

# Technical Assistance Guide for Team Members

Improving academic and industry related competencies of  
career/technical students

## *Technology Centers That Work (TCTW)*



Southern Regional Education Board  
592 Tenth Street NW  
Atlanta, GA 30318  
Phone: (404) 875-9211  
Fax: (404) 872-1477  
<http://www.sreb.org>

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## Primary *TCTW* Goals for Continuous Improvement

The mission of *TCTW* is to create a culture of high expectations and continuous improvement in high school. To achieve this mission, *TCTW* has several goals:

- Increase to 85 percent the percentages of career/technical students who meet the *TCTW* reading, mathematics and science performance goals on a National Assessment of Educational Progress (NAEP)-referenced exam.
- Increase the percentages of career/technical students who perform at the Proficient level to at least 50 percent in reading, mathematics and science, as measured by the NAEP-referenced *TCTW* Assessment.
- Increase the percentages of technology center graduates who complete a career/technical concentration and enter employment within the field for which they were prepared and who enter postsecondary studies.
- Increase to 95 percent the percentages of high school students who enter the technology center in grade 11 and graduate on time.
- Advance state and local policies and leadership initiatives that sustain a continuous school improvement effort.
- Work with middle schools to effectively use EPAS assessments to guide students in creating programs of study that consist of courses that prepare students for high school and technology center courses.
- Increase annually the percentage of students leaving the technology center with postsecondary credit or having met standards for postsecondary studies, so they will avoid remedial courses.
- Work with the high schools to annually increase the percentage of students entering technology centers prepared and qualified to earn college credit based on PLAN test scores.
- Increase annually the percentage of technology center high school graduates that pass an improved employers exam. (National licensure, state exam/credential, etc. such as ASE)

## *TCTW* Key Conditions for Accelerating Student Achievement

*High Schools That Work* believes everyone — teachers, high schools, districts, technology centers, local and state leaders — must work together to align policies, resources, initiatives and accountability efforts to support high schools and technology centers as they adopt and implement comprehensive school improvement designs. The *TCTW* Key Conditions include the following:

- **A clear, functional mission statement:** Technology centers need a clear, functional mission statement to prepare students for challenging secondary studies and for success in postsecondary education and the workplace.

- **Strong leadership:** Each technology center and home high school needs strong and committed leaders to improve, align and benchmark curricula to high standards, to improve the quality of instruction and to raise student achievement in grades 10 through adulthood. At each technology center, create a leadership team consisting of the campus director, assistant director, counselor and teacher leaders. School and district teams participate annually in a series of leadership development workshops aimed at more fully implementing the *TCTW* design.
- **Plan for continuous improvement:** Technology centers and site leaders need to create an organizational structure and process that ensures continuous involvement with faculty on what to teach, how to teach it, what students are expected to learn, how to assess what they have learned, and how faculty relate to each other, to the students and to the home high school, family and community.
- **Qualified teachers:** Technology center teachers have in-depth knowledge of their program/content areas and of teaching strategies appropriate to students' needs for success. Alternatively certified technology center teachers lacking certification/BS degree in their program/content areas are supported by the technology center to acquire them. The technology centers employ teachers who have program/content area depth and support them in learning how to teach effectively.
- **Commitment to goals:** School leaders and teachers are committed to achieving the *TCTW* Goals and implementing the Key Practices. School boards are committed to having all students complete a career/technical concentration and a rigorous academic core. Continuous review of local policies and practices ensures that a strong message of high expectations is sent to the school administration, faculty/staff and the home high school.
- **Flexible scheduling:** Technology center superintendents and school boards work with home high schools to adopt flexible schedules enabling students to attend technology centers, earn college credit and certifications, and complete an upgraded academic core.
- **Support for professional development:** Technology center leaders provide teachers with instructional materials, planning time and professional development for implementing new curricula and research-based instructional methods.

## ***TCTW* Key Practices for Improving Student Achievement**

*TCTW* has identified a set of Key Practices that impact student achievement. Following are the *TCTW* Key Practices that provide direction and meaning to comprehensive school improvement and student learning:

- **High expectations** — Motivate more students to meet high expectations by integrating high expectations into classroom practices and giving students frequent feedback.
- **Program of study** — Require each student to complete a plan of study leading them to complete a true concentration of an approved sequence, including at least four career/technical courses and an upgraded academic core leading to better postsecondary preparation for postsecondary studies.
- **Academic studies** — Teach more students the essential concepts of the college-preparatory curriculum by encouraging them to apply academic content and skills to real-world problems and projects within their career and technical studies. School leaders need to:
  - Align career/technical courses to essential state, national, academic and career/technical standards that prepare students for postsecondary studies and careers.
  - Align core academic courses to essential state and national standards that prepare youth for postsecondary studies and careers.
  - Align student assignments, student work and classroom assessments to at least the Proficient-level standards as measured by a NAEP-referenced exam, state assessments and employer recognized exams.
- **Career/technical studies** — Provide more students access to intellectually challenging career/technical studies in high-demand fields that emphasize higher-level mathematics, science, literacy and problem-solving skills needed in the workplace and in further education. School leaders need to:
  - Create new courses blending academics and technical content, using applied teaching methods and new measures of academic and technical proficiency.
  - Develop standards, conditions and agreements for awarding postsecondary credit in high-demand career/technical fields to high school students.
  - Require senior projects with academic, technical and performance standards. (Capstone)
  - Provide students opportunities to work toward a recognized employer certification.
  - Provide students opportunities to earn college credit through dual enrollment in career/technical courses.
- **Work-based learning** — Enable students and their parents to choose from programs that integrate challenging high school career/technical studies and work-based learning and are planned by educators, employers and students.

- **Teachers working together** — Provide teams of teachers from several disciplines the time and support to work together to help students succeed in challenging career/technical and academic studies. Integrate reading, writing and speaking as strategies for learning into all parts of the curriculum and integrate mathematics and science into career/technical classrooms. School leaders need to support
  - career/technical and academic teachers in engaging students regularly in reading books and articles, writing, making presentations, and using high-level reasoning and thinking skills.
  - career/technical, mathematics and science teachers working together to better align and integrate mathematics and science concepts and skills into assignments in career/technical classrooms.
  
- **Students actively engaged** — Engage students in career/technical and academic classrooms in rigorous and challenging Proficient-level assignments using research-based instructional strategies and technology.
  
- **Guidance** — Involve students and their parents in a guidance and advisement system that develops positive relationships and ensures completion of a career/technical concentration with an approved sequence of at least four courses and an accelerated program of study. Provide each student with the same mentor throughout high school to assist with setting goals, selecting courses, reviewing the student’s progress and suggesting appropriate interventions as necessary. School leaders need to:
  - Hold a meeting with students, parents and their mentors annually at a technology center to review progress and develop plans for the next year.
  - Develop efforts to educate middle grades parents, school and teacher leaders, and students about the achievement level needed for challenging high school and career/technical studies and to educate high school parents, students and teachers about the achievement level needed for postsecondary study and high-demand, high-income jobs.
  
