

# SOUTH DAKOTA EDUCATIONAL TECHNOLOGY STANDARDS

6-8

## Sixth 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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>6.NC.1.1 Compare technology from the past to the present as a progression of input, process, output.</b></p> <ul style="list-style-type: none"><li>• Maps to GIS systems</li><li>• Airmail to Email to Text Messaging</li><li>• Pony Express to FedEx</li></ul> <p><b>Example:</b> Progression from two-way radio to cell phone; cell phone to merging of PDA and cell phone.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>6.NC.2.1 Analyze the processes of technology systems.</b></p> <p><b>Example:</b> Graphically illustrate a laboratory procedure</p> <p><b>Example:</b> Create a flow chart that illustrates the steps in packing and transporting household items when moving to a new home.</p> <ul style="list-style-type: none"><li>• Diagram and Describe</li></ul>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Knowledge)	<p><b>6.NC.3.1 Identify careers in various technology areas.</b></p> <p><b>Example:</b> Students match career topics to the appropriate career cluster.</p> <p><b>Example:</b> Students make a list of medical personnel that use technology in their job.</p> <ul style="list-style-type: none"> <li>• Identify technology careers in different career clusters</li> <li>• Identify careers in different technological systems               <ul style="list-style-type: none"> <li>○ Medical</li> <li>○ Agricultural</li> <li>○ Energy and Power</li> <li>○ Information and Communication</li> <li>○ Transportation</li> <li>○ Manufacturing</li> <li>○ Construction</li> </ul> </li> </ul>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Comprehension)	<p><b>6.NC.4.1 Demonstrate the iterative (repetitive or cyclical) nature of the design process.</b></p> <p><b>Example:</b> construct repetitive models</p> <p><b>Example:</b> During a basketball game students run the same play more than once.</p> <p><b>Example:</b> In production, assembly process are repeated (Henry Ford)</p> <p><b>Example:</b> In computer programming, a routine may be called multiple times.</p>

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

**Performance Descriptors**

<b>Advanced</b>	<p><b>Sixth grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"><li>• Based on the past, can design a model of a future technology component. (Input, process, output)</li><li>• Evaluate processes of technology systems: Input, process, output and feedback</li><li>• Compare careers in information and communication technology.</li><li>• Critique the effectiveness of using the design process to problem-solve.</li></ul>
<b>Proficient</b>	<p><b>Sixth grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"><li>• Compare technology from the past to the present as a progression of input, process, and output.</li><li>• Analyze the four processes: Input, process, output and feedback.</li><li>• Identify careers in information and communication technology.</li><li>• Provide examples illustrating the iterative nature of the design process.</li></ul>
<b>Basic</b>	<p><b>Sixth grade students performing at the basic level:</b></p> <ul style="list-style-type: none"><li>• Identify progression in technology.</li><li>• Classify the four processes: Input, process, output and feedback.</li><li>• List careers in information and communication technology.</li><li>• Apply the design process to existing problem-solving activities.</li></ul>

**Sixth Grade Social Interactions**  
**Grade Standards, Supporting Skills, and Examples**

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Application)	<p><b>6.SI.1.1 Apply basic software/hardware solutions to protect themselves and others when using Information and Communications Technologies. (ICT)</b></p> <p><b>Example:</b> Determine where and when firewalls or other protection methods are necessary.</p> <ul style="list-style-type: none"> <li>• Firewalls</li> <li>• Software settings</li> <li>• Software updates</li> <li>• Wireless security</li> </ul>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>6.SI.2.1 Analyze how adoption of technological advancements produces change.</b></p> <p><b>Example:</b> Cotton gin, Rail transportation, Flight, Telephone</p> <p><b>Example:</b> Social Studies 8.E.1.3</p> <ul style="list-style-type: none"> <li>• Investigate past innovations</li> </ul>

**Sixth Grade Social Interactions  
Performance Descriptors**

<b>Advanced</b>	<b>Sixth grade students performing at the advanced level:</b> <ul style="list-style-type: none"><li>• Investigate additional ways to secure computers and networks.</li><li>• Predict the impact of a new technological advancement.</li></ul>
<b>Proficient</b>	<b>Sixth grade students performing at the proficient level:</b> <ul style="list-style-type: none"><li>• Apply basic security settings within platform or applications.</li><li>• Apply security settings to devices on a home network.</li><li>• Generate examples of how adoption of technological advancements produces change.</li></ul>
<b>Basic</b>	<b>Sixth grade students performing at the basic level:</b> <ul style="list-style-type: none"><li>• List basic security settings within platform of applications</li><li>• Understand that technology advancements produce change.</li></ul>

