Master Technology Teacher Standards

FINAL

Approved on January 4, 2002

Texas State Board for Educator Certification

MASTER TECHNOLOGY TEACHER
STANDARDS

Standard I. The Master Technology Teacher effectively models and applies classroom teaching methodology and curriculum models that promote active student learning through the integration of technology and addresses the varied learning needs of all students.

Standard II. The Master Technology Teacher selects and administers appropriate technology-related assessments on an ongoing basis and uses the results to design and improve instruction.

Standard III. The Master Technology Teacher applies knowledge of digital learning competencies including Internet research, graphics, animation, Web site mastering, and video technology.

Standard IV. The Master Technology Teacher serves as a resource regarding the integration of assistive technologies and accessible design concepts to meet the needs of all students.

Standard V. The Master Technology Teacher facilitates appropriate, research-based technology instruction by communicating and collaborating with educational stakeholders; mentoring, coaching, and consulting with colleagues; providing professional development opportunities for faculty; and making decisions based on converging evidence from research.

Standard I. **The Master Technology Teacher effectively models and applies classroom teaching methodology and curriculum models that promote active student learning through the integration of technology and addresses the varied learning needs of all students.**

Teacher Knowledge: What Master Technology Teachers Know

Teachers of Students in Grades EC–12

The Master Technology Teacher knows and understands:

1.1k   the knowledge and skills included in the Technology Applications Standards I–V for all beginning teachers;

1.2k   that educators and students have different levels of technology knowledge and skills that require varied instructional methods and approaches;

1.3k   components of effective instructional design (e.g., eliciting and using prior knowledge, integrating prior and new knowledge, integrating knowledge and skills, providing scaffolded instruction, planning reviews) in a technology-enhanced environment;

1.4k   effective methods for incorporating technology into various instructional strategies (e.g., direct instruction, cooperative, project-based);

1.5k   methods for using technology to maximize student learning and teacher effectiveness;

1.6k   a variety of technology-based tools to support effective instruction;

1.7k   ways in which technology affects the role of the teacher (e.g., mentor, facilitator, collaborator) to promote student-centered learning;

1.8k   processes for integrating evolving technologies to transform the teaching process by promoting greater levels of interest, inquiry, analysis, collaboration, creativity, and content production;

1.9k   how to use technology to promote students' ability to work collaboratively to propose, assess, and implement solutions to real-world problems and to communicate effectively with a variety of audiences;

Teacher Application: What Master Technology Teachers Can Do

Teachers of Students in Grades EC–12

The Master Technology Teacher is able to:

1.1s   facilitate classroom teachers' acquisition and implementation of the knowledge and skills in the Technology Applications Standards I–V for all beginning teachers;

1.2s   develop and/or use formal and informal assessments to evaluate educators' technology proficiency and instructional strategies;

1.3s   develop and/or use formal and informal assessments to evaluate students' technology proficiencies;

1.4s   select and use appropriate research-based strategies to address the varied technology needs of educators and students;

1.5s   identify and adapt appropriate technology tools for specific instructional needs;

1.6s   apply current research on teaching and learning with technology when planning and designing effective learning experiences and environments;

1.7s   facilitate the design and implementation of developmentally appropriate learning experiences that use technology-enhanced instructional strategies to support the diverse needs of all students;

1.8s   facilitate the integration of instructional technology tools on a consistent basis across the curriculum;

1.9s   recognize that technology may be assistive, instructional, or both, depending on a student's Individual Educational Plan (IEP);

1.10s   create classroom environments that effectively integrate technology;

Standard I. **The Master Technology Teacher effectively models and applies classroom teaching methodology and curriculum models that promote active student learning through the integration of technology and addresses the varied learning needs of all students.**

Teacher Knowledge: What Master Technology Teachers Know	Teacher Application: What Master Technology Teachers Can Do
Teachers of Students in Grades EC–12 (continued)	*Teachers of Students in Grades EC–12 (continued)*
1.10k methods for providing effective technology-enhanced instruction to meet the educational needs of all students, including those with special needs;	1.11s communicate and collaborate with other educators to plan and implement effective, technology-enhanced instructional environments and experiences;
1.11k effective classroom management strategies in technology-enhanced learning environments;	1.12s model and apply effective classroom management strategies in a technology-enhanced environment; and
1.12k theories and factors that affect learning in technology-enhanced environments (e.g., students' developmental stages and characteristics); and	1.13s demonstrate continual growth in technology, knowledge, and skills to stay abreast of current and emerging technologies.
1.13k issues related to equity and access.	

