



# TEA Mathematics and Science Update

**Texas Association of Secondary  
School Principals**

June 10, 2010

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## Agenda

- Mathematics
- Science
- Serving All Students
- Other Agency Resources

## Mathematics Update

- Graduation Requirements
- Algebra Readiness  
Components
- Texas Mathematics & Science  
Diagnostic Assessment  
System



## Graduation Requirements

- Entered high school before 2007–2008  
3 math credits required for the Recommended High School Program (RHSP): Algebra I, Geometry, and Algebra II
- Entered high school in 2007–2008 and thereafter  
Graduating under the 4 X 4 RHSP

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## Where will they be in 2010-2011?

- Twelfth Graders  
First class to have 4 X 4 RHSP
- Eleventh Graders  
First 8<sup>th</sup> grade class affected by SSI grade advancement requirements
- Eighth graders  
First class to have end-of-course assessments as a graduation requirement

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## Graduation Requirements for students who entered high school in 2007-2008 and thereafter

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## Graduation Requirements

### Minimum Plan Mathematics Requirements

- Algebra I
- Geometry
- 3rd math credit

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## Graduation Requirements

Options for 3 <sup>rd</sup> math credit for Minimum Plan	
Algebra II	IB Mathematical Studies Standard Level
Precalculus	IB Mathematics Standard Level
Mathematical Models with Applications	IB Mathematics Higher Level
Independent Study in Mathematics	IB Further Mathematics Standard Level
AP Statistics	Mathematical Applications in Agriculture, Food, and Natural Resources (CTE)
AP Calculus AB	Engineering Mathematics (CTE)
AP Calculus BC	Statistics and Risk Management (CTE)
AP Computer Science	

(Red denotes courses that were recently approved to satisfy the fourth math credit requirement.)

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## Graduation Requirements

### 4 X 4 RHSP Mathematics Requirements

- After successful completion of Algebra I, Geometry, and Algebra II, a student may select the fourth required math credit.
- If Mathematical Models with Applications or Mathematical Applications in Agriculture, Food, and Natural Resources is chosen as the 4<sup>th</sup> math credit, it must be successfully completed **prior to** Algebra II.

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## Graduation Requirements

Options for 4th math credit for RHSP	
Precalculus	IB Mathematical Studies Standard Level
Mathematical Models with Applications**	IB Mathematics Standard Level
Independent Study in Mathematics	IB Mathematics Higher Level
AP Statistics	IB Further Mathematics Standard Level
AP Calculus AB	Mathematical Applications in Agriculture, Food, and Natural Resources (CTE)**
AP Calculus BC	Engineering Mathematics (CTE)
AP Computer Science	Statistics and Risk Management (CTE)

**\*\* This course must be successfully completed prior to Algebra II.**

(Red denotes courses that were recently approved to satisfy the fourth math credit requirement.)

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## Graduation Requirements

### Distinguished Achievement Program (DAP) Mathematics Requirements

- Algebra I
- Algebra II
- Geometry
- additional SBOE-approved mathematics course for which Algebra II is a prerequisite.

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## Graduation Requirements

### Options for 4th math credit for DAP

Precalculus	IB Mathematical Studies Standard Level
Independent Study in Mathematics	IB Mathematics Standard Level
AP Statistics	IB Mathematics Higher Level
AP Calculus AB	IB Further Mathematics Standard Level
AP Calculus BC	Engineering Mathematics (CTE)
AP Computer Science	Statistics and Risk Management (CTE)

(Red denotes courses that were recently approved to satisfy the fourth math credit requirement.)

## Algebra Readiness Components

- Texas Response to Curriculum Focal Points (TxRCFP)
- Professional Development
- Grants to districts
- Math supplemental diagnostic screening instrument



## Texas Response to Curriculum Focal Points K-8

- Aligns student expectations to key topics (focal points)
- Emphasizes integration of concepts across the strands/skills that naturally leads to mathematical connections and higher-level thinking
- Identifies critical areas that connect and integrate mathematical proficiency and understanding

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TEXAS Response to Curriculum Focal Points  
for Kindergarten through Grade 8 Mathematics

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## Upcoming Math Professional Development

- MSTAR Math Academies
- Algebra I EOC Success
- ESTAR
- GATAR

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## MSTAR Math Academies

### Middle-school Students in Texas: Algebra Ready

- Serves grades 5-6 & grades 7-8
- Explores hands-on, student-centered lessons
- Strengthens knowledge of the middle school mathematics that is critical for success in algebra
- Connects to CCRS, ELPS, and RtI
- Available through ESCs

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## Algebra I EOC Success

- Focuses on strategies to prepare students for success on the EOC assessment
- Explores hands-on, student-centered lessons
- Strengthens connections to CCRS and ELPS
- Applies Rtl and G/T strategies
- Available through ESCs

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## ESTAR

### Elementary Students in Texas: Algebra Ready

- Serves grades K-5
- Investigates TxRCFP framework and intervention strategies for struggling students
- Offered through the Texas Regional Collaboratives (TRC)

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# GATAR


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## Geometric Approach to Algebra Readiness

- Serves grades 6-8
- Investigates differentiated instructional strategies
- Emphasizes connections between algebra and geometry
- Offered through the TRC

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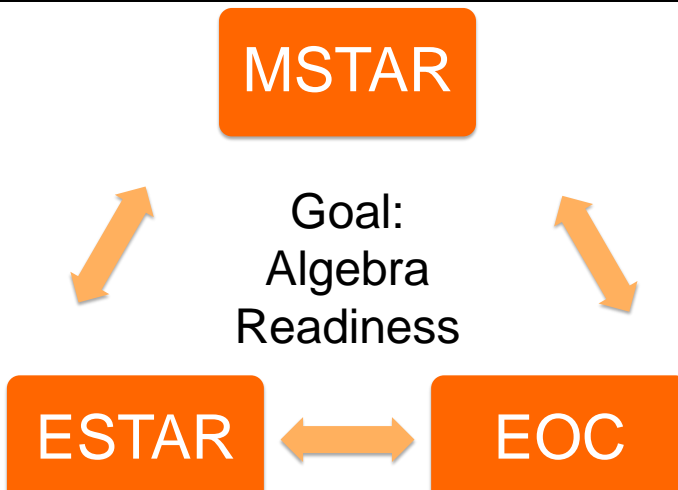
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## Mathematics Professional Development Academies

