

West Virginia Learning Skills and Technology Tools

Grades 9, 10, 11, 12

Adopted 2008

Information and Communication Skills

- 1. The student will access, analyze, manage, integrate, evaluate, and create information in a variety of forms using appropriate technology skills and communicate that information in an appropriate oral, written, or multimedia format.** 21C.S.9-12.1

Learning Skills

- LS1.** Student recognizes information needed for problem solving, can efficiently browse, search and navigate online to access relevant information, evaluates information based on credibility, social, economic, political and/or ethical issues, and presents findings clearly and persuasively using a range of technology tools and media. 21C.O.9-12.1.LS1
- LS2.** Student analyzes and interprets visuals and recognizes the impact digital media influences (e.g. design, technique, and rate of speed) have on audiences. The student's visual products reflect a sophisticated understanding of subject, digital media and design techniques. 21C.O.9-12.1.LS2
- LS3.** Student creates information using advanced skills of analysis, synthesis and evaluation and shares this information through a variety of oral, written and multimedia communications that target academic, professional and technical audiences and purposes. 21C.O.9-12.1.LS3

Technology Tools

- TT1.** Student makes informed choices among available advanced technology systems, resources and services (e.g., global positioning software, graphing calculators, personal digital assistants, web casting, online collaboration tools) for completing curriculum assignments and projects and for managing and communicating personal/professional information. 21C.O.9-12.1.TT1
- TT2.** Student routinely applies keyboarding skills, keyboard shortcut techniques, and mouse skills with facility, speed and accuracy. 21C.O.9-12.1.TT2
- TT3.** Student uses advanced utilities (e.g., zipping or compressing files, file level anti-virus scans), converts files to different formats (e.g., .doc, .xls, .mdb, .htm, .pdf) and saves finished products to multiple media sources (e.g., CDRW, DVDR, USB drives, shared folders, web-based file storage). 21C.O.9-12.1.TT3
- TT4.** Student uses audio, video, pictures, clip art, moviemaker programs, webpage design software, electronic documents and other files to collaborate for the creation of electronic products that inform multiple audiences both inside and outside the school environment. 21C.O.9-12.1.TT4
- TT5.** Student uses advanced features of word processing software (e.g., outline, table of contents, index feature, draw tool, headers and footers, track changes, macros, hyperlinks to other file formats, etc.). 21C.O.9-12.1.TT5
- TT6.** Student uses advanced features and utilities of spreadsheet software, (e.g., formulas, filters, pivot tables, pivot charts, macros, conditional formatting), to perform calculations and to organize, analyze and report data. 21C.O.9-12.1.TT6

- TT7.** Student uses advanced features and utilities of presentation software (e.g., slide transitions, master slides, narrations and timings, creating web-enabled presentations, creating a non-linear presentation) to communicate ideas to multiple audiences. [21C.0.9-12.1.TT7](#)
- TT8.** Student uses advanced features and utilities of database software (e.g., to create tables, forms, perform table relationships, advanced queries, and simple reports) to test hypotheses or research questions and to report results. [21C.0.9-12.1.TT8](#)
- TT9.** Student uses advanced telecommunication tools (e.g., email, video conferencing, interactive websites, newsgroups, video phones, chats) to create collaborative projects that are relevant to real world situations and contribute to the communication process among various groups. [21C.0.9-12.1.TT9](#)
- TT10.** Student implements various Internet search techniques (e.g., Boolean searches, metasearches, web bots) to gather information; student evaluates the information for validity, appropriateness, content, bias, currency, and usefulness. [21C.0.9-12.1.TT10](#)
- TT11.** Student imports and exports multiple data formats and integrates to multiple productivity programs (e.g., exports comma delimited files, standard data formats) and understands transferability of data among different programs. [21C.0.9-12.1.TT11](#)
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Thinking and Reasoning Skills

2. The student will demonstrate the ability to explore and develop new ideas, to intentionally apply sound reasoning processes and to frame, analyze and solve complex problems using appropriate technology tools. [21C.S.9-12.2](#)

Learning Skills

- LS1.** Student engages in a critical thinking process that supports synthesis and conducts evaluation using complex criteria. [21C.0.9-12.2.LS1](#)
- LS2.** Student draws conclusions from a variety of data sources to analyze and interpret systems. [21C.0.9-12.2.LS2](#)
- LS3.** Student engages in a problem solving process by formulating questions and applying complex strategies in order to independently solve problems. [21C.0.9-12.2.LS3](#)
- LS4.** Student visualizes the connection between seemingly unrelated ideas and independently produces solutions that are fresh, unique, original and well developed. Student shows capacity for originality, concentration, commitment to completion, and persistence to develop unique and cogent products. [21C.0.9-12.2.LS4](#)