- **Extra help** — Provide a structured system of extra help to assist students in completing accelerated programs of study with high-level academic and technical content. School leaders need to:
  - Support all career/technical students to become independent learners by giving them opportunities to practice the habits of successful learners, such as study and literacy skills, time management and cooperative learning.
  - Give students easy access to opportunities to meet course standards and graduate on time with their peers.
  - Support teachers in forming nurturing relationships with career/technical students aimed at improving students’ work and achievement.

- Establish a system to analyze student progress on technology center standards and provide remediation focused on career/technical skills to ensure students can pass both hands-on performance and written certification exams.
- Plan catch-up learning experiences for entering technology center students who are not prepared for career/technical and college-preparatory courses.
- Work with postsecondary institutions to identify 11th-grade career/technical students not ready for postsecondary study. Develop special strategies to get these students prepared.
- **Culture of continuous improvement** — Use student assessment, program evaluation data, technology center performance reports, program enrollment, retention and placement reports, college remediation reports, student follow-up reports and advisory committee input to continuously improve school culture, organization, management, curriculum and instruction to advance student learning.

## The *TCTW*-Recommended Curriculum

The centerpiece of *TCTW* is a challenging curriculum focused on preparing high school students for further education and the workplace. To complete the recommended curriculum, each student takes the following:

- at least **four English courses**, with the content and performance standards of college-preparatory English that emphasize reading, writing and presentation skills. Students should read the equivalent of eight books annually, write short papers weekly and write one or more research papers annually. Students revise work until it meets standards.
- at least **four credits in mathematics** including Algebra I, geometry, Algebra II. A fourth higher-level mathematics course or a specially developed mathematics course designed to prepare students for postsecondary studies is strongly recommended. This will help 11th-graders who are unprepared for college-level studies avoid remedial college mathematics.
  - Students completing Algebra I in grade eight will be required to complete three additional years of mathematics.
  - Students take mathematics their senior year.
  - All career/technical courses focus on numeracy and literacy in the language of the technical area.
- at least **three college-preparatory science courses** — biology, chemistry, physics or applied physics, or anatomy/physiology. Students conduct lab experiments and investigative studies; read, critique and discuss three to five books or equivalent articles about scientists, scientific discoveries and how science is used in the real world; keep lab notebooks; make presentations; and complete research projects and written reports. Students design and conduct group or individual projects. *TCTW* recommends that schools using block schedules require four years of science.
- at least **three college-preparatory social studies courses** emphasizing reading and writing to learn. Students will read five to eight books or equivalent articles, write weekly, make presentations, complete research projects, and prepare at least one major research paper in each course.
- at least **one computer course** or demonstrated proficiency in computer technology beyond simple keyboarding, which students should take early in high school to be prepared to use computer-based technical skills in other classes.
- at least **four credits in a concentration** that consists of an approved sequence of career/technical courses. Each student will have a choice from at least four career/technical concentrations in career cluster pathways at school sites, work sites, career/technical centers, postsecondary institutions; and a blended concentration, such as mathematics/science/technology or humanities and business studies. Each concentration will include one or two Advanced Placement (AP), International Baccalaureate (IB) or dual credit courses.



## Purpose of Technical Assistance Visits

The purpose of technical assistance (TA) visits is to help school leaders and teachers identify changes needed to achieve the *Technology Centers That Work* (TCTW) goal: improved student achievement through blending high-level academic and career/technical studies. TA teams help sites improve the quality of learning for all students by working with teachers, counselors and administrators to:



- \_ raise expectations for student performance;
- \_ revise what students are taught;
- \_ change how students are taught;
- \_ change how the school relates to students;
- \_ change how teachers relate to each other;
- \_ change how the school relates to parents, middle schools, employers and postsecondary schools; and
- \_ collect and use data for continued improvement.

## The History of TCTW

*Technology Centers That Work* is a model to assist shared time technology centers to review actions needed to produce high-demand, high-wage graduates who will be leaders in their selected careers. In order to promote this focus and achieve the previously mentioned TCTW Goals, SREB leaders have made modifications to its original comprehensive school improvement model *High Schools That Work* (HSTW). The TCTW Key Practices reflect the basic indicators found in the HSTW model but have been created to target the specific needs of technology centers and their sending high schools.



While HSTW has primarily been working with comprehensive high schools since its inception in 1987, SREB has also had the fortune of working with technology centers over the past years to collect data and best practices in an effort to define quality career/technical studies. HSTW is a consortium of states working with the Southern Regional Education Board (SREB). Currently the HSTW Network consists of 32 states and almost 1,200 high schools. As HSTW works to assist schools in raising student achievement and completion rates to meet No Child Left Behind measures, TCTW will assist centers in emphasizing quality academic components and industry standards to provide students with a high-quality program of studies to support high-wage, high-demand careers. This focus on high-wage, high-demand careers highlights the shift in career/technical education from old beliefs to new beliefs to support a globally competitive workforce. A comparison of these beliefs is found on pages 10 and 11 of this guide. A review of the structure and organization of changes needed for successful implementation of the model are found on pages 12-15.

## CONCEPTS OF QUALITY CAREER/TECHNICAL EDUCATION

<b>Old Beliefs</b>		<b>New Beliefs</b>	
Stand-alone programs taught occupational skills for specific jobs.		CTE is part of a total program of academic and technical studies that prepares students for continued learning in work or educational settings.	
Students taught in low-level related academic courses		Students expected to complete high-level academic courses	
All content needed for career taught by a CTE instructor		CTE and academic teachers work as an instructional team	
Programs focused on preparing students for entry-level jobs		Programs focused on preparing students for further learning and a career pathway	
Program success measured by number of students who entered a specific occupation right after high school		Program success measured by number of students who make a successful transition to work, further study or both	
CTE is equated with less able students		CTE is part of the education of many students with a wide range of abilities	
CT educators “accommodate” many students by setting low standards		CT courses have challenging, clearly defined goals that all students are expected to achieve	
CTE is an elective		All students either complete an academic or career major	
Academic educators view CTE as a way to teach occupational skills to students who could not succeed in academic courses		Academic and CT educators work together to help students learn high-level academic and technical concepts	
Emphasis on learning procedural skills and following directions—students dependent on someone else to do the thinking		Emphasis is on helping students become independent learners who can think through problems and find solutions	

Source: A Guide to Preparing a Syllabus: Designing Challenging Vocational Courses, SREB, 1997.