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MSTAR

Goal:  
Algebra  
Readiness

ESTAR

EOC

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## Grants to Districts

- Current
  - Algebra Readiness Grants, Cycle 1
    - Planning phase
    - Implementation phase
- Planned
  - Algebra Readiness Grants, Cycle 2
  - Algebra Readiness Grants, Small and Rural

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## MSTAR Universal Screener

- Based on algebra-readiness content from TxRCFP, grade 5-8
- Designed to be administered in fall, winter, and spring
- Used as a formative assessment system to support instructional decisions
- Assesses Foundation, Bridging, and Target knowledge representations
- Available Fall 2010 on TMSDS

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## Texas Math and Science Diagnostic System (TMSDS)

- Grades 3–8, Algebra I & II and Geometry
- 3 diagnostic tests available for each grade level/course; 30 questions each
- 5-question “mini-assessments” available for most student expectations
- Managed by Core K12
- Provided at no cost to school districts and charter schools
- Contact ESCs for technical assistance

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## Science

- Professional Development
- Instructional Materials
- Graduation Plans
- TMSDS
- Presidential Awards
- Science TAKS Results

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## Science TEKS Professional Development

### Professional development opportunities

- Spring and summer 2010
  - K-12 science TEKS (1 day)
  - 5-8 Academies (3 days)
  - Biology EOC Success (3 days)
- Spring and summer 2011
  - Chemistry and Physics EOC Success

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## Science TEKS Professional Development

- Contact the science specialist at your ESC for registration information.
- Contact information for ESCs can be found at <http://ritter.tea.state.tx.us/ESC/>.

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## Science Instructional Materials

- Proclamation 2012 (Science) postponed
- Request for supplemental instructional materials that meet all of the new and expanded TEKS
- Grades 5-8, Biology, Chemistry, Integrated Physics and Chemistry (IPC), and Physics
- Information at <http://ritter.tea.state.tx.us/textbooks/proclamations/SupplementalScience/index.html>



## Science Instructional Materials

- Bidders may submit price in one or more of the following configurations: per-student, per-teacher, or statewide license.
- The adoption of materials under this request is scheduled to occur in May 2011.
- The adopted materials are scheduled to be implemented in schools beginning with the 2011-2012 school year.
- For more information, contact the Instructional Materials & Educational Technology Division at (512) 463-9601.



## Options for Science Graduation Credit

The following CTE courses remain options for satisfying the fourth science credit requirement for the RHSP and DAP:

- Anatomy and Physiology
- Medical Microbiology
- Pathophysiology
- Scientific Research and Design
- Engineering Design and Problem Solving (beginning 2010-2011)

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## Options for Science Graduation Credit

Other options for the 4<sup>th</sup> science credit also remain:

- Aquatic Science
- Astronomy
- Earth and Space Science
- Environmental Systems
- All AP and IB Science courses

*Note: Principles of Technology remains an option for satisfying the physics requirement on the RHSP only.*

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### Recommended HS Program

– Phase-out of IPC was removed.

- IPC must be completed prior to Chemistry and Physics.
- Biology, Chemistry, and Physics are required for all students.
- *However, those students who completed IPC prior to 2010-2011 may satisfy science requirements as currently stated in the TAC.*

The following CTE courses are options for satisfying the fourth science credit requirement for the RHSP and DAP (19 TAC Chapter 130):

- Advanced Animal Science (subchapter A)
- Advanced Biotechnology (subchapter O)
- Advanced Plant and Soil Science (subchapter A)
- Food Science (subchapter I)
- Forensics (subchapter L)
- Engineering Design and Problem Solving (subchapter O)



## Texas Math and Science Diagnostic System (TMSDS)

- 2010-2011 version is based on new science TEKS; Grades 3–8, IPC, Biology, Chemistry, Physics
- 3 diagnostic tests available for each grade level/course; 30 questions each, English and Spanish
- 5-question “mini-assessments” available for most student expectations
- Managed by Core K12
- Provided at no cost to school districts and charter schools
- Technical assistance provided by ESCs
- Website is [www.tmsds.org](http://www.tmsds.org)

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## Presidential Awards (PAEMST)

The National Science Foundation, under the direction of the White House, approves the Texas candidates as finalists for the national Presidential Awards for Excellence in Math and Science Teaching (PAEMST) award. If chosen as a national winner, the state finalists will receive \$10,000 and an all-expense-paid trip for two to Washington D.C. for ceremonies that include recognition from the President of the United States at the Capital.

- Texas Finalists Selected (K-6)
- Nominations (7-12) Due April 1, 2011
- Applications (7-12) Due May 1, 2011
- More information at [www.PAEMST.org](http://www.PAEMST.org)