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

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Application)	<p><b>6.CT.1.1 Demonstrate touch-type at 20 gwam with 2 or fewer errors per minute in a 3 minute time period.</b></p> <ul style="list-style-type: none"><li>• Transposing from hard copy</li></ul> <p><b>Example:</b> Students create electronic documents from hand-written or printed copy within the established parameters for time and accuracy.</p>
(Analysis)	<p><b>6.CT.1.2 Investigate the functionality of various storage devices providing rationale for their uses.</b></p> <ul style="list-style-type: none"><li>• Articulate the use of media devices for a given use.</li></ul> <p><b>Example:</b> flash drive for easily transporting data. DVD for universal video sharing.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Comprehension)	<p><b>6.CT.2.1 Demonstrate ways to present and publish information using a variety of common applications.</b></p> <ul style="list-style-type: none"> <li>• Compare various applications and the individual benefits each may provide.</li> </ul> <p><b>Example:</b> Desktop publishing document for paper flyers.</p> <p><b>Example:</b> Add graphs from a spreadsheet application into a word processing document.</p> <p><b>Example:</b> Save an electronic file as a pdf file or other common standard format and publish to a web site.</p>
(Synthesis)	<p><b>6.CT.2.2 Incorporate the use of software features for self-directed learning.</b></p> <p><b>Example:</b> Go to application integrated help system and find out how to do something they haven't been taught.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>6.CT.3.1 Differentiate versions of software and file formats.</b></p> <p><b>Example:</b> Note the differences between certain file application extensions and the applications available to open such documents.</p>

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

<b>Advanced</b>	<p><b>Sixth grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"> <li>• Explain the reasoning behind using posture and technique while keying</li> <li>• Type 20 gwam with 2 or fewer errors per minute.</li> <li>• Compare and contrast functionality of storage devices to determine the best solution.</li> <li>• Provide assistance to peers when creating a project using word processing, spreadsheet, and presentation software.</li> <li>• Utilize the help feature of an application, either online or in the application itself, to gain additional knowledge.</li> <li>• Convert documents from one file format to another</li> </ul>
<b>Proficient</b>	<p><b>Sixth grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"> <li>• Demonstrate all of the components of posture and technique while keying</li> <li>• Type 15 gwam with 2 or fewer errors per minute.</li> <li>• Provide rationale for using a particular storage device.</li> <li>• Present or publish information using word processing, spreadsheet, and presentation software</li> <li>• Utilize the help feature of an application, not online, to gain additional knowledge.</li> <li>• Differentiate versions of software and file formats.</li> </ul>
<b>Basic</b>	<p><b>Sixth grade students performing at the basic level:</b></p> <ul style="list-style-type: none"> <li>• With prompting, demonstrate all of the components of posture and technique while keying</li> <li>• Type 10 gwam with 2 or fewer errors per minute.</li> <li>• Name a variety of storage devices.</li> <li>• Present or publish information using word-processing or presentation software.</li> <li>• Utilize the help feature of an application with guided help</li> <li>• Identify different versions of software and file formats</li> </ul>

**Sixth 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.

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Knowledge)	<p><b>6.CP.1.1 Identify the reasons for using technology tools for interpersonal interactions.</b></p> <p><b>Example:</b> Cell phone to quickly communicate, email/website to disseminate information to large groups.</p> <ul style="list-style-type: none"> <li>• Why or when these tools would or would not be used.</li> </ul>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>6.CP.2.1 Compare and contrast the effects of different forms of technology on different audiences.</b></p> <p><b>Example:</b> video conference collaboration versus text messaging</p>

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

<b>Advanced</b>	<p><b>Sixth grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"><li>• Put into practice 5 reasons how technology tools assist collaborative communication.</li><li>• Contrast several technology tools used to communicate with others.</li></ul>
<b>Proficient</b>	<p><b>Sixth grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"><li>• Identify five reasons of how technology tools assist in collaborative communication.</li><li>• Compare 3 technology tools you would use to communicate with other.</li></ul>
<b>Basic</b>	<p><b>Sixth grade students performing at the basic level:</b></p> <ul style="list-style-type: none"><li>• Given a list, students can identify three technology tools used to communicate collaboratively.</li><li>• List 3 technology tools used to communicate with others.</li></ul>

