

Appendix E: Grade Level Benchmarks

Based on the National Educational Technology Standards for Students (2007)

Strand	Kindergarten	1 st Grade
Creativity & Innovation	<ul style="list-style-type: none"> • Use basic computer drawing tools, colors and shapes to illustrate or communicate ideas. • Explore tool palettes. 	<ul style="list-style-type: none"> • Use computers to express ideas using media elements that may include text, graphics or sound (with assistance). • Use more drawing tools, colors and shapes • Make appropriate choices from the tool palettes.
Communication & Collaboration	<ul style="list-style-type: none"> • Use computers to facilitate letter recognition and vocabulary development. • Use computers to facilitate reading, writing, listening and speaking. • Write first and last name using a developmentally appropriate word processing program. 	<ul style="list-style-type: none"> • Use computers to compose a short story, poem or expository writing using text with appropriate spacing.
Research & Information Retrieval	<ul style="list-style-type: none"> • Explore pre-selected developmentally appropriate sites on the Internet. 	<ul style="list-style-type: none"> • Within pre-selected developmentally appropriate sites, explore information on various curriculum topics.
Critical Thinking, Problem-Solving & Decision Making	<ul style="list-style-type: none"> • Use computers to explore and demonstrate number sense. • Use computers to explore special relations and shape recognition. • Use computers to practice sequencing, patterns and symmetry. 	<ul style="list-style-type: none"> • Use computers to explore and develop math skills (counting, addition, subtraction, measurement and length).
Digital Citizenship	<ul style="list-style-type: none"> • Respect each other's work. • Use resources as directed. • Demonstrate safe and responsible use of technology, such as proper care of computers. • Introduce that technology helps people work and play. 	<ul style="list-style-type: none"> • Respect others' work. • Practice safe and responsible use of technology and resources. • Identify that technology helps people work and play.
Technology Operations & Concepts	<ul style="list-style-type: none"> • Identify basic components of the computer: monitor, keyboard, mouse, headphones, and printers. • Use the mouse appropriately in programs. • Identify and find letters & numbers on the keyboard. • Be able to use and navigate the Dock. • Locate and open programs or files with assistance. • Ask for assistance when needed and assist peers when appropriate. 	<ul style="list-style-type: none"> • Login to computer account with minimal assistance. • Use the mouse, keyboard and peripherals (headphones) appropriately. • Introduce using two hands on the keyboard. • Launch and quit applications independently. • Identify and use special keys on the keyboard (enter, space bar, shift, backspace, period, question mark).

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Strand	2 nd Grade	3 rd Grade
Creativity & Innovation	<ul style="list-style-type: none"> • Use technology to express ideas using media elements such as text, images and sound to express knowledge and to entertain. • Begin to locate, select and use appropriate images to enhance curriculum projects. 	<ul style="list-style-type: none"> • Use various graphics (photos, drawings, clip art) styles and layouts to enhance expression and communicate information. • Locate, select and use appropriate images. • Develop image-editing techniques (selecting, resizing, copying & pasting).
Communication & Collaboration	<ul style="list-style-type: none"> • Use computers to type stories, poetry or other writing related to curriculum using basic editing skills (font, text alignment) and using shift key to capitalize letters and using simple punctuation. • Contribute to team projects. 	<ul style="list-style-type: none"> • Compose and edit one or more paragraphs using basic formatting techniques and tools (select text to delete, copy, paste, tab, alignment, font/size). • Create multimedia presentation with text, graphics and sound. • Begin to use spell check.
Research & Information Retrieval	<ul style="list-style-type: none"> • Use pre-selected Web sites to locate and access information related to curriculum. • Introduce basic keyword searches in kid-friendly search engines. • Introduce concept of citation of sources. 	<ul style="list-style-type: none"> • Develop strategies to locate information from appropriate Internet sources. • Navigate web sites with assistance. • Develop and practice note-taking strategies. • Begin to cite information and image sources.
Critical Thinking, Problem-Solving & Decision Making	<ul style="list-style-type: none"> • Begin using technology to gather information, solve problems and complete projects (with assistance). • Use the computer to explore math concepts such as grouping, dividing and geometric shapes. 	<ul style="list-style-type: none"> • Continue to develop strategies to collect information, solve problems and complete projects. • Create a simple chart or graph using appropriate graphing program.
Digital Citizenship	<ul style="list-style-type: none"> • Respect others' privacy and work. • Practice safe and responsible use of technology resources. 	<ul style="list-style-type: none"> • Respect others' privacy and work. • Practice safe, responsible and appropriate use of local and online resources. • Learn basic resource conservation measures (i.e. printing efficiency, energy saving.) • Explain ways that technology influences our lives at home, school and work. • Understand the concept of copying material and programs as illegal (copyright).
Technology Operations & Concepts	<ul style="list-style-type: none"> • Login to computer account independently. • Use two hands on the keyboard most of the time. Introduce "home row" position. • Locate, open, print and save files (with assistance). • Introduce basic Internet terms (web address, link, bookmark, etc.) and basic Internet safety (Netsmartzkids.org). 	<ul style="list-style-type: none"> • Continue to develop "home row" position on the keyboard. • Continue to locate, open, save and print files with minimal assistance. • Review basic Internet terms and review basic Internet safety.

