

SOUTH DAKOTA EDUCATIONAL TECHNOLOGY STANDARDS

3-5

Third Grade Nature, Concepts and Systems (systems thinking, interactions, and design) Grade Standards, Supporting Skills, and Examples

Indicator 1: Students understand the history and progression of technology in relation to the development and design of future technology

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Knowledge)	<p>3.NC.1.1 Describe ways that creative thinking, economics and culture influence the development of technology over time.</p> <ul style="list-style-type: none">• Develop a progression timeline of technology to show change over time<ul style="list-style-type: none">○ Information/communication○ Manufacturing○ Transportation○ Medical○ Energy○ Construction○ Agricultural• Describe Influences of the past present and future• Interpret and respond to diverse works from various cultures and time periods. <p>Example: Transition from the agrarian age to the industrial age changed with the technology invention of the assembly line process.</p>

Indicator 2: Students analyze the parts of a technological system in terms of input, process, output, and feedback.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Comprehension)	<p>3.NC.2.1 Illustrate, using a flow chart, the parts of the system model as it relates to technology.</p> <ul style="list-style-type: none"> • Explain how the components work together to make a system. Example: input-information on the keyboard, process- typing, output-printed paper document, feedback-grade. • Define a system. (input, process, output, feedback). Example: electric pencil sharpener: put the pencil in, sharpen it, pull it out and decide that it is sharp enough. <p>Example: Science 3.L.3.1</p>

Indicator 3: Students analyze the relationships and the connections between technologies in different fields of study and how they apply to communities.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Comprehension)	<p>3.NC.3.1 Categorize technologies into home, school, work or global use.</p> <p>Example: Different technologies are used in different locations e.g. home-lawnmower, school-Smart board, global-Internet</p>

Indicator 4: Students understand the purpose and demonstrate the use of the design process in problem solving.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>3.NC.4.1 Produce a variety of solutions to a defined problem.</p> <p>Example: sending a letter = do you want personalization or speed</p>

**Third Grade Nature, Concepts and Systems
(systems thinking, interactions, and design)**

Performance Descriptors

Advanced	Third grade students performing at the advanced level: <ul style="list-style-type: none">• Design a technology timeline and explain how creative thinking, economics and culture have influenced various periods of time.• Explain the use of one technology in a variety of locations.• Explain the benefits of each solution given
Proficient	Third grade students performing at the proficient level: <ul style="list-style-type: none">• Describe ways that creative thinking, economics, and culture influence the development of technology over time.• Diagram all components of systems thinking model as it relates to technology• Classify technologies into home, school or global use• Define a problem and produce a variety of solutions
Basic	Third grade students performing at the basic level: <ul style="list-style-type: none">• Given a timeline, Identify three major technology events.• Illustrate and label two of the four parts of the systems thinking model.• List technology at school• Given a defined problem can produce two solutions

Third Grade Social Interactions
Grade Standards, Supporting Skills, and Examples

Indicator 1: Students understand the safe, ethical, legal, and societal issues related to technology.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Comprehension)	<p>3.SI.1.1 Distinguish among different types of illegal and unethical technology usage.</p> <ul style="list-style-type: none"> • Plagiarism-copy pre-existing work • Hacking-breaking into secured location • Pirating- break copyrighting • Licensing- individual vs. site <p style="text-align: right;">Example: Super Mario program copied for all my buddies</p>
(Application)	<p>3.SI.1.2 Implement safety precautions while online.</p> <p style="text-align: center;">Example: Protecting personal info. during a simulated safe conversation via Chat/Instant Messaging/ Email</p>
(Knowledge)	<p>3.SI.1.3 Identify how to cite a source.</p>

Indicator 2: Students investigate the advantages and disadvantages of technology.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Analysis)	<p>3.SI.2.1 Recognize the advantages and disadvantages of technology on the individual.</p> <ul style="list-style-type: none"> • Summarize how assistive technologies can benefit persons with disabilities. <p style="text-align: center;">Example: personal computer, PDA, GPS, cell phones, Computer/software for the blind</p>

**Third Grade Social Interactions
Performance Descriptors**

Advanced	<p>Third grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • Communicate the consequences of illegal and unethical use of technology • Practice safety precautions while online and can recognize unsafe use by others. • Apply proper time and place for citation • Predict how technologies might change in the future to assist persons with disabilities • Predict the advantages and disadvantages of a given technology on the individual
Proficient	<p>Third grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • Distinguish among different types of illegal and unethical technology usage • Demonstrate safety precautions while online • Identify how to cite a source • Explain how technologies assist persons with learning/physical/or developmental disabilities • Compare and contrast a given technology's advantages and disadvantages on the individual
Basic	<p>Third grade students performing at the basic level:</p> <ul style="list-style-type: none"> • List a type of illegal technology usage • List a type of unethical usage • Recognize some safety precautions while online • Locate a source to be identified • List technologies that can assist persons with a disability • List a personal advantage and disadvantage to technology

Third Grade Information and Communication Tools Grade Standards, Supporting Skills, and Examples

Indicator 1: Students recognize and demonstrate skills in operating technological systems.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Knowledge)	<p>3.CT.1.1 Identify parts of an operating system environment</p> <p>Example: Desktop, start menu, quick-launch bar/ dock, icons, and menu bar</p>
(Comprehension)	<p>3.CT.1.2 Demonstrate use of home row keyboarding</p> <ul style="list-style-type: none"> ✓ Introduce remaining keys <p>Example: Have students use a paper keyboard and practice positions of keys, use a keyboard that is no longer in use to practice typing.</p> <ul style="list-style-type: none"> ✓ Demonstrate proper posture while typing <p>Example: Sitting up, feet on floor, arms parallel to keyboard, fingers curved and upright, and wrists at neutral</p>
(Comprehension)	<p>3.CT.1.3 Demonstrate proper care in the use of hardware, software, peripherals, and storage media.</p>
(Application)	<p>3.CT.1.4 Create, save and retrieve folders.</p> <ul style="list-style-type: none"> • Create folders • Access the server
	<ul style="list-style-type: none"> ✓ Identify input/output devices and other peripherals. -Knowledge <p>Example: Digital camera, scanner, printer, external media storage (CD, floppy, flash drive)</p>