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## Science TAKS Results



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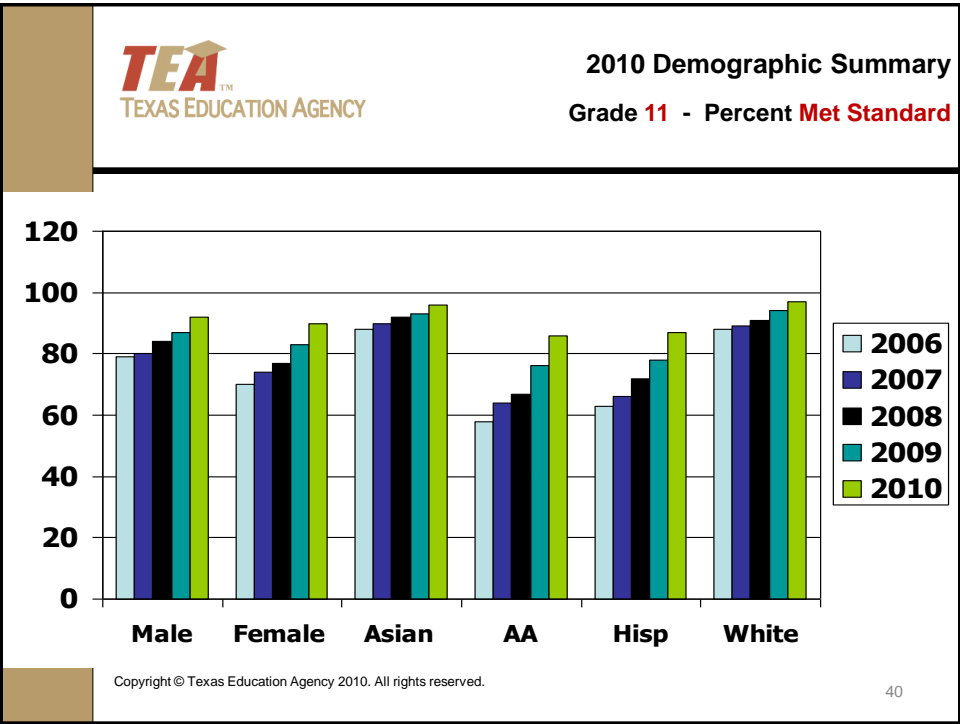
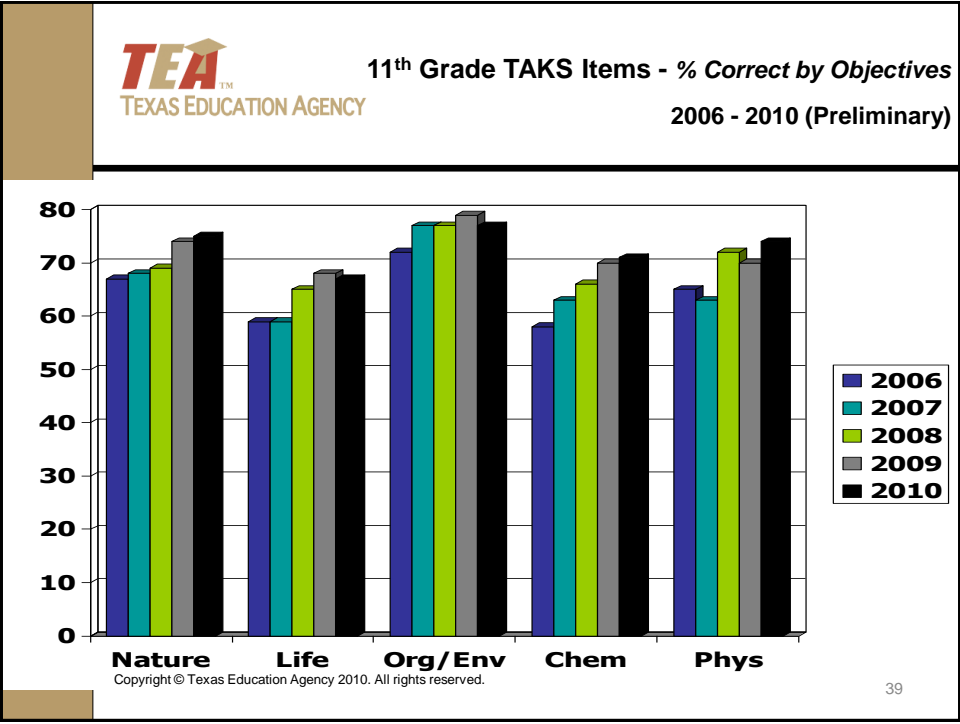
