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TITLE 126 LEGISLATIVE RULE BOARD OF EDUCATION SERIES 44N

21st CENTURY LEARNING SKILLS AND TECHNOLOGY TOOLS CONTENT STANDARDS AND OBJECTIVES FOR WEST VIRGINIA SCHOOLS (2520.14)

§126-44N-1. General.

1.1. Scope. West Virginia Board of Education Policy 2510 provides a definition of a delivery system for, and an assessment and accountability system for, a thorough and efficient education for West Virginia public school students. Policy 2520.14 defines the content standards (or instructional goals) and objectives for 21st century learning skills and technology tools as required by W.Va. 126CSR42 (Policy 2510).

1.2. Authority. W.Va. Constitution, Article XII, §2, W. Va. Code §18-2-5 and §18-9A-22.

1.3. Filing Date. - November 15, 2006.

1.4. Effective Date.. - July 1, 2008.

1.5. Repeal of Former Rule. This legislative rule repeals and replaces W. Va. 126CSR44N “Technology Content Standards and Objectives for West Virginia Schools (2520.14)” filed May 8, 2003 and effective July 1, 2003.

§126-44N-2. Purpose.

2.1. This policy defines the content standards (or instructional goals) and objectives for the program of study required by Policy 2510 in 21st Century Learning Skills and Technology Tools.

3.1. A copy of 21st Century Learning Skills and Technology Tools Standards and Objectives for West Virginia Schools is attached and incorporated by reference into this policy. Copies may be obtained in the Office of the Secretary of State and in the West Virginia Department of Education, Office of Instructional Services.

§126-44N-4. Summary of the Content Standards and Objectives.

4.1. The West Virginia Board of Education has the responsibility for establishing high quality standards pertaining to all educational standards pertaining to all education programs (W.Va. Code §18-9A-22). The content standards and objectives provide a focus for teachers to teach and students to learn those skills and competencies essential for future success in the workplace and further education. The document includes content standards for PreK-12 21st Century learning skills and technology tools an explanation of terms; and objectives that reflect a rigorous and challenging curriculum.

West Virginia Department of Education

West Virginia Board of Education Policy 2520.14
*21st Century Learning Skills and Technology
Tools Content Standards and Objectives for
West Virginia Schools*

Steven L. Paine
State Superintendent

Foreword

A 21st century curriculum that incorporates learning skills and technology tools is an increasingly important aspect of developing learners prepared for success in the 21st century. Thus, the West Virginia Board of Education and the West Virginia Department of Education are pleased to present Policy 2520.14, 21st Century Learning Skills and Technology Tools Content Standards and Objectives for West Virginia Schools. The West Virginia Standards for 21st Century Learning includes 21st century *content* standards and objectives as well as 21st century standards and objectives for *learning skills* and *technology tools*. This broadened scope of curriculum is built on the firm belief that quality engaging instruction must be built on a curriculum that triangulates rigorous 21st century content, 21st century learning skills and the use of 21st century technology tools.

Committees of educators from across the state convened to revise the content standards and objectives. The overarching goal was to build a rigorous, relevant and challenging learning skills and technology tools curriculum that would prepare students for the 21st century. West Virginia educators, including regular classroom teachers, special education teachers, and teachers representing higher education institutions, played a key role in shaping the content standards to align with national standards, rigorous national assessments and research and best practice in the field of educational technology. The contribution of these professionals was critical in creating a policy that is meaningful to classroom teachers and appears in a format that can easily be used and understood.

Policy 2520.14 is organized around two of the major components of a standards-based curriculum: learning standards and instructional objectives. The learning standards are the *broad descriptions* of what *all* students must know and be able to do at the conclusion of the instructional sequence. The accompanying programmatic-level objectives are specific descriptors of knowledge, skills and attitudes that when mastered will enable the student to attain the standard. The instructional objectives guide instructional *planning* and provide a basis for determining appropriate *assessments*, *instructional strategies* and *resources*.

In combination, the use of learning standards and instructional objectives become a comprehensive guide for delivering a rigorous and relevant learning skills and technology tools curriculum to all West Virginia students. These elements, when used to guide the instructional process and when delivered with the creativity and instructional expertise of West Virginia teachers, will become a powerful resource for preparing students to meet the challenges of the 21st century.

Steven L. Paine
State Superintendent of Schools

Explanation of Terms

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Content Standards are broad descriptions of what students should know and be able to do in a content area. Content standards describe what students' knowledge and skills should be at the end of a K-12 sequence of study.

Objectives are incremental steps toward accomplishment of content standards. Objectives are listed by grade level and are organized around the content standards. Objectives build across grade levels as students advance in their knowledge and skills.

Numbering of Standards

The number for each content standard is composed of four parts, each part separated by a period:

- the content area codes are LS for Learning Skills and TT for Technology Tools,
- the letter S, for Standard,
- the programmatic level, and
- the standard number.