Indicator 2: Students use technology to enhance learning, extend capability, and promote creativity.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>3.CT.2.1 Use a word processor to develop a product.</p> <ul style="list-style-type: none"> • Incorporating specific formatting <p>Example: bold, italics, underline, font size, color and type</p>
(Application)	<p>3.CT.2.2 Develop documents in design applications.</p> <p>Example: Inspiration, Kidpix, MS paint</p> <p>Example: Writing 3.LVS.1.4</p>

Indicator 3: Students evaluate and select information tools based on the appropriateness to specific tasks.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Comprehension)	<p>3.CT.3.1 Differentiate between information tools and technological innovations.</p> <ul style="list-style-type: none"> • Tools are one or two communication devices. i.e. A tool can be a one way communication (record player) or two way communication (recording a lecture to playback at a later date). • Innovation makes life easier. • Tools exist, innovations are brand new • Discuss how innovations become information tools. <p>Example: Television, telegraph, internet, cell phones</p> <p>Example: A tool can be a one way communication (record player) or two way communication (recording a lecture to playback at a later date).</p> <p>Example: Science 3.P.3.3</p>

**Third Grade Information and Communication Tools
Performance Descriptors**

Advanced	<p>Third grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • Explain the role of each part of a computer environment • Access menu bars and use some keyboard/toolbar shortcuts independently • Move and manage files and folders independently. • Demonstrate use of home row keyboarding using touch typing techniques • Develop a document in a design or word processing application with advanced features • Select and justify multiple tools to complete a task. • Based on current tools, predict an innovations
Proficient	<p>Third grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • Identify parts of an operating system environment. • Access and use menu bars and sub-commands • Demonstrate use of home row keyboarding • Demonstrate proper care of technology • Create, save and retrieve files • Given specific formatting criteria, use a word processor to develop a product • Develop documents in a design application • State the difference between technology tools and innovations • Select tools based on a specific tasks.
Basic	<p>Third grade students performing at the basic level:</p> <ul style="list-style-type: none"> • Label parts of a computer desktop environment • Access a menu bar with assistance • Demonstrate proper care of mouse, keyboard and cpu • Identify Home Row Keys • Create, save, and retrieve files with assistance • Create a word processing document with assistance • Given a created document in a design application, make one to two changes in the product • State one technology tool and innovation. • Select a tool for a given task.

	<ul style="list-style-type: none"> • Identify a tool which may be used to best solve a task
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Third Grade Information and Communication Processes Grade Standards, Supporting Skills, and Examples

Indicator 1: Students understand the purpose of information technologies to communicate with a variety of collaborators.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>3.CP.1.1 Participate within groups to produce a digital output for a given assignment.</p> <p>Example: Collaborate in groups of two or more individuals to create a short story with inserted graphics.</p>

Indicator 2: Students exchange information and ideas for an identified purpose through Information Technologies.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>3.CP.2.1 Describe how a message communicated through information technology is affected by an audience.</p> <ul style="list-style-type: none"> • Identify ways audience receives information (text, graphics, audio, video) • Type of audiences • Location of audience • Experience of audience <p>Example: Using different information technologies create an invitation to invite the public to a school event.</p> <p>Example: Science 3.P.3.3</p>

**Third Grade Information and Communication Processes
Performance Descriptors**

Advanced	<p>Third grade students performing at the advanced level:</p> <ul style="list-style-type: none">• Participate within groups to produce a digital output using a variety of resources for a given assignment• Describe how an audience affects media and format• Justify their reasoning for choosing a communication tool to exchange information
Proficient	<p>Third grade students performing at the proficient level:</p> <ul style="list-style-type: none">• Collaboratively create a digital output for an assignment.• Identify audience factors that affect a presentation• Identify, describe, and select the best media for communication
Basic	<p>Third grade students performing at the basic level:</p> <ul style="list-style-type: none">• Use a pre-created digital output with a partner for a given assignment• List types of audiences• Given a media source can use it to communicate with an intended audience

**Third Grade Information Literacy and Decision Making
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Students use technology to locate and acquire information.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>3.II.1.1 Perform a keyword/phrase search on existing databases on a specified topic.</p> <ul style="list-style-type: none"> • Local databases • Online databases <p>Example: Existing databases have data already created in a structure for an end user. They can include proprietary and free sources- Digital Encyclopedia, dictionary.com, google.com, ask.com</p> <ul style="list-style-type: none"> • Find results based on a question • Teacher driven topic <p>Example: Search for Social Studies or Science topics on a database or website.</p>

Indicator 2: Students determine the reliability and relevancy of information.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Knowledge)	<p>3.II.2.1 Identify author, date, and subject within different sources of information.</p> <ul style="list-style-type: none"> • Locate source information i.e. Open a webpage and be able to find this info on that page • Identify types of resources i.e. journal, newspaper, books, encyclopedias <p>Example: Find author information on three books or articles.</p>

**Third Grade Information Literacy and Decision Making
Performance Descriptors**

Advanced	Third grade students performing at the advanced level: <ul style="list-style-type: none">• Can extend the search results of the specified topic beyond to a general topic• Correctly cite author, date and subject of the resource• Select the best type of resource to use based on need
Proficient	Third grade students performing at the proficient level: <ul style="list-style-type: none">• Can generate multiple relevant search results relating to a specific topic.• Locate author, date and subject within the resource• Identify types of resources
Basic	Third grade students performing at the basic level: <ul style="list-style-type: none">• Can find a search result relating to a specific topic• Locate author, date, and subject with assistance

Fourth Grade Nature, Concepts and Systems
(systems thinking, interactions, and design)
Grade Standards, Supporting Skills, and Examples

Indicator 1: Students understand the history and progression of technology in relation to the development and design of future technology

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Analysis)	<p>4.NC.1.1 Distinguish how changes in technological tools affect outcomes – Ex: faster computers = more/better data Charts and graphs are more commonly made by using software programs rather than by hand. Using a calculator in Math.</p> <ul style="list-style-type: none"> • Explain the relationship between the tool, its development, and productivity. <p style="text-align: center;">Example: the faster the tool the more productivity is gained. Combine (farming machine) vs. hand tools</p> • Explain how creative thinking and economic and cultural influences shape technology.