## CTE INSTRUCTIONAL PRACTICES

<b>Old Approach</b>		<b>New Approach</b>	
Instruction focuses on procedural skills		In addition to learning procedural skills, students are given open-ended problems requiring the use of technical, academic, cognitive and personal skills	
CTE teacher handles the majority of the instruction		CTE and academic teachers work together	
Students follow a set of steps to complete assignments		Students are given open-ended assignments that require them to do research and to prepare their own steps for completing them	
Instruction takes place in the classroom or laboratory		Classrooms, laboratories, business and industry, the home and the community are all locations for instruction	
Content is determined by what the instructor likes to teach or the students want to learn		All students must learn a core set of major competencies (knowledge and skills)	
Standards vary according to each student's perceived ability		All students are expected to meet the same high standards	
Assignments do not require students to use academic and thinking skills		The teacher uses activities and problems that require students to integrate and use multiple academic and technical competencies	
The teacher assumes student learning through informal observations or performance and written tests		Assessment is continuous, using a wide variety of techniques that focus on standards	
All assessment is done by the teacher		Students evaluate their own work based on the definition of quality learning that they have developed with their teacher before submitting it for the teacher's review	
Assessments are conducted primarily for assigning grades		The purpose of assessment is to help students and instructors improve, as well as to determine grades based on standards	
Students get one chance to learn the content before they are graded		Students are given multiple opportunities to learn the content. They may be expected to use their own time to meet quality standards	
Students are not expected to work outside of class		Students are expected to work on assigned projects outside of class	

Source: A Guide to Preparing a Syllabus: Designing Challenging Vocational Courses, SREB, 1997.

### Changes Schools Can Expect – Ideal Process for Implementing the TCTW Design

Structural Changes	Instructional Changes	Support Changes	Leadership Changes
<ul style="list-style-type: none"> <li>▪ <b>Adjust the Master Schedule</b> – annually to increase the percentage of students enrolled in college preparatory courses by at least 20 percent.</li> <li>▪ <b>Expand Student Access to Quality Career/Technical Studies</b> – through partnerships with employers and postsecondary institutions</li> <li>▪ <b>Expand Dual Credit and Advanced Placement Offerings Each Year</b> – by training teachers annually and offering new courses</li> <li>▪ <b>Organize into career-based</b> small learning communities around a rigorous academic core/</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Literacy Across the Curriculum</b> – prepare all teachers to use reading and writing to learn strategies</li> <li>▪ <b>Numeracy Across the Curriculum</b> – Establish plans to increase student use of mathematical skills and processes in all content areas – with special emphasis in science, career/ technical courses, physical education and athletics</li> <li>▪ <b>Integrating Academic and Career Studies</b> – Establish common units of study that link academic content with real world opportunities</li> <li>▪ <b>Project-based Learning</b> – Develop high-level project-based assessments</li> <li>▪ <b>Research-based Instructional Strategies</b> – prepare teachers to use strategies that actively engage students in relevant learning experiences</li> <li>▪ <b>Curriculum Alignment</b> – Align instruction to state standards through development of a curriculum framework, course syllabi, common end-of-course exams and units of study</li> <li>▪ <b>Developing Students as Self-directed Learners</b> – Instruction to develop study skills provided through a support class or integrated into ninth -and 10<sup>th</sup> - grade courses</li> <li>▪ <b>Teacher Assignments and Assessments</b> – Develop a process to provide teachers with frequent feedback on a review of assignments, student work and assessments to determine if they expect students to learn at the proficient level</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Development of a Ninth -grade Support Program</b> - for students entering high school lacking skills for success.</li> <li>▪ <b>Extra Help Program</b> – Program that ensures all students having a grade below “B” have access to and receive help.</li> <li>▪ <b>Guidance Program</b> – Program that ensures every student has an adult advocate at the school who meets with the student to develop and annually review a four-year plan for success. The program also involves frequent monitoring of student progress by the adult advocate who keeps parents involved and informed.</li> <li>▪ <b>Credit Recovery Program</b> – A process to allow students to make up failed courses in a timely manner so they may graduate on-time.</li> <li>▪ <b>Support for Teaching and Learning</b> – A process to develop school leadership teams who support efforts to improve instruction through development of demonstration classrooms, peer coaching, walkthrough observations and strategies to assist teachers in making the various changes outlined here.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Development of a leadership team to:</b> <ul style="list-style-type: none"> <li>▪ involve all faculty in the change process</li> <li>▪ create a culture of high expectations in the school</li> <li>▪ build consensus for a need to change within a school</li> <li>▪ move standards into the classroom to get students to create proficient-level work</li> <li>▪ support efforts to focus on literacy</li> <li>▪ support efforts to focus on numeracy</li> </ul> </li> <li>▪ <b>Prepare master teachers</b> - to become teacher leaders</li> <li>▪ <b>Engage the Faculty in Continuous School Improvement</b> – by organizing a school improvement team and school wide leadership teams around curriculum and instruction, professional development, evaluation, guidance and transitions.</li> </ul>

**Recommended Plan for *High Schools That Work* Plan for Implementation - Year 1**

<b>Area</b>	<b>Planning</b>	<b>Implementing</b>	<b>Reviewing/Refining</b>
<b>Structural</b>	<ul style="list-style-type: none"> <li>▪ Actions to create a culture of raised expectations within the school</li> <li>▪ Actions to increase the percentages of students completing the <i>TCTW</i>-recommended core and a concentration</li> <li>▪ New master schedule that increases the percentages of students in advantaged curriculum</li> <li>▪ Increase in AP offerings and develop links to expand dual credit offerings</li> </ul>	<ul style="list-style-type: none"> <li>▪ Interdisciplinary <i>TCTW</i> leadership teams within to plan actions for continuous improvement</li> <li>▪ Increase in senior year expectations (multiple formats)</li> <li>▪ Phase out 20 percent of low- level course sections to push students to a higher level</li> </ul>	<ul style="list-style-type: none"> <li>▪ School and Classroom Practices via the <i>TCTW</i> Technical Assistance Visit, <i>TCTW</i> Assessment and <i>TCTW</i> Ninth -grade Survey</li> <li>▪ Master Schedule</li> <li>▪ Current School Improvement Plans</li> </ul>
<b>Instructional</b>	<ul style="list-style-type: none"> <li>▪ Development of a literacy plan using <i>TCTW</i>'s Literacy Goals</li> <li>▪ Development of a numeracy across the curriculum plan that integrates mathematics, science, CT, PE and athletics</li> <li>▪ Process for teachers to analyze teacher assignments, student work and assessments</li> <li>▪ Curriculum mapping in all core areas and career/technical courses</li> </ul>	<ul style="list-style-type: none"> <li>▪ Literacy instructional strategies across the curriculum</li> <li>▪ Research-based instructional strategies that actively engage students to complete challenging assignments</li> <li>▪ Upgrade mathematics teachers' content knowledge and instructional methods (as needed)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Instruction via walkthrough observations by school and district leaders aligned to professional development</li> <li>▪ Analyze teacher assignments, student work and classroom assignments against the proficient level.</li> </ul>
<b>Support</b>	<ul style="list-style-type: none"> <li>▪ Advisor-advisee program that will involve faculty, students and parents</li> <li>▪ Extra Help Program for all students not meeting standards</li> <li>▪ Prepare teachers for ninth-grade catch-up courses</li> </ul>	<ul style="list-style-type: none"> <li>▪ Actions to communicate plans to students and parents in a clear manner</li> <li>▪ Provide students with frequent feedback on progress in reaching proficient level work</li> </ul>	<ul style="list-style-type: none"> <li>▪ Development or revision of program of study booklet</li> <li>▪ Involvement of parents in the scheduling process</li> </ul>
<b>Leadership Development</b>	<ul style="list-style-type: none"> <li>▪ Develop leadership team procedures for overall school</li> </ul>	<ul style="list-style-type: none"> <li>▪ SREB's Leadership Modules:                             <ul style="list-style-type: none"> <li>○ Creating a Culture of High Expectations</li> <li>○ Using Data to Lead Change</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Involvement of entire faculty in the improvement process</li> </ul>