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Strand	4 th Grade	5 th Grade
Creativity & Innovation	<ul style="list-style-type: none"> • Create simple charts to display data. • Create multimedia presentation using text, images and audio to convey curriculum concepts. • Use technology resources for self-expression through original stories. 	<ul style="list-style-type: none"> • Use a variety of media that may include text, graphics and sound to communicate and express ideas. • Use basic principles of design (color, shape, space) and text formatting to enhance ideas or to persuade with word processing or drawing programs.
Communication & Collaboration	<ul style="list-style-type: none"> • Continue to develop word processing skills (delete, font/size, tab, bullets, etc.) for writing assignments. • Insert & reposition graphics in documents. • Develop appropriate use of spell check. 	<ul style="list-style-type: none"> • Create, edit, save and retrieve a one-page document with graphics on a word processing program. • Create a one-page flyer or desktop publishing document.
Research & Information Retrieval	<ul style="list-style-type: none"> • Continue to use appropriate search engines and directories to search for information on the Internet. • Continue to take notes and cite sources appropriately. • Create a chart or graph using appropriate graphing program. 	<ul style="list-style-type: none"> • Follow proper citation guidelines. • Begin using advanced search techniques such as Boolean operators to search for information. • Continue to take notes and cite sources appropriately.
Critical Thinking, Problem-Solving & Decision Making	<ul style="list-style-type: none"> • Plan and execute strategies to guide research and complete projects. • Gather and analyze data to identify solutions and make informed decisions. • Use the Internet to locate and access information using appropriate search engines and online resources. 	<ul style="list-style-type: none"> • Introduce basic use of a spreadsheet to analyze, calculate and store data. • Plan and execute strategies to guide research and complete projects. • Use the Internet to locate and access information using appropriate search engines and online resources.
Digital Citizenship	<ul style="list-style-type: none"> • Use resources in a manner that is safe and responsible. • Continue learning and practicing resource conservation measures (printing efficiency, energy saving.) • Begin to evaluate accuracy of information of online content. • Review concept of copyrights. 	<ul style="list-style-type: none"> • Discuss the USD 442 Acceptable Use Policy and its implications for students. • Continue using resources in a manner that is safe and responsible, practicing general resource conservation measures. • Continue to evaluate accuracy of online content. • Discuss privacy policies and copyright regarding print, web sites and videos.
Technology Operations & Concepts	<ul style="list-style-type: none"> • Develop typing technique using all fingers in consistent home row position. • Be aware of basic file management techniques (saving, organize, rename, delete files). • Review basic Internet terms (web address, link, bookmark, etc.) and review basic Internet safety. 	<ul style="list-style-type: none"> • Type using all fingers in consistent home row position. • Be comfortable saving and retrieving documents from network folder. • Troubleshoot common technology problems (log out & in, force-quit, replace paper in printer, accessing correct printer). • Review Internet safety tips.

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Based on the National Educational Technology Standards for Students (2007)

GRADES 6-8

The numbers in parentheses after each item identify the NETS categories (1-6) that most closely correspond to the activity. Each activity may relate to one indicator, to multiple indicators or to the overall standards.