Indicator 2: Students analyze the parts of a technological system in terms of input, process, output, and feedback.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>4.NC.2.1 Determine the effects of feedback in the system model. Example: explain how the desire to improve the grade affects the rest of the system.</p> <ul style="list-style-type: none"> • Define types of feedback Person to person <p style="text-align: center;">Example: How the audience reacts to a presentation.</p> Person to machine <p style="text-align: center;">Example: Using a web page counter to see hits on a page.</p> Machine to person

	<p>Example: A machine checking spelling and grammatical errors.</p> <p>Machine to machine</p> <p>Example: Information sent from a computer to a printer.</p> <p>Example: Science 4.L.3.1</p> <p>Example: Science 4.E.1.1</p>
(Knowledge)	<p>4.NC.2.2 Identify the resources needed in a system in order for it to work.</p> <p>Example: Water Cycle – needs water and heat for the process of evaporation, condensation, precipitation to occur</p> <p>Example: Science 4.L.3.1</p> <p>Example: Science 4.E.1.1</p>

Indicator 3: Students analyze the relationships and the connections between technologies in different fields of study and how they apply to communities.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>4.NC.3.1 Identify examples of how technology changes have affected society</p> <ul style="list-style-type: none"> • Identify technology's affects on various cultures <p>Example: Technologically literate cultures vs. technologically illiterate cultures</p> <ul style="list-style-type: none"> • Identify ways changes in technology have affected a cultures history to determine how new changes will impact its future • Identify various sub-cultures with in a society that have alternate views of technology <p>Example: religious views of internet usage</p> <p>Example: Science 4.S.1.2</p> <p>Example: Social Studies 3.W.1.1</p>

Indicator 4: Students understand the purpose and demonstrate the use of the design process in problem solving.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Synthesis)	<p>4.NC.4.1 Adapt a structured method to produce a variety of solutions to a given problem using the design process. -</p> <p>Example: Brainstorming, clustering, outlining, mind-mapping, graphic organizers</p> <ul style="list-style-type: none"> • Apply the parts of the design process <ol style="list-style-type: none"> 1. Define the problem 2. Gather information 3. Create alternative solutions 4. Select optimum solution 5. Develop and produce solution 6. Test solution 7. Report results <p>Example: Science 4.S.1.1</p> <p>Example: Science 4.L.1.1</p>

**Fourth Grade Nature, Concepts and Systems
(systems thinking, interactions, and design)
Performance Descriptors**

Advanced	<p>Fourth grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • Design a technology of the future incorporating current technologies • Predict the effects of feedback within the systems thinking model to determine an outcome. • Describe the role of resources needed in a system in order for it to work. • Differentiate changes in technology at home, school and community. • Explain why some culture choose not to embrace technologies • Predict how future technologies will impact various cultures • Explain the benefits of using the design process when finding solutions to a defined problem.
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	<ul style="list-style-type: none"> • Explain the benefits of using different structures to solve problems
Proficient	<p>Fourth grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • Distinguish how changes in technological tools affect outcomes • Determine the effects of feedback in the systems thinking model. • Identify examples of how technology changes have affected society • List ways changes in technology have affected a culture's history • Describe why some subcultures have different views of technology • Given a scenario, students can apply steps 1-7 in the design process to develop multiple solutions
Basic	<p>Fourth grade students performing at the basic level:</p> <ul style="list-style-type: none"> • Identify the change in the outcome as a result of a change in the technological tool. • Identify one resource needed in a system • Define two types of feedback • Illustrate a change in technology at school, home, and work. • List a sub-culture which has an alternative view of technology • List the steps of the design process • Adapt one method to produce more than one solution to a problem

Fourth Grade Social Interactions
Grade Standards, Supporting Skills, and Examples

Indicator 1: Students understand the safe, ethical, legal, and societal issues related to technology.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Evaluation)	<p>4.SI.1.1 Compare and contrast consequences of illegal and unethical technology use</p> <p>Example: Having privileges revoked for looking at inappropriate websites.</p> <p>Example: Social Studies 4.C.2.1</p> <ul style="list-style-type: none"> • Identify the difference between ethical (right) and unethical (wrong) usage • Define consequences of unethical and illegal uses of technology in different environments. <ul style="list-style-type: none"> ○ Unethical examples <ul style="list-style-type: none"> ▪ Home-grounded school-detention ○ Illegal examples: <ul style="list-style-type: none"> ▪ Copying a copyrighted cd is illegal in all environments but depending on the environment different consequences might occur -Probation, jail time, loss of privilege or job
(Synthesis)	<p>4.SI. 1.2 Communicate issues relating to online safety</p> <ul style="list-style-type: none"> • Viruses • Social networking sites <ul style="list-style-type: none"> ○ i.e. myspace.com, facebook.com, chat rooms • Communication etiquette <p>Example: Students understand the dangers of giving too much information online.</p>
(Application)	<p>4.SI.1.3 Determine where and when to cite a source of information.</p> <p>Example: Apply proper citing of information sources in created works when referencing information from an online article.</p>

