	I	I	I
Identify computer hardware components and peripheral devices.	E	EP	P	P	PI	I	I	I	I	I
Students start, restart, and correctly shut down the computer.	E	EP	PI	I	I	I	I	I	I	I
Students identify the parts of a computer; monitor, keyboard, mouse, CPU, speakers and control buttons.	E	EP	P	PI	I	I	I	I	I	I
Student use the mouse to choose options in a menu.	E	EP	P	PI	I	I	I	I	I	I
Students click, double-click, and click/drag the mouse.	E	P	I	I	I	I	I	I	I	I
Students insert, eject, and properly care for a CD-ROM.		E	EP	PI	I	I	I	I	I	I
Students identify correct software application icon for a task.		E	EP	PI	I	I	I	I	I	I
Students save files and folders to different disks and drives.		E	EP	PI	I	I	I	I	I	I
Students create and organize folders in multiple ways.					E	EP	PI	I	I	I
Students use search operation for folders and files.						E	EP	PI	I	I
Students change control panel and set options.						E	EP	PI	I	I
Students create shortcuts on desktop.						E	EP	PI	I	I
Students check for computer viruses and know how to prevent them.				E	E	EP	PI	I	I	I
Students recognize common file extensions (doc, jpg, bmp, xls, exe).				E	E	EP	PI	I	I	I
Students understand and use memory size.				E	E	EP	PI	I	I	I
Students understand the use of digital cameras, scanner, LCD projector, and fax machine.		E	E	EP	EP	PI	I	I	I	I

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Basic Operations and Concepts (continued)	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Students use content specific hardware such as graphing calculators, scientific probes, and PDAs.					E	EP	PI	PI	I	I
Students use content- specific tools and software (science probes, calculators, simulation, etc.) to support learning and research.					E	EP	EP	PI	PI	I
Solve routine technical problems using online Help and troubleshooting strategies.			E	E	EP	PI	PI	I	I	I
Students identify and use various drives.			E	E	EP	PI	PI	I	I	I
Keyboarding										
Students use developmentally appropriate keyboarding techniques.	E	E	EP	PI	PI	PI	I	I	I	I
Students use a keyboarding program to type the home row keys using correct form.		E	EP	PI	PI	PI	I	I	I	I
Students use the keyboard to type capitals and lowercase letters, numbers and symbols.	E	EP	PI	I	I	I	I	I	I	I
Students use punctuation keys.	E	EP	PI	I	I	I	I	I	I	I
Students use the enter, space bar and backspace keys.	E	EP	PI	I	I	I	I	I	I	I
Students use arrow, tab, shift, and caps lock keys.	E	E	EP	PI	I	I	I	I	I	I
Students type words.	E	EP	PI	I	I	I	I	I	I	I
Students type phrases.	E	EP	PI	I	I	I	I	I	I	I
Students type sentences.	E	E	EP	PI	I	I	I	I	I	I
Program Operations										
Students recognize program and document icons.	E	E	EP	PI	PI	I	I	I	I	I
Students select appropriate program/resource to complete a task.		E	EP	EP	PI	PI	PI	I	I	I
Students open and exit programs correctly.	E	EP	PI	PI	I	I	I	I	I	I
Students click on icon, folder, or document to open or start a program.	E	EP	PI	PI	I	I	I	I	I	I

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Basic Operations and Concepts (continued)	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Students use "Save" and "Save as" appropriately to save documents or create new versions of a document.	E	EP	PI	PI	I	I	I	I	I	I
Students create, name, and save new files.	E	E	EP	PI	PI	I	I	I	I	I
Students open, close, add, and delete files.	E	E	EP	PI	PI	I	I	I	I	I
Students rename a file.	E	E	EP	PI	PI	I	I	I	I	I
Students create a new folder and move files to that folder.		E	EP	PI	PI	I	I	I	I	I
Students view file Properties to determine memory size				E	EP	PI	I	I	I	I
Students use a virus scanner to protect and maintain their files.				E	EP	PI	I	I	I	I
Students use Page Setup and Print Preview.			E	E	EP	PI	I	I	I	I
Students print a document.	E	EP	PI	I	I	I	I	I	I	I
Students open, close, minimize, and resize a window.			E	E	EP	PI	I	I	I	I
Students move between two or more open programs (windows).			E	E	EP	PI	I	I	I	I
Students use the spell checker, dictionary, and thesaurus.			E	EP	EP	PI	I	I	I	I
Students set preferences and options in different software programs.				E	EP	PI	I	I	I	I
Students use content specific software such as spreadsheets, databases, and concept mapping software.		E	EP	PI	I	I	I	I	I	I
Network Operations										
Students log on and off the DPS network correctly.	E	EP	PI	PI	I	I	I	I	I	I
Students use personal password to log into network account.		E	EP	PI	PI	I	I	I	I	I
Students save files in a group folder on DPS network.		E	EP	PI	PI	I	I	I	I	I
Students manage their own files (move, copy, delete) on network.			E	EP	EP	PI	PI	I	I	I
Students use a web browser, buttons and hypertext links.				E	EP	PI	PI	I	I	I

