

Information and Computer Technology (ICT) Standards, preK-8 Topeka Collegiate School

The Information and Computer Technology (ICT) curriculum supports the Topeka Collegiate School's core competencies, including: life-long learning, innovation, critical thinking, collaboration, and communication. In particular, the ICT curriculum allows our students to become technologically literate, "adept in the application of ever-changing technology."

Technology Literacy is the ability of individuals to responsibly use appropriate technology tools to: access and integrate information; and construct and communicate knowledge to improve learning, and support lifelong learning.

Standards are aligned with the National Educational Technology Standards (NETS) from the International Society of Technology in Education (ISTE).

Introduce skills: skills that may be new to the student in an educational setting. Those skills introduced should also be practiced throughout the year.

Develop skills: skills that students already have been introduced to and should be practicing throughout the year.

Assess skills: benchmark skills on which students will be assessed for their progress.

Reinforce skills: benchmark skills that students have previously been assessed on, but need to practice and reinforce in their activities.

There are six standards (from the National Educational Technology Standards), with three main objectives each. The benchmark skills align vertically in grades prekindergarten – 8:

I. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations. Students...

1. Understand and use technology systems (operating systems, applications)
2. Use systems effectively and productively, and can troubleshoot
3. Transfer current knowledge to learning new technology

II. Digital Citizenship: Students understand human, cultural, and social issues related to technology and practice legal and ethical behavior, using technology responsibly. Students...

1. Practice safe, legal, and responsible use of information and technology, with respect for privacy, intellectual freedom, and intellectual property rights
2. Demonstrates a positive, respectful attitude and personal responsibility online, particularly with Web 2.0 tools and social networking.
3. Uses technology effectively for collaboration, sharing, learning, and productivity

III. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology. Students...

1. Create original works as a means of personal or group expression
2. Use models and simulations to explore complex systems or issues
3. Identify trends and forecast possibilities

IV. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. Students...

1. Interact, collaborate, and publish with peers, experts, or other teams employing a variety of digital environments and media
2. Communicate information and ideas to multiple audiences in a variety of media and formats
3. Develop global awareness by engaging with learners from other cultures around the nation and the world

V. Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information. Students...

1. Strategize to guide inquiry, and then locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
2. Evaluate and select information and digital tools based on the appropriateness of specific tasks
3. Process data and report results

VI. Critical Thinking, Problem Solving, and Decision Making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

1. Identify and define authentic problems and significant questions for investigation
2. Plan and manage activities to develop a solution or complete a project
3. Collect and analyze data to identify solutions and make informed decisions

Pre-Kindergarten ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Identify components: monitor, keyboard, printer and mouse.	X			
	Open and quit applications.	X			
	Manipulate the mouse and keyboard.	X			
	Demonstrate proper posture (sit up straight, feet on/toward floor, keyboard placement).	X			
	Identify letter keys as letters are learned.	X			
II. Digital Citizenship	Practice responsible use of equipment.	X			
	Demonstrate positive social behaviors when using technology.	X			
	Acknowledge name of programs.	X			
III. Creativity and Innovation					
IV. Communication and Collaboration					
V. Research and Information Fluency					
VI. Critical Thinking, Problem Solving, and Decision Making	Use puzzles, logical thinking programs, writing tools, drawing tools, content programs or interactive storybooks.	X			

Kindergarten ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Identify components ¹ : monitor, keyboard, printer and mouse.			X	
	Identify program icons, cursor, CD/DVD drive, USB port		X		
	Use appropriate terminology for technology ²	X			
	Open and quit applications.			X	
	Start up computer and login; log out and shut down		X		
	Manipulate the mouse and keyboard.			X	
	Demonstrate proper posture (sit up straight, feet on/toward floor, keyboard placement).		X		
	Demonstrate use of the letter keys by typing first name and last name			X	
	Identifies all the letters of the alphabet on the keyboard.			X	
	Demonstrate appropriate use of special keys, including shift, arrow, spacebar, backspace, enter	X			
II. Digital Citizenship	Practice responsible use of equipment and software.		X		
	Demonstrate positive social and ethical behaviors when using technology.		X		
	Acknowledge name of programs (sources of information).		X		
III. Creativity and Innovation	Create a picture using a draw program to illustrate a thought, idea or story.		X		
IV. Communication and Collaboration					
V. Research and Information Fluency	Use simple search terms and the search engine	X			
VI. Critical Thinking, Problem Solving, and Decision Making	Use puzzles, logical thinking programs, writing tools, drawing tools, content programs or interactive storybooks.		X		

¹ Keyboard, mouse, monitor, screen, printer, CD/DVD drive

² login, cursor, icon, scroll bar, hour glass (busy signal), word processing, internet, maximize, minimize