Standard II. **The Master Technology Teacher selects and administers appropriate technology-related assessments on an ongoing basis and uses the results to design and improve instruction.**

Teacher Knowledge: What Master Technology Teachers Know	Teacher Application: What Master Technology Teachers Can Do
Teachers of Students in Grades EC–12	*Teachers of Students in Grades EC–12*
The Master Technology Teacher knows and understands:	The Master Technology Teacher is able to:
2.1k the reciprocal nature of assessment, planning, and instruction;	2.1s facilitate the evaluation of students' knowledge and skills using technology-related assessment methods (e.g., projects, portfolios, performance-based) where appropriate;
2.2k fundamental characteristics of quantitative and qualitative assessments;	
2.3k fundamental assessment-related issues, such as those related to bias, reliability, and validity;	2.2s facilitate educators' appropriate assessment of technology-enriched instruction;
2.4k characteristics and uses of types of technology-related assessments, including performance-based, in-depth, continuous progress monitoring, and summative evaluation; and	2.3s facilitate ongoing educator and student self-assessment in the use of technology, including both process and product; and
2.5k the benefits and limitations of technology as applied to the assessment process.	2.4s use appropriate quantitative and qualitative assessments before, during, and after instruction to guide instruction and monitor progress.

Standard III. **The Master Technology Teacher applies knowledge of digital learning competencies including Internet research, graphics, animation, Web site mastering, and video technology.**

Teacher Knowledge: What Master Technology Teachers Know	Teacher Application: What Master Technology Teachers Can Do
Teachers of Students in Grades EC–12	*Teachers of Students in Grades EC–12*
The Master Technology Teacher knows and understands:	The Master Technology Teacher is able to:
Foundations	**Foundations**
3.1k the appropriate use of hardware components, software programs, and their connections;	3.1s demonstrate the knowledge of technology terminology and concepts, and demonstrate proficient use of input and output devices when using selected digital technologies (e.g., text, graphics, animation, video, sound, Internet applications);
3.2k data-input skills appropriate to a given task; and	3.2s identify, create, use, and exchange digital file formats (e.g., text, image, video, audio) between applications and/or platforms;
3.3k pertinent laws and issues regarding the use of technology in society.	3.3s model ethical use of and respect for intellectual property and understand copyright, fair use, patent, and trademarks when using, manipulating, and editing electronic media;
	3.4s make decisions regarding the selection, acquisition, and use of productivity and authoring software, taking into consideration its quality, appropriateness, effectiveness, and efficiency;
	3.5s apply design concepts to assist students and educators in the creation of products;
	3.6s facilitate the use of integrated technologies in foundation and enrichment curricular content;
	3.7s facilitate the use of appropriate digital and analog video and audio systems, software applications, and hardware for a designated task;
	3.8s facilitate the preproduction, production, distribution, and use of student and educator media products;

Standard III. **The Master Technology Teacher applies knowledge of digital learning competencies including Internet research, graphics, animation, Web site mastering, and video technology.**

	Teacher Application: What Master Technology Teachers Can Do *Teachers of Students in Grades EC–12* **Foundations (continued)** 3.9s plan and design activities and products that are accessible to diverse audiences (e.g., visually impaired, hearing impaired, learning disabled); and 3.10s use strategies to navigate, access, share, and store information across networks (e.g., intranet, Internet).

Standard III. **The Master Technology Teacher applies knowledge of digital learning competencies including Internet research, graphics, animation, Web site mastering, and video technology.**

Teacher Knowledge: What Master Technology Teachers Know	Teacher Application: What Master Technology Teachers Can Do
Teachers of Students in Grades EC–12	*Teachers of Students in Grades EC–12*
The Master Technology Teacher knows and understands:	The Master Technology Teacher is able to:
Information Acquisition	**Information Acquisition**
3.4k　a variety of strategies for acquiring information from electronic resources; and	3.11s　obtain and cite the source of print and digital information from a variety of resources (e.g., the Internet, encyclopedias, databases, and libraries of images in a variety of formats including text, audio, video, graphics);
3.5k　how to acquire and evaluate electronic information in a variety of formats.	3.12s　identify and employ a method to evaluate information acquired from primary and secondary sources for accuracy and validity;
	3.13s　organize, store, and retrieve electronic information; and
	3.14s　apply appropriate electronic search strategies to a variety of resources.

Standard III. **The Master Technology Teacher applies knowledge of digital learning competencies including Internet research, graphics, animation, Web site mastering, and video technology.**

Teacher Knowledge: What Master Technology Teachers Know

Teachers of Students in Grades EC–12

The Master Technology Teacher knows and understands:

Problem Solving

3.6k how to use appropriate computer-based productivity tools to create and modify solutions to problems;

3.7k how to use research skills and electronic communication to create new knowledge; and

3.8k how to use technology applications to facilitate evaluation of work, including both process and product.