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

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Comprehension)	<p><b>6.II.1.1 Describe the organizational structure of searchable resources.</b></p> <ul style="list-style-type: none"> <li>• key words</li> <li>• subject directories</li> <li>• meta-tags</li> </ul> <p><b>Example:</b> library catalogues and search engines</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Knowledge)	<p><b>6.II.2.1 Select online sources based on a list of criteria.</b></p> <ul style="list-style-type: none"> <li>• Choose based on source relevance</li> </ul> <p><b>Example:</b> Research/University site versus community search site.</p>

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

<b>Advanced</b>	<b>Sixth grade students performing at the advanced level:</b> <ul style="list-style-type: none"><li>• Analyze a searchable resource to determine how effective searches can be performed.</li><li>• Create a list of 5 criteria to evaluate online sources.</li></ul>
<b>Proficient</b>	<b>Sixth grade students performing at the proficient level:</b> <ul style="list-style-type: none"><li>• Describe the organizational structure of a given resource in terms of how key words, subject directories and meta-tags aid in using the resource.</li><li>• Select 3 online sources that meet a given list of criteria.</li></ul>
<b>Basic</b>	<b>Sixth grade students performing at the basic level:</b> <ul style="list-style-type: none"><li>• Identify key words, subject directories and meta-tags.</li><li>• Selects 1 online source that meets a given list of criteria.</li></ul>

**Seventh 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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>7.NC.1.1 Outline the implications of increasing computing potential over time.</b></p> <p>Moore's Law - speed/space/size/cost</p> <p><b>Example:</b> Rate in 1960s and 1970s as opposed to future rate of computing potential increase; microprocessors smaller and faster.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Comprehension)	<p><b>7.NC.2.1 Describe how subsystems work within a larger system.</b></p> <ul style="list-style-type: none"> <li>• Identify subsystems within larger systems</li> <li>• Describe how they work within the larger system</li> </ul> <p><b>Example:</b> the systems of the human body or structure of cells to tissues to organs to systems to organisms –</p> <ul style="list-style-type: none"> <li>• <b>Example:</b> Science 7.L.1.2</li> </ul> <p><b>Example:</b> how the transmission, electrical, and combustion systems of a car work together.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Synthesis)	<p><b>7.NC.3.1 Compare technology education skills required to pursue a variety of career paths.</b></p> <p><b>Example:</b> Understand complex technical information and be able to explain it to others.</p> <p><b>Example:</b> Planning, organizing, communication, problem-solving, decision-making, adaptability</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Application)	<p><b>7.NC.4.1 Apply the universal nature of the design process to different situations.</b></p> <p><b>Example:</b> Take a manufacturing process for cars and apply the process to toys, candy or other reproducible items.</p> <p><b>Example:</b> Follow reproducible steps throughout multiple trials in order to ensure a consistent outcome.</p> <ul style="list-style-type: none"> <li>● Construct charts or models.</li> </ul>

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

**Performance Descriptors**

<b>Advanced</b>	<p><b>Seventh grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"> <li>• Support the implications of increasing computing potential over time.</li> <li>• Diagram the interrelationship between subsystems of a larger system</li> <li>• Evaluate technology education skills required to pursue a variety of career</li> <li>• Break down the individual steps of the design process to discuss its universal nature.</li> </ul>
<b>Proficient</b>	<p><b>Seventh grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"> <li>• Analyze the implications of increasing computing potential over time.(Moore’s Law - speed/space/size/cost)</li> <li>• Example – rate in 60s and 70s as opposed to future rate</li> <li>• Give 3 examples of subsystems working within a larger system and explain how they work together</li> <li>• Compare technology education skills required to pursue a variety of career paths.</li> <li>• Provide examples of the design process in use in 5 different settings.</li> </ul>
<b>Basic</b>	<p><b>Seventh grade students performing at the basic level:</b></p> <ul style="list-style-type: none"> <li>• Recognize that changes have occurred in speed, space, size and cost.</li> <li>• Give one example of a subsystem working within a larger system.</li> <li>• Identify technology education skills required to pursue a variety of career paths.</li> <li>• List the individual steps of the design process.</li> </ul>

**Seventh Grade Social Interactions**  
**Grade Standards, Supporting Skills, and Examples**

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>7.SI.1.1 Correlate the illegal/unethical use of technology to the consequences as it relates to changes in society.</b></p> <p><b>Example:</b> Downloading copyrighted works negatively impacts the profits or intellectual property rights of the copyright holder and the related entities.</p> <ul style="list-style-type: none"> <li>• Copyright, DMCA, Creative Commons and other intellectual property rights,</li> <li>• Identity theft, costs, plagiarism, viruses, hacking, FERPA and CIPA, bullying and file sharing</li> </ul>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Application)	<p><b>7.SI.2.1 Determine which innovations in technology have produced the greatest impact on society.</b></p> <ul style="list-style-type: none"> <li>• Positive and Negative</li> </ul> <p><b>Example:</b> impact on productivity, health, environment and social interaction.</p>