First Grade ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Identify components ¹			X	
	Identify program icons, cursor, CD/DVD drive, USB port			X	
	Use appropriate terminology for technology ²				
	Change text formats (font and size)		X		
	Start up computer and login; logout and shut down			X	
	Print a document		X		
	Demonstrate correct procedures for opening, closing, and saving files using menu options and commands	X			
	Demonstrate proper posture (sit up straight, feet on/toward floor, keyboard placement).			X	
	Demonstrate use of the letter keys by typing first name and last name, and simple sentences			X	
	Demonstrate appropriate use of special keys, including shift, arrow, spacebar, backspace, enter		X		
	Uses both hands to key the left and right sides of the keyboard			X	
II. Digital Citizenship	Practice responsible use of equipment and software.		X		
	Demonstrate positive social and ethical behaviors when using technology.		X		
	Acknowledge name of programs (sources of information).		X		
III. Creativity and Innovation	Create a picture using a draw program to illustrate a thought, idea or story.			X	
	Use animation applications (i.e. MonkeyJam, Gimp)	X			
IV. Communication and Collaboration					
V. Research and Information Fluency	Use simple search terms and the search engine to gather information		X		
VI. Critical Thinking, Problem Solving, and Decision Making	Use puzzles, logical thinking programs, writing tools, drawing tools, content programs or interactive storybooks.			X	

¹ Keyboard, mouse, monitor, screen, printer, CD/DVD drive, desktop, recycle bin, hard drive

² login, cursor, icon, scroll bar, hour glass (busy signal), word processing, internet, maximize, minimize

Second Grade ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Identify components learned in earlier grades ¹				X
	Use appropriate terminology for technology ²		X		
	Navigate server and identify student folder on the server			X	
	Name document and save to student folder		X		
	Demonstrate correct procedures for opening, closing, and saving files using menu options and commands		X		
	Change text formats (font and size)			X	
	Print a document			X	
	Demonstrate proper posture (sit up straight, feet on/toward floor, keyboard placement).				X
	Demonstrate keying the alphabet using the correct finger of the correct hand		X		
	Demonstrate using correct finger for return, shift, and spacebar, esc, tab, and other special keys		X		
	Demonstrate keyboarding at 10 words per minute	X			
II. Digital Citizenship	Practice responsible use of equipment and software.		X		
	Demonstrate positive social and ethical behaviors when using technology.		X		
	Cite source used in projects, following a citation format	X			
III. Creativity and Innovation	Create a picture using a draw program to illustrate a thought, idea or story.			X	
	Create an MS Word document		X		
	Use animation applications		X		
IV. Communication and Collaboration	Work cooperatively and collaboratively with peers on a project.		X		
V. Research and Information Fluency	Use simple search terms and the search engine to gather information			X	
	Use reliable online resources (databases, web sites) to gather information		X		
VI. Critical Thinking, Problem Solving, and Decision Making	Use educational software, calculators, and other technology tools for problem-solving, self-directed learning, and extended learning activities		X		

¹ Keyboard, mouse, monitor, screen, printer, CD/DVD drive, desktop, recycle bin, hard drive, network, folder, directory, input and output devices

² login, cursor, icon, scroll bar, hour glass (busy signal), word processing, internet, maximize, minimize, edit, open file, hardware, software, copyright, CPU, CD-ROM, file server, digital camera, scanner,

Third Grade ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Change text formatting and use paragraph tools (outline tools, indenting, alignment)		X		
	Navigate server and identify student folder on the server			X	
	Cut, copy and paste text		X		
	Learn Page Layout and Review tools (spell check, spacing, margins)	X			
	Name document and save to student folder			X	
	Demonstrate correct procedures for opening, closing, and saving files using menu options and commands			X	
	Use appropriate terminology for technology ¹			X	
	Demonstrate keying the alphabet and special keys ² by touch using correct fingers, home row finger placement			X	
	Compose a document at the keyboard			X	
	Demonstrate keyboarding at 15 words a minute				X
II. Digital Citizenship	Practice responsible use of equipment and software.		X		
	Demonstrate positive social and ethical behaviors when using technology.		X		
	Cite source used in projects, following a standard citation format (MLA)		X		
III. Creativity and Innovation	Use software to create a document that includes graphics and text combined		X		
	Create an MS Word document formatted according to teacher directions			X	
	Use Web 2.0 tools to find and create content	X			
IV. Communication and Collaboration	Work cooperatively and collaboratively with peers on a project.		X		
V. Research and Information Fluency	Locate a web site using URLs			X	
	Use multiple reliable online resources (databases, web sites) to gather information		X		
	Navigate within sites and use online search tools effectively to locate information		X		
VI. Critical Thinking, Problem Solving, and Decision Making	Use educational software, calculators, and other technology tools for problem-solving, self-directed learning, and extended learning activities		X		