Teacher Application: What Master Technology Teachers Can Do

Teachers of Students in Grades EC–12

The Master Technology Teacher is able to:

Problem Solving

3.15s extend the learning environment beyond the classroom through the creation and sharing of electronically formatted and published documents via electronic networks;

3.16s synthesize new information from data gathered from interviews, print, and electronic resources;

3.17s accomplish tasks through technological collaboration and participate with electronic communities as a learner, initiator, contributor, and teacher/mentor;

3.18s create technology specifications for tasks and evaluation rubrics to evaluate process and product against established criteria;

3.19s resolve information conflicts and validate information through accessing, researching, and comparing data;

3.20s integrate productivity tools including, but not limited to, word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs, into digital graphics;

3.21s facilitate the use of appropriate digital editing tools and established design principles including consistency, repetition, alignment, proximity, ratio of text to white space, image file size, color use, and font size, type, and style; and

3.22s collaborate with colleagues and other professionals to delineate technological tasks related to solving problems.

Standard III. **The Master Technology Teacher applies knowledge of digital learning competencies including Internet research, graphics, animation, Web site mastering, and video technology.**

Teacher Knowledge: What Master Technology Teachers Know	Teacher Application: What Master Technology Teachers Can Do
Teacher Knowledge: What Master Technology Teachers Know	**Teacher Application: What Master Technology Teachers Can Do**
Teachers of Students in Grades EC–12	*Teachers of Students in Grades EC–12*
The Master Technology Teacher knows and understands:	The Master Technology Teacher is able to:
Communication	**Communication**
3.9k how to create and format digital information for effective communication;	3.23s select content for, format, and present media activities and projects according to defined output specifications, including target audience, communication purpose, and viewing environment;
3.10k how to deliver a product electronically in a variety of media;	3.24s determine and employ methods to evaluate the design (for audience and content delivery) and functionality (for navigation and interaction) of interactive media;
3.11k how to evaluate communication in terms of both process and product; and	3.25s create media products for specified audiences; and
3.12k the characteristics, purpose, and protocols for using a variety of electronic communication tools.	3.26s apply a variety of electronic communication tools appropriately.

Standard IV. **The Master Technology Teacher serves as a resource regarding the integration of assistive technologies and accessible design concepts to meet the needs of all students.**

Teacher Knowledge: What Master Technology Teachers Know	Teacher Application: What Master Technology Teachers Can Do
Teachers of Students in Grades EC–12	*Teachers of Students in Grades EC–12*
The Master Technology Teacher knows and understands:	The Master Technology Teacher is able to:
4.1k that assistive technology is any tool that enables a child with an identified disability to do something that they would not otherwise be able to do;	4.1s identify and suggest appropriate information resources to support student-centered decisions about technology-based solutions;
4.2k how to locate resources regarding available assistive technologies and accessible design concepts for electronic media development;	4.2s recognize that technology may be assistive, instructional, or both, depending on a student's Individual Educational Plan (IEP);
4.3k that decisions about assistive technology for students are required by law to be made by the Individual Educational Plan (IEP) or Section 504 Committee;	4.3s identify personnel who are responsible for assistive technology decisions;
4.4k various ways to adapt technology to address the needs of all students (e.g., accessible design concepts for electronic media, physical access); and	4.4s collaborate with classroom teachers and other staff (e.g., special education, technology) to link individual needs with appropriate technologies; and
4.5k assistive technology as defined by state and federal regulations.	4.5s consider disabilities, learning differences, and needs when evaluating technologies.

Standard V. **The Master Technology Teacher facilitates appropriate, research-based technology instruction by communicating and collaborating with educational stakeholders; mentoring, coaching, and consulting with colleagues; providing professional development opportunities for faculty; and making decisions based on converging evidence from research.**

Teacher Knowledge: What Master Technology Teachers Know	Teacher Application: What Master Technology Teachers Can Do
Teachers of Students in Grades EC–12	*Teachers of Students in Grades EC–12*
The Master Technology Teacher knows and understands:	The Master Technology Teacher is able to:
Communication and Collaboration with Educational Stakeholders	**Communication and Collaboration with Educational Stakeholders**
5.1k the dual role of the Master Technology Teacher as teacher and mentor in the school community;	5.1s collaborate with administrators, colleagues, parents/guardians, and other members of the school community to establish and implement the roles of the Master Technology Teacher and ensure effective ongoing communication;
5.2k leadership, communication, and facilitation skills and strategies; and	5.2s build trust and a spirit of collaboration with other members of the school community to promote positive change;
5.3k principles, guidelines, and professional ethical standards regarding collegial and professional collaborations, including issues related to confidentiality.	5.3s use leadership skills to promote effective integration of technology in the curriculum, encourage support for the use of technology in the classroom, and engage others in integrating technology effectively;
	5.4s collaborate with members of the school community to evaluate, negotiate, and establish priorities regarding technology integration;
	5.5s confer with students, colleagues, administrators, and parents/guardians to discuss technology-related issues; and
	5.6s apply professional ethical standards and guidelines in collegial and professional collaborations.

