

Technology Operations and Concepts

Grade Level K-5

<i>Standard</i>	<i>Exploration / Application</i>	<i>K</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
a. understand and use technology systems.	<ul style="list-style-type: none"> Use developmentally appropriate and accurate terminology to identify and refer to points and basic hardware and software operations 	✓	✓	✓	✓	✓	✓
b. select and use applications effectively and productively.	<ul style="list-style-type: none"> Explore and apply a variety of technology systems and resources to complete learning tasks <ul style="list-style-type: none"> Name, save, retrieve, open, delete and organize files Use input and output devices 			✓	✓	✓	✓
c. troubleshoot systems and applications.	<ul style="list-style-type: none"> Apply basic technology based thinking strategies <ul style="list-style-type: none"> Storage and Retrieval techniques 					✓	✓
d. transfer current knowledge to learning of new technologies.	<ul style="list-style-type: none"> Identify the source of common operational and network problems 		✓	✓	✓	✓	✓
	<ul style="list-style-type: none"> Resolve common problems that occur during every day use 	✓	✓	✓	✓	✓	✓
	<ul style="list-style-type: none"> Apply basic and functions from previous learning to new technologies and situations 		✓	✓	✓	✓	✓

<i>Standard</i>	<i>Exploration / Application</i>	<i>K</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<p>a. advocate and practice safe, legal, and responsible use of information and technology.</p> <p>b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.</p> <p>c. demonstrate personal responsibility for lifelong learning.</p> <p>d. exhibit leadership for digital citizenship.</p>	<ul style="list-style-type: none"> • Demonstrate an understanding of age appropriate issues relate to safe, healthy, and acceptable use of digital devices • Discuss and apply responsible and legal use of technology • Articulate and demonstrate cooperative and collaborative use of technology to contribute to an effective learning environment • Use technology as a way to communicate with others and access information for formal and informal learning • Select and use technology resources to pursue personal and academic learning outside of the classroom • Model positive digital behavior 	✓	✓	✓	✓	✓	✓

Digital Citizenship : Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

Based on NETS-S
Grade Level K-5

<i>Standard</i>	<i>Exploration / Application</i>	<i>K</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<p>a. identify and define authentic problems and significant questions for investigation.</p> <p>b. plan and manage activities to develop a solution or complete a project.</p> <p>d. collect and analyze data to identify solutions and/or make informed decisions.</p> <p>d. use multiple processes and diverse perspectives to explore alternative solutions.</p>	<ul style="list-style-type: none"> • Identify ways technology can help explore and understanding everyday problems • Use print and online resources to identify significant issues • Identify and apply strategies to select information and digital resources to complete an activity or solve a problem • Use digital planning tools for completing a project or solving a problem • Collect data and record results using appropriate digital tools • In small groups compare problem solving processes and solution 			<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

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.

<i>Standard</i>	<i>Exploration / Application</i>	<i>K</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<p>a. plan strategies to guide inquiry.</p> <p>b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.</p> <p>c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.</p> <p>d. process data and report results.</p>	<ul style="list-style-type: none"> • KWHL charts • Develop and refine questions for investigation a learning related topic • List sources of information needed • Find appropriate information gathering tools • Locate and gather information from preselected digital sources • Locate and organize relevant and reliable information from a variety of digital sources • Analyze and synthesize results to answer a question or clarify and issue • Document sources in an age-appropriate manner • Describe the use of a variety of age appropriate digital tools • Compare and contrast effectiveness of two or more digital tools and information resources • Validate sources document bias by checking credentials 	<p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

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

<i>Standard</i>	<i>Exploration / Application</i>	<i>K</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<p>a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.</p> <p>b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.</p> <p>c. develop cultural understanding and global awareness by engaging with learners of other cultures.</p> <p>d. contribute to project teams to produce original works or solve problems.</p>	<ul style="list-style-type: none"> • Collaborative – writing stories, presenting information respond to content related topics (variety of digital tools) • Online curriculum based resources • Sharing learning with classmates, families and others • Using variety of media environments • Use technology to exchange ideas and information classroom to classroom or other cultures, communities or countries • Collaboratively explore concepts and present solutions using age-appropriate tools 	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

Communication and Collaboration: to support individual learning and contribute to the learning of others.