Illustration: 21C.S.PK-2.1 refers to PreK-2 content standard #1.

Numbering of Objectives

The number of each objective is composed of five parts, each part separated by a period:

- the content area code (LS for Learning Skills; TT for Technology Tools),
- the letter O is for Objective,
- the programmatic level,
- the number of the content standard addressed, and
- the objective number.

Illustration: 21C.O.3-4.1.TT2 refers to technology tools objective for grades 3-4 that addresses standard #1 in 21st Century Learning Skills and Technology Tools, and is the second objective listed under that standard.

Unique Electronic Numbers (UENs)

Unique Electronic Numbers (or UENs) are numbers that help to electronically identify, categorize and link specific bits of information. Once Policy 2520.14 is available on the Web, each standard and each objective will have a Unique Electronic Number (UEN) that will always remain the same.

The codes printed in Policy 2520.14 form the basis of the UENs. The only additional set of numbers that will be added to each code to formulate its UEN will be a prefix that indicates the year and month that a particular version of Policy 2520.14 is approved by the State Board of Education.

The prefix for the UENs for each content area in Policy 2520.14 is noted at the top of each page containing standards, objectives and performance descriptors. As sections of 2520.14 are revised, UENs will be changed to reflect the new approval date.

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UENs (Unique Electronic Numbers) are unique numbers that facilitate implementation of WV Standards into Electronic formats such as Databases and XML Files. The WV Department of Education encourages everyone who is going to use the WV Content Standards in any kind of electronic distribution, alignment, or software development to use the UENs so that all efforts can be cross-referenced and there is consistency across initiatives.

Illustration: The UEN for fifth grade learning skills and technology tools standard #2 will be “200302.21C.S.5-8.2”

Abbreviations

Content Areas

LS	Learning Skills
TT	Technology Tools

Other Abbreviations

O	Objective
S	Standard (Content Standard)
PreK-2	Grades from PreK through 2
3-4	Grades 3 and 4
5-8	Grades 5 through 8
9-12	Grades 9 through 12

West Virginia Standards for 21st Century Learning

Information and communication technology (ICT) literacy is the ability to use technology to develop 21st century context knowledge and learning skills, in the support of 21st century teaching and learning. In a digital world, students need to learn to use the tools that are essential to everyday life and workplace productivity. The *West Virginia Standards for 21st Century Learning* integrate 21st century learning skills and 21st century technology tools into three standards: Standard 1 – Information and Communication Skills; Standard 2 – Thinking and Reasoning Skills; and Standard 3 – Personal and Workplace Skills. These three standards reflect the content found in the six national standards published by the International Society for Technology in Education (ISTE):

- Basic operations and concepts
- Social, ethical and human issues
- Technology productivity tools
- Technology communication tools
- Technology research tools
- Technology problem-solving and decision-making tools

Important 21st century technology tools include information and communication technologies such as computers, networking and other technologies (e.g. probes/sensors and accelerometers, ipods, interactive white boards, etc.); audio, video, multimedia and other digital tools; access to online learning communities and resources; aligned digital content software and adequate hardware for all students; and educators with appropriate technology support systems.

The mix of technology tools will change and evolve rapidly in the future. Today's technology may be obsolete tomorrow. It is impossible to predict the tools that will be essential for learning and working in the years to come. That is why it is important for people to acquire learning skills that will enable them to use next-generation technology and why business people and educators need to continue to collaborate so schools will stay abreast of new technology. By moving beyond the development of foundational skills in technology to the development of ICT literacy skills, we will prepare our students to be productive in the classroom and the workplace.

In order to prepare our students to be successful students today and productive workers tomorrow, West Virginia teachers are responsible for integrating the learning skills and technology tools found in the *Standards for 21st Century Learning* appropriately into the learning environment. The three standards and related objectives are organized by programmatic levels, grades PreK-2; grades 3-4; grades 5-8; and grades 9-12. The intent is to provide the school principal and staff the flexibility to collaboratively design a model of implementation at each programmatic level that will afford all students to develop proficiency in each of the three standards.

West Virginia Standards for 21st Century Learning 21st Century Learning Skills and Technology Tools

PK-2 Standards for 21st Century Learning

Upon completion of the second grade the student will be able to work cooperatively and productively with others in small groups and use age-appropriate instructional rubrics and other tools to assess performance related to the learning goal. The student will practice correct keyboarding and proper care of computer software and hardware, create text using word processing software and use email to send messages. The student will use an Internet browser to access websites, developmentally appropriate technology resources to locate information for assignments, presentation software to explain and communicate information and drawing or paint software to create a picture.

PK-2	Standards for 21 st Century Learning
Standard	Standard 1: Information and Communication Skills
21C.S.PK-2.1	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.