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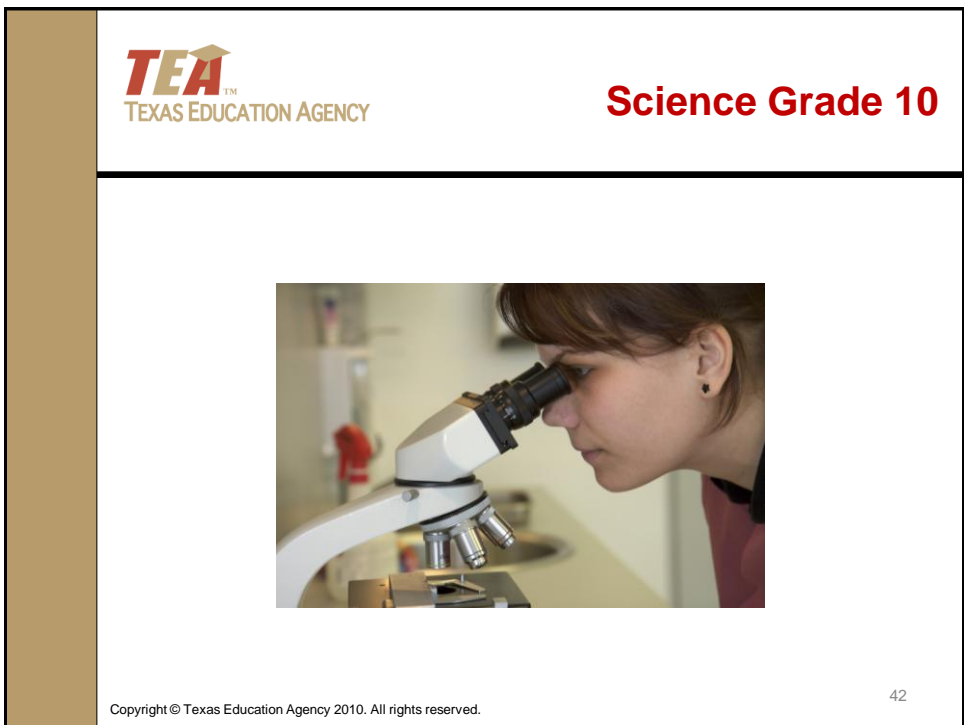
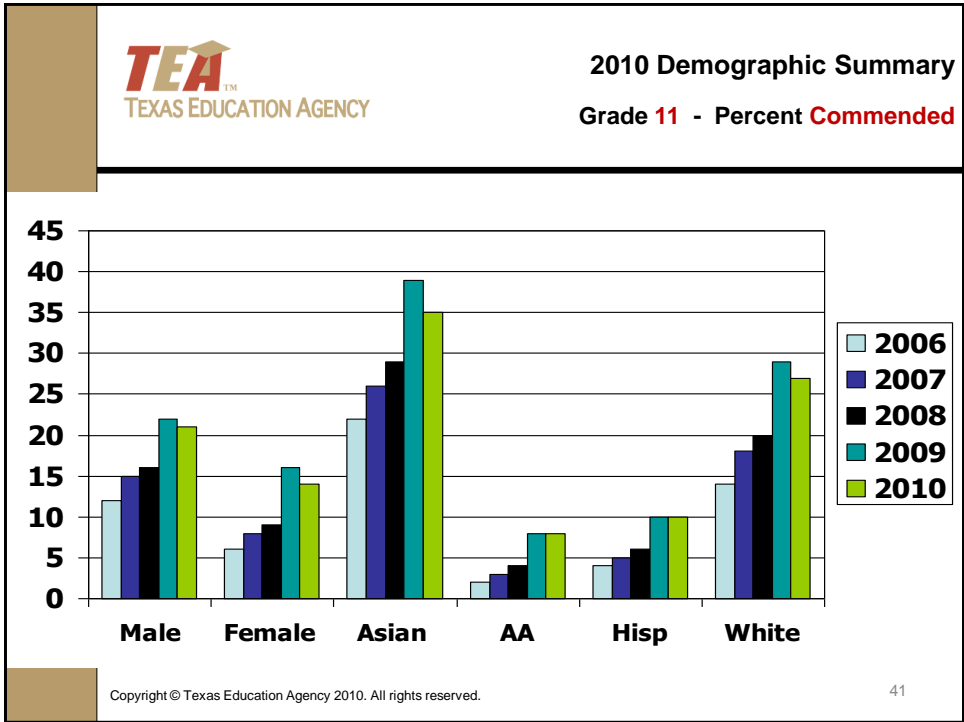
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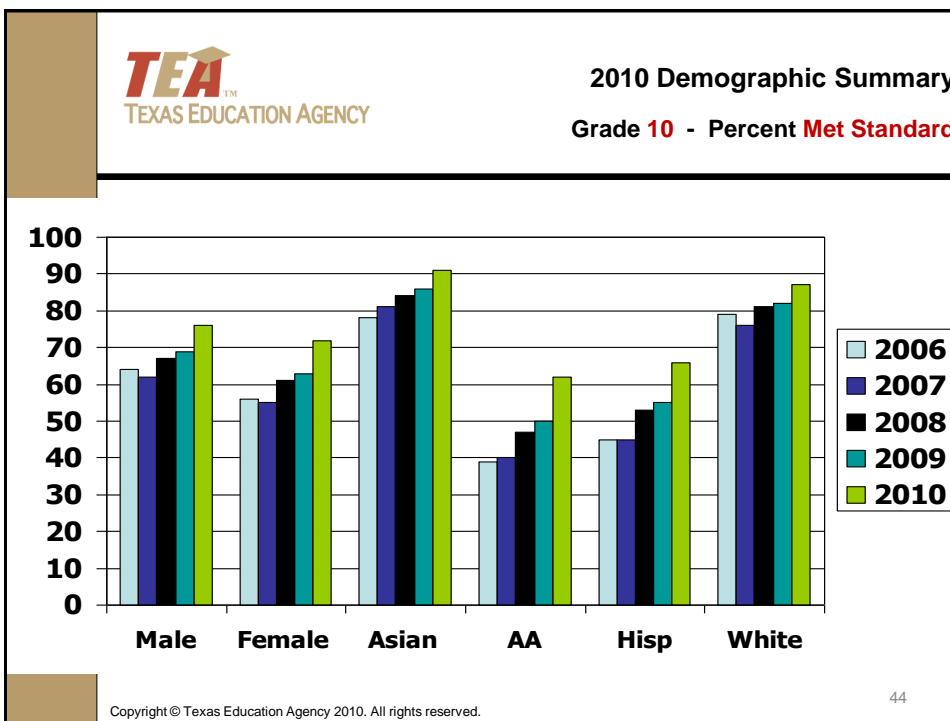
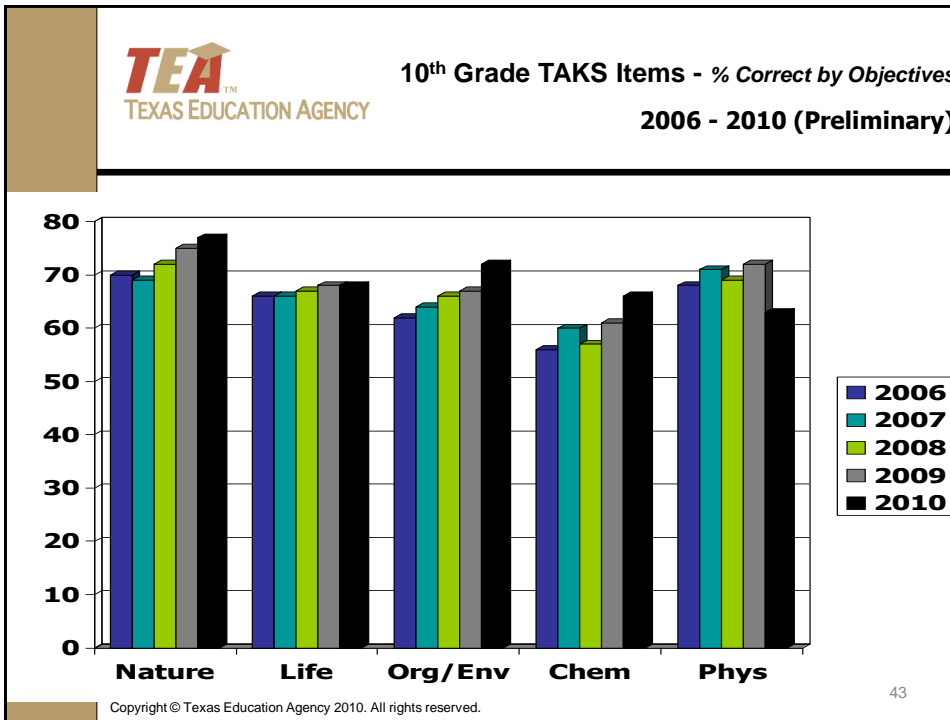