Technology Tools

- TT1.** Student knows how to find information necessary to solve advanced problems related to hardware, software, networks, and connections (e.g., by accessing online help, Internet searches, technical documentation, system utilities, and communication with technical experts). [21C.0.9-12.2.TT1](#)
 - TT2.** Student collaborates with peers, experts and others to contribute to a content-related knowledge base by using technology to compile, synthesize, produce, and disseminate information, models, and other creative works. [21C.0.9-12.2.TT2](#)
 - TT3.** Student uses multiple electronic sources of information and multiple technology tools and resources tools (e.g., digital cameras, graphing calculators, probes, mp3 players, handheld devices, other emerging technologies, simulations, models, browsers, word processing, authoring tools, spreadsheets, databases) to collaborate with others, to formulate a hypothesis, to solve problems, make decisions, and present and justify the solutions. [21C.0.9-12.2.TT3](#)
 - TT4.** Student uses technology tools and multiple media sources to analyze a real-world problem, design and implement a process to assess the information, and chart and evaluate progress toward the solution. [21C.0.9-12.2.TT4](#)
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Personal and Workplace Skills

- 3. The student will exhibit leadership, ethical behavior, respect for others; accept responsibility for personal actions considering the impact on others; take the initiative to plan and execute tasks; and interact productively as a member of a group.** **21C.S.9-12.3**

Learning Skills

- LS1.** Student remains composed and focused, even under stress, willingly aligns his/her personal goals to the goals of others when appropriate, approaches conflict from win-win perspective, and derives personal satisfaction from achieving group goals. **21C.O.9-12.3.LS1**
- LS2.** Student independently considers multiple perspectives and can represent a problem in more than one way, quickly and calmly changes focus and goals as the situation requires, and actively seeks innovations (e.g. technology) that will enhance his/her work. **21C.O.9-12.3.LS2**
- LS3.** Student demonstrates ownership of his/her learning by setting goals, monitoring and adjusting performance, extending learning, using what he/she has learned to adapt to new situations, and displaying perseverance and commitment to continued learning. **21C.O.9-12.3.LS3**
- LS4.** Student demonstrates ethical behavior and works responsibly and collaboratively with others in the context of the school and the larger community, and he/she demonstrates civic responsibility through engagement in public discourse and participation in service learning. **21C.O.9-12.3.LS4**
- LS5.** Student exhibits positive leadership through interpersonal and problem-solving skills that contribute to achieving the goal. He/she helps others stay focused, distributes tasks and responsibilities effectively, and monitors group progress toward the goal without undermining the efforts of others. **21C.O.9-12.3.LS5**
- LS6.** Student maintains a strong focus on the larger project goal and frames appropriate questions and planning processes around goal. Prior to beginning work, student reflects upon possible courses of action and their likely consequences; sets objectives related to the larger goal; and establishes benchmarks for monitoring progress. While working on the project, student adjusts time and resources to allow for completion of a quality product. **21C.O.9-12.3.LS6**

Technology Tools

- TT1.** Student protects software, hardware and network resources from viruses, vandalism, and unauthorized use and employs proper techniques to access, use and shut down technology equipment. **21C.O.9-12.3.TT1**
- TT2.** Student works collaboratively to acquire information from electronic resources, conducts online research, and evaluates information as to validity, appropriateness, usefulness, comprehensiveness and bias. **21C.O.9-12.3.TT2**
- TT3.** Student evaluates current trends in information technology, discusses the potential social, ethical, political, and economic impact of these

technologies, and analyzes the advantages and disadvantages of widespread use and reliance on technology in the workplace and society. 21C.0.9-

12.3.TT3

- TT4.** Student adheres to acceptable use policy and displays ethical behaviors related to acceptable use of information and communication technology (e.g., privacy, security, copyright, file-sharing, plagiarism); student predicts the possible cost and effects of unethical use of technology (e.g., consumer fraud, intrusion, spamming, virus setting, hacking) on culture and society; student identifies the methodologies that individuals and businesses can employ to protect the integrity of technology systems. 21C.0.9-12.3.TT4
- TT5.** Student models ethical behavior relating to security, privacy, computer etiquette, passwords and personal information and demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects and multi-media presentations. Student advocates for legal and ethical behaviors among peers, family, and community regarding the use of technology and information. 21C.0.9-12.3.TT5
- TT6.** Student evaluates and applies technology tools for research, information analysis, problem solving, content learning, decision making, and lifelong learning. 21C.0.9-12.3.TT6
- TT7.** Student protects his/her identity online and in email and/or websites, limits the distribution of personal information/pictures, and evaluates the authenticity of emails that solicit personal information. Student identifies the methodologies that individuals and businesses can employ to protect the integrity of technology systems. 21C.0.9-12.3.TT7
- TT8.** Student uses technology to seek strategies and information to address limits in their own knowledge. 21C.0.9-12.3.TT8