Based on NETS-S
Grade Level K-5

<i>Standard</i>	<i>Exploration / Application</i>	<i>K</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<p>a. apply existing knowledge to generate new ideas, products, or processes.</p> <p>b. create original works as a means of personal or group expression.</p> <p>c. use models and simulations to explore complex systems and issues.</p> <p>d. identify trends and forecast possibilities.</p>	<ul style="list-style-type: none"> • KWHL chart • Identify global and local problems • Explore options and provide solutions • Create original presentations • Media rich digital stories • Working individually and in collaborative groups • Reflect and document results • Digital tools to find and organize data • Manipulate variable and record and display results using electronic tools • Use graphic organizers identify variables and patterns predict out comes • Collect and store data electronically • Use graphs to identify trends • Make data driven predictions 	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

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

Based on NETS-S
Grade Level K-5

<i>Standard</i>	<i>Exploration / Application</i>	<i>Assessments</i>		
<p>a. understand and use technology systems.</p> <p>b. select and use applications effectively and productively.</p> <p>c. troubleshoot systems and applications.</p> <p>d. transfer current knowledge to learning of new technologies.</p>	<ul style="list-style-type: none"> • Use a variety of technology interfaces and operating systems • Demonstrate an understanding of how technology interfaces and operating systems interact with local and wide area networks • Use technology to systems and resources to complete learning activities • Use multiple file types and their related software applications • Develop and apply criteria for selecting a digital application tool to accomplish a real-world task • Compare and contrast the efficiency and effectiveness of several applications • Justify the appropriateness of an application • Demonstrate the ability to locate and use documentation and online resources to help solve hardware and software problems • Provide accurate descriptions of problems using correct terminology and, when appropriate, propose a plan of action to resolve unexpected problems • Develop and apply strategies to learn new technologies and advanced features of current technologies 			

Technology Operations and Concepts

Grade Level

6-8

Based on NETS standards.

<i>Standard</i>	<i>Exploration / Application</i>	<i>Assessments</i>		
<p>a. advocate and practice safe, legal, and responsible use of information and technology.</p> <p>b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.</p> <p>c. demonstrate personal responsibility for lifelong learning.</p> <p>d. exhibit leadership for digital citizenship.</p>	<ul style="list-style-type: none"> • Develop materials to educate others about appropriate use of information and technology (public service announcements, flyers, advertisements, other presentations) • Use technology to collaborate, communicate, learn, and produce in a positive and appropriate way • Identify and use personal and academic learning communities (ex: Ed Ted, wikis, blogs, social media) to support lifelong learning and academic success • Share aspects of digital citizenship with a diverse audience through a variety of digital media tools 			

Digital Citizenship : Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

Grade Level

6-8

Based on NETS standards.

<i>Standard</i>	<i>Exploration / Application</i>	<i>Assessments</i>		
<p>a. identify and define authentic problems and significant questions for investigation.</p> <p>b. plan and manage activities to develop a solution or complete a project.</p> <p>d. collect and analyze data to identify solutions and/or make informed decisions.</p> <p>d. use multiple processes and diverse perspectives to explore alternative solutions.</p>	<ul style="list-style-type: none"> • Use inquiry model to explore a content related issue or problem • Plan a thesis statement, independently select and use the appropriate digital tools, resources, and computational strategies to solve the problem • Collect and analyze data using technology to gather, view, examine patterns, analyze potential solutions, and report conclusions for content-related problems • Use collaboration tools and online collaboration environments to explore diverse points of view (culture, location, environment, etc) and evaluate solutions from a variety of perspectives 			

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.

Grade Level

6-8

Based on NETS standards.

