Technology Applications Standards

FINAL

Approved on May 5, 2000

TECHNOLOGY APPLICATIONS STANDARDS

Standard I. All teachers use technology-related terms, concepts, data input strategies, and ethical practices to make informed decisions about current technologies and their applications.

Standard II. All teachers identify task requirements, apply search strategies, and use current technology to efficiently acquire, analyze, and evaluate a variety of electronic information.

Standard III. All teachers use task-appropriate tools to synthesize knowledge, create and modify solutions, and evaluate results in a way that supports the work of individuals and groups in problem-solving situations.

Standard IV. All teachers communicate information in different formats and for diverse audiences.

Standard V. All teachers know how to plan, organize, deliver, and evaluate instruction for all students that incorporates the effective use of current technology for teaching and integrating the Technology Applications Texas Essential Knowledge and Skills (TEKS) into the curriculum.

Standard VI. The computer science teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in computer science, in addition to the content described in Technology Applications Standards I–V.

Standard VII. The desktop publishing teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in desktop publishing, in addition to the content described in Technology Applications Standards I–V.

Standard VIII. The digital graphics/animation teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in digital graphics/animation, in addition to the content described in Technology Applications Standards I–V.

Standard IX. The multimedia teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in multimedia, in addition to the content described in Technology Applications Standards I–V.

Standard X. The video technology teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in video technology, in addition to the content described in Technology Applications Standards I–V.

Standard XI. The Web mastering teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in Web mastering, in addition to the content described in Technology Applications Standards I–V.

Standard I. **All teachers use technology-related terms, concepts, data input strategies, and ethical practices to make informed decisions about current technologies and their applications.**

Teacher Knowledge: What All Teachers Know	**Application: What All Teachers Can Do**
Teachers of Students in Grades EC–12	***Teachers of Students in Grades EC–12***
The beginning teacher knows and understands:	The beginning teacher is able to:
1.1k the appropriate use of hardware components, software programs, and their connections;	1.1s demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components;
1.2k data input skills appropriate to the task; and	1.2s compare, contrast, and appropriately use various input, processing, output, and primary/secondary storage devices;
1.3k laws and issues regarding the use of technology in society.	1.3s select and use software for a defined task according to quality, appropriateness, effectiveness, and efficiency;
	1.4s delineate and make necessary adjustments regarding compatibility issues, including, but not limited to, digital file formats and cross-platform connectivity;
	1.5s use technology terminology appropriate to the task;
	1.6s perform basic software application functions, including, but not limited to, opening an application program and creating, modifying, printing, and saving documents;
	1.7s explain the differences between analog and digital technology systems and give examples of each;
	1.8s use appropriate terminology related to the Internet, including, but not limited to, electronic mail (e-mail), uniform resource locators (URLs), electronic bookmarks, local area networks (LANs), wide area networks (WANs), World Wide Web (WWW) pages, and Hypertext Markup Language (HTML);
	1.9s compare and contrast LANs, WANs, the Internet, and intranets;

Standard I. **All teachers use technology-related terms, concepts, data input strategies, and ethical practices to make informed decisions about current technologies and their applications.**

Application: What All Teachers Can Do

Teachers of Students in Grades EC–12 (continued)

1.10s use a variety of input devices such as mouse/track pad, keyboard, microphone, digital camera, printer, scanner, disk/disc, modem, CD-ROM, and joystick;

1.11s demonstrate keyboarding proficiency in technique and posture while building speed;

1.12s use digital keyboarding standards for data input such as one space after punctuation, the use of em/en dashes, and smart quotation marks;

1.13s develop strategies for capturing digital files while conserving memory and retaining image quality;

1.14s discuss copyright laws, violations, and issues including, but not limited to, computer hacking, computer piracy, intentional virus setting, and invasion of privacy;

1.15s model ethical acquisition and use of digital information including citing sources using established methods;

1.16s demonstrate proper etiquette and knowledge of acceptable use of electronic information and products while in an individual classroom, lab, or on the Internet or an intranet;

1.17s identify the impact of technology applications on society through research, interviews, and personal observation; and

1.18s demonstrate knowledge of the importance of technology to future careers, lifelong learning, and daily living for individuals of all ages.

Standard II. **All teachers identify task requirements, apply search strategies, and use current technology to efficiently acquire, analyze, and evaluate a variety of electronic information.**

Teacher Knowledge: What All Teachers Know	**Application: What All Teachers Can Do**
Teachers of Students in Grades EC–12	***Teachers of Students in Grades EC–12***
The beginning teacher knows and understands:	The beginning teacher is able to:
2.1k a variety of strategies for acquiring information from electronic resources;	2.1s use strategies to locate and acquire desired information from collaborative software and on networks, including the Internet and intranets;
2.2k how to acquire electronic information in a variety of formats; and	2.2s apply appropriate electronic search strategies in the acquisition of information, including keyword and Boolean search strategies;
2.3k how to evaluate acquired electronic information.	2.3s identify, create, and use files in various appropriate formats such as text, bitmapped/vector graphics, image, video, and audio files;
	2.4s access, manage, and manipulate information from secondary storage and remote devices;
	2.5s use on-line help and other documentation;
	2.6s determine and employ methods to evaluate electronic information for accuracy and validity;
	2.7s resolve information conflicts and validate information by accessing, researching, and comparing data from multiple sources; and
	2.8s identify the source, location, media type, relevancy, and content validity of available information.

Standard III. **All teachers use task-appropriate tools to synthesize knowledge, create and modify solutions, and evaluate results in a way that supports the work of individuals and groups in problem-solving situations.**

Teacher Knowledge: What All Teachers Know	**Application: What All Teachers Can Do**
Teachers of Students in Grades EC–12	***Teachers of Students in Grades EC–12***
The beginning teacher knows and understands:	The beginning teacher is able to:
3.1k how to use appropriate computer-based productivity tools to create and modify solutions to problems;	3.1s plan, create, and edit word processing documents using readable fonts, alignment, page setup, tabs, and ruler settings;
3.2k how to use research skills and electronic communication to create new knowledge; and	3.2s plan, create, and edit spreadsheet documents using all data types, formulas and functions, and chart information;
3.3k how to use technology applications to facilitate evaluation of work, including both process and product.	3.3s plan, create, and edit databases by defining fields, entering data, and designing layouts appropriate for reporting;
	3.4s demonstrate proficiency in the use of multimedia authoring programs by creating linear or nonlinear projects incorporating text, audio, video, and graphics;
	3.5s plan, create, and edit a document using desktop publishing techniques including, but not limited to, the creation of multicolumn or multisection documents with a variety of text-wrapped frame formats;
	3.6s differentiate between and demonstrate the appropriate use of a variety of graphic tools found in draw and paint applications;
	3.7s integrate two or more productivity tools, including, but not limited to, tables, charts and graphs, graphics from paint or draw programs, and mail merge, into a document;
	3.8s use interactive virtual environments, appropriate to grade level, such as virtual reality or simulations;
	3.9s use technical writing strategies to create products such as a technical instruction guide;