**Seventh Grade Social Interactions  
Performance Descriptors**

<b>Advanced</b>	<b>Seventh grade students performing at the advanced level:</b> <ul style="list-style-type: none"><li>• Design policies addressing issues of illegal/unethical use of technology</li><li>• Predict the impact of an innovation in technology on society.</li></ul>
<b>Proficient</b>	<b>Seventh grade students performing at the proficient level:</b> <ul style="list-style-type: none"><li>• Compare 5 ways technology has been used illegally/unethically and the impact that has had on society in terms of cost and other consequences.</li><li>• Compare 3 innovations in technology to determine which had the greatest impact on society.</li></ul>
<b>Basic</b>	<b>Seventh grade students performing at the basic level:</b> <ul style="list-style-type: none"><li>• List examples of illegal/unethical use of technology.</li><li>• Provide examples where innovations in technology affect people's lives.</li></ul>

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

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Knowledge)	<p><b>7.CT.1.1 Describe the factors that contribute to increased/decreased functionality in a technological system.</b></p> <p><b>Example:</b> Size of circuitry/power available increases processing potential.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>7.CT.2.1 Recognize differences between applications and their uses.</b></p> <p><b>Example:</b> word processing vs. spreadsheet</p>
(Comprehension)	<p><b>7.CT.2.2 Demonstrate ways that communication technologies interrelate.</b></p> <p><b>Example:</b> podcasting, video streaming , mobile multimedia devices (e.g. mobile phones with integrated audio/video players)</p> <p><b>Example:</b> take 2 tools such as camera and computer and use them together</p>
(Synthesis)	<p><b>7.CT.2.3 Create projects using technology applications and tools.</b></p> <ul style="list-style-type: none"> <li>• Demonstrate touch-type at 25 gwam with 2 or fewer errors per minute in a 3 minute time period. – Application</li> </ul> <p><b>Example:</b> create a paragraph in a word processing application</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Evaluation)	<b>7.CT.3.1 Evaluate the effectiveness of new tools.</b> <b>Example:</b> Compare a list of criteria to judge which tool is most effective for a provided task.

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

<b>Advanced</b>	<p><b>Seventh grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"> <li>• Determine a plan to ensure that a technological system performs at optimum levels.</li> <li>• Critique applications on their effectiveness as wordprocessing, spreadsheet, presentation, and database.</li> <li>• Design projects that capitalize on the interrelationship of communication technologies.</li> <li>• Demonstrate a rate of more than 25 gwam with 2 or fewer errors while using keyed technology in a learning environment.</li> <li>• Develop strategies for adapting and applying new tools.</li> </ul>
<b>Proficient</b>	<p><b>Seventh grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"> <li>• Describe the effect on technological systems when computer settings are changed, 3rd party utilities are installed, or additional components are added to a system.</li> <li>• Categorize applications into basic groups of wordprocessing, spreadsheet, presentation, and database.</li> <li>• Explain, given a list of communication technologies, how the technologies are interrelated.</li> <li>• Demonstrate a rate of at least 25 gwam with 2 or fewer errors while using keyed technology in a learning environment.</li> <li>• Evaluate the effectiveness of new tools.</li> </ul>
<b>Basic</b>	<p><b>Seventh grade students performing at the basic level:</b></p> <ul style="list-style-type: none"> <li>• List changes that can be made to computer settings, types of 3rd party utilities available, and types of components that can be added to a system.</li> <li>• Identify at least one application each for wordprocessing, spreadsheet, presentation, and database.</li> <li>• List 5 communication technologies.</li> <li>• Demonstrate a rate of at least 20 gwam with 2 or fewer errors while using keyed technology in a learning environment.</li> <li>• Generate a list of new tools.</li> </ul>

**Seventh 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.

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>7.CP.1.1 Compare various ways in which you can use collaborative technologies to present information.</b></p> <p><b>Examples:</b> Personal communication, social communication, Civic responsibility.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Application)	<p><b>7.CP.2.1 Apply information technology to design on demand communication.</b></p> <p><b>Example:</b> Use a graphic organizer to create a web page layout.</p> <ul style="list-style-type: none"> <li>• Organize</li> <li>• Plan</li> </ul>