(Knowledge)	<p>4.SI.1.4 Identify cultural issues relating to technology.</p> <ul style="list-style-type: none"> • Background differences affect societies view of legal and illegal consequence. <p>Example: How colonial cultures and third world countries have different views of technology</p>
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Indicator 2: Students investigate the advantages and disadvantages of technology.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Analysis)	<p>4.SI.2.1 Distinguish advantages and disadvantages of technology on society.</p> <p>Example: Integration of technology can result in loss of jobs for employees but greater productivity for the company.</p> <p>Example: Unfiltered information online can result in identity theft.</p>

**Fourth Grade Social Interactions
Performance Descriptors**

Advanced	Fourth grade students performing at the advanced level: <ul style="list-style-type: none">• Scan files and folders for viruses.• Predict how changes in technology will affect a cultures future• Predict where/how technology will change and how this will affect society's future
Proficient	Fourth grade students performing at the proficient level: <ul style="list-style-type: none">• Compare and contrast consequences of illegal and unethical technology use.• Communicate issues relating to online safety.• Determine where and when to cite a source of information.• Identify cultural issues relating to technology.• Distinguish advantages and disadvantages of technology on society
Basic	Fourth grade students performing at the basic level: <ul style="list-style-type: none">• Compare a consequence of illegal technology usage with a consequence of unethical technology usage• List an issue related to online safety in a social networking environment• Given a source, can determine where to cite the source• List 2 ways of how technology has assisted, and been a disadvantage to society

**Fourth Grade Information and Communication Tools
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Students recognize and demonstrate skills in operating technological systems.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>4.CT.1.1 Demonstrate how to use parts of Application windows and menu options.</p> <ul style="list-style-type: none"> • Copy • Cut, • Paste • Spell check • insert <p>Example: Student can move document windows, access menus, and navigate toolbars.</p>
(Comprehension)	<p>4.CT.1.2 Demonstrate the correct use of all letters, punctuation, symbol and command keys using proper techniques.</p>
(Application)	<p>4.CT.1.3 Use input/output devices and other peripherals.</p> <p>Example: Students can take a digital photograph and transfer it to the computer and insert it into a document.</p>
	<p>4.CT.1.4 Manage and maintain files and folders independently application.</p> <p>Example: Create, save, retrieve, and organize files and folders using server technologies</p> <p>Example: Delete old/unused files</p> <p>Example: Identify multiple locations to save files and folders</p>
(Analysis)	<p>✓ Compare and contrast different ways of accessing commonly used commands.</p> <p>Example: Using multiple ways of completing the same function like print and save (ctrl+s or File> Save).</p>

Indicator 2: Students use technology to enhance learning, extend capability, and promote creativity.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>4.CT.2.1 Use presentation application to develop a product. Example: Including sound and multimedia in a presentation for class Example: Writing 4.LVS.1.3</p>
	<p>✓ Develop documents in design applications incorporating rich multimedia</p>

Indicator 3: Students evaluate and select information tools based on the appropriateness to specific tasks.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Comprehension)	<p>4.CT.3.1 Explain how problems are solved through innovations.</p> <ul style="list-style-type: none"> • Identify how and why innovations occur • Compare different fields of innovations • Apply the design process to create an innovation <p>Example: Blender =convenience, phone= communication, use word processing to write a letter, use a spreadsheet to collect data. Manufacturing uses robots, assembly lines.</p>

**Fourth Grade Information and Communication Tools
Performance Descriptors**

Advanced	<p>Fourth grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • Customize toolbars within applications • Determine the best external storage device to use for a specific task • Move and manage folders in an organized way to a variety of locations • Key 10 words per minute with 90% accuracy using proper touch typing techniques. • Develop a presentation documents with embedded media • Create media with design application without assistance • Given a set of problems, students will determine which technology best produces wanted output
Proficient	<p>Fourth grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • Demonstrate use for different parts of Application Windows • Implement use of toolbars buttons and navigation of menu options. • Use input/output devices and other peripherals. • Demonstrate the correct use of all letters, punctuation, symbol, and command keys. • Use touch typing techniques in timed writings. • Manage and maintain folders and files, • Develop documents in a presentations application incorporating media • Explain how problems are solved through innovation.
Basic	<p>Fourth grade students performing at the basic level:</p> <ul style="list-style-type: none"> • Label parts of Application Windows • Use toolbar shortcuts with assistance • Identify and use external devices for a specific task • Key up to 10 words per minute using some touch typing techniques • Manage and maintain folders and files with assistance • Develop a document using a presentation application • Explain how an innovation solved a problem

Fourth Grade Information and Communication Processes
Grade Standards, Supporting Skills, and Examples

Indicator 1: Students understand the purpose of information technologies to communicate with a variety of collaborators.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>4.CP.1.1 Utilize virtual collaboration environments to contribute within a group to the production of a digital output</p> <ul style="list-style-type: none"> • Communicate ideas, opinions, revisions through electronic communication devices either asynchronously or synchronously <p>Example: Utilize email or a bulletin board to collaborate on the development of a web presentation</p>

Indicator 2: Students exchange information and ideas for an identified purpose through Information Technologies.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Knowledge)	<p>4.CP.2.1 Select the best way to deliver information and ideas based on the audience</p> <ul style="list-style-type: none"> • Factors of the audience i.e. age, race, religion- Peers vs. Adults • Formal/informal audience • Presentation format • Media forms used in the presentation • Intended and unintended audiences <p>Example: Determine audience level (student or parent) and create a presentation geared at their interests</p>

**Fourth Grade Information and Communication Processes
Performance Descriptors**

Advanced	<p>Fourth grade students performing at the advanced level:</p> <ul style="list-style-type: none">• Create a media-rich digital output utilizing many virtual collaboration environments• Use communication tools to share, revise and edit a digital document at the same time• Adapt a presentation to multiple audiences using a variety of methods depending on the audience.
Proficient	<p>Fourth grade students performing at the proficient level:</p> <ul style="list-style-type: none">• Create a digital output utilizing a virtual collaboration environment• Selects tools that will be most effective when exchanging information at the same time.• Select the best way to deliver a presentation/project based on the audience
Basic	<p>Fourth grade students performing at the basic level:</p> <ul style="list-style-type: none">• Create a digital output for a given assignment with teacher directed assistance in the virtual collaboration environment• Use a given tool when exchanging information at the same time.