**Recommended Plan for *High Schools That Work* Plan for Implementation - Year 2**

<b>Area</b>	<b>Planning</b>	<b>Implementing</b>	<b>Reviewing/Refining</b>
<b>Structural</b>	<ul style="list-style-type: none"> <li>▪ 12<sup>th</sup> grade transition program designed around three dimensions:                             <ul style="list-style-type: none"> <li>○ Getting almost all students ready for college</li> <li>○ Special programs for students planning to go to college but not yet prepared</li> <li>○ Employer certification programs for students not planning to go to college</li> </ul> </li> <li>▪ Continuous efforts to raise expectations for all students</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ninth- grade program including catch-up courses</li> <li>▪ Actions to increase the percentages of students completing <i>TCTW</i> recommended core and a concentration</li> <li>▪ Master schedule that phases out 20 percent of low- level course sections to push students to a higher level</li> <li>▪ Implement new AP course offerings and expand dual credit offerings</li> </ul>	<ul style="list-style-type: none"> <li>▪ Interdisciplinary leadership team effectiveness</li> <li>▪ Senior-year expectations and current graduation requirements</li> <li>▪ Implementation impact of pushing more students into advantaged curriculum</li> </ul>
<b>Instructional</b>	<ul style="list-style-type: none"> <li>▪ Project-based learning focus</li> <li>▪ Improving the quality of CTE instruction through integration of academic, career/technical instruction and improvement of project-based learning opportunities.</li> <li>▪ Curriculum Mapping in two core academic areas</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implement school-wide literacy plan</li> <li>▪ Implement numeracy across the curriculum plan that integrates mathematics, science, CT, PE and athletics</li> <li>▪ Research-based Instructional Strategies</li> <li>▪ Process for teachers to analyze teacher assignments, student work and assessments to determine if they reach proficiency</li> <li>▪ Curriculum mapping for two core content areas</li> </ul>	<ul style="list-style-type: none"> <li>▪ Teacher use of literacy strategies to engage students in classrooms</li> <li>▪ Teacher use of research-based instructional strategies that actively engage students</li> <li>▪ Quality of mathematics instruction</li> </ul>
<b>Support</b>	<ul style="list-style-type: none"> <li>▪ Preparation of teachers to teach new senior transition courses to prepare students for postsecondary study and careers</li> <li>▪ Develop students as self-directed learners curriculum</li> <li>▪ Prepare teachers to teach new AP course offerings</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adviser-advisee program that involves students, faculty and parents with frequent feedback and communication</li> <li>▪ Extra Help Program for all students not meeting standards</li> <li>▪ Implement new ninth grade catch-up courses</li> </ul>	<ul style="list-style-type: none"> <li>▪ Communication procedures to students and parents</li> <li>▪ Feedback procedures for students on progress toward proficient-level work</li> </ul>
<b>Leadership</b>	<ul style="list-style-type: none"> <li>▪ Develop leadership teams for continuous improvement.</li> <li>▪ Develop school wide school improvement coordinators</li> </ul>	<ul style="list-style-type: none"> <li>▪ SREB's Leadership Modules:                             <ul style="list-style-type: none"> <li>○ Prioritizing, Mapping and Monitoring the Curriculum</li> <li>○ Literacy Leadership</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Effectiveness of leadership processes</li> <li>▪ Change in the culture of expectations within school</li> <li>▪ Processes to analyze data, establish goals and actions to meet them.</li> </ul>

**Recommended Plan for *High Schools That Work* Plan for Implementation - Year 3**

Area	Planning	Implementing	Reviewing/Refining
<b>Structural</b>	<ul style="list-style-type: none"> <li>▪ Enhanced collaboration with community/technical colleges and business/industry</li> <li>▪ Expand collaboration with feeder middle grades to improve transition of students</li> </ul>	<ul style="list-style-type: none"> <li>▪ 12<sup>th</sup> grade transition program designed around three dimensions:                             <ul style="list-style-type: none"> <li>○ Getting almost all students ready for college</li> <li>○ Special programs for students planning to go to college but not yet prepared</li> <li>○ Employer certification programs for students not planning to go to college</li> </ul> </li> <li>▪ Efforts to raise expectations for all students</li> <li>▪ Phase out 20 percent of low level course sections to push students to a higher level</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ninth-grade transition programs</li> <li>▪ Actions to increase the percentages of students completing <i>TCTW</i> recommended core and a concentration</li> <li>▪ Quality of new AP offerings and effectiveness of dual credit offerings</li> </ul>
<b>Instructional</b>	<ul style="list-style-type: none"> <li>▪ Expansion of real-world learning opportunities                             <ul style="list-style-type: none"> <li>○ Work-based learning</li> <li>○ Senior project development</li> </ul> </li> <li>▪ Curriculum mapping for CTE programs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Literacy/numeracy and research-based Instructional Strategies</li> <li>▪ Project-based learning focus</li> <li>▪ Improve the quality of CTE Instruction through integration of academic and career/technical instruction and improve quality of project-based learning activities</li> <li>▪ Curriculum mapping for two core content areas</li> <li>▪ Demonstration Classrooms</li> </ul>	<ul style="list-style-type: none"> <li>▪ Teacher use of literacy/numeracy strategies to engage students in the classrooms</li> <li>▪ Teacher use of research-based instructional strategies that actively engage students</li> <li>▪ Curriculum mapping process</li> <li>▪ Processes for teachers to analyze assignments, student work and assessments to determine if they reach proficiency</li> <li>▪ Effectiveness of demonstration classrooms and increase in teacher collaboration</li> </ul>
<b>Support</b>	<ul style="list-style-type: none"> <li>▪ Expand links with community support programs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Teach new senior transition courses to prepare students for postsecondary study and careers</li> <li>▪ Implement students as self-directed learners curriculum</li> <li>▪ Teach new AP/dual credit course offerings</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adviser-advisee program effectiveness</li> <li>▪ Extra Help program effectiveness</li> <li>▪ Ninth-grade catch-up courses effectiveness</li> <li>▪ School and classroom practices via Technical Review Visit, <i>TCTW</i> Assessment and <i>TCTW</i> Ninth-grade survey</li> <li>▪ Continual review of communication processes</li> </ul>
<b>Leadership</b>	<ul style="list-style-type: none"> <li>▪ Continuous improvement team revisits current plans</li> <li>▪ Process to orient new staff to <i>TCTW</i> design.</li> <li>▪ Literacy and numeracy coaches to support continued growth</li> </ul>	<ul style="list-style-type: none"> <li>▪ SREB’s Leadership Modules:                             <ul style="list-style-type: none"> <li>○ Leading Assessment and Instruction</li> <li>○ Numeracy Leadership</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Focus team effectiveness for continuous planning</li> <li>▪ Leadership for curriculum, instruction and assessment</li> </ul>