PK-2

Learning Skills Objectives		Technology Tools Objectives	
<i>Learning skills enable students to acquire new content, knowledge and skills, connect new information to existing knowledge, learn new software programs, and learn new ways of doing things using technology tools.</i>		<i>Technology tools, when integrated with classroom instruction, enable students to access, manage, integrate and evaluate information across content areas, construct new knowledge and communicate efficiently with others.</i>	
21C.O.PK-2.1.LS1	Student uses text, people and electronic resources (e.g. interactive books, educational software, CD-ROMs, elementary multimedia encyclopedias and search engines) to locate information for classroom assignments and is able to identify the author and purpose for each source located.	21C.O.PK-2.1.TT1	Student uses keyboard and mouse to enter name and User ID, types sentences and follows on-screen prompts to successfully operate computers. Student uses printers, audiotapes, and other technologies. Student names common technologies (e.g., CD player, DVD player, video camera, cell phone).

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PK-2

Learning Skills Objectives		Technology Tools Objectives	
21C.O.PK-2.1.LS2	Student can accurately interpret and create simple visuals (e.g. charts, maps, graphs and models) and use this information to solve problems and communicate information.	21C.O.PK-2.1.TT2	Student demonstrates correct keyboarding posture and correct hand and finger placement for the home row, knows how to use keyboard to create lower and upper case letters, knows how to locate and use the letters, numbers and special keys (e.g., enter, space bar, arrow keys, delete, shift, punctuation keys, number keys, left and right hand position), knows how to use a mouse to point and click, place cursor at a specified location, click and drag, and right click.
21C.O.PK-2.1.LS3	Student articulates thoughts and ideas, representative of real and imaginary experiences, clearly and effectively through oral, written or multimedia communication.	21C.O.PK-2.1.TT3	Student logs on to computer, starts and exits programs, finds files, and handles and uses output devices (e.g., CDs, DVDs, USB drives, diskettes) with care. Student uses file menu commands (e.g., New, Open, Close, Save, Save as, Print) and saves computer files to diskette, hard drive and server.
		21C.O.PK-2.1.TT4	Student uses electronic drawing and paint programs to create graphics. Student participates in a group to locate and create pictures, clip art, graphs, tables and other appropriate objects and to insert into documents and presentations.
		21C.O.PK-2.1.TT5	Student creates text, types words and sentences, and inserts images using word processing software. Student creates, saves, prints and opens existing files. Student uses editing functions in word processing software (e.g., font, boldface, underline, font color). Student inserts graphics that enhance the understanding of the text.
		21C.O.PK-2.1.TT6	Student, working in a teacher–led whole group project, enters simple data into a spreadsheet and creates graphs electronically (i.e., use of chart wizard).

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PK-2

PK-2	
Learning Skills Objectives	Technology Tools Objectives
	<p>21C.O.PK-2.1.TT7 Student, working in a teacher-led whole group project, uses presentation software to illustrate concepts and communicate ideas.</p>
	<p>21C.O.PK-2.1.TT8 Student, working in a teacher-led whole group project, uses existing common databases (e.g., online or CD-ROM encyclopedias, electronic dictionaries, and other online library archives) to find information for classroom assignments.</p>
	<p>21C.O.PK-2.1.TT9 Student identifies the Internet and email as tools to locate information and communicate. Student, with assistance from teachers or student partners, views identified Internet sites and uses email to read and send messages to other students, teachers, and online experts.</p>
	<p>21C.O.PK-2.1.TT10 Student begins to locate information in a variety of developmentally appropriate technology resources (e.g., interactive books, educational software, CD-ROMs, elementary multi-media encyclopedias and web-based search engines) to support classroom assignments.</p>

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PK-2	Standards for 21 st Century Learning
Standard	Standard 2: Thinking and Reasoning Skills
21C.S.PK-2.2	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.

PK-2			
Learning Skills Objectives		Technology Tools Objectives	
21C.O.PK-2.2.LS1	Student engages with teacher assistance in a critical thinking process by conducting basic evaluations using simple criteria.	21C.O.PK-2.2.TT1	Student identifies procedures for caring for and using developmentally appropriate technologies (e.g., computers, CD/DVD players, videotapes, diskettes, CD-ROMs, remote controls).
21C.O.PK-2.2.LS2	Student identifies parts of a system and explains how those parts interact with one another.	21C.O.PK-2.2.TT2	Student collaborates with classmates, families and others using telecommunications (e.g., class electronic pen pal projects, children’s online message boards, e-cards, ask an expert online).
21C.O.PK-2.2.LS3	Student engages in a problem solving process using objects to solve problems and demonstrates learning by explaining how they solved the problem.	21C.O.PK-2.2.TT3	Student identifies different purposes among software applications (e.g., puzzles, writing tools, graphing tools, concept mapping tools). Student selects technology tools and software to solve problems (e.g., presentation software to explain and communicate information, drawing or paint software to make a picture, email software to send messages, Internet browser to access websites, and word processing software to write a story).
21C.O.PK-2.2.LS4	Student engages in discovery, exploration and experimentation to reach unexpected answers. Student makes unusual associations and provides a variety of solutions to problems.	21C.O.PK-2.2.TT4	Student identifies how technology could be used to solve problems in our everyday world.