¹ Add: electronic mail (email), software piracy, license agreement, file, telecommunication, multimedia

² Add: ctrl, alt, del, insert

Fourth Grade ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Change text formatting and use paragraph tools (outline tools, indenting, alignment)			X	
	Cut, copy and paste text, and use other editing tools, opening, saving, and organizing documents			X	
	Learn Page Layout and Review tools (spell check, spacing, margins)		X		
	Use appropriate terminology for technology				X
	Select printers, find student folders and other locations on network drives			X	
	Demonstrate keying the alphabet and special keys ¹ by touch using correct fingers		X		
	Compose a document at the keyboard			X	
	Demonstrate keyboarding at 20 words a minute			X	
II. Digital Citizenship	Practice responsible use of equipment and software.		X		
	Demonstrate positive social and ethical behaviors when using technology.		X		
	Cite source used in projects, following a standard citation format (MLA)		X		
	Discuss responsible use of technology and information and consequences of inappropriate use (review school policy)	X			
III. Creativity and Innovation	Use software to create a document that includes graphics and text combined			X	
	Create an MS Word document formatted according to teacher directions				X
	Create a slide show using PowerPoint	X			
	Use tools (scanner, camera) and software (MS Publisher) for writing, communication, and publishing	X			
	Use Web 2.0 tools to find and create content		X		
IV. Communication and Collaboration	Work cooperatively and collaboratively with peers on a project.			X	
	Communicate with others using email and other tools, with support from teachers and student partners	X			
V. Research and Information Fluency	Locate a web site using URLs				X
	Use multiple reliable online resources (databases, web sites) to gather information			X	
	Navigate within sites and use online search tools effectively to locate information		X		
VI. Critical Thinking, Problem Solving, and Decision Making	Use educational software, calculators, and other technology tools for problem-solving, self-directed learning, and extended learning activities		X		

¹ See terms learned in earlier grades and add: del, ins, home, end, PgUp, PgDn

Fifth Grade ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Demonstrate editing skills (text formatting, paragraph tools) and overall facility with word processing			X	
	Practice Page Layout and Review tools (spell check, spacing, margins)		X		
	Select printers, find student folders and other locations on network drives Save documents in student folder				X
	Use appropriate terminology for technology ¹				X
	Demonstrate keying the alphabet and special keys by touch using correct fingers			X	
	Compose a document at the keyboard				X
	Demonstrate keyboarding at 25 words a minute			X	
	Demonstrate use of operating system menu items and commands			X	
II. Digital Citizenship	Practice responsible use of equipment and software.		X		
	Demonstrate positive social and ethical behaviors when using technology.		X		
	Cite source used in projects, following a standard citation format (MLA)			X	
	Discuss responsible use of technology and information and consequences of inappropriate use (review school policy)			X	
III. Creativity and Innovation	Use software to create a document that includes graphics and text combined			X	
	Create original graphic content using cameras (hand-held, smartphone, or other device) and drawing programs, save, and use		X		
	Create a slide show using PowerPoint, using background, text, graphics, and special effects that complement the content		X		
	Use tools (scanner, camera) and software (MS Publisher) for writing, communication, and publishing		X		
	Use Web 2.0 tools to find and create content		X		
IV. Communication and Collaboration	Present a team-produced project created using technology	X			
	Communicate with others using email and other tools, with support from teachers and student partners		X		
V. Research and Information Fluency	Use multiple reliable online resources (databases, web sites) to gather information			X	
	Evaluate the reliability, accuracy, and relevancy of different online sources of information	X			
	Use effective search strategies within web sites and databases		X		
VI. Critical Thinking, Problem Solving, and Decision Making	Use educational software, calculators, and other technology tools for problem-solving, self-directed learning, and extended learning activities		X		

¹ See terms learned in earlier grades, and add: spreadsheet, database, desktop publishing, operating system menu items and commands/options