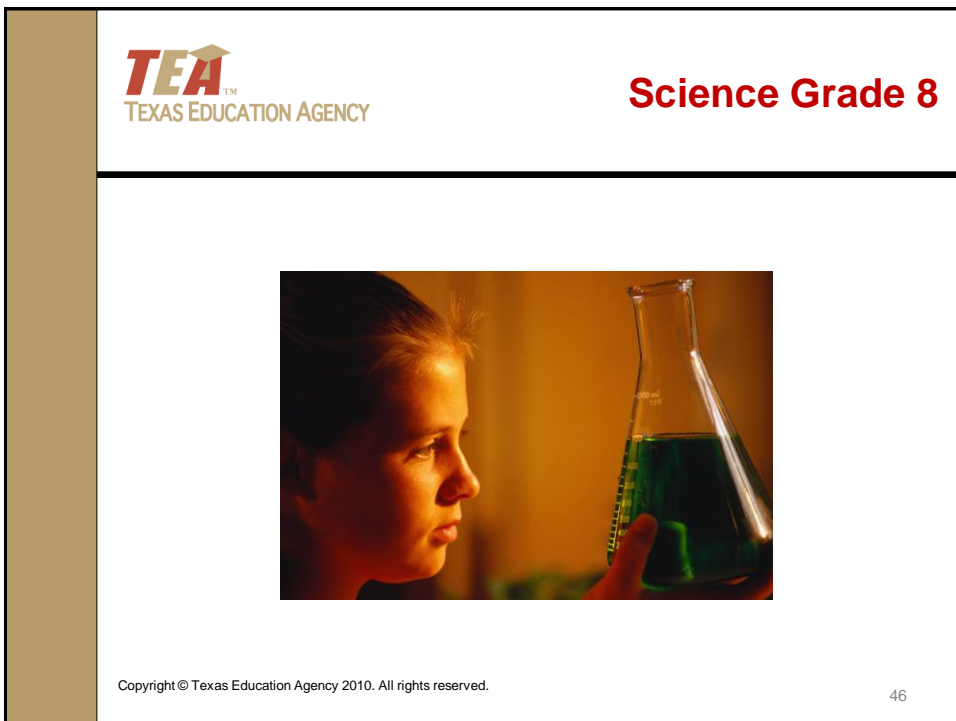
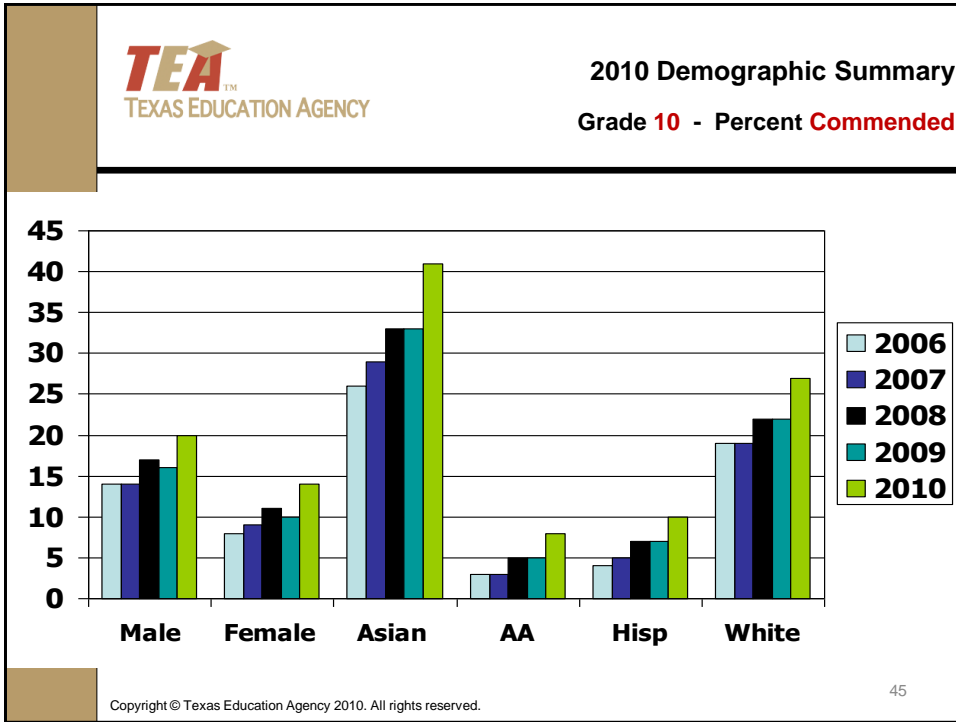
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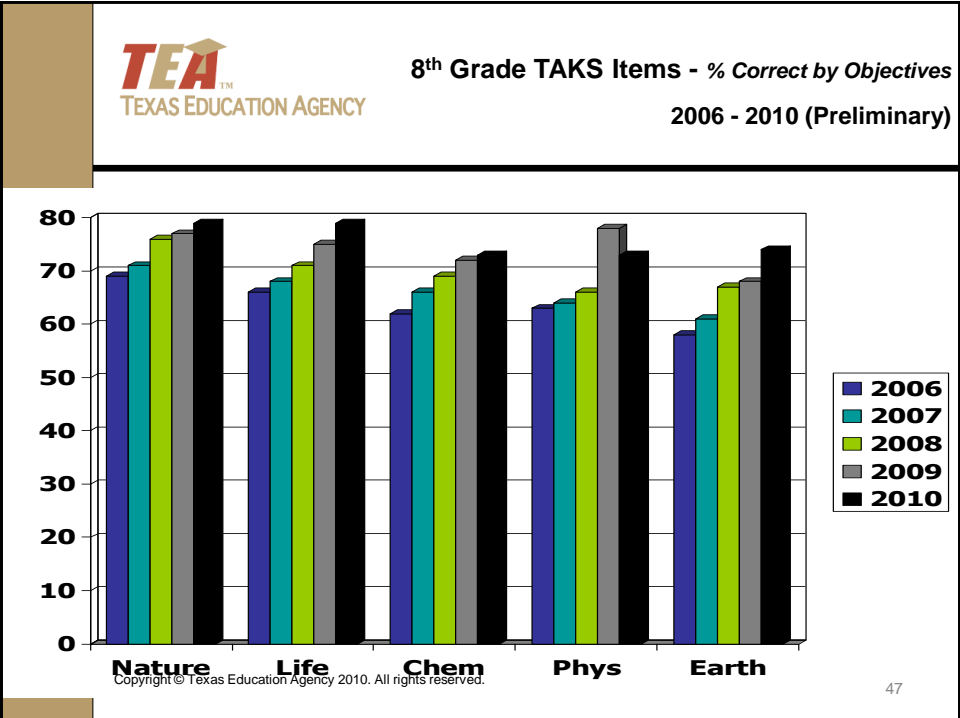
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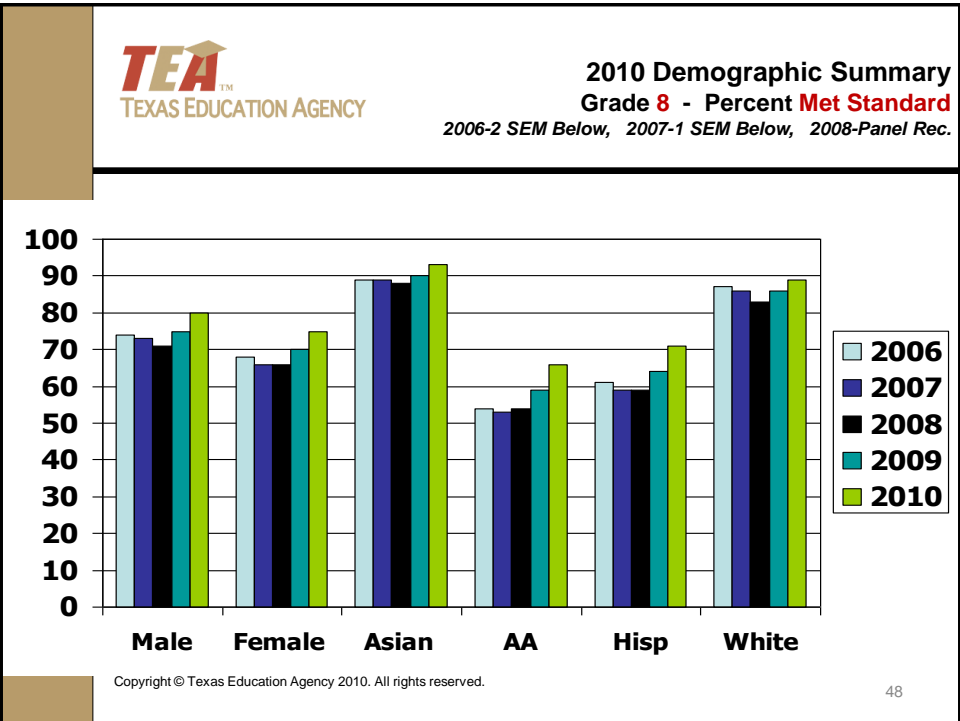