**Fourth Grade Information Literacy and Decision Making
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Students use technology to locate and acquire information.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Synthesis)	<p>4.II.1.1 Given a general topic predict what key details will be needed to refine a search in a database for a specific purpose.</p> <ul style="list-style-type: none"> • Validate the prediction with a computer generated search. <p>Examples: Use a search engine to find all Presidents with birthdays this month, or Hoofed mammals specifically found in North America</p>

Indicator 2: Students determine the reliability and relevancy of information.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Evaluation)	<p>4.II.2.1 Evaluate the relevancy of the resource.</p> <ul style="list-style-type: none"> • Up-to-date and accurate information. • Analyze the author date and subject for accuracy, and consistency <p>Example: Filtering through search results to find the hurricane season in Miami and not sports team 'Miami Hurricanes'.</p>

**Fourth Grade Information Literacy and Decision Making
Performance Descriptors**

Advanced	Fourth grade students performing at the advanced level: <ul style="list-style-type: none">• Evaluate relevant simple search results to greater focus the topic• Compare and contrast multiple sources to determine the order of relevancy
Proficient	Fourth grade students performing at the proficient level: <ul style="list-style-type: none">• Generate relevant simple search results for an identified broad topic using existing databases or web-sites• Evaluate the relevancy of a resource
Basic	Fourth grade students performing at the basic level: <ul style="list-style-type: none">• Given an existing database can generate a simple search for an identified broad topic• Determine if a resource is relevance based on two factors

Fifth Grade Nature, Concepts and Systems
(systems thinking, interactions, and design)
Grade Standards, Supporting Skills, and Examples

Indicator 1: Students understand the history and progression of technology in relation to the development and design of future technology

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Knowledge)	<p>5.NC.1.1 Describe the historical evolution of technological inventions as societies wants and needs change.</p> <ul style="list-style-type: none"> • Describe flow of information • Describe the impact of technology used at various points in history <p>Example: Recognize the technology timeline affects on news events - WWII hours before we got information (telegraph, radio), 9-11 live broadcast (internet streaming, television)</p>
(Application)	<p>5.NC.1.2 Report on the relationship between technological inventions and societal changes.</p> <ul style="list-style-type: none"> • Describe how recent changes in technological inventions have affected processes in and on society. <p>Example: unfiltered and abundant information can have a desensitizing affect on society.</p>
(Knowledge)	<p>5.NC.1.3 Identify ways people have adapted the natural world to meet their needs and wants</p> <ul style="list-style-type: none"> • Factors that influence the adaptations economics culture creative thinking <p>Example: Using technology in farming to increase a crops productivity</p>

Indicator 2: Students analyze the parts of a technological system in terms of input, process, output, and feedback.

Bloom’s Taxonomy Level	Standard, Supporting Skills, and Examples
(Evaluation)	<p>5.NC.2.1 Evaluate what changes need to be made within a systems model to accomplish a goal.</p> <ul style="list-style-type: none"> • Determine how systems are affected by the resources. • Availability, compatibility, security, and updates. <p>Example: the overall process of writing a paper with intent to score an “A”.</p> <p>Example: Science 5.S.1.1</p> <p>Example: Science 5.S.1.2</p> <p>Example: Science 5.L.3.1</p>
(Evaluation)	<p>5.NC.2.2 Evaluate how changes in a systems model affect the goal.</p> <p>Example: How ongoing changes will affect the outcome.</p> <p>Example: Science 5.S.1.1</p> <p>Example: Science 5.S.1.2</p> <p>Example: Science 5.L.3.1</p>

Indicator 3: Students analyze the relationships and the connections between technologies in different fields of study and how they apply to communities.

Bloom’s Taxonomy Level	Standard, Supporting Skills, and Examples
(Analysis)	<p>5.NC.3.1 Analyze how careers have changed due to changes in technology.</p> <p>Example: Teachers have had to become more technology savvy as new technology is integrated in to the classroom.</p>

Indicator 4: Students understand the purpose and demonstrate the use of the design process in problem solving.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Evaluation)	<p>5.NC.4.1 Evaluate solutions for positive and negative aspects in order to choose the optimum solution.</p> <p>Example: Best way to cleanup an oil spill, evaluating harm to environment and wildlife and economical impact.</p>

**Fifth Grade Nature, Concepts and Systems
(systems thinking, interactions, and design)**

Performance Descriptors

Advanced	<p>Fifth grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • Predict a technology of the future incorporating future technologies • Justify the reason why a change needs to occur in a process • Implement a change in a systems model and justify the reasons for change. • Predict how careers will change due to changes in technology. • Defend an optimum solution.
Proficient	<p>Fifth grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • Report how recent changes in technology have affected processes in and on society • List 3 technologies from home that didn't exist when they were born • Use a provided diagram to evaluate necessary changes in input and process to improve an output (product). • Describe the progression of technology in career field • Evaluate a variety of solutions for positive and negative aspects in order to choose the optimum result.
Basic	<p>Fifth grade students performing at the basic level:</p> <ul style="list-style-type: none"> • Provide 1 technologies from home that didn't exist when they were born • Explain how changes to input and process will affect a goal • Match careers with a specific type of technology • Evaluate if a single solution is positive or negative using the design process