## Tips for Being a Successful Team Member

Perhaps the most important component of the TA visit is the team member. During the visit, team members observe classes and take notes related to specific practices; interview administrators, teachers, counselors and students; and help develop the TA report for the site.

### Tips for Being a Successful Team Member

1. Think of yourself as a “helper.” You provide technical assistance to a site that is taking great risks to change center and classroom practices. Celebrate the positive!
2. Be analytical. Look beneath the surface to ensure you are giving an honest appraisal of where the school is now and where it needs to be. Do not make assumptions or inferences; just collect evidence.
3. Take copious notes. Do not rely on your memory, no matter how good it is. **You will give the team leader your notes at the end of the visit, so be sure they are clear.** Keep your notes confidential.
4. Find data to support your decisions (SAT/ACT scores, certification exam results, state tests, dropout rate, number of students who go on to postsecondary studies, number of students who must take remedial courses, etc.).
5. Ask pointed questions in interviews. Be persistent; if a question is not answered to your satisfaction, ask it in a different way. Talk to teachers and students in the halls as well as during interviews.
6. Read and study materials provided by the school.
7. **Visit all classes assigned to you.**
8. Talk in specifics — not generalities. Remember that each promising practice and each challenge must have a strong, clear rationale.
9. Base your questions and investigations on the key conditions and practices.
10. Always keep in mind that the purpose of the visit is to provide technical assistance to the site — not to monitor or evaluate.



## Sample Schedule/Agenda for the Visiting Team

### DAY 1

3:00 p.m.- 4: 30 p.m.	Visiting Team Member Orientation with the Team Leader (allow an hour and a half for this meeting)*
4:30 p.m.- 5:30 p.m.	Presentation to the Visiting Team (typically will last an hour to an hour and a half)*
5:30 p.m.	Dinner with Hosting Team and Visiting Team (optional)

### DAY 2

7: 30 a.m.- 8:00 a.m.	Team Assignment/Clarification Meeting (this session should be scheduled to start 30 minutes prior to the start of the school day at the center; this agenda assumes that a school day is 8:00 a.m.-3:00 p.m.)
8:00 a.m.- 3:00 p.m.	Classroom Observations
8:00 a.m.-9:00 a.m.	Interview 1 Interview 2
9:00 a.m.-10:00 a.m.	Interview 3 Interview 4
10:00 a.m.- 11:00 a.m.	Interview 5 Interview 6
12:00 p.m.-12:45 p.m.	Lunch (on-site)
1:00 p.m.- 2:00 p.m.	Interview 7 Interview 8
2:00 p.m.-3:00 p.m.	Interview 9 Interview 10
3:00 p.m.-8:00 p.m.	Team Debriefing (Outlining Promising Practices and Challenges)
6:00 p.m.	Dinner (working dinner provided in the workroom)

Suggested interview groups include:

- Technology Center Superintendent and board member(s)
- Technology Center Director (other site leaders may be included in this interview)
- Randomly selected CT Instructors\*
- Randomly selected academic instructors (if located on your campus)\*
- Technology Center Guidance Staff (guidance counselors, tech representatives and career advisors)
- Representatives from CT Advisory Committees\*
- First year technology center students\*
- Second year technology center students\*
- Adult learners
- Parents\*

Other local or postsecondary partners that participate in improvement activities

**\*Please remember that interviews will last approximately one hour.** Interview groups will be limited to 8 to 10 individuals.

### DAY 3

8:00 a.m.- 9:00 a.m.	Visiting team will review the exit findings from the debriefing
9:00 a.m.- 10:30 a.m.	Exit Presentation to the Center's Leadership Team
10:30 a.m.	Closing Questions/Adjourn

# Conducting Observations and Interviews

## Morning Briefing

The team will meet about 30 minutes before classes begin on the second day of the visit to review schedules and plans. Team members will spend 10-15 minutes in each classroom and will need access to all classes. The site coordinator should have encouraged teachers not to test on the day team members visit classes.

## Classroom Visits

The basic purpose of the classroom visit is to find out:

- \_ the extent to which students are challenged;
- \_ the extent to which students are engaged in learning;
- \_ the extent of teacher preparation;
- \_ the extent to which the classroom is productively focused and managed;
- \_ the extent to which academic content (literacy, numeracy, science, etc.) are emphasized in career/technical classes;
- \_ the extent to which career/technical classes are focused on state/national industry standards that will prepare students for earning certifications or participating in postsecondary studies;
- and
- \_ the extent of differences between high- and low-achieving classes.

The team leader will review assignments and forms for team members to use in making classroom visits and participating in scheduled interviews. Team members are responsible for getting detailed information about teaching practices, student participation and administrative support. Team members are encouraged to record specific examples of high-quality instructional activities that motivate students and engage them in challenging lessons. Informal conversations with teachers and students before and after classroom observations also provide excellent information.

A sample observation form is attached for your review.

# TCTW Classroom Observation Form

<b>CLASSROOM DATA</b>		Time of Observation: Opening ____ Middle ____ Closing ____	
Course: _____		Class Size ____ Male ____ Female ____	
Ethnicity: White ____ African-American ____ Hispanic/Latino ____ Asian-American ____ Native American ____ Other ____			
<b>CLASSROOM OBSERVATION</b>		<b>DESCRIPTION/COMMENTS</b>	
Emphasis on literacy or technical reading:	Check if Observed	Describe the classroom activities or assignments requiring that students read and/or write	
Emphasis on numeracy	Check if Observed	Describe classroom activities or assignments that highlight the mathematical skills that are associated with the lesson.	
Emphasis on science/other content	Check if Observed	Describe any other integrated content observed in the lesson, including integration of content from other CTE areas.	
Emphasis on state or national CTE standards	Check if Observed	What CTE standard or objective was addressed with this lesson? In your professional opinion, was this content covered at a level that would be encountered on state/national certification exams or at a level that prepares students for rigorous postsecondary work?	
<b>Teacher Actions</b> ____ Lecture ____ Teacher - Led Instruction/Discussion ____ Teacher Modeling With Student Practice ____ Teacher Works With Individual Students ____ High-level Questioning	Briefly describe what the teacher was doing during your time in the classroom.		
<b>Student Actions/Activities</b> ____ Bell Ringer/Warm-Up Activity ____ Project/Problem-based Learning ____ Lab/Hands-on Student Work ____ Using Technology ____ Cooperative Group Work ____ Students Working With Partners ____ Students Making Presentations ____ Drill / Worksheet / Text Seat Work	Briefly describe what students were doing during your time in the classroom.		
<b>Summary of Observation:</b>			
<b>RIGOR/CHALLENGE OF WORK</b>		____ Basic ____ Proficient ____ Advanced	
<b>ENGAGEMENT OF STUDENTS</b>		____ Low (Compliant) ____ Medium ____ High	
<b>NUMBER OF STUDENTS ENGAGED</b> _____		<b>NOT ENGAGED/OFF TASK</b> _____	