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PK-2	Standards for 21 st Century Learning
Standard	Standard 3: Personal and Workplace Skills
21C.S.PK-2.3	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.

PK-2

Learning Skills Objectives		Technology Tools Objectives	
21C.O.PK-2.3.LS1	Student manages negative emotions, aligns his/her goals to the goals of others, and works cooperatively and productively with others in small groups.	21C.O.PK-2.3.TT1	Student identifies and practices the responsible use of technology systems and software.
21C.O.PK-2.3.LS2	Student demonstrates ability to assume different roles and responsibilities as assigned by the teacher and abandons ineffective strategies when introduced to more effective strategies for solving a problem or completing a task.	21C.O.PK-2.3.TT2	Student discusses with the teacher how the Internet can be a source of information.
21C.O.PK-2.3.LS3	Student understands the defined learning goal and uses age-appropriate instructional rubrics and tools to assess his/her performance in meeting the goal within the timeline established by the teacher.	21C.O.PK-2.3.TT3	Student identifies how technology is commonly used in homes, community, and other environments.
21C.O.PK-2.3.LS4	Student knows the difference between right and wrong, is accepting of others in work and play groups, and shows regard for peers and adults within the school by keeping work, play and public areas clean and organized.	21C.O.PK-2.3.TT4	Student discusses the requirements of acceptable use policies (AUP). Student recognizes and gives examples of an individual's right of ownership to computer-generated work.
21C.O.PK-2.3.LS5	Student uses clearly defined teacher directions and interpersonal skills to move others toward the goal.	21C.O.PK-2.3.TT5	Student demonstrates positive social and ethical behaviors when using technology. Student identifies appropriate and inappropriate use of computers and describes how to work collaboratively with others when using technology at home or in school.

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PK-2

Learning Skills Objectives		Technology Tools Objectives	
21C.O.PK-2.3.LS6	Student focuses on a project goal, and with teacher guidance, frames appropriate questions related to the goal, considers possible courses of action, selects a plan of action and completes the project.	21C.O.PK-2.3.TT6	Student discusses how technology is used in the classroom, during leisure time, and for communication with others.
		21C.O.PK-2.3.TT7	Student participates in teacher-led discussion about Internet safety and the importance of protecting identity on-line, in email, and/or websites, and of limiting distribution of information and pictures.

West Virginia Standards for 21st Century Learning

Grade 3-4 Standards for 21st Century Learning

Upon completion of the fourth grade the student will work productively in a group setting and demonstrate flexibility in assuming different roles and responsibilities. The student will engage in a problem solving process that promotes questioning, investigating and finding solutions and will begin to select appropriate tools for problem solving, self-directed learning and extended learning activities. The fourth grade student understands the meaning of acceptable use, protects online identity and demonstrates personal responsibility in the use of technology. The student continues to expand the use of word processing software, begins to use a spreadsheet to perform calculations, understands the functionality of a database and creates a simple multimedia project. Students use technology tools in a collaborative setting to generate products, create ideas, and to communicate effectively.

3-4	Standards for 21 st Century Learning
Standard	Standard 1: Information and Communication Skills
21C.S.3-4.1	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.

3-4			
Learning Skills Objectives		Technology Tools Objectives	
<i>Learning skills enable students to acquire new content, knowledge and skills, connect new information to existing knowledge, learn new software programs, and learn new ways of doing things using technology tools.</i>		<i>Technology tools, when integrated with classroom instruction, enable students to access, manage, integrate and evaluate information across content areas, construct new knowledge and communicate efficiently with others.</i>	
21C.O.3-4.1.LS1	Student identifies information needed to solve a problem or complete an assignment, conducts a search and prioritizes various sources based on credibility and relevance, retrieves relevant information from a variety of media sources, and uses this information to create an effective presentation.	21C.O.3-4.1.TT1	Student uses keyboard, mouse and other common input and output devices (including adaptive devices when necessary) efficiently and effectively; student handles diskettes, CD/DVDs, USB drives, microphones, and headphones with care; student opens files independently, saves documents, and sends documents to the printer.