Fifth Grade Social Interactions
Grade Standards, Supporting Skills, and Examples

Indicator 1: Students understand the safe, ethical, legal, and societal issues related to technology.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Comprehension)	<p>5.SI.1.1 Describe the Impact of unethical and illegal technology usage on the individual and society as a system</p> <ul style="list-style-type: none"> • Identify the role frequency and duration on has on illegal usage. • Identify reasons rules exist to protect individual created work <p>Example: The results some individuals have faced for creating computer viruses that affected businesses</p> <p>Example: Consequences of plagiarism</p>
(Synthesis)	<p>5.SI.1.2 Integrate personal safety precautions and etiquette while online</p> <ul style="list-style-type: none"> • Scanning files, • not giving out personal information • Communication etiquette (blogs, email, chat rooms) • Network etiquette <p>Example: Determine the difference between safe and unsafe behaviors online.</p>
(Application)	<p>5.SI.1.3 Implement proper citation for a variety of information sources in created works</p> <p>Example: Citing author, source, and date for sources from Internet, cd, wiki, blog, etc.</p> <p>Example: Reading 5.R.5.1</p>
(Comprehension)	<p>5.SI.1.4 Describe how technology is affecting a cultures heritage</p> <p>Example: Colonies adapting technology into schools, farms, & other work.</p> <p>Example: Reading 5.R.3.1</p>

Indicator 2: Students investigate the advantages and disadvantages of technology.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Evaluation)	<p>5.SI.2.1 Evaluate intended and unintended results of technology</p> <ul style="list-style-type: none"> • Inventions have an impact on our daily lives <p>Examples: silly putty, tang, sticky notes, smaller computers, fuel efficient cars</p>

**Fifth Grade Social Interactions
Performance Descriptors**

Advanced	<p>Fifth grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • Justify consequences of inappropriate conduct • Explain why there is a needs for safety precautions • Cite work from a variety of online sources • Predict how technology will continue to change a cultures heritage • Defend and unintended results of technology as either an advantage or a disadvantage on society
Proficient	<p>Fifth grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • Describe how technology has affected a cultures heritage • Describe the impact of unethical and illegal technology usage on the individual and society. • Integrate personal safety precautions and etiquette while online. • Implement proper citation of information sources in created works. • Evaluate intended and unintended results of technology
Basic	<p>Fifth grade students performing at the basic level:</p> <ul style="list-style-type: none"> • Recognize inappropriate uses of technology • Demonstrate safety precautions while online (e.g. virus scanning, personal information). • Recognize the need for proper citing of electronic information in created works. • Label results of technology as either intended or unintended

**Fifth Grade Information and Communication Tools
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Students recognize and demonstrate skills in operating technological systems.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Synthesis)	<p>5.CT.1.1 Personalize application menus and toolbars for greater productivity.</p> <p>Example: Moving cut/copy/paste buttons to right side of screen for quicker access</p>
(Application)	<p>5.CT.1.2 Key 15 words per minute using touch typing techniques from hard copy or typing program.</p> <ul style="list-style-type: none"> • Number Keys, Shift, Punctuation, Return/Enter, Space Bar and Alphabet Keys • Sitting up, feet on floor, arms parallel to keyboard, fingers curved and upright, and wrists at neutral
(Analysis)	<p>5.CT.1.3 Compare the difference between input/output devices and other peripherals.</p> <p>Examples: When to use a cell phone, Digital camera, scanner, MP3 device, Navigation device, PDA</p>
(Application)	<p>5.CT.1.4 Demonstrate the ability to transfer data between devices.</p> <p>Examples: Move a document from hard drive to Flash Drive, Floppy Disk, CD.</p>
(Analysis)	<p>5.CT.1.5 Compare and contrast different ways of accessing commonly used commands</p> <p>Example: Using shortcut keys and menus to complete common functions</p> <ul style="list-style-type: none"> • Utilize keyboard shortcut commands -Application PC Example:: ctrl+s (save), ctrl+v (copy) Mac Example:: apple symbol+s(save) Print, Undo, save

Indicator 2: Students use technology to enhance learning, extend capability, and promote creativity.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	5.CT.2.1 Use a spreadsheet application to create a product.
(Application)	<p>5.CT.2.2 Develop documents in design applications incorporating rich multimedia.</p> <p>Examples: iMovie, iPhoto, Windows Media</p> <p>Example: Edit photos using a photo editor (rotate, crop, red-eye, brightness)</p> <p>Example: Writing 5.LVS.1.4</p>

Indicator 3: Students evaluate and select information tools based on the appropriateness to specific tasks.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Analysis)	<p>5.CT.3.1 Compare and contrast the functions and capabilities of technology tools.</p> <p>Example:: Compare/contrast the function and capabilities of the word processing table, a database, and a spreadsheet for gathering data, processing data, performing calculations, and reporting results</p>

Fifth Grade Information and Communication Tools

Performance Descriptors

Advanced	<p>Fifth grade students performing at the advanced level:</p> <ul style="list-style-type: none"> • Personalize keyboard short cuts based on needs • Recommend peripherals to use for a given task • Key 15 words per minute with 100% accuracy using proper touch typing techniques • Uses proper posture while keying without being prompted
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	<ul style="list-style-type: none"> • Differentiate uses of storage devices and can decide which is best to use for a specific task • Create a product that uses a spreadsheet document incorporating a chart • Compare and contrast the benefits of the functions and capabilities of technological tools and innovations.
Proficient	<p>Fifth grade students performing at the proficient level:</p> <ul style="list-style-type: none"> • Customize application menus and toolbars • Use keyboard shortcuts for tasks • use multiple ways of completing the same function • Compare and contrast different ways of accessing commonly used commands • Key 15 words per minute with 90% accuracy using proper touch typing techniques • Demonstrate proper typing posture • Demonstrate the ability to use a portable transfer device • Compare differences between input/output devices • Create a spreadsheet document from data provided • Develop documents in a design application and utilize rich media • Compare and contrast the functions and capabilities of technological tools and innovations.
Basic	<p>Fifth grade students performing at the basic level:</p> <ul style="list-style-type: none"> • Customize application toolbars with assistance • Use a keyboard shortcut for commonly used task • Can use two ways of completing commonly used commands • Save and retrieve files and folders • Key up to 15 words per minute using some proper touch-typing techniques. • Uses proper typing position when prompted • Demonstrate the ability to use a portable transfer device with assistance • Compare two input and output devices • Navigate and enter data into a spreadsheet application • List the function and capability of a technological tool and innovation