## Technical Assistance Observation Summary Form

**Directions:** Use your completed individual observation forms to complete the following table. This information provides quantifiable information about the current state of classroom practices and engagement. To save time, complete the sections of this form as you exit each class. You will be asked to provide your specific numbers and examples at the beginning of the debriefing session on Day 2 of the visit. This form will also be collected by your team leader.

<b>1. Content:</b> Do classes reflect content that is consistent with state grade-level curricula? According to proficiency descriptors, would you classify the content of the lesson as Basic (B), Proficient (P) or Advanced (A)?				
<b>B</b> (approaching grade level)	<b>P</b> (grade level)	<b>A</b> (above grade level)		
<b>2. Engagement:</b> Were class activities student-centered? Consider if learning activities require students to make presentations, work in cooperative groups and perform real-world tasks. Is instruction teacher-led, (lecture, questions and answers or textbook-based) or student-centered or directed (interactive, every student is actively involved)?				
<b>L</b> (compliant/passive)	<b>M</b> (moderately engaged)	<b>H</b> (very engaged)		
<b>3. Classroom Environment:</b> Were students sitting in rows or in groups? Did students have access to technology? Did the classroom have resource materials (books, magazines, maps, globes, artifacts, etc.)? Was student work posted? Did the teacher post a daily objective?				
<b>Seating</b>	<b>Access to Technology</b>	<b>Reading Resources</b>	<b>Student Work Posted</b>	<b>Daily objective posted</b>
Rows				
Groups				
<b>Best Lesson:</b> In two or three sentences, please describe the best lesson that you saw at this school.				
<b>Concerns:</b> List your key concerns for the school below.				

## Appendix I

### Conducting Interviews

Each team member will interview at least one group at the site. There are specific questions in the following pages for each for interviews with career/technical teachers, guidance counselors, the director, the superintendent and teachers. Be sure to appoint a note taker during the interviews.

#### **Tips for Effective Interviews**

1. Introduce yourself and provide a brief statement about the nature of the visit. Be clear about the purpose of the visit—to help the center identify best practices and future actions needed to improve all program areas. The goal is to get views on what the center has done, to define next steps and challenges, and to enable the people from the center to talk to each other.
2. Be prepared. Study the available data and information. Develop an idea of what you want to learn about the school. Take 15 minutes to review the specific interview questions in the Team Member Guide. Decide if there are other questions you should ask that will help fill in any gaps.
3. Have one person ask the questions. Designate someone to take clear copious notes. Decide who that will be before you begin the interview. This can be determined during the team orientation the first afternoon. The team leader should always interview the students, the director and district leaders.
4. Avoid the trap of allowing one person to dominate the responses. Ask everyone in the room to respond to each question.
5. Restate the question when answers miss the point. For instance, you may not get an adequate answer to a probing question such as, “Why aren’t your students performing well?” Don’t move on to the next question. Instead, repeat what they have said to you in a different way: “Are you saying that all students’ problems originate in themselves and their experiences outside school?”
6. Generate follow-up questions based on responses. For example, if an interviewee says, “I don’t have time to give students extra help,” you may wish to ask, “How can the school adjust your schedule to help you make time for extra help?”
7. Be prepared to confront challenges constructively. You may say to leaders, “As we look at the data, we might conclude that staff development follow-up is a problem. Other sites may have addressed it better. What can we do to help address the problem?”
8. Summarize the main ideas interviewees have shared with you and ask if there is anything that was omitted or that needs clarification.
9. Thank interviewees for their time and their commitment to raising student achievement.
10. Remember the contextual differences in interviews with students, teachers and site leaders. Relate this to the purpose of the interview and the questions that you ask.

# High School Student Interview Form

Tech Center: \_\_\_\_\_

Use this form as a guide to interview students at the *TCTW* site you are visiting.

1. Describe this technology center to someone who doesn't attend the center
2. What courses are you enrolled in this year (academic and CTE)?
3. How do your CTE teachers encourage you to take courses at your home school? Do CTE teachers ever talk to you about the courses you take?
4. Describe a quality project or assignment that you have felt challenged you and helped you learn the most? How often are you given these assignments?
5. How often are you required to read or write in your CTE classes? Describe the last item that you were required to read.
6. How do your CTE teachers help you to understand the math and science concepts that you will encounter in your career field?
7. What steps will you need to take to earn a certification in your career area and continue your training after leaving this campus?
8. Do you have an assigned an advisor or mentor to assist you in planning your high school schedule and next steps after graduation? If yes, describe how that advisor or mentor works with you.
9. If you are having problems mastering a concept or procedure, how can you get extra help?
10. What opportunities do you have to visit local businesses or interact with local business leaders?
11. What one thing would you change at this center that would allow students to be more successful?

## Adult Student Interview Form

Tech Center: \_\_\_\_\_

Use this form as a guide to interview adult students at the *TCTW* site you are visiting, if appropriate.

1. Describe this technology center to someone who doesn't attend the center.
2. What, if any, other courses are you enrolled in this year (academic and CTE)?
3. How do your CTE teachers encourage you to take courses at a community or technical college? Do CTE teachers ever talk to you about the courses you take?
4. Describe a quality project or assignment that you have felt challenged you and helped you learn the most? How often are you given these assignments?
5. How often are you required to read or write in your CTE classes? Describe the last item that you were required to read.
6. How do your CTE teachers help you to understand the math and science concepts that you will encounter in your career field?
7. What steps will you need to take to earn a certification in your career area and continue your training after leaving this campus?
8. Do you have an assigned an advisor or mentor to assist you in planning next steps after graduation? If yes, describe how that advisor or mentor works with you.
9. If you are having problems mastering a concept or procedure, how can you get extra help?
10. What opportunities do you have to visit local businesses or interact with local business leaders?
11. What one thing would you change at this center that would allow students to be more successful?

## Teacher Interview Form: Academic Teachers

Tech Center: \_\_\_\_\_

Use this form as a guide to interview academic teachers, if appropriate, at the *TCTW* site you are visiting.