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

<b>Advanced</b>	<p><b>Seventh grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"><li>• Implement presentation technologies into a collaborative project.</li><li>• Provide assistance to others when using available technology tools to create projects.</li></ul>
<b>Proficient</b>	<p><b>Seventh grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"><li>• Compare three presentation technologies which can be used while working with a group.</li><li>• Independently use the technology tools available to design, develop, and enhance materials, publications, or presentations.</li></ul>
<b>Basic</b>	<p><b>Seventh grade students performing at the basic level:</b></p> <ul style="list-style-type: none"><li>• Compare two presentation technologies which can be used while working with a group.</li><li>• Construct a project based on a given set of directions.</li></ul>

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

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>7.II.1.1 Compare technology systems and resources.</b></p> <p><b>Example:</b> Technology systems such as library catalogue systems, search engines, SQL server</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>7.II.2.1 Categorize validated and non-validated sources.</b></p> <p><b>Example:</b> Make a chart of valid and non-validated sources for a given research project.</p> <p><b>Example:</b> Understanding when to use primary sources with information supported by research versus information retrieved from wikis or blogs</p>

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

<b>Advanced</b>	<p><b>Seventh grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"><li>• Compare and contrast library catalogue systems or search engines to determine which best fits the needs of the student.</li><li>• Critique the validity of multiple online sources based on accuracy, relevance, comprehensiveness and bias using a rubric</li></ul>
<b>Proficient</b>	<p><b>Seventh grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"><li>• Analyze various systems, such as a library catalogues and search engines to be able to best utilize the resources.</li><li>• Determine the validity of an online source based on accuracy, relevance, comprehensiveness and bias using a rubric.</li></ul>
<b>Basic</b>	<p><b>Seventh grade students performing at the basic level:</b></p> <ul style="list-style-type: none"><li>• Describe the difference between a library catalogue and a search engine.</li><li>• Determine the validity of an online source based on accuracy and relevance using a rubric.</li></ul>

**Eighth 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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Evaluation)	<p><b>8.NC.1.1 Evaluate the innovations contributed by individuals and institutions related to the development and design of technology.</b></p> <ul style="list-style-type: none"> <li>• Understand the roles of inventors and entrepreneurs</li> <li>• Example - handheld multimedia devices</li> <li>• Example - the development of the transistor</li> <li>• Example - graphing calculator</li> </ul>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>8.NC.2.1 Compare the effect one system has on another system</b></p> <ul style="list-style-type: none"> <li>• Subsystem to subsystem</li> </ul> <p><b>Example:</b> Systems of the body</p> <ul style="list-style-type: none"> <li>• Individual system to individual system</li> </ul> <p><b>Example:</b> Effect of human action on the environment</p> <p><b>Example:</b> 8.SI.2.1</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Evaluation)	<p><b>8.NC.3.1 Evaluate technology education skills required to pursue a chosen personal career path.</b></p> <p><b>Example:</b> Understand complex technical information.</p> <p><b>Example:</b> Make a booklet of five technical skills required for a selected career.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Synthesis)	<p><b>8.NC.4.1 Defend the design process in problem-solving activities.</b></p> <p><b>Example:</b> Analyze aspects of the manufacturing/scientific process through teacher provided case studies.</p>

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

**Performance Descriptors**

<b>Advanced</b>	<p><b>Eighth grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"> <li>• Critique the contributions of individuals and institutions relating to future communication technologies.</li> <li>• Determine the effect of one system on another system and its positive or negative effect.</li> <li>• Map personal educational choices required to pursue a chosen career path</li> <li>• Evaluate the effectiveness of using the design process in problem solving activities.</li> </ul>
<b>Proficient</b>	<p><b>Eighth grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"> <li>• Recognize the names and contributions of individuals and institutions important to the innovations of information and communication technologies</li> <li>• Diagram the relationship of a subsystem to a subsystem</li> <li>• Diagram the relationship of a system to a system.</li> <li>• Evaluate technology education skills required to pursue a chosen career path</li> <li>• Integrate the design process in problem solving activities.</li> </ul>
<b>Basic</b>	<p><b>Eighth grade students performing at the basic level:</b></p> <ul style="list-style-type: none"> <li>• Match individuals and institutions with accomplishments in communication technologies.</li> <li>• Give examples of how systems affect each other.</li> <li>• List the technology skills required to pursue a chosen career path.</li> <li>• Give examples where the design process has been used in problem solving activities.</li> </ul>