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Basic Operations and Concepts (continued)	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Network Operations (continued)										
Students use a favorites or bookmarked list to access web sites.		E	EP	PI	PI	I	I	I	I	I
Students effectively use a variety of search engines, online databases, and search techniques.			E	E	EP	EPI	EPI	I	I	I
Students evaluate accuracy and quality of online information.			E	E	EP	EP	PI	PI	I	I
Students use correct bibliographic citation for internet resources.				E	EP	EP	PI	PI	I	I
Social, Ethical, and Human Issues	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Students describe and exhibit responsible and appropriate use of computers, disks, and peripherals.	E	EP	PI	PI	I	I	I	I	I	I
Students explain and practice the rules of DPS policies related to Internet and computer use.	E	E	EP	PI	PI	I	I	I	I	I
Students show respect for the work of others.	E	EP	PI	PI	I	I	I	I	I	I
Students explain and respect copyright law.		E	EP	PI	PI	PI	I	I	I	I
Students identify ethical and unethical uses of computers, networks, and other technologies.				E	EP	PI	PI	PI	I	I
Students demonstrate an understanding of plagiarism and its consequences.	E	E	EP	PI	PI	PI	I	I	I	I
Students explain Internet safety guidelines.	E	E	EP	PI	PI	PI	I	I	I	I
Students responsibly use their network password privilege.		E	EP	PI	PI	PI	I	I	I	I
Students use email appropriately.			E	E	EP	PI	PI	I	I	I
Students are respectful of school computer and network privacy.			E	E	EP	PI	PI	I	I	I
Students explain how hacking, filtering, information technology and business practices, government controls, access to technology and privacy issues affect you and the world in general.					E	E	EP	EP	P	I

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Technology Productivity Tools	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Identify the functions and advantages of computer productivity software.		E	E	E	EP	PI	PI	I	I	I
Word Processing – Max Write, Word										
Students use toolbar icons: new, open, close, save, print	E	EP	PI	PI	I	I	I	I	I	I
Students use toolbar icons: undo, copy, cut, paste	E	EP	EPI	PI	PI	I	I	I	I	I
Students use toolbar icons to change font.	E	EP	EP	PI	PI	I	I	I	I	I
Students use drop-down menus to operate a word processing program.										
-File: new, open, close, save, print	E	EP	PI	PI	PI	I	I	I	I	I
-File: save as, page setup, print preview, send to		E	EP	EP	EP	PI	PI	I	I	I
-File: save as web page, web page preview, properties			E	E	EP	EP	PI	PI	I	I
-Edit: undo, cut, copy, paste, select all, clear		E	EP	EP	PI	PI	I	I	I	I
-Edit: find, replace, go to, paste as		E	E	EP	PI	I	I	I	I	I
-View: normal, print layout, toolbars		E	E	EP	EP	PI	PI	I	I	I
-View: header/footer, zoom, full screen		E	E	EP	EP	PI	PI	I	I	I
-Insert: page number, date, picture		E	EP	EP	PI	PI	I	I	I	I
-Insert: text box, hyperlink		E	EP	EP	EP	PI	PI	I	I	I
-Format: font, paragraph		E	EP	EP	PI	PI	I	I	I	I
-Format: columns, tabs, border/shading, bullets, numbering		E	EP	EP	PI	PI	PI	I	I	I
-Tools: spell check		E	EP	EP	I	I	I	I	I	I
-Table: insert, delete, add rows, add columns			E	EP	PI	I	I	I	I	I
-Table: select, split cells, autoformat, autofit, hide gridlines				E	EP	EP	EP	PI	PI	I