<i>Standard</i>	<i>Exploration / Application</i>	<i>Assessments</i>		
<p>a. plan strategies to guide inquiry.</p> <p>b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.</p> <p>c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.</p> <p>d. process data and report results.</p>	<ul style="list-style-type: none"> • Use inquiry model to explore a content related issue or problem • Use effective research strategies • Evaluate sources for credibility • Categorize and classify information • Synthesize results and use visual representations (spreadsheets, graphs) • Choose a web 2.0 tool or other software appropriate for the task • Use data analysis tools to analyze data collection • Create projects and models to inform 			

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

6-8

<p>a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.</p> <p>b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.</p> <p>c. develop cultural understanding and global awareness by engaging with learners of other cultures.</p> <p>d. contribute to project teams to produce original works or solve problems.</p>	<ul style="list-style-type: none"> • Use digital media tools to collaborate with peers, experts, or global partners to plan, design, and publish content specific products • Individually or in collaborative groups, identify and evaluate sources for accuracy, bias, and comprehensiveness. Summarize and distribute results to multiple audiences. • Collaborate with learners from other cultures to better understand a topic of global concern • Work collaboratively in a project team using digital tools to support investigation/experimentation 			
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Communication and Collaboration : to support individual learning and contribute to the learning of others.

Grade Level

6-8

<i>Standard</i>	<i>Exploration / Application</i>	<i>Assessments</i>		
<p>a. apply existing knowledge to generate new ideas, products, or processes.</p> <p>b. create original works as a means of personal or group expression.</p> <p>c. use models and simulations to explore complex systems and issues.</p> <p>d. identify trends and forecast possibilities.</p>	<ul style="list-style-type: none"> • Create new products that could be used to provide innovative solutions in the real world (ex: public service announcements on global and local problems, book trailers, digital stories, or podcasts) • Create animations or videos about a topic of interest or in response to a learning activity and document a reflection on the quality of the production • Describe and illustrate a complex content-related concept or process using a model, simulation, concept mapping software, or hypermedia (ex: trip through a cell, trip through an ancient civilization) • Develop and apply a research strategy for making data-driven predictions. Manipulate data to forecast results. Determine models that allow manipulation of variables. 			

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

Grade Level

6-8

Based on NETS standards.

<i>Standard</i>	<i>Exploration / Application</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>
<p>a. understand and use technology systems.</p> <p>b. select and use applications effectively and productively.</p> <p>c. troubleshoot systems and applications.</p> <p>d. transfer current knowledge to learning of new technologies.</p>	<ul style="list-style-type: none"> • Know how to locate information to assist troubleshooting (Help section online and within software, websites) • Understand how to use a variety of devices for education and personal information effectively and efficiently • Be able to select the best device for the purpose. • Use cloud based technology (Google docs, drop box, etc) for creating, saving, sharing using a variety of devices • Resolve common problems that occur during every day use of devices (printers, computers, tablets, etc) 				

Technology Operations and Concepts: students demonstrate a sound understanding of technology concepts, systems and operations.
 Grade Level 9-12

Based on NETS standards.

<i>Standard</i>	<i>Exploration / Application</i>				
<p>a. advocate and practice safe, legal, and responsible use of information and technology.</p> <p>b. exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.</p> <p>c. demonstrate personal responsibility for lifelong learning.</p> <p>d. exhibit leadership for digital citizenship.</p>	<ul style="list-style-type: none"> • Identify and discuss existing and emerging issues in digital citizenship • Demonstrate safe and ethical use of digital devices and resources • Use correct citation • Demonstrate synthesis avoiding plagiarism • Understanding the advantages and concerns about using social networks • Locate and use digital collaboration tools • Understand safe use of internet in public spaces using a variety of devices (public library, hotspots, Starbucks, etc) • Understand copyright rules for a variety of materials: music, text, movie, etc • Understand Fair Use law and how it applies at school but not in career setting. • Create presentations that inform others (parents, younger students, PSA) about safe, legal, responsible use of information and technology 				

Digital Citizenship : Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

Grade Level 9-12

Based on NETS standards.

