



CHAPTER 3

What Are The Technology Applications TEKS?

The Technology Applications Texas Essential Knowledge and Skills (TEKS) are guidelines for the teaching and learning of technology skills and the use of computers and other related electronic tools. They were adopted by the State Board of Education in April 1997 and are found in 19 TAC Chapter 126. These guidelines provide direction for schools as they prepare students to be lifelong learners and citizens in a technological age. The knowledge and skills gained through this curriculum may be applied to foundation and other enrichment curriculum areas for grades K-12. The development of these Technology Applications TEKS addresses the recommendation in the *Long-Range Plan for Technology, 1996-2010* that follows:

Establish expectations for technology proficiencies by students in kindergarten through grade 12, including computer-related skills that meet standards for each high school graduate by the year 2000 (Texas Education Code 32.001).

This chapter presents a description of the Technology Applications TEKS and their development process.

INTRODUCTION

The following excerpt came from *The 1996 Comprehensive Biennial Report on Texas Public Schools: A Report to the 75th Texas Legislature* from the Texas Education Agency.

The 70th Texas Legislature passed Senate Bill 1, establishing a new Texas Education Code. The new law directed the State Board of Education with the direct participation of educators, parents, business and industry representatives, and employers to identify the essential knowledge and skills of each subject of the foundation curriculum that all students should be able to demonstrate. Assessment instruments and textbooks will be required to be aligned with the essential knowledge and skills.

The board was also directed to identify, using the same process, essential knowledge and skills of each subject of the enrichment curriculum that all students should be able to demonstrate. School districts will be required to use the essential knowledge and skills in the foundation curriculum in their instructional programs, but will be able to use the essential knowledge and skills in the enrichment curriculum as guidelines, rather than requirements.

1995-1997: Development of Texas Essential Knowledge and Skills

In order to develop the knowledge and skills called for by law, the commissioner initially appointed 13 writing teams composed of teachers, administrators, business and industry representatives, scientists and educators from colleges and universities, and parents. Two additional teams later began work in health/physical education and technology applications, due to changes in law.

The teams were charged to:

- review the essential elements;
- ensure relevance and rigor in the curriculum;
- articulate what all students should know and be able to do;
- specify the levels of performance expected of students at particular grade levels;
- ensure that the knowledge and skills meet the learning needs of all students; and
- link interdisciplinary concepts, content, and skills across the curriculum.

The commissioner also appointed two other groups to help carry out the statute. A Connections Team, composed of the chairs and contractors for the writing teams as well as Texas Education Agency staff, developed a common format for the revised state curriculum and reviewed drafts for the commissioner's charge relating to interdisciplinary connections, rigor, multicultural strategies, real-world connections, technology connections, and others that affect all content areas. In addition, State Board of Education Review Committees, composed of content experts, educators, and citizens, represent board members in reviewing drafts of the Texas Essential Knowledge and Skills (TEKS).

The focus of the TEKS is to articulate what students should know and be able to do rather than emphasize how teachers should teach. They draw connections to real-world situations and bring relevance to the lives of students.

The TEKS articulate knowledge and skills, that is, statements of what students should know and be able to do at specified grade levels (or clusters as in the case of the technology applications curriculum), and student expectations, which are statements of what is expected of students.

Technology Applications TEKS

The Technology Applications Writing Team was given the opportunity to write the Technology Applications TEKS for grades K-12. The team members represented district technology coordinators, classroom teachers including computer literacy teachers, district administrators, higher education representatives, business representatives, independent consultants, and parents. A list of the members may be found in the front of the *Companion*. The members took their technology experiences and listened to experts in the field and the public about what proficiencies were needed in grades K-8 and what courses were needed at grades 9-12. They wanted the TEKS to be rigorous for students as well as flexible, taking into consideration local options and rapidly changing technology. It is with the feedback the team received, through research, and considerations of local options and emerging technologies, that the Technology Applications TEKS were developed. These TEKS were adopted April 1997.

FREQUENTLY ASKED QUESTIONS

The following have been the most frequently asked questions regarding the Technology Applications Texas Essential Knowledge and Skills for grades K-12. These questions and their responses should help to give a good understanding of these TEKS. The answers have been provided by the Texas Education Agency.

1. What are the Technology Applications TEKS?

Technology Applications TEKS are guidelines for the teaching and learning of technology skills and the use of computers and other related electronic tools. These TEKS focus on creating, accessing, manipulating, utilizing, communicating, and publishing information during the learning process.

2. How do these TEKS differ from the Essential Elements in Chapter 75?

The Technology Applications TEKS are found in 19 TAC Chapter 126. These TEKS are the outgrowth of the computer literacy and computer science courses that were included in 19 TAC Chapter 75, Curriculum, Subchapter C and D, Essential Elements. There were no essential elements for technology applications at the elementary level in Chapter 75. At the middle school in the essential elements there was one required course in seventh or eighth grade. In the TEKS, districts have the flexibility of offering technology applications (computer literacy) in a variety of settings, including a specific class or integrated into other subject areas. A prerequisite for the high school technology applications courses is the Technology Applications TEKS at grades 6-8. At the high school level there are six new courses in addition to the Computer Science I and II courses that have had essential elements. The new courses include: Desktop Publishing, Digital Graphics and Animation, Multimedia, Video Technology, Web Mastering, and Technology Applications Independent Study.