Standard III. **All teachers use task-appropriate tools to synthesize knowledge, create and modify solutions, and evaluate results in a way that supports the work of individuals and groups in problem-solving situations.**

	Application: What All Teachers Can Do ***Teachers of Students in Grades EC–12 (continued)*** 3.10s use subject matter foundation and enrichment curricula in the creation of products; 3.11s participate in electronic communities as a learner, initiator, and contributor; 3.12s complete tasks using technological collaboration such as sharing information through on-line communications; 3.13s use groupware, collaborative software, and productivity tools to create products; 3.14s use technology in self-directed activities to create products for and share products with defined audiences; 3.15s integrate acquired technology applications, skills, and strategies and use of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundation and enrichment curricula; 3.16s design and implement procedures to track trends, set time lines, and review/ evaluate progress for continual improvement in process and product; and 3.17s resolve information conflicts and validate information through research and comparison of data from multiple sources.

Standard IV. **All teachers communicate information in different formats and for diverse audiences.**

Teacher Knowledge: What All Teachers Know	**Application: What All Teachers Can Do**
Teachers of Students in Grades EC–12	***Teachers of Students in Grades EC–12***
The beginning teacher knows and understands:	The beginning teacher is able to:
4.1k how to format digital information for appropriate and effective communication;	4.1s use productivity tools, such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports, to create effective document files for defined audiences;
4.2k how to deliver a product electronically in a variety of media; and	4.2s demonstrate the use of a variety of layouts in a database, including horizontal and vertical layouts, to communicate information appropriately;
4.3k how to evaluate communication in terms of both process and product.	4.3s create a variety of spreadsheet layouts containing descriptive labels and page settings;
	4.4s demonstrate appropriate use of fonts, styles, and sizes, as well as effective use of graphics and page design to communicate effectively;
	4.5s match the chart style to the data when creating and labeling charts;
	4.6s publish information in a variety of ways, including, but not limited to, printed copy, monitor displays, Internet documents, and video;
	4.7s design and create interdisciplinary multimedia presentations that include audio, video, text, and graphics for defined audiences;
	4.8s use telecommunication tools, such as Internet browsers, video conferencing, and distance learning, for publishing information;
	4.9s design and implement procedures to track trends, set time lines, and review and evaluate products using technology tools such as database managers, daily/monthly planners, and project management tools;
	4.10s determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience and demonstrate that process and product can be evaluated using established criteria or rubrics;

***Standard IV*. All teachers communicate information in different formats and for diverse audiences.**

	Application: What All Teachers Can Do ***Teachers of Students in Grades EC–12 (continued)*** 4.11s select representative products to be collected and stored in an electronic evaluation tool; and 4.12s evaluate products for relevance to the assignment or task.

Standard V. **All teachers know how to plan, organize, deliver, and evaluate instruction for all students that incorporates the effective use of current technology for teaching and integrating the Technology Applications Texas Essential Knowledge and Skills (TEKS) into the curriculum.**

Teacher Knowledge: What All Teachers Know	**Application: What All Teachers Can Do**
Teachers of Students in Grades EC–12	***Teachers of Students in Grades EC–12***
The beginning teacher knows and understands:	The beginning teacher is able to:
5.1k planning techniques to ensure that students have time to learn the Technology Applications TEKS in order to meet grade-level benchmark expectations;	5.1s plan applications-based technology lessons using a range of instructional strategies for individuals and small/whole groups;
5.2k where to find and how to utilize technological resources to implement the TEKS, to support instruction, to extend communication, to enhance classroom management, and to become more productive in daily tasks;	5.2s identify and address equity issues related to the use of technology, including, but not limited to, gender, ethnicity, language, disabilities, and student access to technology;
5.3k instructional strategies for teaching the Technology Applications TEKS and integrating them into the curriculum;	5.3s plan, select, and implement instruction that allows students to use technology applications in problem-solving and decision-making situations;
5.4k strategies that students with diverse strengths and needs can use to determine word meaning in content-related texts;	5.4s develop and implement, using technology applications, tasks that emphasize collaboration and teamwork among members of a structured group or project team;
5.5k strategies that students with diverse strengths and needs can use to develop content-area vocabulary;	5.5s provide adequate time for teaching the Technology Applications TEKS;
5.6k strategies that students with diverse strengths and needs can use to facilitate comprehension before, during, and after reading content-related texts;	5.6s identify and use resources to keep current with technology education;
5.7k how to evaluate the effectiveness of technology-based instruction; and	5.7s create project-based learning activities that integrate the Technology Applications TEKS into the curriculum and meet the Technology Applications TEKS benchmarks;
5.8k how to set goals for ongoing professional development in teaching the Technology Applications TEKS and integrating them into the curriculum.	5.8s follow guidelines for the legal and ethical use of technology resources;
	5.9s select and use developmentally appropriate instructional practices, activities, and materials to improve student learning of the Technology Applications TEKS;
	5.10s use a variety of instructional strategies to ensure all students' reading comprehension of content-related texts, including helping students link the content of texts to their lives and connect related ideas across different texts;

Standard V. **All teachers know how to plan, organize, deliver, and evaluate instruction for all students that incorporates the effective use of current technology for teaching and integrating the Technology Applications Texas Essential Knowledge and Skills (TEKS) into the curriculum.**

Application: What All Teachers Can Do

Teachers of Students in Grades EC–12 (continued)

5.11s teach students how to locate, retrieve, and retain content-related information from a range of texts and technologies;

5.12s teach students how to locate the meanings and pronunciations of unfamiliar content-related words using appropriate sources, such as dictionaries, thesauruses, and glossaries;

5.13s use technology tools to perform administrative tasks such as taking attendance, maintaining grade books, and facilitating communication;

5.14s evaluate appropriately students' projects and portfolios using formal and informal assessment methods;

5.15s collect observable and measurable data to gauge student progress and adjust instruction in Technology Applications;

5.16s conduct an ongoing self-assessment of strengths and weaknesses in the knowledge and skills of Technology Applications;

5.17s develop and implement an individual plan for professional growth in the knowledge and skills of Technology Applications; and

5.18s incorporate new strategies to improve classroom instruction in Technology Applications.