The categories are:

1. Creativity and Innovation
2. Communication and Collaboration
3. Research and Information Fluency
4. Critical Thinking, Problem Solving, and Decision Making
5. Digital Citizenship
6. Technology Operations and Concepts

Prior to completion of Grade 8, students will:

1. Create original word processing documents as a means of personal or group expression (1).
2. Create spreadsheets, charts, and graphs to display, analyze and communicate data. (1,2,3,4,6)
3. Create spreadsheets, charts and graphs to identify trends and forecast events. (1)
4. Use graphic organizers to construct knowledge and generate new ideas. (1)
5. Create a graphic organizer with two sublevels and an outline. (2,3)
6. Create a table using multiple rows and columns. (2,3)
7. Use advanced editing skills such as text wrapping and hyper linking. (2,6)
8. Create a one page flyer or desktop publishing document. (4,6)
9. Create a multi-column, multi-page desktop publishing document as an individual or team project. (1,2,3,4)
10. Review Internet safety. (6)
11. Use keyword, natural language searching and Boolean operators to refine Internet search skills. (3,4)
12. Understand the advantages and disadvantages of using computers and Internet for data retrieval and information access. (3,4)
13. Use the Internet to locate and access information using appropriate search engines and online resources and subscription services. (3)
14. Use Internet resources to generate new ideas and products. (1,2)
15. Select and use appropriate Internet sites effectively, productively and independently. (6)
16. Discuss the basics of email etiquette. (2)
17. Use email (as a class) to communicate with experts on curriculum topics (i.e.: Ask-an-expert). (5)
18. Evaluate validity, point of view and bias when using information from electronic sources and online content. (3,5)
19. Discuss and understand the implications of cyber bullying and social networking sites. (5)
20. Understand the correct and safe use of social networking sites. (5).
21. Use new online resources such as podcasting, video conferencing, online learning and interactive websites to communicate knowledge. (1,3)
22. Create multimedia presentations using text & graphics, video, digital stills, sound and transitions. (2,3,4,6)
23. Create an individual or group video production. (1,2,4,6)
24. Discuss privacy policies and copyright regarding print, Internet web sites and videos. (5)
25. Discuss the USD 442 Acceptable Use Policy and its implications for students. (5)
26. Use technology resources efficiently, practicing general conservation methods (printing efficiency, energy saving). (5)
27. Troubleshoot common technology problems (correct use of Command-Option-Escape, restart procedure, secure cables, accessing printers, etc.) (6)
28. Develop and maintain proper keyboarding skills with a rate of 15-20 words per minute. (6)

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GRADES 9-12

The numbers in parentheses after each item identify the NETS categories (1-6) that most closely correspond to the activity. Each activity may relate to one indicator, to multiple indicators or to the overall standards.

The categories are:

1. Creativity and Innovation
2. Communication and Collaboration
3. Research and Information Fluency
4. Critical Thinking, Problem Solving, and Decision Making
5. Digital Citizenship
6. Technology Operations and Concepts

During high school, students will:

1. Create original documents (word processed or desktop published) and presentations as a means of personal or group expression (1, 2, 3, 4, 6).
2. Create multimedia presentations using text, graphics, video, digital stills, sound and transitions. (1, 2, 3, 4, 5, 6)
3. Create an individual or group video production. (1, 2, 4, 6)
4. Use spreadsheets, charts and graphs to display, analyze and communicate data (1,2,3,4,6)
5. Use spreadsheets, charts and graphs to identify trends and forecast events. (1)
6. Use graphic organizers to construct knowledge and generate new ideas. (1)
7. Use advanced editing skills such as tables, bullets, outlining and hyperlinking. (2, 3, 6)
8. Use keyword, natural language searching and Boolean operators to refine Internet research skills (3,4)
9. Use the Internet to locate and access information using appropriate search engines and online resources and subscriptions services (3, 4)
10. Use Internet resources to generate new ideas and products. (1,2)
11. Evaluate validity, point of view and bias when using information from electronic sources and online content. (3, 5)
12. Understand privacy policies and copyright regarding, print, photographs, images, Internet web sites and videos (5)
13. Understand the basics of email etiquette (2)
14. Use email, including attachments, to communicate with others (2, 5)
15. Use online resources such as podcasting, video conferencing, online learning and interactive websites to communicate knowledge. (1, 3)
16. Understand the issue of cyber-bullying (5)
17. Understand the correct and safe use of social networking sites (5)
18. Understand the USD 442 Acceptable Use Policy and its implications for students. (5)
19. Use folders to organize personal home directory. (6)
20. Use technology resources efficiently, practicing general conservation methods (printing efficiency, energy saving). (5)
21. Troubleshoot common technology problems (login/logout, correct use of Control-Alt-Delete, restart procedure, secure cables, accessing printers, etc.) (6)