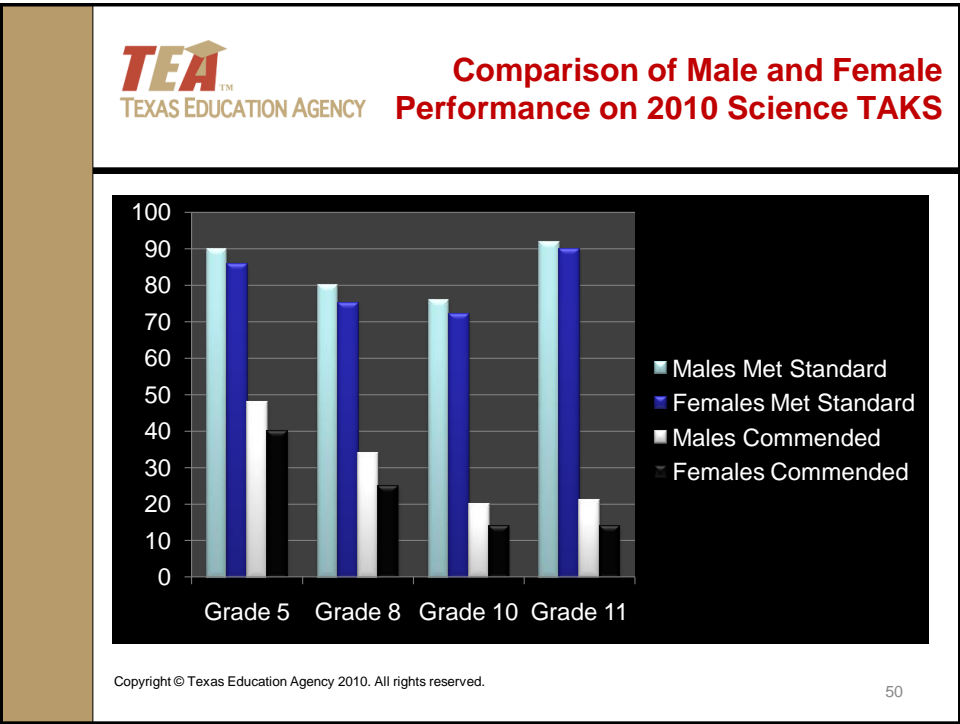
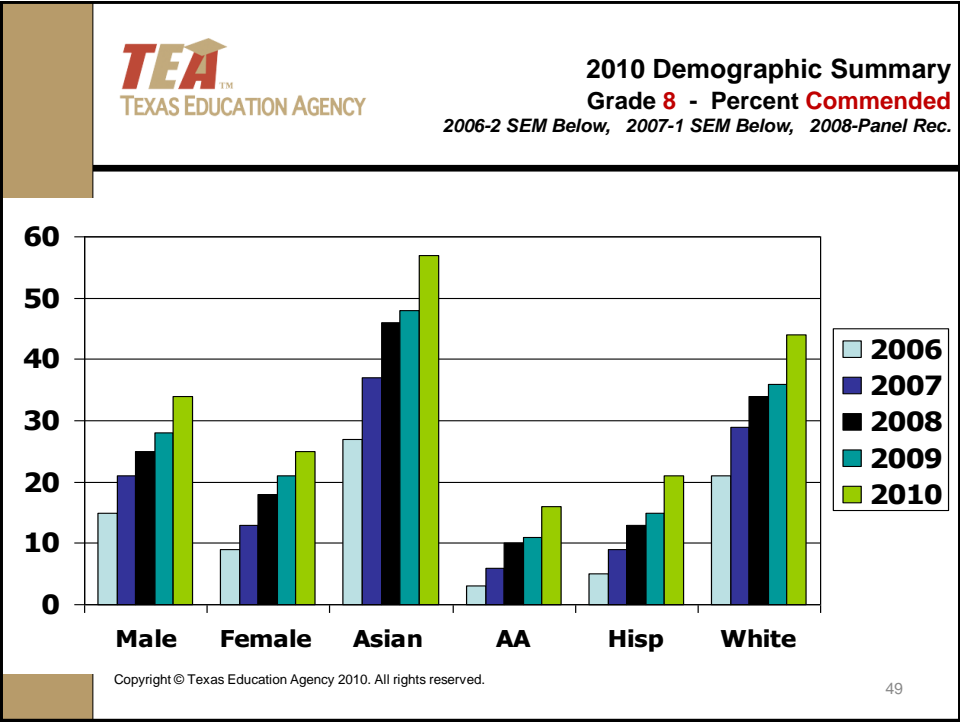