Standard VI. **The computer science teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in computer science, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Computer Science Know	**Application: What Teachers of Computer Science Can Do**
Teachers of Students in Grades 8–12	***Teachers of Students in Grades 8–12***
The beginning teacher of computer science knows and understands:	The beginning teacher of computer science is able to:
Foundations	**Foundations**
6.1k the appropriate use of hardware components, software programs, and their connections;	6.1s use necessary vocabulary related to computer science;
	6.2s differentiate among properties of current programming languages, discuss the use of the languages in other fields of study, and demonstrate knowledge of specific programming terminology and concepts;
	6.3s differentiate among the levels of programming languages, including machine, assembly, high-level compiled, and interpreted languages;
	6.4s identify object-oriented data types and delineate the advantages/disadvantages of object data;
	6.5s demonstrate coding proficiency in contemporary programming languages, including an object-oriented language;
	6.6s survey the issues accompanying the development of large software systems, such as design/implementation teams, software validation/testing, and risk assessment;
6.2k data input skills appropriate to a given task;	6.7s investigate measures, such as passwords and virus detection/prevention, to protect computer systems and databases from unauthorized use and tampering;
6.3k pertinent laws and issues regarding the use of technology in society;	6.8s discuss the impact of computer programming on the World Wide Web (WWW) community;
	6.9s code modules for the WWW community;

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Teacher Knowledge: What Teachers of Computer Science Know	**Application: What Teachers of Computer Science Can Do**
Information Acquisition	**Information Acquisition**
6.4k a variety of strategies for acquiring information from electronic resources;	6.10s design and document sequential search algorithms for digital information storage and retrieval;
	6.11s construct searching algorithms, including linear and binary searches;
	6.12s construct sorting algorithms, including quadratic algorithms such as selection, bubble and insertion, and more efficient algorithms such as merge, shell, and quick sorts;
	6.13s compare and contrast searching and sorting algorithms for space and time requirements;
6.5k how to acquire electronic information in a variety of formats;	6.14s acquire information in and knowledge about a variety of electronic formats, including text, audio, video, and graphics;
	6.15s use a variety of resources, including foundation and enrichment curricula, together with various productivity tools to gather authentic data as a basis for individual and group programming projects;
6.6k how to evaluate acquired electronic information;	6.16s determine and employ methods to evaluate the design and functionality of information acquisition processes and algorithms, using effective coding, design, and test data;
	6.17s implement methods for the evaluation of acquired information using defined rubrics;

Standard VI. **The computer science teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in computer science, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Computer Science Know	**Application: What Teachers of Computer Science Can Do**
Work in Solving Problems	**Work in Solving Problems**
6.7k how to use appropriate computer-based productivity tools to create and modify solutions to problems;	6.18s apply problem-solving strategies such as design specifications, modular top-down design, step-wise refinement, and algorithm development; 6.19s use visual organizers such as flowcharts and schematic drawings to design solutions to problems; 6.20s develop sequential and iterative algorithms and code programs in prevailing computer languages to solve practical problems modeled from school and community; 6.21s demonstrate effective use of predefined input and output procedures for lists of computer instructions, including procedures to protect from invalid input; 6.22s develop coding with correct and efficient use of expressions and assignment statements, including the use of standard/user-defined functions, data structures, operators/proper operator precedence, and sequential/conditional/ repetitive control structures; 6.23s create and use libraries of generic modular code to be used for efficient programming; 6.24s identify actual and formal parameters and use value and reference parameters; 6.25s use control structures such as conditional statements and iterated, pretest, and post-test loops; 6.26s use sequential, conditional, selection, and repetition execution control structures such as menu-driven programs that branch and allow user input; 6.27s identify and use structured data types of one-dimensional arrays, records, and text files;

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Application: What Teachers of Computer Science Can Do

Work in Solving Problems (Continued)

6.28s use recursion appropriately and trace program design comparing invariant, iterative, and recursive algorithms;

6.29s manipulate data structures using string processing;

6.30s use notation for language definition, such as syntax diagrams and Backus-Naur forms;

6.31s identify, describe, and use sequential/nonsequential files and multidimensional arrays and arrays of records;

6.32s create robust programs with increased emphasis on design, style, clarity of expression, and documentation for ease of maintenance, program expansion, reliability, and validity;

6.33s apply methods for computing iterative approximations and statistical algorithms;

6.34s define and develop code using the concepts of abstract data types, including stacks, queues, linked lists, trees and graphs and incorporate the use of information hiding and encapsulation;

6.35s identify and describe the correctness and complexity of algorithms, such as divide and conquer, backtracking, and greedy algorithms;

6.36s develop software to solve a school or community problem such as customer relations, design, modular programming, documentation, validation, marketing, and support;

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Teacher Knowledge: What Teachers of Computer Science Know	**Application: What Teachers of Computer Science Can Do**
Work in Solving Problems (Continued)	**Work in Solving Problems (Continued)**
	6.37s research advanced computer science concepts such as applied artificial intelligence, expert systems, robotics, depth-first/breadth-first and heuristic search strategies, multitasking operating systems, and computer architecture, such as reduced instruction set computer (RISC) and complex instruction set computer (CISC);
6.8k how to use research skills and electronic communication to create new knowledge;	6.38s participate with electronic communities as a learner, initiator, contributor, and teacher/mentor to solve problems in computer science;
	6.39s extend the learning environment beyond the classroom with digital products created to increase teaching and learning in the foundation and enrichment curricula via electronic networks;
	6.40s participate in relevant, meaningful activities in the larger community and society to create electronic projects;
6.9k how to use technology applications to facilitate evaluation of work, including both process and product;	6.41s design and implement procedures to track trends, set time lines, and review/evaluate programming progress for continual improvement in process and product;
	6.42s use correct programming style, such as spacing, indentation, descriptive identifiers, formatting, comments, and documentation, to enhance the readability and functionality of code;
	6.43s seek and respond to advice from colleagues and other professionals in delineating technological tasks related to computer programming;
	6.44s resolve information conflicts and validate information through accessing, researching, and comparing data;

Standard VI. **The computer science teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in computer science, in addition to the content described in Technology Applications Standards I–V.**

Application: What Teachers of Computer Science Can Do

Work in Solving Problems (Continued)

6.45s create technology specifications for tasks/evaluation rubrics and demonstrate that computer programming products/product quality can be evaluated against established criteria;