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3-4

Learning Skills Objectives		Technology Tools Objectives	
21C.O.3-4.1.LS2	Student accurately interprets symbols and visuals and can distinguish fact from opinion when presented with visuals through various media; student uses his/her knowledge to construct new knowledge and communicate information.	21C.O.3-4.1.TT2	Student demonstrates correct keyboarding posture and technique, uses correct hand and finger placement for alphabetic, numeric, and special purpose keys such as arrows, escape, backspace, delete, caps lock, and control; student knows how to correctly use these keys; students know how to use Edit menu to cut, copy, paste, change font, and other common editing features.
21C.O.3-4.1.LS3	Student, cognizant of audience and purpose, articulates thoughts and ideas accurately and effectively through oral, written or multimedia communications.	21C.O.3-4.1.TT3	Student uses menu options in software applications to create documents, simple spreadsheets and presentations and to save files to various locations (e.g., USB drive, diskette, hard drive, server). Student begins to use e-mail to exchange documents with other teachers and students. Students know how to organize files through the use of folders.
		21C.O.3-4.1.TT4	Student finds, imports, inserts, and resizes or moves pictures, images and charts in word processing documents, spreadsheets, presentations and other electronic templates.
		21C.O.3-4.1.TT5	Student uses word processing software to create and format a document (e.g., paragraphs, tabs, page justification, margins, spell check, grammar check, word count, insert page breaks, page numbers), uses Edit menu to cut, copy, paste, change font type, size and color, select and highlight text, and other common editing features.
		21C.O.3-4.1.TT6	Student enters data into a spreadsheet, performs simple calculations (e.g., Sum, Average), aligns data (e.g., left, right, center justification), applies different formats (e.g., number format, currency format, general format), and creates simple graphs and charts using the chart wizard.

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3-4

Learning Skills Objectives

Technology Tools Objectives

21C.O.3-4.1.TT7	Student creates a presentation of at least four to six slides. Student inserts slides and chooses backgrounds, fonts, and slide layouts. Student understands and uses different formats for viewing (e.g., slide sorter menu, slide show menu, normal view).
21C.O.3-4.1.TT8	Student uses existing common databases (e.g., online or CD-ROM encyclopedias, electronic dictionaries, and other online library archives) to find, sort and interpret information for classroom assignments.
21C.O.3-4.1.TT9	Student participates in several curriculum-based telecommunications projects as class activities (e.g., web quests, ask an expert, collaborative email projects, online discussions). Student uses telecommunications efficiently and effectively to access remote information and communicate with audiences.
21C.O.3-4.1.TT10	Student selects and uses appropriate software, other technologies, and grade level appropriate search engines to locate and acquire information from electronic resources (e.g., interactive books, multi-media encyclopedias, Internet sites). Student evaluates information found for content and usefulness.

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3-4	Standards for 21 st Century Learning
Standard	Standard 2: Thinking and Reasoning Skills
21C.S.3-4.2	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.

3-4			
Learning Skills Objectives		Technology Tools Objectives	
21C.O.3-4.2.LS1	Student engages, with teacher assistance, in a critical thinking process that synthesizes knowledge and ideas.	21C.O.3-4.2.TT1	Student troubleshoots simple hardware and software problems (e.g., rebooting, closing applications, powering off and restarting computers, using simple help menus, clearing print queues).
21C.O.3-4.2.LS2	Student identifies parts of a system and explains how those parts interact with one another.	21C.O.3-4.2.TT2	Student collaborates with peers, experts and others using telecommunications and online resources (e.g., e-mail, online discussions) to participate in collaborative problem-solving activities for the purpose of developing solutions or products for audiences inside and outside the classroom.
21C.O.3-4.2.LS3	Student engages in a problem solving process that promotes questioning, planning investigations and finding answers and solutions.	21C.O.3-4.2.TT3	Student uses technology tools (e.g., presentation software, word processing software, publishing software, group web page design, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create informative products for audiences inside and outside the classroom.
21C.O.3-4.2.LS4	Student generates ideas for solutions to problems and asks questions in order to create unusual, unique or clever products. Student begins to cognitively recognize the skills of adapting, improving, modifying, and expanding existing thoughts or ideas to create products.	21C.O.3-4.2.TT4	Student uses technology tools (e.g., calculators, data collection probes, videos, educational software) for problem solving, self-directed learning, and extended learning activities.

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3-4	Standards for 21 st Century Learning
Standard	Standard 3: Personal and Workplace Skills
21C.S.3-4.3	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.