**Eighth Grade Social Interactions**  
**Grade Standards, Supporting Skills, and Examples**

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>8.SI.1.1 Outline the components and purpose of school acceptable use policies.</b></p> <p><b>Example:</b> Identify levels of rights and permissions</p> <ul style="list-style-type: none"> <li>• Compare student to staff and school to school</li> </ul>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>8.SI.2.1 Predict the effects that may result from society's increasing reliance on technology</b></p> <p><b>Example:</b> Summarize the economic, social and political changes</p> <p><b>Example:</b> Social Studies 6.W.1.7</p> <ul style="list-style-type: none"> <li>• Reflect on personal experiences with loss of technology services and distinguish longer term or greater scale issues.</li> </ul>

**Eighth Grade Social Interactions  
Performance Descriptors**

<b>Advanced</b>	<b>Eighth grade students performing at the advanced level:</b> <ul style="list-style-type: none"><li>• Compare and contrast educational acceptable use policies with those outside of a school setting.</li><li>• Organize a presentation on the effects resulting from society's increasing reliance on technology.</li></ul>
<b>Proficient</b>	<b>Eighth grade students performing at the proficient level:</b> <ul style="list-style-type: none"><li>• Identify levels of rights and permissions on a network.</li><li>• Outline the components and purpose of an acceptable use policy and compare it to a similar policy.</li><li>• Distinguish the effects that may result from society's increasing reliance on technology.</li></ul>
<b>Basic</b>	<b>Eighth grade students performing at the basic level:</b> <ul style="list-style-type: none"><li>• Understands the basic concept of an acceptable use policy.</li><li>• Identify effects of society's increasing reliance on technology.</li></ul>

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

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Synthesis)	<p><b>8.CT.1.1 Categorize the causes of routine hardware or software problems.</b></p> <p><b>Example:</b> Computer screen does not display through LCD projector.</p> <ul style="list-style-type: none"> <li>• Internal/external device failure</li> <li>• Virus and malware</li> <li>• Improper use of equipment</li> </ul>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Evaluation)	<p><b>8.CT.2.1 Recommend applications that could be extended to other situations.</b></p> <p><b>Example:</b> GIS for emergency services, transportation systems and design.</p>
(Comprehension)	<p><b>8.CT.2.2 Demonstrate the ability to utilize virtual learning environments in a classroom setting</b></p> <p><b>Example:</b> WebCT, BlackBoard, Blogs, eboard, Web-based portals</p>
(Synthesis)	<p><b>8.CT.2.3 Incorporate the use of keyed technology into any learning environment.</b></p> <p><b>Example:</b> Create word processing document for course notes.</p> <p>✓ Demonstrate touch-type at 30 gwam with 2 or fewer errors per minute in a 3 minute time period. - Application</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Synthesis)	<b>8.CT.3.1 Develop a repertoire of strategies to apply new technologies to tasks.</b> <b>Example:</b> Students implement an online podcast or student newsletter to reach a varied audience.

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

<b>Advanced</b>	<p><b>Eighth grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"> <li>• Apply corrective action to routine hardware and software problems</li> <li>• Independently utilize more than one application to complete a specific task.</li> <li>• Differentiate between available virtual learning environments to determine the most productive environment.</li> <li>• Demonstrate a rate of more than 30 gwam with 2 or fewer errors while using keyed technology in a learning environment.</li> <li>• Instruct others in using strategies to apply new technologies to task. (EX-Prepare a brochure of strategies to share with peers, teachers, and others.)</li> </ul>
<b>Proficient</b>	<p><b>Eighth grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"> <li>• Categorize a variety of common computer problems as either hardware or software related.</li> <li>• Determine a secondary application that could be used to complete a specific task</li> <li>• Independently utilize virtual learning environments in a classroom setting.</li> <li>• Demonstrate a rate of at least 30 gwam with 2 or fewer errors while using keyed technology in a learning environment</li> <li>• Develop 3 strategies to apply new technologies to tasks.</li> </ul>
<b>Basic</b>	<p><b>Eighth grade students performing at the basic level:</b></p> <ul style="list-style-type: none"> <li>• Construct a list of common computer problems.</li> <li>• Use a secondary application to complete a specific task if directed to do so.</li> <li>• Use a virtual learning environment in a classroom setting if given specific directions.</li> <li>• Demonstrate a rate of at least 25 gwam with 2 or fewer errors while using a keyed technology in a learning environment.</li> <li>• Use a strategy to apply a new technology to a task</li> </ul>