6.46s demonstrate the ability to read and modify large programs, including the design description and process development;

6.47s analyze algorithms using "big-O" notation and best, average, and worst-case space techniques;

6.48s compare and contrast design methodologies including top-down and bottom-up;

6.49s analyze models used in development of software, including software life cycle models, design objectives, documentation, and support;

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Teacher Knowledge: What Teachers of Computer Science Know	**Application: What Teachers of Computer Science Can Do**
Communication	**Communication**
6.10k how to format digital information for appropriate and effective communication;	6.50s create interactive documents using modeling, simulation, and hypertext;
6.11k how to deliver a product electronically in a variety of media; and	6.51s publish information in a variety of ways, including, but not limited to, software, Internet documents, and video;
6.12k how to evaluate communication in terms of both process and product.	6.52s write technology specifications for planning/evaluation rubrics documenting variables, prompts, and programming code internally and externally;
	6.53s seek and respond to advice from colleagues and other professionals in evaluating a programming product; and
	6.54s debug and solve problems using reference materials and effective strategies.

Standard VII. **The desktop publishing teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in desktop publishing, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Desktop Publishing Know	**Application: What Teachers of Desktop Publishing Can Do**
Teachers of Students in Grades 8–12	***Teachers of Students in Grades 8–12***
The beginning teacher of desktop publishing knows and understands:	The beginning teacher of desktop publishing is able to:
Foundations	**Foundations**
7.1k the appropriate use of hardware components, software programs, and their connections;	7.1s demonstrate knowledge of technology terminology and concepts and relate them to desktop publishing;
7.2k data input skills appropriate to a given task;	7.2s demonstrate proficiency in the use of a variety of input devices appropriate for producing desktop publishing products;
	7.3s use digital keyboarding standards in word processing such as one space after punctuation, the use of em/en dashes, and smart quotation marks;
7.3k pertinent laws and issues regarding the use of technology in society;	7.4s model respect for intellectual property when manipulating, morphing, and editing graphics, and text;
	7.5s analyze the impact of desktop publishing on society, including concepts related to persuasiveness, marketing, and point of view;

Standard VII. **The desktop publishing teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in desktop publishing, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Desktop Publishing Know	**Application: What Teachers of Desktop Publishing Can Do**
Information Acquisition	**Information Acquisition**
7.4k a variety of strategies for acquiring information from electronic resources;	7.6s use strategies that conserve memory and retain image integrity when digitally capturing files;
	7.7s use strategies to obtain print and digital information from a variety of electronic resources including, but not limited to, reference software, databases, and libraries of images, citing the source;
	7.8s use strategies to navigate on and access information from local area networks (LANs), wide area networks (WANs), the Internet, and intranets;
7.5k how to acquire electronic information in a variety of formats;	7.9s acquire information in electronic formats including text, audio, video, and graphics, citing the source;
	7.10s demonstrate the ability to import and export elements from one program to another;
7.6k how to evaluate acquired electronic information;	7.11s identify and employ a method to evaluate acquired information;
	7.12s demonstrate skill in testing the accuracy and validity of acquired information;

Standard VII. **The desktop publishing teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in desktop publishing, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Desktop Publishing Know	**Application: What Teachers of Desktop Publishing Can Do**
Work in Solving Problems	**Work in Solving Problems**
7.7k how to use appropriate computer-based productivity tools to create and modify solutions to problems;	7.13s use desktop publishing methods in foundation and enrichment curricula; 7.14s identify the tasks in a project and use tools, such as word processing, pagination, utility, indexing, graphics, and drawing programs, necessary to complete those tasks; 7.15s use electronic productivity tools, including move, copy, cut and paste, and spell check, to edit text; 7.16s select and use the categories of type, font, size, style, and alignment appropriate for the task; 7.17s apply the basic elements of page design, including text, graphics, headlines, and white space; 7.18s distinguish design requirements as they relate to purposes and audiences, including one-surface objects, multiple or bound pages, stationery, book jackets/magazine covers, pamphlets, magazines, brochures, and labels; 7.19s read and use technical documentation to solve problems in desktop publishing;
7.8k how to use research skills and electronic communication to create new knowledge;	7.20s develop technical documentation related to desktop publishing; 7.21s use technology to participate in self-directed and practical activities related to desktop publishing; 7.22s extend the learning environment beyond the classroom through the creation and sharing of electronically formatted and published documents via electronic networks;

Standard VII. **The desktop publishing teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in desktop publishing, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Desktop Publishing Know	**Application: What Teachers of Desktop Publishing Can Do**
Work in Solving Problems (Continued)	**Work in Solving Problems (Continued)**
	7.23s synthesize new information from data gathered from interviews, print, and electronic resources;
	7.24s demonstrate that tasks can be accomplished through technological collaboration and participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;
7.9k how to use technology applications to facilitate evaluation of work, including both process and product;	7.25s create technology specifications for tasks and evaluation rubrics to evaluate process and product against established criteria;
	7.26s design and implement procedures to track trends, set time lines, and review/evaluate work progress for continual improvement in process and product;
	7.27s resolve information conflicts and validate information through accessing, researching, and comparing data;
	7.28s seek and respond to advice from colleagues and other professionals in delineating technological tasks related to solving problems in desktop publishing;

Standard VII. **The desktop publishing teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in desktop publishing, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Desktop Publishing Know	**Application: What Teachers of Desktop Publishing Can Do**
Communication	**Communication**
7.10k how to format digital information for appropriate and effective communication;	7.29s define the purpose of a desktop publishing product and identify the specified audience; 7.30s use terms related to typography, including categories of type and type contrasts, appropriately; 7.31s use principles of page design, including, but not limited to, leading/kerning, automatic text flow into linked columns, widows/orphans, and text wrap, to create a product; 7.32s compare and contrast the rules of visual composition such as rule of thirds and the golden section/rectangle with respect to harmony and balance as well as discord and drama; 7.33s create a master template to include page specifications and other repetitive tasks; 7.34s apply the basics of type measurement for inches and picas; 7.35s use type techniques such as drop cap, decorative letters, and embedded-text frames as graphic elements; 7.36s apply color principles to communicate the mood of the product for a specific audience; 7.37s incorporate the principles of basic design, including, but not limited to, balance, contrast, dominant element, use of white space, consistency, repetition, alignment, and proximity; 7.38s identify pictorial qualities in a design such as shape and form, space and depth, and pattern and texture to create visual unity and desired effects in designs;