3-4			
Learning Skills Objectives		Technology Tools Objectives	
21C.O.3-4.3.LS1	Student manages and preempts negative emotions before they escalate, exercises self-restraint without assistance, and works productively in a variety of group settings.	21C.O.3-4.3.TT1	Student practices responsible use of technology systems. Student identifies the consequences of viruses, vandalism and inappropriate use of hardware and software.
21C.O.3-4.3.LS2	Student is flexible in assuming various roles and responsibilities in the classroom and the school, and with minimal assistance, considers alternative methods, solutions and perspectives to solving a problem or completing a task.	21C.O.3-4.3.TT2	Student evaluates bookmarked Internet sites or teacher-directed sites for relevance to curriculum tasks.
21C.O.3-4.3.LS3	Student engages in the goal setting process, and with guidance, demonstrates ability to change focus and direction or use different strategies, while using instructional rubrics and other tools to monitor and evaluate his/her performance.	21C.O.3-4.3.TT3	Student identifies and describes the impact of technology on homes, school and business environments. Student identifies how technology supports individual and group work and assistance for students with disabilities.
21C.O.3-4.3.LS4	Student appreciates, accepts and works cooperatively with others, in both academic and social contexts, shares responsibility for continued improvement of the academic performance and climate of the school, and exhibits ethical behavior while working alone or communicating with others.	21C.O.3-4.3.TT4	Student complies with county acceptable use policy. Student identifies the need for acceptable use policies (AUP), discusses basic issues related to responsible use of technology and information and describes personal consequences of inappropriate use, and begins to cite sources for information found through electronic searches.
21C.O.3-4.3.LS5	Student uses his/her interpersonal skills when in an assigned leadership role, helps others stay focused and successfully moves the group toward the goal.	21C.O.3-4.3.TT5	Student identifies why technology is important to them, the purpose of using login names and passwords, and reasons for keeping them private. Student models acceptable use and understands the etiquette of email communications.

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3-4

Learning Skills Objectives		Technology Tools Objectives	
21C.O.3-4.3.LS6	Student focuses on the larger goal of a project, frames appropriate questions related to the goal, develops and initiates a plan of action with specific tasks and appropriate benchmarks, and completes the project on time.	21C.O.3-4.3.TT6	Student selects appropriate technology tools and resources needed to communicate information to others, to achieve personal goals, and to support independent learning.
		21C.O.3-4.3.TT7	Student identifies need to protect identity online, in email, and/or websites, and the importance of limiting distribution of information/pictures. Student begins to apply strategies for protecting identity online, in email, and on websites.

West Virginia Standards for 21st Century Learning

Grade 5-8 Standards for 21st Century Learning

Upon completion of the eighth grade, the student will demonstrate ethical behavior and work responsibly and collaboratively with others to accomplish both individual and team goals. The student will become a more critical thinker and problem solver and use technology tools to solve problems and make decisions related to classrooms assignments. The eighth grade student will create products that reflect a growing understanding of visual language and the effective use of technology tools. The student will use expanded features of spreadsheet, database and presentation software and use telecommunications to publish information. A proficient user of technology, the student will demonstrate a sound understanding of the nature and operation of technology systems and will effectively use telecommunications tools for research, collaboration and communication. The student understands the need for individuals and business to protect the integrity of technology systems..

5-8	Standards for 21 st Century Learning
Standard	Standard 1: Information and Communication Skills
21C.S.5-8.1	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.

5-8			
Learning Skills Objectives		Technology Tools Objectives	
<i>Learning skills enable students to acquire new content, knowledge and skills, connect new information to existing knowledge, learn new software programs, and learn new ways of doing things using technology tools.</i>		<i>Technology tools, when integrated with classroom instruction, enable students to access, manage, integrate and evaluate information across content areas, construct new knowledge and communicate efficiently with others.</i>	
21C.O.5-8.1.LS1	Student, when presented with a problem, identifies the information needed, uses text, people, online databases and search engines to filter relevant information efficiently, analyzes information for biases, synthesizes information gathered and creates an effective and efficient response to the problem	21C.O.5-8.1.TT1	Student connects peripheral devices (e.g., scanners, digital cameras, video projectors, USB drives, printers, media storage devices) to computers and uses them efficiently and effectively. Student accesses server and/or network resources (e.g., file folders/software programs, bookmarked sites).

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5-8

Learning Skills Objectives		Technology Tools Objectives	
21C.O.5-8.1.LS2	Student interprets abstract visuals and creates products (e.g. digital storytelling) that reflect a growing understanding of visual language and require the effective use of tools (e.g. cropped photos, original charts and graphs, well-chosen images from databases, video clips).	21C.O.5-8.1.TT2	Student increases keyboarding facility and uses mouse and keyboard shortcut techniques and identified assistive technology to improve speed and accuracy.
21C.O.5-8.1.LS3	Student presents thoughts, ideas, and conceptual understanding efficiently, accurately and in a compelling manner and enhances the oral or written presentation through the use of technology.	21C.O.5-8.1.TT3	Student recognizes different file format extensions (e.g., .doc, .xls, .ppt, .rft, .pdf, .jpeg, .gif, .mpg, .wav, .mp3) and can import the different formats into documents, presentations, spreadsheets and databases.
		21C.O.5-8.1.TT4	Student uses audio, video, pictures, clip art, moviemaker programs, webpage design software, electronic documents, and other files to create and publish electronic products to communicate with various audiences inside and outside the classroom.
		21C.O.5-8.1.TT5	Student uses advanced features and utilities of word processing software (e.g., bullets, numbering, tables, find and replace, thesaurus, help menus and toolbars).
		21C.O.5-8.1.TT6	Student uses advanced features and utilities of spreadsheet software, (e.g. functions, formulas, filters, sorts, creates graphs and charts), to perform calculations and to organize, analyze and report data.
		21C.O.5-8.1.TT7	Student uses advanced features and utilities of presentation software (e.g., design templates, design layouts (fonts/ colors/ backgrounds) animation and graphics, inserting pictures, objects, movies, sound, charts, hyperlinks, and graphs) to create an original product.
		21C.O.5-8.1.TT8	Student enters data relevant to class assignments into a database and performs simple queries.