1. Describe the improvements you have made to improve the level of teaching and learning in your classroom?
2. What do you know about the proposed outcomes of the *TCTW* project and what have you done to reach these outcomes?
3. How has your school gone about the process of getting all faculty members to work toward improved instruction?
4. Describe staff development at your school. How has this staff development changed your instruction?
5. How have you been involved in the use of data to make decisions regarding the school's academic and career/technical programs? How are data used to identify gaps in achievement, curriculum and instruction?
6. How are you involved in encouraging students to pursue additional education?
7. Describe how students get extra help if they are not performing satisfactorily?
8. What support do you receive from school administrators to improve the quality of academic instruction?
9. What are your major challenges?
10. What suggestions would you make to improve the quality of this school?



## Career/Technical Teachers Teacher Interview Form:

Tech Center: \_\_\_\_\_

Use this form as a guide to interview career/technical teachers at the *TCTW* site you are visiting.

1. How would you convince an outside business leader that your program is a top quality program?
2. What state/industry certifications do you currently hold? How are you working to enhance the certifications that you currently hold? How do you maintain involvement in your related career field in order to highlight industry updates and current trends for your students?
3. Describe the steps that your students will have to take to earn a state/industry certification in your program area.
4. How have you worked to expand your knowledge of teaching strategies and skills that you can use to more effectively engage students in your classroom? What professional development sessions have you attended?
5. Describe a recent activity that you used in your classroom that required students to read and/or write. How often do you give these assignments?
6. How do you assist students in mastering the math skills that they will encounter in your career field?
7. What activities have you participated in to assist in integrating academic content (math, science, etc.) into your classroom activities?
8. Are students required to do projects in your class? If so, please describe a recent assigned project.
9. How are you involved in promoting your program with feeder middle and high schools?
10. Describe the involvement of your local business advisory committee. How do business representatives assist you in evaluating equipment, curriculum and the overall quality of your completers?
11. How do you assist struggling students to master the content and skills of your course?
12. What major challenges does your program face as you work to address the new Perkins requirements?

## Counselor/Advisement Personnel Interview Form

Tech Center: \_\_\_\_\_

**Use this form to interview counselors and other advisement personnel at the technology center you are visiting.**

1. How many students take advantage of Describe the opportunities used to promote program offerings at feeder middle and high schools. How do you work with feeder schools to recruit and retain students?
2. Describe any career planning or research activities that you do with potential middle and high school students.
3. What additional career planning assistance do you provide to students once they enroll at the center? How do you assist students in gaining placement in their career field?
4. How do you encourage students to take high-level academic courses at their home high schools?
5. How many students take advantage of postsecondary dual/articulated courses? How do you promote these options with students?
6. What resources (career pathway brochures, course catalogues, course sequence outlines, etc.) do you use to communicate expectations for completing a program? How do you work with teachers to push students to earn an industry certification (when available)?
7. How do you involve parents in planning their students program of study? How do you work to communicate with parents?
8. How do you help students see the relationship between the courses that they take and their future plans?
9. What major challenges do you and the center face in attracting and retaining students?

## Administrator Interview Form

Tech Center: \_\_\_\_\_

Use this form to interview the tech center director, *TCTW* site coordinator and/or other administrators.

1. How do you support improvement efforts at this tech center?
2. What changes have been implemented as a result of participation in the *TCTW* project?
3. How do you use data to evaluate the tech center programs? How are data used by instructors to make instructional decisions?
4. Describe how you are involved in the improvement of teaching and learning.
5. What kind of staff development has been presented to faculty members this year? How has this staff development changed instruction? Describe how you follow up on staff development to see if strategies have been translated into changes in instruction?
6. Do you use faculty-student groups/teams to address individual components of the tech center improvement plan and other issues related to curriculum and instruction? If so, describe the process and outcomes?
7. What strategies have you put in place or are you considering to increase retention and completion rates within Tech center programs, reduce college remediation rates, and improve placement in careers after program completion?
8. What major challenges do you face in fully achieving the *TCTW* goals as well as having the Key Practices for *Technology Centers That Works* in place?
9. Other comments?

# Technology Center Leadership Interview Form

Tech Center: \_\_\_\_\_

Use this form to interview the superintendent and/or other system leaders including board members of the *TCTW* site.

1. How is the tech center leadership, including the superintendent and board of education, driving school improvement efforts for this campus? What is the vision and/or mission statement?
2. What steps have you taken within the district to support the improvement of instruction and student achievement? Have efforts been made to align the curricula to standards? If so, what process did you use? How is data used for continuous improvement?
3. What is the tech center's approach to providing professional development? Do you do walk-throughs of programs? How are new teachers and other administrators supported?
4. How are stakeholders, including teachers and school leaders, involved in identifying improvement goals for the district and developing plans to meet the goals?
5. What is the tech center's long-term plan for improving teaching and learning? Is this included in the tech center's strategic plan? Is teacher turnover a problem? How do you retain quality teachers?
6. What are your hopes for this tech center? What major challenges do you and your tech center continue to face in fully achieving the *TCTW* goals and in having the Key Practices for *Technology Centers That Work* in place? How can the staff of SREB/TCTW assist you in meeting those goals?
7. Do you have other comments you would like to share with the visiting team?

## Business/Industry Representatives Interview Form

Tech Center: \_\_\_\_\_

Use this form to interview business and industry leaders involved in your site.

1. How have you been involved in helping the teachers and administrators of this tech center set higher standards for students?
2. What has your company done to demonstrate to students that it values achievement and cares about learning?
3. How can you become more involved in setting standards for school attendance and achievement?
4. Have you been involved in providing work-based learning experiences for students? If so, how has this impacted your company? The students? If you haven't provided these experiences, why?
5. How can business/industry recognize high achievement by students?
6. Does your company request school information such as attendance records, transcripts and student portfolios as criteria for hiring students? If so, explain. How is this communicated to students who are prospective employees?
7. How can the tech center better prepare students who are working in your business?
8. Do you provide mentoring and tutoring opportunities? Describe.
9. Have you had any opportunities to: (Provide specific examples)
  - Provide information and activities to prepare students for challenging careers?
  - Partner with the tech center and teachers to improve students' academic and technical knowledge?
  - Provide educators, students and parents with specific information about the preparation needed to advance in the industry?
  - Provide students with quality workplace learning opportunities?

## Parent Interview Form

Tech Center: \_\_\_\_\_

Use this form to interview parents at the *TCTW* site.

1. Describe the program that your child is involved in here at the tech center?
2. How did your child learn about the programs offered here?
3. Can your child earn college credit or a certification upon completing the program? If so, which certifications/ courses are available?
4. How have you helped your child in selecting courses to take during high school? What information have you been provided to assist you and your child to plan for next steps after graduation?
5. What opportunities do you have to meet/talk with your child's teachers or come to campus to see what your child is doing?
6. How do teachers and campus leaders communicate with parents? How do you know about school related events and opportunities?
7. Give an example of a high-quality project or assignment that your child was required to complete.
8. How can teachers and center leaders work to improve the relationship and communication with parents?