Standard VII. **The desktop publishing teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in desktop publishing, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Desktop Publishing Know	**Application: What Teachers of Desktop Publishing Can Do**
Communication (Continued)	**Communication (Continued)**
	7.39s identify the parts and kinds of pages, including inside margin, outside margin, gutter, title, and inside pages;
	7.40s use a variety of strategies, such as varying line widths and patterns, and use manipulation tools to stretch, bend, screen, rotate, follow a path, and mirror type to create effective designs;
7.11k how to deliver a product electronically in a variety of media; and	7.41s use appropriate media for creating a knowledge base with a broad perspective and for communicating information and delivering a product to the worldwide community;
	7.42s use printing options such as tiling, color separations, collation, and previewing;
	7.43s distinguish design and printing requirements as they relate to purposes, audiences, and final output;
	7.44s use styles (style sheets), including a variety of type specifications such as typeface, style, size, alignment, indents, and tabs;
7.12k how to evaluate communication in terms of both process and product.	7.45s identify and employ a method to evaluate a desktop publishing project for design, content delivery, purpose, and audience;
	7.46s use electronic project management tools to set milestones for completing projects and reviewing work progress;
	7.47s seek and respond to advice from colleagues and other professionals in evaluating a desktop publishing product;

Standard VII. **The desktop publishing teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in desktop publishing, in addition to the content described in Technology Applications Standards I–V.**

	Application: What Teachers of Desktop Publishing Can Do **Communication (Continued)** 7.48s create technology specifications for tasks and evaluation rubrics to evaluate the communication of a desktop publishing product; and 7.49s demonstrate that desktop publishing products and product quality can be evaluated against established criteria.

Standard VIII. **The digital graphics/animation teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in digital graphics/animation, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Digital Graphics/Animation Know	**Application: What Teachers of Digital Graphics/Animation Can Do**
Teachers of Students in Grades 8–12	***Teachers of Students in Grades 8–12***
The beginning teacher of digital graphics/animation knows and understands:	The beginning teacher of digital graphics/animation is able to:
Foundations	**Foundations**
8.1k the appropriate use of hardware components, software programs, and their connections;	8.1s make decisions regarding the selection, acquisition, and use of graphics and animation software, taking into consideration its quality, appropriateness, effectiveness, and efficiency;
	8.2s use the vocabulary related to digital graphics and animation software;
	8.3s distinguish among and correctly use process color (RGB and CYMK), spot color, and black/white;
	8.4s identify color mixing theories and apply these theories to create new colors in the digital format;
	8.5s compare, contrast, and integrate basic sound-editing principles, including the addition of effects and the manipulation of wave forms;
	8.6s distinguish among and use the components of animation software programs, including the animation control panel and cast, score, and stage;
	8.7s select and connect task-appropriate peripherals;
	8.8s distinguish between and use the animation techniques of path and cel animation;
8.2k data input skills appropriate to a given task;	8.9s demonstrate proficiency in the use and graphical integration of a variety of input devices;
	8.10s compare and contrast digital input devices;

Standard VIII. **The digital graphics/animation teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in digital graphics/animation, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Digital Graphics/Animation Know	**Application: What Teachers of Digital Graphics/Animation Can Do**
Foundations (Continued)	**Foundations (Continued)**
8.3k pertinent laws and issues regarding the use of technology in society;	8.11s model respect for intellectual property when manipulating, morphing, and editing graphics, video, text, and sound; 8.12s research digital graphics as an art form and the impact of digital graphics on society;

Standard VIII. **The digital graphics/animation teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in digital graphics/animation, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Digital Graphics/Animation Know	**Application: What Teachers of Digital Graphics/Animation Can Do**
Information Acquisition	**Information Acquisition**
8.4k a variety of strategies for acquiring information from electronic resources;	8.13s obtain print and digital information from a variety of resources including, but not limited to, encyclopedias, databases, and libraries of images;
8.5k how to acquire electronic information in a variety of formats;	8.14s use the Internet to retrieve information in electronic formats including text, audio, video, and graphics, citing the source;
	8.15s demonstrate the appropriate use of digital imaging, video integration, and sound in documents;
	8.16s import sounds from a variety of sources;
8.6k how to evaluate acquired electronic information;	8.17s compare and contrast the rules of visual composition, such as rule of thirds and the golden section/rectangle, with respect to harmony and balance as well as discord and drama;
	8.18s evaluate the fundamental concepts of a graphic design, including composition and lighting;
	8.19s analyze graphic designs to decide the point of interest and the attributes that determine prominence and support of the subject;
	8.20s distinguish among the categories of typefaces while recognizing and resolving conflicts that occur through combined usage;

Standard VIII. **The digital graphics/animation teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in digital graphics/animation, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Digital Graphics/Animation Know	**Application: What Teachers of Digital Graphics/Animation Can Do**
Work in Solving Problems	**Work in Solving Problems**
8.7k how to use appropriate computer-based productivity tools to create and modify solutions to problems;	8.21s combine graphics, images, and sound for foundation and enrichment curricular projects; 8.22s integrate productivity tools, including, but not limited to, word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs, into digital graphics; 8.23s use perspective, including backgrounds, light, shades/shadows, and scale to capture a focal point and create depth; 8.24s use the basic principles of proportion, balance, variety, emphasis, harmony, symmetry, and unity in type, color, size, line thickness, shape, and space; 8.25s use repetition of color, shape, texture, spatial relationships, line thickness, and size to develop organization and strengthen the unity of a product; 8.26s create three-dimensional effects using foreground, middle distance, and background images; 8.27s apply a variety of color schemes to digital designs, including monochromatic, analogous, complementary, primary/secondary triads, cool/warm colors, and split complements; 8.28s use the basic concepts of color and design theory to work in a bitmapped mode, creating backgrounds, characters, and other case members as needed for an animation; 8.29s use appropriate scripting languages to create an animation or movie; 8.30s read, use, and develop technical documentation related to digital graphs/animation;