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Learning Skills Objectives

Technology Tools Objectives

21C.O.5-8.1.TT9	Student uses telecommunications tools (e.g., email, web pages, blogs, discussion groups, list-servs, etc.) to learn academic content and to gather, share and publish information to various audiences.
21C.O.5-8.1.TT10	Student uses Internet browsers, various search engines, book marking features, and advanced search techniques to gather information; student evaluates the information for validity, bias, appropriateness, content and usefulness.

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5-8	Standards for 21 st Century Learning
Standard	Standard 2: Thinking and Reasoning Skills
21C.S.5-8.2	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.

5-8			
Learning Skills Objectives		Technology Tools Objectives	
21C.O.5-8.2.LS1	Student engages in a critical thinking process that supports synthesis and conducts evaluations by applying comprehensive criteria.	21C.O.5-8.2.TT1	Student solves problems related to hardware, software and networks by applying problem solving techniques (e.g., Task Manager to close tasks, Ctrl-Alt-delete, restarting the systems, accessing help menus, performing online searches, checking cable connections).
21C.O.5-8.2.LS2	Student draws conclusions from a variety of data sources to analyze and interpret systems.	21C.O.5-8.2.TT2	Student collaborates with peers, experts, and others using telecommunications and collaborative tools to investigate curriculum-related problems, issues, and information, and to develop solutions or products for audiences inside and outside the classroom.
21C.O.5-8.2.LS3	Student engages in a problem solving process that divides complex problems into simple parts in order to devise solutions.	21C.O.5-8.2.TT3	Student uses multiple technology tools for gathering information in order to solve problems, make informed decisions, and present and justify the solutions.
21C.O.5-8.2.LS4	Student creates thoughtful ideas and solutions and takes risks as he/she works toward goal despite mistakes. Student begins to consistently think of all the possibilities and diverges to become more expansive with his/her thoughts/ideas that lead to the creation of original products.	21C.O.5-8.2.TT4	Student formulates a plan and uses technology tools and multiple media sources to compare and analyze information in order to solve real-world problems.

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5-8	Standards for 21 st Century Learning
Standard	Standard 3: Personal and Workplace Skills
21C.S.5-8.3	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.

5-8			
Learning Skills Objectives		Technology Tools Objectives	
21C.O.5-8.3.LS1	Student manages emotions and behaviors, engages in collaborative work assignments requiring compromise, and demonstrates flexibility by assuming different roles and responsibilities within various team structures.	21C.O.5-8.3.TT1	Student protects software, hardware and network resources from viruses, vandalism, and unauthorized use and uses proper techniques to access, use and shut down technology equipment.
21C.O.5-8.3.LS2	Student is flexible in approach to solving problems and completing tasks, considers alternative methods, solutions and perspectives, abandons strategies that do not work, and reallocates time and resources as priorities change.	21C.O.5-8.3.TT2	Student conducts online research and evaluates the accuracy, relevance, and appropriateness of electronic information sources
21C.O.5-8.3.LS3	Student sets challenging goals and strategically plans to reach those goals, monitors performance and adjusts effort and strategies, seeks assistance when needed, and demonstrates focused commitment to reaching the established goals.	21C.O.5-8.3.TT3	Student analyzes current information technologies and the effect these technologies have on the workplace and society.
21C.O.5-8.3.LS4	Student demonstrates ethical behavior and works responsibly and collaboratively with others, in academic and social contexts, to accomplish both individual and team goals related to improved academic, extracurricular and co-curricular performances.	21C.O.5-8.3.TT4	Student complies with county acceptable use policy. Student discusses legal and ethical behaviors related to acceptable use of information and communication technology (e.g., privacy, security, copyright, file-sharing, plagiarism) and predicts the possible effects of unethical use of technology (e.g., consumer fraud, intrusion, spamming, virus setting, hacking) on the individual and society, as well as identify methods for addressing these risks.