**Fifth Grade Information and Communication Processes
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Students understand the purpose of information technologies to communicate with a variety of collaborators.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Synthesis)	<p>5.CP.1.1 Collaborate with other students outside the classroom utilizing distance technologies to create a media-rich product</p> <ul style="list-style-type: none"> • Video conferencing • Social networking web tools <p>Example: students utilize a wiki to collaborate with other students around the world to present information</p>

Indicator 2: Students exchange information and ideas for an identified purpose through Information Technologies.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Knowledge)	<p>5.CP.2.1 Select the most effective tools to deliver information and ideas in different times and places.</p> <ul style="list-style-type: none"> • Asynchronous • Synchronous <p>Example: Choose between synchronous and asynchronous communications and choose the correct medium for each.</p> <p>Example: Writing 5.LVS.1.4</p>

**Fifth Grade Information and Communication Processes
Performance Descriptors**

Advanced	<p>Fifth grade students performing at the advanced level:</p> <ul style="list-style-type: none">• Create and present a media-rich product through collaboration using many different distance technologies.• compare and contrast the benefits of different forms of media and formats may be used to share similar information
Proficient	<p>Fifth grade students performing at the proficient level:</p> <ul style="list-style-type: none">• Collaborate with other students outside the classroom utilizing distance technologies to create a media-rich product• compare and contrast how different forms of media and formats may be used to share similar information depending on the intended audience
Basic	<p>Fifth grade students performing at the basic level:</p> <ul style="list-style-type: none">• Collaborate with another student outside the classroom utilizing a given distance technology to create a product• Given an intended audience can Identify two types of media and/or formats used to share similar information

**Fifth Grade Information Literacy and Decision Making
Grade Standards, Supporting Skills, and Examples**

Indicator 1: Students use technology to locate and acquire information.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>5.II.1.1 Produce relevant information using advanced search functions EX: Boolean operators, advanced find</p> <ul style="list-style-type: none"> • Apply different types of filters Example: file format, word filter, domain filter Time filter when performing a web search <p>Example: Reading 5.R.1.1 Example: Reading 5.R.4.1</p>

Indicator 2: Students determine the reliability and relevancy of information.

Bloom's Taxonomy Level	Standard, Supporting Skills, and Examples
(Application)	<p>5.II.2.1 Apply a given evaluation tool to determine the reliability of an online source</p> <ul style="list-style-type: none"> • Identify website domains to determine reliability .com, .edu, .gov, .org, .biz; Example: Understand that generally a .com site is less reliable than a .gov, .edu, or .org domain <p>Example: Identify information for validity, timeliness, and accuracy of online information.</p>

**Fifth Grade Information Literacy and Decision Making
Performance Descriptors**

Advanced	<p>Fifth grade students performing at the advanced level:</p> <ul style="list-style-type: none">• Can apply multiple filters at a given time to produce relevant information using advance search features• Locate the evaluation tool and evaluate a website for relevancy and reliability.
Proficient	<p>Fifth grade students performing at the proficient level:</p> <ul style="list-style-type: none">• Apply different types of filters to produce relevant information using advanced search functions• Evaluate the reliability of a website by using an evaluation tool
Basic	<p>Fifth grade students performing at the basic level:</p> <ul style="list-style-type: none">• Given a filter can apply it to produce information• Determine if a resource is reliable based on the domain• Identify an online source as either fact and opinion

**NATURE, CONCEPTS AND SYSTEMS
(SYSTEMS THINKING, INTERACTIONS, AND DESIGN)**

3-5

Indicator 1: Students understand the history and progression of technology in relation to the development and design of future technology.

Third Grade	Fourth Grade	Fifth Grade
3.NC.1.1 Describe ways that creative thinking, economics and culture influence the development of technology over time. (Knowledge)	4.NC.1.1 Distinguish how changes in technological tools affect outcomes. (Analysis)	5.NC.1.1 Describe the historical evolution of technological inventions as societies wants and needs change. (Knowledge)
		5.NC.1.2 Report on the relationship between technological inventions and societal changes.. (Application)
		5.NC.1.3 Identify ways people have adapted the natural world to meet their needs and wants. (Knowledge)

Indicator 2: Students analyze the parts of a technological system in terms of input, process, output, and feedback.

Third Grade	Fourth Grade	Fifth Grade
3.NC.2.1 Illustrate, using a flow chart, the parts of the system model as it relates to technology. (Comprehension)	4.NC.2.1 Determine the effects of feedback in the system model. (Application)	5.NC.2.1 Evaluate what changes need to be made within a systems model to accomplish a goal. (Evaluation)
	4.NC.2.2 Identify the resources needed in a system in order for it to work. (Knowledge)	5.NC.2.2 Evaluate how changes in a systems model affect the goal. (Evaluation)

Indicator 3: Students analyze the relationships and the connections between technologies in different fields of study and how they apply to communities.

Third Grade	Fourth Grade	Fifth Grade
3.NC.3.1 Classify technologies into home, school, work, or global use. (Comprehension)	4.NC.3.1 Identify examples of how technology changes have affected society. (Application)	5.NC.3.1 Analyze how careers have changed due to changes in technology. (Analysis)

Indicator 4: Students understand the purpose and demonstrate the use of the design process in problem solving.

Third Grade	Fourth Grade	Fifth Grade
3.NC.4.1 Produce a variety of solutions to a defined problem. (Application)	4.NC.4.1 Adapt a structured method to produce a variety of solutions to a given problem using the design process. (Synthesis)	5.NC.4.1 Evaluate solutions for positive and negative aspects in order to choose the optimum solution. (Evaluation)

SOCIAL INTERACTIONS

3-5

Indicator 1: Students understand the safe, ethical, legal, and societal issues related to technology.