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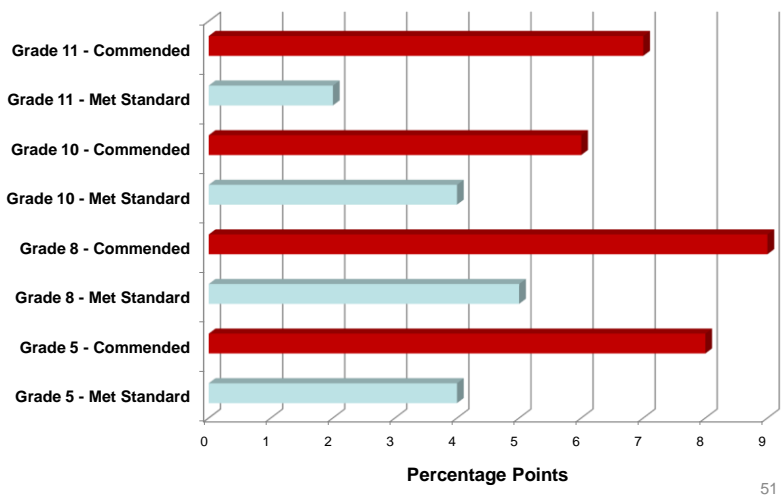


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### Gap Between Male and Female Performance on 2010 Science TAKS



### Curriculum Support for Special Populations



## English Language Proficiency Standards (ELPS)

- Outline the instruction school districts must provide to ELLs in order for them to have the full opportunity to learn English and to succeed academically
- Are to be implemented as an integral part of the instruction in each foundation and enrichment subject of the TEKS

<http://www.tea.state.tx.us/rules/tac/chapter074/ch074a.html>

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## English Language Proficiency Standards (ELPS)

- Purpose: to provide quality content-area instruction while developing social and academic language skills
- Goals: second language acquisition and quality content-area instruction

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Consists of four sections:

- Subsection (a) – general introduction
- Subsection (b) – district responsibilities
- Subsection (c) – language skills and strategies
- Subsection (d) – PLDs found in TELPAS

- |   |  |
|---|--|
| <p>(a) Introduction</p> <ul style="list-style-type: none"> <li>• Make content comprehensible</li> <li>• Build academic language</li> </ul> <p>(b) District Responsibilities</p> <ul style="list-style-type: none"> <li>• Communicated</li> <li>• Sequenced</li> <li>• Scaffolded</li> </ul> | <p>(c) Student Expectations</p> <ul style="list-style-type: none"> <li>• Learning Strategies</li> <li>• Listening</li> <li>• Speaking</li> <li>• Reading</li> <li>• Writing</li> </ul> <p>(d) Proficiency Level Descriptors</p> <ul style="list-style-type: none"> <li>• Beginning</li> <li>• Intermediate</li> <li>• Advanced</li> <li>• Advanced High</li> </ul> |
|---|--|

***Training available through  
your regional ESC.***



## Gifted/Talented Services



Available in English and Spanish at <http://www.tea.state.tx.us/index2.aspx?id=6420>

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## Texas Performance Standards Project



### TEXAS PERFORMANCE STANDARDS PROJECT

Welcome!

Welcome and thank you for your interest in the Texas Performance Standards Project!

The TPSP is a statewide standards and assessment system you can use to capture the high levels of achievement of gifted/talented students. The goal of the TPSP is for students to create work that reflects the professional quality that the *Texas State Plan for the Education of Gifted/Talented Students* requires. Student projects are TEKS-based and focus on the core content areas of English language arts, mathematics, science, and social studies with interdisciplinary connections.

On this site, you can find out more information about TPSP in [fourth grade](#), [eighth grade](#), and the [exit level](#).



- ABOUT TPSP
- FOURTH GRADE
- EIGHTH GRADE
- EXIT LEVEL
- MORE GRADE LEVELS
- RESOURCES
- CONTACT

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## Texas Performance Standards Project

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# Exit Level

TEXAS PERFORMANCE STANDARDS PROJECT


- ABOUT TPSP
- FOURTH GRADE
- EIGHTH GRADE
- EXIT LEVEL
- Projects
- Methods of Assessment
- Delivery Options
- Guide to Success
- Forms
- Glossary of Terms
- Sample Project

At the exit level, gifted/talented students garner all the resources they have fine tuned over their K-12 education to design an independent project that is individualized and based on a topic of their choosing. Over the course of a year, students work with a mentor, who is a professional in the chosen field of study, to create a unique, innovative final product or performance that is of professional quality. The TPSP provides opportunities for students to explore their areas of interest to an extent that is not often possible in school. Such an in-depth study may impact students' future studies and career plans.



The [exit level manual](#) was used during the pilot, but it can still be a useful tool. A Guide to Success for teachers was developed in 2006 and distributed statewide. An Adobe PDF version of the Guides to Success can be downloaded from the [resources page](#).