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Technology Productivity Tools (continued)	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Students use help features.	E	E	EP	EP	PI	PI	I	I	I	I
Students use icons of paint in Max Write to draw pictures.	E	EP	EP	PI	I	I	I	I	I	I
Students use features of standard and formatting toolbars.		E	EP	EP	PI	PI	I	I	I	I
Students use features of draw and SMART toolbars.	E	E	EP	EP	PI	PI	I	I	I	I
Students insert, move, and resize a graphic in a document.		E	EP	EP	EP	PI	PI	I	I	I
Slide Presentation – Max Show, Powerpoint										
Students use toolbar icons to create a simple slide presentation.	E	E	EP	EP	PI	PI	I	I	I	I
Students create a new presentation from scratch or using a design template.		E	EP	EP	EP	PI	PI	I	I	I
Students format slide layout, color scheme, background, design template.		E	EP	EP	EP	EP	PI	PI	I	I
Students add action and animation to slide show.		E	EP	EP	EP	PI	PI	I	I	I
Students add sound, pictures, video to slide show.		E	EP	EP	EP	PI	PI	I	I	I
Students add text box, slide number, date/time, picture, chart, table to slide show.			E	EP	PI	I	I	I	I	I
Students individually create a multimedia slide show presentation.				EP	EP	EP	PI	PI	I	I
Spreadsheet – Max Count, Excel										
Students use toolbar icons to create simple tables and charts.	E	E	EP	EP	PI	PI	I	I	I	I
Students understand and explain the purpose and use of a spreadsheet.		E	EP	EP	EP	PI	PI	PI	I	I
Students add, delete, move text and numbers in an existing spreadsheet.		E	EP	EP	EP	PI	PI	I	I	I
Students add, delete, move text and numbers in a created spreadsheet.		E	EP	EP	EP	EP	PI	PI	I	I
Students insert cell, row, column, worksheet, chart.			E	EP	EP	EP	PI	PI	I	I
Students format cell, row, column, sheet.			E	EP	EP	EP	PI	PI	I	I
Students insert function: sum, average, product.			E	EP	EP	EP	EP	PI	PI	I
Students sort and filter data.			E	EP	EP	EP	PI	PI	PI	I

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Technology Productivity Tools (continued)	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Spreadsheet – Max Count, Excel (continued										
Students insert a spreadsheet or graph into another document.			E	E	EP	EP	EP	PI	PI	I
Students utilize spreadsheet to analyze data and test hypothesis.			E	EP	EP	EP	PI	PI	PI	I
Concept Mapping – Kidspiration, Inspiration										
Students create graphic organizers to develop and structure ideas.		E	EP	EP	EP	PI	PI	PI	I	I
Students use icons to brainstorm and organize ideas and information.		E	EP	EP	EP	PI	PI	PI	I	I
Students use graphics, symbols, and text to represent ideas and information.		E	EP	EP	EP	PI	PI	I	I	I
Students link ideas and information to show relationships.		E	EP	EP	EP	EP	PI	PI	PI	I
Students use paint feature of Kidspiration to create representations of ideas.	E	E	EP	EP	PI	PI				
Students create an outline/diagram of a topic for prewriting.		E	EP	EP	PI	PI	I	I	I	I
Students create an outline/diagram for a report or presentation.		E	E	EP	EP	PI	PI	I	I	I
Database – Access										
Students explain the purpose of a database and show how it works.			E	E	EP	EP	EP	PI	PI	I
Students add, delete, and move text in an existing database template.			E	EP	EP	EP	PI	PI	PI	I
Students create and sort data on a simple database.			E	E	EP	EP	EP	PI	PI	I
Students add, delete, and move text in a designed database.			E	E	EP	EP	EP	PI	PI	I
Students use find, sort, show and hide functions.			E	E	EP	EP	EP	PI	PI	I
Students use a database to look for relationships and test hypotheses.			E	E	E	EP	EP	EP	PI	PI
Students design, create, and test the effectiveness of a database.				E	E	EP	EP	EP	PI	PI