3. Are schools required to use the Technology Applications Texas Essential Knowledge and Skills for the 1997-1998 school year?

No, the Technology Applications Texas Essential Knowledge and Skills (TEKS) are effective September 1, 1998. A professional development year is scheduled for 1997-1998. School districts may choose to implement these K-12 guidelines as early as the 1997-1998 school year, if that best meets their readiness and accessibility to technology. At the high school level, amendments to 19 TAC Chapter 74 regarding the state technology applications graduation requirement were approved at the September 1997 State Board of Education meeting. All Technology Applications high school courses now count for the graduation credit beginning in the 1997-1998 school year. For more information refer to Chapter 8.

4. Why are the TEKS organized by grade clusters rather than by grade levels?

Below the high school level, the Technology Applications TEKS are divided into grade clusters of K-2, 3-5, and 6-8 with benchmark years at grades 2, 5 and 8. The specific time or grade level at

which each student develops understanding, knowledge, and skills in using technology applications is dependent on many factors that are determined by conditions of learning readiness, staff readiness, and local accessibility to technology. School districts across the state are at varying stages of technology implementation. Considering these factors, the technology applications curriculum is organized by grade levels. This gives districts flexibility in using these guidelines. Students should demonstrate technology proficiencies before they exit the target grades 2, 5, and 8. Although these grades are identified as benchmark points for student achievement, all grade levels are involved in work toward the benchmark year. Interim grade-level expectations will be local definitions of strategies that build toward student success.

The following four grade clusters have been defined for the Technology Applications TEKS, Chapter 126:

Subchapter A:	Elementary Grades K-2 Grades 3-5
Subchapter B:	Middle School Grades 6-8
Subchapter C:	High School Grades 9-12

By the end of the eighth grade, a benchmark year, students should know and be able to demonstrate the knowledge and skills listed for the middle school level. Students should be computer literate before entering high school and should apply the technology applications knowledge and skills in the foundation curriculum as well as in enrichment areas throughout the high school years. In addition, there are eight high school courses in Technology Applications that allow for growth, specialization, integration into other curricular areas, and preparation for the technological world. The Technology Applications courses include: Computer Science I and II, Desktop Publishing, Digital Graphics and Animation, Multimedia, Video Technology, Web Mastering, and the Technology Applications Independent Study. A prerequisite for the high school Technology Applications courses is the Technology Applications TEKS at grades 6-8.

5. What are the four strands that are consistent throughout the TEKS?

Within each grade cluster, there are four strands with knowledge, skills and student expectations for each strand. The four strands are as follows:

<u>Foundations</u>	Through the study of technology applications foundations, including technology-related terms, concepts, and data input strategies, students learn to make informed decisions about technologies and their applications.
<u>Information Acquisition</u>	The efficient acquisition of information includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyze, and evaluate the acquired information.

<u>Solving Problems</u>	By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create knowledge and evaluate the results.
<u>Communications</u>	Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results.

SUMMARY:

The development of the Technology Applications TEKS addresses the recommendation in the *Long-Range Plan for Technology, 1996-2010* that follows:

Establish expectations for technology proficiencies by students in kindergarten through grade 12, including computer-related skills that meet standards for each high school graduate by the year 2000 (Texas Education Code 32.001).

These TEKS provide direction for schools as they prepare students to be lifelong learners and citizens in a technological age. The knowledge and skills gained through this curriculum may be applied to foundation and other enrichment curricular areas for grades K-12. They were developed by the Technology Applications Writing Team, representing district technology coordinators, classroom teachers including computer literacy teachers, district administrators, higher education representatives, business representatives, independent consultants, and parents. These TEKS were adopted by the State Board of Education in April 1997.

This chapter has been an introduction to the Technology Applications TEKS. The next chapter will assist educators as they plan for this curriculum and TEKS, as well as planning for the introduction of technology into other curriculum. Chapters that follow will provide the full text of the Technology Applications TEKS and suggest electronic, web, and print resources for teaching the Technology Applications TEKS and applying these knowledge and skills across the curricular areas. The chapters will be divided by grade clusters: K-2, 3-5, 6-8, and 9-12. Several classroom examples will be given for each grade cluster.

Implementation of the TEKS are effective September 1, 1998 and the professional development year is the 1997-1998 school year. The START package is designed to assist during the professional development year. In addition to this *Technology Applications Companion (K-12)*, there is a START CD-ROM as well as a START Web Site created specifically to enable Texas educators to obtain timely information about the Technology Applications TEKS and resources for teaching and learning these TEKS. The START Web Site will contain resources, as the CD-ROM does. However, it will have the capability of continuing to grow over time. A benefit of having a Web Site is that additional resources will be placed on the Web Site as they are made available. As a part of the START project, a form has been provided in Appendix E for schools, Education Service Centers, CEDs, CPDTs, and others to share how they are implementing this Technology Applications curriculum. Specifically, schools implementing the Technology Applications TEKS at the various grade clusters are requested to share resources such as scope and sequences, semester plans, instructional materials, and teaching strategies. This information will be extremely valuable as schools prepare for and implement the Technology Applications TEKS.