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5-8

Learning Skills Objectives		Technology Tools Objectives	
21C.O.5-8.3.LS5	Student exhibits interpersonal and problem-solving skills when in the role of leader. He/she helps others stay focused on the goal, monitors progress of the group, and successfully moves the group toward the goal.	21C.O.5-8.3.TT5	Student models ethical behavior relating to security, privacy, computer etiquette, passwords and personal information. Student demonstrates an understanding of copyright by citing sources of copyrighted materials in papers, projects and multi-media presentations.
21C.O.5-8.3.LS6	Student maintains focus on larger project goal, frames appropriate questions, reflects on possible courses of action and their likely consequences, develops and initiates a plan of action with appropriate smaller objectives and benchmarks, and submits the completed project when due.	21C.O.5-8.3.TT6	Student applies productivity/ multimedia tools and peripherals to support personal productivity, group collaboration, self-directed learning, lifelong learning, and assistance for individuals with disabilities including supplemental assistive technology tools.
		21C.O.5-8.3.TT7	Student develops an understanding of the need to protect his/her identity online, in e-mail, and or websites, limits the distribution of personal information and pictures, and evaluates the authenticity of e-mail that solicit personal information. Student identifies the methodologies that individuals and businesses can employ to protect the integrity of technology systems.
		21C.O.5-8.3.TT8	Student recognizes personal limits in his/her knowledge and develops strategies and skills for using technology to seek information.

West Virginia Standards for 21st Century Learning

Grade 9-12 Standards for 21st Century Learning

Upon completion of the twelfth grade, the student uses advanced skills of analysis, synthesis and evaluation to create new knowledge and visualizes the connections between seemingly unrelated ideas to produce well-developed solutions. The student continues to develop critical thinking and problem solving skills and uses technology tools to solve problems and make decisions related to classroom, community and world issues. The student demonstrates ethical behavior related to acceptable use of information and communication technology, protects his/her identify on line and in email and/or websites, and makes informed choices among available advanced technology systems, resources and services for completing projects, solving problems and managing information. The high school student will integrate advanced technology application skills in the use of the word processor, database, spreadsheet and presentation software.

9-12	Standards for 21 st Century Learning
Standard	Standard 1: Information and Communication Skills
21C.S.9-12.1	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.

9-12			
Learning Skills Objectives		Technology Tools Objectives	
<i>Learning skills enable students to acquire new content, knowledge and skills, connect new information to existing knowledge, learn new software programs, and learn new ways of doing things using technology tools.</i>		<i>Technology tools, when integrated with classroom instruction, enable students to access, manage, integrate and evaluate information across content areas, construct new knowledge and communicate efficiently with others.</i>	
21C.O.9-12.1.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.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.

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9-12

Learning Skills Objectives		Technology Tools Objectives	
21C.O.9-12.1.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.TT2	Student routinely applies keyboarding skills, keyboard shortcut techniques, and mouse skills with facility, speed and accuracy.
21C.O.9-12.1.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.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.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.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.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.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.

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9-12

Learning Skills Objectives

Technology Tools Objectives

21C.O.9-12.1.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.O.9-12.1.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.O.9-12.1.TT10	Student implements various Internet search techniques (e.g., Boolean searches, meta-searches, web bots) to gather information; student evaluates the information for validity, appropriateness, content, bias, currency, and usefulness.
21C.O.9-12.1.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.

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9-12	Standards for 21 st Century Learning
Standard	Standard 2: Thinking and Reasoning Skills
21C.S.9-12.2	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.

9-12			
Learning Skills Objectives		Technology Tools Objectives	
21C.O.9-12.2.LS1	Student engages in a critical thinking process that supports synthesis and conducts evaluation using complex criteria.	21C.O.9-12.2.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.O.9-12.2.LS2	Student draws conclusions from a variety of data sources to analyze and interpret systems.	21C.O.9-12.2.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.O.9-12.2.LS3	Student engages in a problem solving process by formulating questions and applying complex strategies in order to independently solve problems.	21C.O.9-12.2.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.O.9-12.2.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.O.9-12.2.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.

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9-12	Standards for 21 st Century Learning
Standard	Standard 3: Personal and Workplace Skills
21C.S.9-12.3	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.

9-12			
Learning Skills Objectives		Technology Tools Objectives	
21C.O.9-12.3.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.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.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.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.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.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.

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9-12			
Learning Skills Objectives		Technology Tools Objectives	
21C.O.9-12.3.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.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.O.9-12.3.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.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.O.9-12.3.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.TT6	Student evaluates and applies technology tools for research, information analysis, problem solving, content learning, decision making, and lifelong learning.

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9-12

Learning Skills Objectives

Technology Tools Objectives

21C.O.9-12.3.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.O.9-12.3.TT8	Student uses technology to seek strategies and information to address limits in their own knowledge.