<i>Standard</i>	<i>Exploration / Application</i>				
<p>a. identify and define authentic problems and significant questions for investigation.</p> <p>b. plan and manage activities to develop a solution or complete a project.</p> <p>d. collect and analyze data to identify solutions and/or make informed decisions.</p> <p>d. use multiple processes and diverse perspectives to explore alternative solutions.</p>	<ul style="list-style-type: none"> • Use Stripling inquiry model • Demonstrate ability to select the correct source for the purpose (when to select database or open web, which database is appropriate for task, when is a book better, when to use primary source) • Demonstrate use of visual literacy including visual rhetoric – Analyze, use, and create graphic/visual images of varying types • Locate, analyze, & use primary sources effectively and efficiently • Use charts and graphs... analyze & interpret • Locate and use sources from varied source types (oral, written, video, audio, pictorial, graphs sources) • Locate, read, analyze varying points of views/opinion from a variety of sources • Demonstrate understanding of the different between opinion and document supported arguments – difference between persuasion and argumentative stance <p>~English and Business Communication connection Both do persuasive speeches in their curriculum</p>				

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.
Grade Level 9-12

Based on NETS standards.

<i>Standard</i>	<i>Exploration / Application</i>				
<p>a. plan strategies to guide inquiry.</p> <p>b. locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.</p> <p>c. evaluate and select information sources and digital tools based on the appropriateness to specific tasks.</p> <p>d. process data and report results.</p>	<ul style="list-style-type: none"> • Teach the Stripling Model • Teach Thesis creating tools • Teach research strategies (keyword, search engines, databases, etc) • Learn your way around a website (Locating author & publisher, locating publication date, understanding domain name, etc) • Locate sources effectively and efficiently • Citation/plagiarism • Better search strategies on the open web including power searches • Evaluate sources (5 W's, CRAPP) • Evaluate tools for purpose, cost, accessibility, etc • Analyze & create using excel and other tools like infographics (science teachers?) • Demonstrate how to use the online card catalog (Destiny) effectively and efficiently (book reviews, one search, book search , advance search) 				

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

Grade Level

9-12

Based on NETS standards.

<p>a. interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.</p> <p>b. communicate information and ideas effectively to multiple audiences using a variety of media and formats.</p> <p>c. develop cultural understanding and global awareness by engaging with learners of other cultures.</p> <p>d. contribute to project teams to produce original works or solve problems.</p>	<ul style="list-style-type: none"> • Use tools that allow conversation with experts and peers over distance - Skype/Camera to camera tools/Face Time/Google Hang-out/email an expert • Use Multimedia tools effectively and efficiently (Animoto, Movie Maker, Voice thread) to present knowledge <p>~English: Historical Fiction gr 9 (create documentary using above tools)</p> <ul style="list-style-type: none"> • Teach teachers how to use TED Talks and Skype • Use web-based collaborative tools effectively and efficiently (Prezi, etc.) • Use online card catalog (Destiny)to communicate effectively and efficiently about books using book review system • Understand domain name of website enabling locating research at non USA sites • Publishing work using web-based tools and publishing on the web in a variety of formats (online posters, websites, written text, movies on Youtube, etc) 				
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Communication and Collaboration : to support individual learning and contribute to the learning of others.

Grade Level

9-12

Based on NETS standards.

<i>Standard</i>	<i>Exploration / Application</i>				
<p>a. apply existing knowledge to generate new ideas, products, or processes.</p> <p>b. create original works as a means of personal or group expression.</p> <p>c. use models and simulations to explore complex systems and issues.</p> <p>d. identify trends and forecast possibilities.</p>	<ul style="list-style-type: none"> • Use inquiry model to create questions and thesis • Research strategies (keywords, etc) • Better searches using open web –effectively and efficiently • Use Databases effectively and efficiently • Create effectively and efficiently using Web 2.0 Tools • Create book Trailers – publish on Destiny online catalog • Utilize 21st century presentation tools and product creation tools to complete a project • Test new presentation and product creation tools and evaluate for future use. • Google Earth and Magic (maps at UCONN) – teach Geography teachers how to use <ul style="list-style-type: none"> ○ Analyze and predict <p>English Curriculum connections:</p> <p>~Historical Fiction gr 9 (research, databases, camera/phone, Teacher Tube, TED Talks, create documentary)</p> <p>~Persuasion gr 10 (database, SIRS, primary sources LOC)</p>				

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

Grade Level