**Eighth 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.

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Evaluation)	<p><b>8.CP.1.1 Evaluate a variety of communication tools for effective and efficient collaboration.</b></p> <p><b>Example:</b> Choose between using a webcam and a closed-circuit studio.</p> <p><b>Example:</b> Choosing between Instant messaging/texting or making a voice phone call.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Synthesis)	<p><b>8.CP.2.1 Integrate effective information technology to manage personal and education information.</b></p> <p><b>Example:</b> Create a personal portfolio or online journal to track assignments, notes and other pertinent information. (Google Pages, Moodle and other collaborative environments).</p> <p><b>Example:</b> Posting information or media to the web cannot be “recalled” or taken back. Once data is disseminated, it is available somewhere, somehow for all time.</p> <ul style="list-style-type: none"> <li>• Podcasts</li> <li>• Streaming video</li> <li>• Website</li> </ul>

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

<b>Advanced</b>	<p><b>Eighth grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"><li>• Compare multiple current communication tools and how they may be used in the future.</li><li>• Evaluate the content of, as well as the process used, when using communication tools such as email, chat, and blogs to send, receive, and post information for personal and educational use.</li></ul>
<b>Proficient</b>	<p><b>Eighth grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"><li>• Compare three communication tools used to collaborate and evaluate the effectiveness of the process used.</li><li>• Independently utilize communication tools such as email, chat, and blogs to send, receive, and post information for both personal and educational use.</li></ul>
<b>Basic</b>	<p><b>Eighth grade students performing at the basic level:</b></p> <ul style="list-style-type: none"><li>• Describe how one communication tool is used for collaboration.</li><li>• Use communication tools such as email and chat to send, receive, and post information when directed by a teacher.</li></ul>

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

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Synthesis)	<p><b>8.IL.1.1 Design a plan for conducting a search of electronic resources for a given task.</b></p> <p><b>Example:</b> For any given assignment, provide details on search method/engine used, keywords and operators used.</p> <p><b>Example:</b> Design a plan for conducting a search of electronic sources for a given task.</p>

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

<b>Bloom's Taxonomy Level</b>	<b>Standard, Supporting Skills, and Examples</b>
(Analysis)	<p><b>8.IL.2.1 Analyze predetermined online sources for accuracy, relevance, comprehensiveness, and bias.</b></p> <p><b>Example:</b> Create a rubric to compare online sources.</p> <p><b>Example:</b> Analyze predetermined online sources for accuracy, relevance, comprehensiveness and bias.</p>

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

<b>Advanced</b>	<p><b>Eighth grade students performing at the advanced level:</b></p> <ul style="list-style-type: none"><li>• Anticipate the outcome of a search using a variety of electronic resources to determine which resource would be most productive.</li><li>• Compare and contrast multiple online sources for accuracy, relevance, comprehensiveness and bias.</li><li>•</li></ul>
<b>Proficient</b>	<p><b>Eighth grade students performing at the proficient level:</b></p> <ul style="list-style-type: none"><li>• Design a plan for conducting a search for a given topic that includes which electronic resources to use and how to perform an effective search.</li><li>• Compare and contrast 2 online sources for accuracy, relevance, comprehensiveness and bias.</li><li>•</li></ul>
<b>Basic</b>	<p><b>Eighth grade students performing at the basic level:</b></p> <ul style="list-style-type: none"><li>• Conduct a search for a given topic using a variety of electronic resources.</li><li>• Compare and contrast 2 online sources for accuracy and relevance.</li></ul>

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

**6-8**

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

<b>Sixth Grade</b>	<b>Seventh Grade</b>	<b>Eighth Grade</b>
6.NC.1.1 Compare technology from the past to the present as a progression of input, process, output. (Analysis)	7.NC.1.1 Outline the implications of increasing computing potential over time. (Analysis)	8.NC.1.1 Evaluate the innovations contributed by individuals and institutions related to technology to understand that role in the development and design of technology. (Evaluation)

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

<b>Sixth Grade</b>	<b>Seventh Grade</b>	<b>Eighth Grade</b>
6.NC.2.1 Analyze the processes of technology systems. (Analysis)	7.NC.2.1 Describe how subsystems work within a larger system. (Comprehension)	8.NC.2.1 Compare the effect one system has on another system. (Analysis)

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

<b>Sixth Grade</b>	<b>Seventh Grade</b>	<b>Eighth Grade</b>
6.NC.3.1 Identify careers in various technology areas. (Knowledge)	7.NC.3.1 Compare technology education skills required to pursue a variety of career paths. (Synthesis)	8.NC.3.1 Evaluate technology education skills required to pursue a chosen personal career path. (Evaluation)

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

<b>Sixth Grade</b>	<b>Seventh Grade</b>	<b>Eighth Grade</b>
6.NC.4.1 Demonstrate the iterative nature of the design process. (Comprehension)	7.NC.4.1 Provide examples that show the universal nature of the design process. (Application)	8.NC.4.1 Validate the design process in problem-solving activities. (Synthesis)