Sixth Grade ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Demonstrate word processing skills				X
	Select printers, find student folders and other locations on network drives Save documents in student folder				X
	Demonstrate keyboarding at 30 words a minute using correct fingering			X	
II. Digital Citizenship	Understand open source and security issues	X			
	Demonstrate positive social and ethical behaviors when using technology.		X		
	Cite source used in projects, following a standard citation format (MLA)			X	
	Discuss responsible use of technology and information and consequences of inappropriate use (review school policy)		X		
III. Creativity and Innovation	Use software to create a document that includes graphics and text combined				X
	Create original graphic content using cameras (hand-held, smartphone, or other device) and drawing programs, save, and use		X		
	Create a slide show using PowerPoint, using background, text, graphics, and special effects that complement the content			X	
	Use tools (scanner, camera) and software (MS Publisher) for writing, communication, and publishing			X	
	Use a spreadsheet to organize information in a chart or graph, and perform simple formulas		X		
IV. Communication and Collaboration	Present a team-produced project created using technology		X		
	Communicate with others using email and other tools, with support from teachers and student partners		X		
	Use Web 2.0 tools (i.e. wikis, blogs) to create content, share learning, or communicate		X		
V. Research and Information Fluency	Use multiple reliable online resources (databases, web sites) to gather information			X	
	Evaluate the reliability, accuracy, and relevancy of different online sources of information		X		
	Use effective search strategies within web sites and databases		X		
VI. Critical Thinking, Problem Solving, and Decision Making	Use educational software, calculators, and other technology tools for problem-solving, self-directed learning, and extended learning activities		X		
	Use productivity tools to organize and analyze information (i.e. MS OneNote)		X		

Seventh Grade ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Demonstrate word processing skills				X
	Select printers, find student folders and other locations on network drives Save documents in student folder				X
	Demonstrate keyboarding at 30 words a minute using correct fingering				X
II. Digital Citizenship	Understand open source and security issues		X		
	Demonstrate positive social and ethical behaviors when using technology.		X		
	Cite source used in projects, following a standard citation format (MLA)			X	
	Understand responsible use of technology and information and consequences of inappropriate use (review school policy)				X
III. Creativity and Innovation	Use software to create a document that includes graphics and text combined				X
	Create original graphic content using cameras (hand-held, smartphone, or other device) and drawing programs, save, and use		X		
	Create a slide show using PowerPoint, using background, text, graphics, and special effects that complement the content			X	
	Use tools (scanner, camera) and software (MS Publisher) for writing, communication, and publishing			X	
	Use a spreadsheet to organize information in a chart or graph, and perform functions		X		
	Use Web 2.0 tools (i.e. wikis, blogs) to create content, share learning, or communicate		X		
	Create a database	X			
IV. Communication and Collaboration	Present a team-produced project created using technology			X	
	Communicate with peers and adult experts outside of the school using email and other tools, with support from teachers and student partners		X		
V. Research and Information Fluency	Use multiple reliable online resources (databases, web sites) to gather information			X	
	Evaluate the reliability, accuracy, and relevancy of different online sources of information			X	
	Use effective search strategies within web sites and databases		X		
VI. Critical Thinking, Problem Solving, and Decision Making	Use educational software, calculators, and other technology tools for problem-solving, self-directed learning, and extended learning activities		X		
	Use productivity tools to organize and analyze information (i.e. MS OneNote)		X		

Eighth Grade ICT Benchmarks

Standard	Benchmark Skill	Introduce	Develop	Assess	Reinforce
I. Technology Operations and Concepts	Demonstrate word processing skills				X
	Select printers, find student folders and other locations on network drives Save documents in student folder				X
	Demonstrate keyboarding at 30 words a minute using correct fingering				X
II. Digital Citizenship	Practice responsible use of equipment and software.		X		
	Demonstrate positive social and ethical behaviors when using technology.		X		
	Cite source used in projects, following a standard citation format (MLA)			X	
	Understand responsible use of technology and information and consequences of inappropriate use (review school policy)				X
III. Creativity and Innovation	Use software to create a document that includes graphics and text combined				X
	Create a slide show using PowerPoint, using background, text, graphics, and special effects that complement the content			X	
	Use tools (scanner, camera) and software (MS Publisher) for writing, communication, and publishing				X
	Use a spreadsheet to organize information in a chart or graph, and use functions		X		
	Use Web 2.0 tools (i.e. wikis, blogs) to create content, share learning, or communicate		X		
	Create a database and online interface		X		
IV. Communication and Collaboration	Use online information resources to meet needs for research, publications, and communications		X		
	Communicate with peers and adult experts in other cities and states, or globally, using videoconferencing and other tools, with support from teachers and student partners		X		
V. Research and Information Fluency	Use multiple reliable online resources (databases, web sites) to gather information			X	
	Evaluate the reliability, accuracy, and relevancy of different online sources of information			X	
	Use effective search strategies within web sites and databases		X		
VI. Critical Thinking, Problem Solving, and Decision Making	Use educational software, calculators, and other technology tools for problem-solving, self-directed learning, and extended learning activities		X		
	Use productivity tools to organize and analyze information (i.e. MS OneNote)		X		