Standard VIII. **The digital graphics/animation teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in digital graphics/animation, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Digital Graphics/Animation Know	**Application: What Teachers of Digital Graphics/Animation Can Do**
Work in Solving Problems (Continued)	**Work in Solving Problems (Continued)**
	8.31s edit files using appropriate digital editing tools and established design principles including consistency, repetition, alignment, proximity, ratio of text to white space, image file size, color use, font size, type, and style;
	8.32s use a variety of techniques to edit, manipulate, and change sounds;
8.8k how to use research skills and electronic communication to create new knowledge;	8.33s use technology to participate in self-directed, meaningful activities in the larger community and society;
	8.34s demonstrate proficiency in, appropriate use of, and navigation of local area networks (LANs), wide area networks (WANs), the Internet, and intranet for research and for sharing resources;
	8.35s participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;
8.9k how to use technology applications to facilitate evaluation of work, including both process and product;	8.36s create technology specifications for problem-solving tasks and rubrics to evaluate digital graphics/animation products and product quality against established criteria;
	8.37s design and implement procedures to track trends, set time lines, and review/evaluate problem-solving progress;
	8.38s evaluate data using criteria appropriate for the purpose;
	8.39s resolve information conflicts and validate information through accessing, researching, and comparing data;
	8.40s seek and respond to advice from colleagues and other professionals in delineating technological tasks related to solving problems in digital graphics/animation;

Standard VIII. **The digital graphics/animation teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in digital graphics/animation, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Digital Graphics/Animation Know	**Application: What Teachers of Digital Graphics/Animation Can Do**
Communication	**Communication**
8.10k how to format digital information for appropriate and effective communication;	8.41s identify pictorial qualities in a design, such as shape and form, space and depth, and pattern and texture, to create visual unity and desired effects in designs;
	8.42s use a variety of lighting techniques, including shadows and shading to create an effect;
	8.43s define the design attributes and requirements of products created for a variety of purposes, including posters, billboards, business cards, stationery, book jackets, folders, booklets, pamphlets, brochures, and magazines;
	8.44s use proximity and alignment to create a visual connection with other elements;
8.11k how to deliver a product electronically in a variety of media; and	8.45s publish information in a variety of formats;
8.12k how to evaluate communication in terms of both process and product.	8.46s determine and employ technology specifications to evaluate digital graphics/animation projects for design, content delivery, purpose, and audience; and
	8.47s seek and respond to advice from colleagues and other professionals in evaluating a digital graphics/animation product.

***Standard IX*. The multimedia teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in multimedia, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Multimedia Know	**Application: What Teachers of Multimedia Can Do**
Teachers of Students in Grades 8–12	***Teachers of Students in Grades 8–12***
The beginning teacher of multimedia knows and understands:	The beginning teacher of multimedia is able to:
Foundations	**Foundations**
9.1k the appropriate use of hardware components, software programs, and their connections;	9.1s analyze demands for accomplishing multimedia tasks to use input, processing, output, and primary/secondary storage devices appropriately; 9.2s make decisions regarding the selection, acquisition, and use of software in a multimedia classroom/lab, taking under consideration its quality, appropriateness, effectiveness, and efficiency; 9.3s delineate and make necessary adjustments regarding compatibility issues, including, but not limited to, digital file formats and cross-platform connectivity; 9.4s use necessary vocabulary related to multimedia; 9.5s distinguish among and correctly use process color (e.g., RGB and CYMK), spot color, and black/white; 9.6s identify color mixing theories and apply these theories to create new colors in the digital format; 9.7s identify and distinguish among basic sound-editing principles, including the addition of effects and the manipulation of wave forms; 9.8s identify and use compression schemes for photo, animation, audio, video, and graphics; 9.9s distinguish between and determine the appropriate application of bitmapped and vector graphics for a multimedia project;

***Standard IX*. The multimedia teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in multimedia, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Multimedia Know	**Application: What Teachers of Multimedia Can Do**
Foundations (Continued)	**Foundations (Continued)**
9.2k data input skills appropriate to a given task;	9.10s demonstrate proficiency in the use of a variety of electronic input devices by creating files for multimedia products;
	9.11s use strategies that conserve memory and retain image integrity when digitally capturing files;
	9.12s differentiate among types of audio input;
9.3k pertinent laws and issues regarding the use of technology in society;	9.13s model respect for intellectual property when manipulating, morphing, and editing graphics, video, text, and sound;
	9.14s provide examples of the role of multimedia in society;
9.4k a variety of strategies for acquiring information from electronic resources;	
9.5k how to acquire electronic information in a variety of formats;	9.15s acquire information in electronic formats, including text, audio, video, and graphics, citing the source;
	9.16s identify, create, and use available file formats, including text, image, video, and audio files;
9.6k how to evaluate acquired electronic information;	9.17s identify and employ a method to evaluate the design, functionality, and accuracy of acquired information;
	9.18s use fundamental concepts of graphic design, including visual composition and lighting when analyzing multimedia;

***Standard IX*. The multimedia teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in multimedia, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Multimedia Know	**Application: What Teachers of Multimedia Can Do**
Work in Solving Problems	**Work in Solving Problems**
9.7k how to use appropriate computer-based productivity tools to create and modify solutions to problems;	9.19s use foundation and enrichment curricula in the creation of multimedia products; 9.20s select and integrate computer-based productivity tools, including, but not limited to, word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs, to develop and modify solutions to problems and to create new knowledge for multimedia products; 9.21s apply color principles to communicate the mood of a product for a specific audience; 9.22s integrate path and cel animation modules appropriately into multimedia products; 9.23s use appropriate scripting language to create a multimedia sequence; 9.24s edit files using established design principles, including consistency, repetition, alignment, proximity, ratio of text to white space, image file size, color use, font size, type, and style; 9.25s read and use technical documentation to solve problems in multimedia;
9.8k how to use research skills and electronic communication to create new knowledge;	9.26s participate with electronic communities as a learner, initiator, contributor, and teacher/mentor and use multimedia technology to participate in self-directed and practical activities in the larger community and society; 9.27s demonstrate proficiency in, appropriate use of, and navigation of local area networks (LANs), wide area networks (WANs), the Internet, and intranets for research and for sharing of resources;

***Standard IX*. The multimedia teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in multimedia, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Multimedia Know	**Application: What Teachers of Multimedia Can Do**
Work in Solving Problems (Continued)	**Work in Solving Problems (Continued)**
	9.28s integrate and use efficiently and effectively a variety of multimedia programs and tools including linear/nonlinear authoring tools, image/video editing tools, compression programs, and draw/paint/text creation tools;
	9.29s extend the learning environment beyond the classroom through the creation and linking of multimedia products via electronic networks;
	9.30s develop technical documentation related to multimedia;
	9.31s participate in different roles and jobs of a multimedia production crew, including project manager, lead programmer, writer, art director, sound engineer, researcher, animator, and presenter;
	9.32s distinguish among and appropriately integrate 3-D modeling, animation, and rendering software into multimedia products;
	9.33s import video into the digital format for integration into multimedia products;
	9.34s capture, record, and integrate sampled and Musical Instrument Digital Interface (MIDI) sound in different sound rates, resolutions, and channels;
9.9k how to use technology applications to facilitate evaluation of work, including both process and product;	9.35s seek and respond to advice from colleagues and other professionals in delineating technological tasks related to solving problems in multimedia;
	9.36s create technology specifications for tasks and rubrics to evaluate multimedia products and product quality against established criteria;
	9.37s resolve information conflicts and validate information by accessing, researching, and comparing data and demonstrate that multimedia products and product quality can be evaluated against established criteria;