# Postsecondary Representative Interview Form

Tech Center: \_\_\_\_\_

Use this form to interview postsecondary representatives, if applicable, at the *TCTW* site.

1. Describe the partnership that your campus has with the technology center.
2. Which programs do students from the technology center enroll in? Do students have an opportunity to earn credits (working with your campus) before they graduate from high school? If so, which courses provide these opportunities?
3. Describe the opportunities that are available for your teachers and teachers from the center to work together to review and align curriculums.
4. How many students coming from the center are required to take remedial coursework on your campus? Which remedial courses do these students typically need?
5. Describe any activities or events that expose students to programs that your campus will support after they graduate from high school.
6. How can the technology center work with your campus to expand opportunities for students?
7. What other recommendations do you have for the technical assistance team?

**Appendix II**

**Team Member:** \_\_\_\_\_

**Personal Interview and Observation Form**

TIME	ACTIVITY—Interview or Observation	Location	Alternative Observations	Location
7:00-8:00	Morning Team Meeting			
8:00-9:00				
9:00-10:00				
10:00-11:00				
11:00-12:00				
12:00-1:00				
1:00-2:00				
2:00-3:00				
3:00-8:00	Team Debriefing			

Notes:



## Appendix III

### *TCTW* Terms and Definitions

**Academic Concentration** — A series of courses providing complex, high-level content in mathematics, science, language arts and social studies

**Academic Teachers** — Teachers of mathematics, science, language arts and social studies

**Action Plan** — A tech center or school district plan developed by a committee of teachers, counselors and administrators for implementing the *TCTW* Key Practices

**Applied or Contextual Learning** — Pedagogy that enables students to connect essential concepts and process skills from the academic curriculum to authentic problems, projects or issues that have value to them in a broad field of career/technical studies

**Academic Competencies** — Knowledge and skills in mathematics, science and language arts

**Blended/Career Concentration** — Four credits in college-preparatory English;

four credits in mathematics — including Algebra I, Algebra II, geometry, pre-calculus or a higher-level mathematics course;

four credits in a lab- and inquiry-based science to include a college-preparatory level physical science, biology, and at least two courses selected from chemistry, physics, applied physics or anatomy and physiology;

three credits in college-preparatory social studies;

four credits in a career concentration;

and two credits in related electives

**Career-bound Students** — All students are career-bound. Most technical assistance visits focus on students who are pursuing studies in a career major. These students may plan to work, attend a two year community or technical college, participate in an apprenticeship program or the military or attend a four-year college or university after high school graduation.

**Career Pathway** – Pathways are sub-groupings of occupations/career specialties used as an organizing tool for curriculum design and instruction. Occupations/career specialties are grouped into Pathways based on the fact that they require a set of common knowledge and skills for career success.

**Career/Technical Completer** — A student who completes at least four credits in an approved career/technical area and takes four English, three mathematics and three science courses (At least two courses in mathematics and science should be equivalent to college-preparatory-level content.)

**Career/Technical Studies** — A course sequence that provides challenging content and assignments in a career/technical field of study requiring students to use technical concepts and procedures as well as concepts from the academic curriculum to complete complex projects representing what workers would be expected to do in a broad career field

**College-prep Studies** — A sequence of courses in mathematics, laboratory sciences and language arts that satisfies public, four-year college or university admissions requirements

**Consortium** — The Southern Regional Education Board (SREB) State Career/Technical Education Consortium is a partnership of states, school systems and school sites in 32 states, united in an effort to raise the achievement of career-bound high school students

**Consortium Goals** — To increase the mathematics, science and communication achievement of students and to integrate the basic content of traditional college preparatory studies — English, mathematics and science — with career/technical studies by creating conditions supporting school principals and faculties in carrying out certain key practices

**Cooperative Learning** — Students work as teams to accomplish learning objectives. Group goals and individual accountability are the key practices. Students receive individual and group grades.

**Curriculum Guide** — A guide for each content area made up of state standards by grade level and content (It includes goals for the program, activities and resources.)

## ***TCTW Terms and Definitions, con't.***

**Four- or Six-year Education Plan** — A specifically designed sequence of courses for a student during his or her four years of high school and connecting to postsecondary studies. This may be called a plan of study.

**General Studies/General Track** — A collection of high school courses that do not satisfy requirements for admission to a public, four-year college/university or entry into a career field, and normally do not prepare the student for work beyond high school

**High-level Courses or Content** — Courses with high content standards equal to those in a college preparatory curriculum, but taught in ways that motivate students to meet the standards (Instructional techniques include hands-on instruction; applied and contextual learning, cooperative learning and other student-centered instructional methods such as project-based learning.)

**HSTW Site** — A participating school or group of schools in *High Schools That Work*

**Industry Certification** — A credential based on standards set by employers in a particular industry or by skilled workers in a given occupation

**Key Conditions** — A set of conditions created by system leaders to accelerate student achievement

**Key Practices** — A framework enabling centers to focus school and classroom practices on improving the quality of learning for all students, particularly those students who will most likely go to work or enter a community or technical college, the military or a four-year institution upon high school completion

**Low-level Courses** — Courses that lack the high standards and content of the college-preparatory curriculum in language arts, mathematics, science and social studies (They are usually taught in a repetitive, drill, memory-recall format and do not develop high-level thinking and intellectual skills. Examples include basic/general mathematics, basic/general English and general science courses.)

**NAEP** — National Assessment of Educational Progress, the assessment tool used by *HSTW* and *TCTW* to test student achievement in mathematics, science and reading (The assessment includes a questionnaire on students' perceptions about their high school and/or tech center experiences.)

**Occupational Field** — Career/ technical, technical or career field of study

**Pacing Guide** — A guide outlining when state standards, core content and concepts are taught — organized by grade level and content area (The guide also includes the suggested amount of time required to teach each standard.)

**Program of Study** — A sequence of required courses and a range of related courses necessary to provide essential skills and knowledge for further study in a particular career or academic field

**Secondary Teacher Survey** — A survey of administrators, career/technical and academic teachers, and counselors, administered the same year as the *HSTW/TCTW* assessment The teacher survey report reveals perceptions regarding the preparation of school staff essential for making changes in curriculum and instructional practices and suggests needed staff development.

**SREB** —The Southern Regional Education Board

**Staff Development** —Training for teachers, counselors and/or administrators

**Student Follow-up Survey** — A study done on the same cohort of students who took the *HSTW* assessment (The survey is administered one year after graduation from high school. The purpose of the student follow-up survey is to determine students' perceptions of the usefulness of their academic preparation.)

**TCTW Site** — A participating technology/technical center, career center or shared-time center participating in the *Technology Centers That Work* initiative