Third Grade	Fourth Grade	Fifth Grade
3.SI.1.1 Distinguish among different types of illegal and unethical technology usage. (Comprehension)	4.SI.1.1 compare and contrast consequences of illegal and unethical technology use. (Evaluation)	5.SI.1.1 Describe the Impact of unethical and illegal technology usage on the individual and society as a system. (Comprehension)
3.SI.1.2 Implement safety precautions while online. (Comprehension)	4.SI. 1.2 Communicate issues relating to online safety. (Synthesis)	5.SI.1.2 Integrate personal safety precautions and etiquette while online. (Synthesis)
3.SI.1.3 Identify how to cite a source. (Knowledge)	4.SI.1.3 Determine where and when to cite a source of information. (Application)	5.SI.1.3 Implement proper citation for a variety of information sources in created works. (Application)
	4.SI. 1.4 Identify cultural issues relating to technology. (Knowledge)	5.SI.1.4 Describe how technology is affecting a cultures heritage. (Comprehension)

Indicator 2: Students investigate the advantages and disadvantages of technology.

Third Grade	Fourth Grade	Fifth Grade
3.SI.2.1 Recognize the advantages and disadvantages of technology on the individual. (Analysis)	4.SI.2.1 Distinguish advantages and disadvantages of technology on society. (Analysis)	5.SI.2.1 Evaluate intended and unintended results of technology. (Evaluation)

INFORMATION AND COMMUNICATION TOOLS

3-5

Indicator 1: Students recognize and demonstrate skills in operating technological systems.

Third Grade	Fourth Grade	Fifth Grade
3.CT.1.1 Identify parts of an operating system environment. (Knowledge)	4.CT.1.1 Demonstrate how to use parts of Application windows and menu options. (Application)	5.CT.1.1 Personalize application menus and toolbars for greater productivity. (Synthesis)
3.CT.1.2 Demonstrate use of home row keyboarding. (Comprehension)	4.CT.1.2 Demonstrate the correct use of all letters, punctuation, symbol and command keys using proper techniques. (Comprehension)	5.CT.1.2 Key 15 words per minute using touch typing techniques from hard copy or typing program. (Application)
3.CT.1.3 Demonstrate proper care in the use of hardware, software, peripherals, and storage media. (Comprehension)	4.CT.1.3 Use input/output devices and other peripherals. (Application)	5.CT.1.3 Compare the difference between input/output devices and other peripherals. (Analysis)
3.CT.1.4 Create, save and retrieve folders. (Application)	4.CT.1.4 Manage and maintain files and folders independently application.	5.CT.1.4 Demonstrate the ability to transfer between devices. (Application)
	4.CT.1.5 Demonstrate the correct use of all letters, punctuation, symbol and command keys. (Comprehension)	5.CT.1.5 Compare and contrast different ways of accessing commonly used commands. (Analysis)
✓ Demonstrate proper posture while typing		

✓ Identify input/output devices and other peripherals. (Knowledge)	✓ Compare and contrast different ways of accessing commonly used commands. (Analysis)	
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Indicator 2: Students use technology to enhance learning, extend capability, and promote creativity.

Third Grade	Fourth Grade	Fifth Grade
3.CT.2.1 Use a word processor to develop a product. (Application)	4.CT.2.1 Use presentation application to develop a product. (Application)	5.CT.2.1 Use a spreadsheet application to create a product. (Application)
3.CT.2.2 Develop documents in design applications. (Application)	✓ Develop documents in design applications incorporating rich multimedia.	5.CT.2.2 Develop documents in design applications incorporating rich multimedia. (Application)

Indicator 3: Students evaluate and select information tools based on the appropriateness to specific tasks.

Third Grade	Fourth Grade	Fifth Grade
3.CT.3.1 Differentiate between information tools and technological innovations. (Comprehension)	4.CT.3.1 Explain how problems are solved through innovations. (Comprehension)	5.CT.3.1 Compare and contrast the functions and capabilities of technology tools. (Analysis)

INFORMATION AND COMMUNICATION PROCESSES

3-5

Indicator 1: Students understand the purpose of information technologies to communicate with a variety of collaborators.

Third Grade	Fourth Grade	Fifth Grade
3.CP.1.1 Participate within groups to produce a digital output for a given assignment. (Application)	4.CP.1.1 Utilize virtual collaboration environments to contribute within a group to the production of a digital output. (Application)	5.CP.1.1 Collaborate with other students outside the classroom utilizing distance technologies to create a media-rich product. (Synthesis)

Indicator 2: Students use a variety of technologies to exchange information and ideas for an identified purpose.

Third Grade	Fourth Grade	Fifth Grade
3.CP.2.1 Describe how a message communicated through information technology is affected by an audience. (Application)	4.CP.2.1 Select the best way to deliver a presentation/project deliver information and ideas based on the audience. (Knowledge)	5.CP.2.1 Select the most effective tools to deliver information and ideas in different times and places. (Knowledge)

INFORMATION LITERACY AND DECISION MAKING

3-5

Indicator 1: Students use technology to locate and acquire information.

Third Grade	Fourth Grade	Fifth Grade
3.IL.1.1 Perform a keyword/phrase search on existing databases on a specified topic. (Application)	4.IL.1.1 Given a general topic predict what key details will be needed to refine a search in a database for a specific purpose. (Synthesis)	5.IL.1.1 Produce relevant information using advanced search functions. (Application)

Indicator 2: Students determine the reliability and relevancy of information.

Third Grade	Fourth Grade	Fifth Grade
3.IL.2.1 Identify author, date, and subject within different sources of information. (Knowledge)	4.IL.2.1 evaluate the relevancy of the resource. (Evaluation)	5.IL.2.1 Apply a given evaluation tool to determine the reliability of an online source. (Application)