## SOCIAL INTERACTIONS

6-8

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

Sixth Grade	Seventh Grade	Eighth Grade
6.SI.1.1 Apply basic software/hardware solutions to protect themselves and others when using Information and Communications Technologies (ICT). (Application)	7.SI.1.1 Correlate the costs and consequences resulting from illegal/unethical use of technology as it relates to changes in society. (Analysis)	8.SI.1.1 Outline the components and purpose of school acceptable use policies. (Analysis)

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

Sixth Grade	Seventh Grade	Eighth Grade
6.SI.2.1 Analyze how adoption of technological advancements produces change. (Analysis)	7.SI.2.1 Determine which innovations in technology have produced the greatest impact on society. (Application)	8.SI.2.1 Distinguish the effects that may result from society's increasing reliance on technology. (Analysis)

## INFORMATION AND COMMUNICATION TOOLS

6-8

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

<b>Sixth Grade</b>	<b>Seventh Grade</b>	<b>Eighth Grade</b>
6.CT.1.1 Demonstrate touch-type at 20 gwam with 2 or fewer errors per minute in a 3 minute time period. (Application)	7.CT.1.1 Describe the factors that contribute to increased/decreased functionality in a technological system. (Knowledge)	8.CT.1.1 Categorize the causes of routine hardware or software problems. (Synthesis)
6.CT.1.2 Investigate the functionality of various storage devices providing rationale for their uses. (Analysis)		

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

<b>Sixth Grade</b>	<b>Seventh Grade</b>	<b>Eighth Grade</b>
6.CT.2.1 Demonstrate ways to present and publish information using a variety of common applications. (Comprehension)	7.CT.2.1 Recognize differences between applications and their uses. (Analysis)	8.CT.2.1 Recommend applications that could be extended to other situations. (Evaluation)
6.CT.2.2 Incorporate the use of software features that demonstrate a broader understanding of the software. (Synthesis)	7.CT.2.2 Demonstrate ways that communication technologies interrelate. (Comprehension)	8.CT.2.2 Demonstrate the ability to utilize virtual learning environments in a classroom setting. (Comprehension)
	7.CT.2.3 Create projects using technology applications and tools. (Synthesis )	8.CT.2.3 Incorporate the use of keyed technology into any learning environment. (Synthesis)

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

<b>Sixth Grade</b>	<b>Seventh Grade</b>	<b>Eighth Grade</b>
6.CT.3.1 Differentiate versions of software and file formats. (Analysis)	7.CT.3.1 Evaluate the effectiveness of new tools. (Evaluation)	8.CT.3.1 Develop a repertoire of strategies to apply new technologies to tasks. (Synthesis)

## INFORMATION AND COMMUNICATION PROCESSES

6-8

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

Sixth Grade	Seventh Grade	Eighth Grade
6.CP.1.1 Identify the reasons for using technology tools for interpersonal interactions. (Knowledge)	7.CP.1.1 Compare various ways in which you can use collaborative technologies to present information. (Analysis)	8.CP.1.1 Evaluate a variety of communication tools for effective and efficient collaboration. (Evaluation)
		8.CP.1.2 Evaluate the process of communicating clearly to peers, teachers and others using collaborative technologies. (Evaluation)

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

Sixth Grade	Seventh Grade	Eighth Grade
6.CP.2.1 Compare and contrast the effects of different forms of technology on different audiences. (Analysis)	7.CP.2.1 Apply information technology to design on demand communication. (Application)	8.CP.2.1 Integrate effective information technology to managing personal and education information. (Synthesis)

## INFORMATION LITERACY AND DECISION MAKING

6-8

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

<b>Sixth Grade</b>	<b>Seventh Grade</b>	<b>Eighth Grade</b>
6.IL.1.1 Describe the organizational structure of searchable resources. (Comprehension)	7.IL.1.1 Compare technology systems and resources. (Analysis)	8.IL.1.1 Design a plan for conducting a search of electronic resources for a given task. (Synthesis)

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

<b>Sixth Grade</b>	<b>Seventh Grade</b>	<b>Eighth Grade</b>
6.IL.2.1 Select online sources based on a list of criteria. (Knowledge)	7.IL.2.1 Analyze online sources for accuracy, relevance, comprehensiveness and bias. (Analysis)	8.IL.2.1 Compare and contrast online sources for accuracy, relevance, comprehensiveness and bias. (Evaluation)