Standard V. **The Master Technology Teacher facilitates appropriate, research-based technology instruction by communicating and collaborating with educational stakeholders; mentoring, coaching, and consulting with colleagues; providing professional development opportunities for faculty; and making decisions based on converging evidence from research.**

Teacher Knowledge: What Master Technology Teachers Know	Teacher Application: What Master Technology Teachers Can Do
Teachers of Students in Grades EC–12	*Teachers of Students in Grades EC–12*
The Master Technology Teacher knows and understands:	The Master Technology Teacher is able to:
Mentoring, Coaching, and Consulting	**Mentoring, Coaching, and Consulting**
5.4k skills and strategies for mentoring, coaching, and consulting in the development, implementation, and evaluation of effective technology integration;	5.7s apply effective mentoring, coaching, and consultation skills and strategies (e.g., observing, negotiating, providing feedback, problem-solving) to support the use of technology among students;
5.5k strategies for facilitating positive change in instructional practices through mentoring, coaching, and consulting; and	5.8s use mentoring, coaching, and consultation to facilitate team building for promoting student use of technology;
5.6k differences between consultation and supervision, and that the role of the Master Technology Teacher is consultation.	5.9s engage in collaborative, systematic problem solving for supporting effective student use of technology;
	5.10s select and use strategies for collaborating with colleagues to identify needs related to integrating technology into the curriculum;
	5.11s collaborate effectively with colleagues with varying levels of skill and experience and/or diverse philosophical approaches to technology integration to develop, implement, and monitor the use of technology; and
	5.12s select and use strategies to maximize effectiveness as a Master Technology Teacher, such as applying principles of time management and engaging in continuous self-assessment.

Standard V. **The Master Technology Teacher facilitates appropriate, research-based technology instruction by communicating and collaborating with educational stakeholders; mentoring, coaching, and consulting with colleagues; providing professional development opportunities for faculty; and making decisions based on converging evidence from research.**

Teacher Knowledge: What Master Technology Teachers Know	**Teacher Application: What Master Technology Teachers Can Do**
Teachers of Students in Grades EC–12	*Teachers of Students in Grades EC–12*
The Master Technology Teacher knows and understands:	The Master Technology Teacher is able to:
Professional Development for Faculty	**Professional Development for Faculty**
5.7k learning processes and procedures for facilitating adult learning;	5.13s collaborate with teachers, administrators, and others to identify professional development needs, generate support for professional development programs, and ensure provision of effective professional development opportunities;
5.8k strategies for facilitating positive change in instructional practices through professional development; and	5.14s design opportunities for ongoing professional development that address identified student technology needs, are appropriate for the intended audience, and are based on a convergence of research evidence;
5.9k models and features of effective professional development programs that promote sustained application in classroom practice (e.g., demonstration, modeling, guided practice, feedback, coaching, follow-up).	5.15s use a variety of models and methods to create professional development opportunities that improve teachers' abilities to implement effective technology integration; and
	5.16s apply principles and procedures for delivering effective professional development and follow-up and for using adult learning experiences to promote and sustain the use of technology.

Standard V. **The Master Technology Teacher facilitates appropriate, research-based technology instruction by communicating and collaborating with educational stakeholders; mentoring, coaching, and consulting with colleagues; providing professional development opportunities for faculty; and making decisions based on converging evidence from research.**

Teacher Knowledge: What Master Technology Teachers Know	Teacher Application: What Master Technology Teachers Can Do
Teachers of Students in Grades EC–12	*Teachers of Students in Grades EC–12*
The Master Technology Teacher knows and understands:	The Master Technology Teacher is able to:
Decision Making Based on Converging Evidence from Research	**Decision Making Based on Converging Evidence from Research**
5.10k sources for locating information about convergent research on integrating technology into the curriculum; and	5.17s critically examine convergent research on technology integration and analyze the usefulness of research results for addressing instructional needs; and
5.11k methods and criteria for critically reviewing research on integrating technology into the curriculum and selecting research findings to apply.	5.18s apply appropriate procedures for translating convergent research on technology into practice.