***Standard IX*. The multimedia teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in multimedia, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Multimedia Know	**Application: What Teachers of Multimedia Can Do**
Communication	**Communication**
9.10k how to format digital information for appropriate and effective communication;	9.38s identify quality in multimedia design, such as consistency, alignment, repetition, and proximity;
	9.39s use content selection and presentation for the defined audience and communication purpose;
	9.40s format multimedia projects according to defined output specifications, including target audience and viewing environment;
9.11k how to deliver a product electronically in a variety of media; and	9.41s publish information in a variety of ways;
9.12k how to evaluate communication in terms of both process and product.	9.42s determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience; and
	9.43s seek and respond to input from colleagues and other professionals in evaluating a multimedia product.

Standard X. **The video technology teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in video technology, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Video Technology Know	**Application: What Teachers of Video Technology Can Do**
Teachers of Students in Grades 8–12	***Teachers of Students in Grades 8–12***
The beginning teacher of video technology knows and understands:	The beginning teacher of video technology is able to:
Foundations	**Foundations**
10.1k the appropriate use of hardware components, software programs, and their connections;	10.1s demonstrate knowledge and appropriate use of digital and analog video systems, software applications, and communication and networking components;
	10.2s compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices;
	10.3s make decisions regarding the selection, acquisition, and use of video technology software, taking into consideration its quality, appropriateness, effectiveness, and efficiency;
	10.4s use vocabulary related to video technology;
	10.5s compare and contrast linear and nonlinear editing;
10.2k data input skills appropriate to a given task;	10.6s outline differences among electronic input devices as related to video technology;
	10.7s demonstrate proficiency in the use of a variety of electronic input devices by incorporating such components into video-related products;
10.3k pertinent laws and issues regarding the use of technology in society;	10.8s analyze the impact of video technology on society;
10.4k a variety of strategies for acquiring information from electronic resources;	
10.5k how to acquire electronic information in a variety of formats;	10.9s acquire information in electronic formats, including text, audio, video, and graphics, citing the source;

Standard X. **The video technology teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in video technology, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Video Technology Know	**Application: What Teachers of Video Technology Can Do**
Foundations (Continued)	**Foundations (Continued)**
	10.10s engage in preproduction planning by surveying sites and obtaining necessary permits and release forms;
10.6k how to evaluate acquired electronic information;	10.11s demonstrate skill in testing the accuracy and validity of acquired information;

Standard X. **The video technology teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in video technology, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Video Technology Know	**Application: What Teachers of Video Technology Can Do**
Work in Solving Problems	**Work in Solving Problems**
10.7k how to use appropriate computer-based productivity tools to create and modify solutions to problems;	10.12s use foundation and enrichment curricula in the development of video and digital products;
	10.13s integrate productivity tools to develop and modify solutions to problems for video productions;
	10.14s create video products for a variety of purposes and audiences;
	10.15s develop technical documentation related to video technology;
10.8k how to use research skills and electronic communication to create new knowledge;	10.16s demonstrate proficiency in, appropriate use of, and navigation of local area networks (LANs), wide area networks (WANs), the Internet, and intranets for research and for sharing of resources;
	10.17s participate in relevant activities in the larger community and society to create video projects;
	10.18s extend the learning environment beyond the classroom through the creation and sharing of video products via electronic networks;
	10.19s demonstrate knowledge in composition, including ratio of image to frame, position in frame, line of gaze, pan/tilts, movement, and perspective;
	10.20s demonstrate proficiency in basic camera techniques, including zoom, focus, iris control, white balance, and filters;
	10.21s create visual communication by applying the strategies of script writing;
	10.22s engage in preproduction activities, including storyboarding, script writing, production, contracting, and scheduling;

Standard X. **The video technology teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in video technology, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Video Technology Know	**Application: What Teachers of Video Technology Can Do**
Work in Solving Problems (Continued)	**Work in Solving Problems (Continued)**
	10.23s utilize lighting techniques, including key, fill, and backlight, and using incident/reflected light, color temperatures, and filters;
	10.24s use audio techniques to create, edit and integrate digital sounds;
	10.25s participate in different roles and jobs of a production crew, including executive producer, producer, director, engineer, script writer, editor, camera person, presenter, and audio technician;
	10.26s apply appropriate postproduction techniques, including editing and creating control and/or time coded tracks, transitions, audio levels, background music, and special sound effects;
	10.27s apply 2-D, 3-D, and multidimensional animation effects to video;
	10.28s use character generators, fonts, colors, and principles of compositions to create graphic images;
	10.29s create captions and titles for video and graphics;
	10.30s use different compression techniques and programs;
	10.31s demonstrate knowledge in outputting digital video to analog and analog video to digital;
10.9k how to use technology applications to facilitate evaluation of work, including both process and product;	10.32s design and implement procedures to track trends, set time lines, and review/evaluate progress for continual improvement in work process and product;
	10.33s seek and respond to advice from colleagues and other professionals in delineating technological tasks related to video technology;

Standard X. **The video technology teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in video technology, in addition to the content described in Technology Applications Standards I–V.**

	Application: What Teachers of Video Technology Can Do **Work in Solving Problems (Continued)** 10.34s create technology specifications for problem-solving tasks and evaluation rubrics; 10.35s resolve information conflicts and validate information by accessing, researching, and comparing data related to video technology; 10.36s monitor work process and product quality using established criteria;

Standard X. **The video technology teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in video technology, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Video Technology Know	**Application: What Teachers of Video Technology Can Do**
Communication	**Communication**
10.10k how to format digital information for appropriate and effective communication;	10.37s use font attributes and color to ensure that products are appropriate for the defined audience and communication purpose;
	10.38s use white space and graphics to ensure that products are appropriate for the defined audience and communication purpose;
	10.39s use camera perspective to ensure that products are appropriate for the defined audience and communication purpose;
	10.40s use content selection and presentation to ensure that products are appropriate for the defined audience and communication purpose;
10.11k how to deliver a product electronically in a variety of media; and	10.41s publish information in a variety of ways;
10.12k how to evaluate communication in terms of both process and product.	10.42s evaluate video technology projects for design, content delivery, purpose, and audience using established criteria;
	10.43s seek and respond to advice from colleagues and other professionals in evaluating video technology products; and
	10.44s perform research to determine the best method of distribution, the number of copies of the finished product needed, and the most appropriate method for promoting a video technology product.