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Technology Productivity Tools (continued)	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Internet										
Students enter an internet address (URL) to access a **web site**.			E	E	EP	EP	PI	PI	PI	I
Students access web sites bookmarked by teacher.		E	EP	EP	PI	PI	I	I	I	I
Students bookmark web sites.			E	E	EP	EP	PI	PI	I	I
Students create simple web pages using a **web page** design/editing program.			E	E	EP	EP	PI	PI	I	I
Students create hypertext links and insert graphics in simple web pages.			E	E	EP	EP	PI	PI	I	I
Students collaborate to create class web pages or online class projects.			E	E	EP	EP	PI	PI	I	I
Students open and send **e-mail** messages.				E	E	EP	EP	PI	PI	I
Students use email to communicate with experts and collaborate with peers.				E	E	EP	EP	PI	PI	I
Students send e-mail to groups.				E	E	EP	EP	PI	PI	I
Students open and send email attachments.				E	E	EP	EP	PI	PI	I
Students use interactive real-time filtered online communication (CHAT) to collaborate with peers.				E	E	EP	EP	PI	PI	I
Students participate in video conferencing to communicate and collaborate with peers.				E	E	EP	EP	PI	PI	I
Multimedia Program										
Students create a linear multimedia slide show containing text and graphics.				E	E	EP	EP	PI	PI	I
Students modify the color scheme in their multimedia product.				E	E	EP	EP	PI	PI	I
Students insert graphs and charts in their multimedia product.				E	E	EP	EP	PI	PI	I
Students use transitions and create simple animations in a multimedia program.				E	E	EP	EP	PI	PI	I
Students add sounds to a multimedia presentation.				E	E	EP	EP	PI	PI	I
Students use different views (outline, slide sorter, etc.) to create and organize multimedia presentations.				E	E	EP	EP	PI	PI	I

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Technology Productivity Tools (continued)	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Multimedia Program (continued)										
Students print audience handouts to go with their multimedia product.				E	E	EP	EP	PI	PI	I
Students collaborate in the creation of a multimedia slide show containing text and graphics.				E	E	EP	EP	PI	PI	I
Students create a non-linear (branching) presentation or instructional game.					E	E	EP	EP	PI	PI
Students use graphics and video software to create graphics, edit photos and create short movies.					E	E	EP	EP	PI	PI
Desktop Publishing Software										
Students collaborate to create a newsletter using desktop publishing software				E	E	EP	EP	PI	PI	I
Students create a newsletter, brochure or booklet using desktop publishing software.				E	E	EP	EP	PI	PI	I
Students use the principles and elements of visual design (line, balance, contrast, variety, center of interest) in the creation of desktop publishing products.				E	E	EP	EP	PI	PI	I
Students use columns, text boxes, headlines and graphics in their desktop publishing product.				E	E	EP	EP	PI	PI	I
Students collaborate to create a tri-fold brochure using desktop publishing software.				E	E	EP	EP	PI	PI	I
Students use color, graphics, fonts, and white space effectively.				E	E	EP	EP	PI	PI	I
Students create a greeting card, label, sticker, bookplate, or simple sign using desktop publishing software.		E	E	EP	EP	PI	PI	I	I	I
Students use desktop publishing software to create brochures with graphics, letterhead, resumes, and business cards.				E	E	EP	EP	PI	PI	I

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Technology Research Tools	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Students do a keyword search using an online encyclopedia.		E	EP	EP	P	PI	PI	I	I	I
Students use search engines.			E	E	EP	EP	PI	PI	I	I
Students use Boolean search terms (AND, OR, NOT).			E	E	EP	EP	PI	PI	I	I
Students can search using a keyword, name, title, author, and phrase.		E	EP	EP	P	PI	PI	I	I	I
Students design a search strategy, narrowing the search parameters as needed.			E	E	EP	EP	PI	PI	I	I
Students develop and implement a project using online resources.			E	E	EP	EP	PI	PI	I	I
Students analyze and evaluate the accuracy and credibility of web resources.				E	EP	EP	PI	PI	I	I
Students create report using information from an online source and a word processor.				E	EP	EP	PI	PI	I	I
Students gather information from several online sources and save the text in a word processing document.				E	EP	EP	PI	PI	I	I
Students use multiple search engines.				E	EP	EP	PI	PI	I	I
Students use a library database to find information.			E	E	EP	EP	PI	PI	I	I
Students use the find function in browser to locate specific information on web page.				E	EP	EP	PI	PI	I	I
Students cite the resources they use.				E	EP	EP	PI	PI	I	I
Students develop and implement a project using online resources.				E	EP	EP	PI	PI	I	I
Technology Problem-Solving and Decision-Making Tools	**K**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9-12**
Students collaborate with peers and others to solve problems and develop solutions using technology tools and resources.			E	EP	EP	PI	PI	I	I	I
Students use multiple resources, tools, and technologies to solve complex problems and present solutions.			E	EP	EP	PI	PI	I	I	I
Students analyze/reflect on collaboration, design, research, problem-solving process.			E	E	EP	EP	PI	PI	I	I
Students create electronic portfolios to demonstrates technology skills and content area knowledge.					E	EP	EP	PI	PI	PI