Standard XI. **The Web mastering teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in Web mastering, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Web Mastering Know	**Application: What Teachers of Web Mastering Can Do**
Teachers of Students in Grades 8–12	***Teachers of Students in Grades 8–12***
The beginning teacher of Web mastering knows and understands:	The beginning teacher of Web mastering is able to:
Foundations	**Foundations**
11.1k the appropriate use of hardware components, software programs, and their connections;	11.1s make decisions regarding the selection, acquisition, and use of software related to Web mastering, taking into consideration its quality, appropriateness, effectiveness, and efficiency;
	11.2s delineate and make necessary adjustments regarding compatibility issues, including, but not limited to, digital file formats and cross-platform connectivity;
	11.3s use vocabulary related to Web mastering and differentiate between characteristics of the Internet and an intranet;
	11.4s plan and design Web pages that are accessible to diverse audiences (e.g., visually impaired, deaf and hearing impaired, learning disabled);
	11.5s summarize the technical needs for a World Wide Web (WWW) server;
	11.6s summarize the development of Internet protocols, including, but not limited to, Hypertext Transfer Protocol (HTTP), Gopher, File Transfer Protocol (FTP), telnet, and Wide Area Information System (WAIS);
11.2k data input skills appropriate to a given task;	11.7s demonstrate proficiency in the use of a variety of electronic input devices such as keyboard, scanner, voice/sound recorders, mouse, touch screen, and digital video by incorporating such components while publishing WWW pages;
11.3k pertinent laws and issues regarding the use of technology in society;	11.8s analyze the impact of the WWW on society through research, interviews, and personal observation;

Standard XI. **The Web mastering teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in Web mastering, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Web Mastering Know	**Application: What Teachers of Web Mastering Can Do**
Information Acquisition	**Information Acquisition**
11.4k a variety of strategies for acquiring information from electronic resources;	11.9s obtain uniform resource locators (URLs) and distinguish among the protocols, including Hypertext Transfer Protocol (HTTP), Gopher, File Transfer Protocol (FTP), telnet, and Wide Area Information System (WAIS);
11.5k how to acquire electronic information in a variety of formats;	11.10s acquire information in electronic formats, including text, audio, video, and graphics;
	11.11s model respect for intellectual properties when acquiring information in electronic formats;
	11.12s identify, create, and use available file formats including text, image, video (analog and digital), and audio files;
11.6k how to evaluate acquired electronic information;	11.13s determine and employ methods to evaluate the design (for content delivery) and functionality (for navigation and interaction) of WWW pages and to compare the method employed with other established evaluation methods;
	11.14s demonstrate skill in testing the accuracy of acquired information;
	11.15s investigate electronic security methods and choose a method to protect a Web server from unauthorized access and negative intentions;

Standard XI. **The Web mastering teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in Web mastering, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Web Mastering Know	**Application: What Teachers of Web Mastering Can Do**
Work in Solving Problems	**Work in Solving Problems**
11.7k how to use appropriate computer-based productivity tools to create and modify solutions to problems;	11.16s use technology tools to create a knowledge base with a broad perspective for creating and modifying solutions to WWW mastering problems; 11.17s select appropriate productivity tools and integrate them into WWW documents; 11.18s use foundation and enrichment curricular content in the creation of WWW pages; 11.19s create WWW pages using specific authoring tools such as text-based editing programs and graphical-based editing programs; 11.20s read, use, and develop technical documentation related to Web mastering; 11.21s create and edit WWW documents using established design principles, including consistency, repetition, alignment, proximity, ratio of text to white space, image file size, color use, font size, type, and style; 11.22s demonstrate the ability to control access to a WWW site via password controls and global access/deny controls; 11.23s establish a folder/directory hierarchy for storage of a Web page and its related and linked files;
11.8k how to use research skills and electronic communication to create new knowledge;	11.24s demonstrate proficiency in, appropriate use of, and navigation of local area networks (LANs), wide area networks (WANs), the Internet, and intranets for research and for sharing resources; 11.25s extend teaching and learning in the local environment to the worldwide community through the creation and sharing of WWW documents;

Standard XI. **The Web mastering teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in Web mastering, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Web Mastering Know	**Application: What Teachers of Web Mastering Can Do**
Work in Solving Problems (Continued)	**Work in Solving Problems (Continued)**
	11.26s synthesize and generate new information from data gathered from electronic and telecommunications resources;
	11.27s create and format WWW documents containing bookmarks of on-line resources and share them electronically;
	11.28s demonstrate the use of WWW pages, collaborative software, and productivity tools to create products;
	11.29s participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;
	11.30s participate in relevant, meaningful activities in the larger community and society to create electronic WWW projects;
11.9k how to use technology applications to facilitate evaluation of work, including both process and product;	11.31s design and implement procedures to track trends, set time lines, and review/evaluate work progress for continual improvement in process and product;
	11.32s seek and respond to advice from colleagues and other professionals in delineating technological tasks related to Web mastering;
	11.33s create technology specifications for tasks and evaluation rubrics to evaluate problem-solving processes;
	11.34s resolve information conflicts and validate information through accessing, researching, and comparing data;

Standard XI. **The Web mastering teacher has the knowledge and skills needed to teach the Foundations, Information Acquisition, Work in Solving Problems, and Communication strands of the Technology Applications Texas Essential Knowledge and Skills (TEKS) in Web mastering, in addition to the content described in Technology Applications Standards I–V.**

Teacher Knowledge: What Teachers of Web Mastering Know	**Application: What Teachers of Web Mastering Can Do**
Communication	**Communication**
11.10k how to format digital information for appropriate and effective communication;	11.35s use hypertext linking appropriately when creating WWW pages; 11.36s develop interactivity for a Web server via scripting; 11.37s demonstrate the ability to conduct secure transactions from a Web server to a client;
11.11k how to deliver a product electronically in a variety of media; and	
11.12k how to evaluate communication in terms of both process and product.	11.38s create technology specifications for tasks and evaluation rubrics to evaluate a WWW communication product; and 11.39s seek and respond to input from colleagues and other professionals in evaluating a WWW communication product.