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## Texas Performance Standards Project


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- Tasks at all levels
- Tasks aligned to College and Career Readiness Standards
- [Learning Continuum](#)
- 12-hour Teacher Training: College-Ready Research Skills
- [Administrator Walkthrough](#)
- Pursuit of Passion*
- Administrator and Counselor Training – In development*




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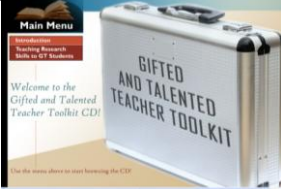
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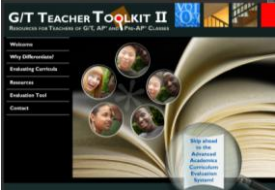
## Other TEA-Provided Assistance


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# Other Agency Resources

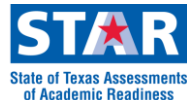
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# Student Assessment

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**Assessment  
Program**


- STAAR includes the 12 end-of-course assessments and the new grade 3-8 assessments.
- The new program begins in the 2011-2012 school year.
- Students beginning high school as freshmen in 2011-2012 will be the first students who must meet the end-of-course testing requirements, in addition to meeting credit requirements, in order to earn a diploma.

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**State of Texas Assessments  
of Academic Readiness**


**Assessment  
Program**

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- Tests will focus on “fewer, clearer, deeper” content.
- New assessments will address the “core” TEKS annually, with other eligible “rotating” TEKS being assessed across years.

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**End-of-Course Exams**

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**Plan for phase-out of HS TAKS and phase-in of EOC assessments**

	<b>2008– 2009</b>	<b>2009– 2010</b>	<b>2010– 2011</b>	<b>2011– 2012</b>	<b>2012– 2013</b>	<b>2013– 2014</b>
Grade 9	TAKS	TAKS	TAKS	<b>EOC</b>	<b>EOC</b>	<b>EOC</b>
Grade 10	TAKS	TAKS	TAKS	TAKS	<b>EOC</b>	<b>EOC</b>
Grade 11	TAKS	TAKS	TAKS	TAKS	TAKS	<b>EOC</b>
Grade 12	TAKS*	TAKS*	TAKS*	TAKS*	TAKS*	TAKS*

\*Out-of-school testers and 12<sup>th</sup> grade re-testers

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## For More Information on STAAR

- Visit the Student Assessment webpage  
[http://www.tea.state.tx.us/index3.aspx?id=3534&menu\\_id=793](http://www.tea.state.tx.us/index3.aspx?id=3534&menu_id=793)
- Join the Student Assessment listserv  
<http://miller.tea.state.tx.us/list>

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## College and Career Readiness Standards (CCRS)

**TEXAS COLLEGE AND CAREER READINESS PROGRAM** Texas College and Career Readiness Program

Home About Resources Training & Events More TEA Home THECD Home

**Setting an Expectation of Achievement**

The College and Career Readiness program is developing and implementing educational standards that reflect what high school graduates must know in order to be successful in higher education and beyond.

**VIDEO**  
 Here is a good time to learn!  
 First generation graduate speaks at the White House

**NEWS**  
 High schools face mounting challenges due to global competition.  
 The 21st Century economy is being driven by rapid innovation and education must adapt!

**EDFACT**  
 Learners with a college degree earn 49% of all income in the US.  
 The public HS graduation rate in Texas has increased by 4.8% over the last 10 years while the national rate has only grown by 2.8%

[www.txccrs.org](http://www.txccrs.org)

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## TEA Best Practices Clearinghouse (BPC)

- Contains examples/summaries collected from high-performing campuses, districts, and charter schools
- Provides access to Texas-specific and general best practice research reports and resources
- Provides a convenient means for schools to share successful practices
- Provides a one-stop shopping web site for Texas-focused educational best practices

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## BPC Listserv and Online Survey

- Visit BPC at <http://www.tea.state.tx.us/bestprac/>.
- Join the Clearinghouse listserv to receive updates at <http://miller.tea.state.tx.us/list/>.
- Provide feedback via the BPC Online Survey at <http://www.tea.state.tx.us/bestprac/>.
- Contact Ertha Patrick for questions or to submit a best practice at [ertha.patrick@tea.state.tx.us](mailto:ertha.patrick@tea.state.tx.us) or call (512) 463-6235.

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## Questions About Educator Certification?

- **Live Chat**

- Monday through Friday from 8 a.m. to 5 p.m.
- Look for the grey chat box located on TEA's Educator Certification Web page at

<http://www.tea.state.tx.us/sbecchat.aspx>

- **Toll-free number (888) 863-5880**

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## Project Share

- Project Share provides an elearning platform to support a community of practitioners dedicated to improving teaching and learning through an interactive and engaging environment.
- Information is available from your Education Service Center.

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Lesson Contents

**Professional Development Opportunities  
Summer 2010**

Contact your ESC for more information.

**Algebra I End-of-Course Success**

Examine the concepts in the Algebra I TEKS and learn strategies to prepare your students for success on the end-of-course assessment during this professional development. Participants will explore hands-on, student-centered lessons designed to provide connections to and strengthen participants' knowledge of College and Career Readiness Standards (CCRS), English Language Proficiency Standards (ELPS), and Response to Intervention (RtI). Sessions will provide Texas teachers and administrators with online resources and follow-up activities through an online interactive platform as well as allow educators to build online professional learning communities for further development and growth.



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**Middle-School Students in Texas: Algebra Ready (MSTAR) - An Introduction (5-8)**

The Texas Response to Curriculum Focal Points (TXRCFP) was created from the Texas Essential Knowledge and Skills (TEKS) and identifies critical areas for mathematics instruction at each grade level. The Middle-School Students in Texas: Algebra Ready (MSTAR) training will inform and familiarize participants with the TXRCFP as a framework for improving overall mathematics instruction and achievement in order to decrease the percentage of students who need math intervention. In addition, the MSTAR training will utilize the TXRCFP framework to guide the design and implementation of Response to Intervention (RtI) strategies for those students in Grades 5-8 who are identified as needing math intervention.


**Navigating the English Language Proficiency Standards (ELPS)**

Explore ways to increase achievement for English language learners using the English Language Proficiency Standards (ELPS). The ELPS require specific focus on developing academic language in the content areas through reading, writing, speaking, and listening in grades K-12. In this session, participants will examine the ELPS and will practice writing language objectives using the four domains. The resources contain specific strategies that will enable teachers to incorporate the ELPS in their classrooms.



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## Project Share

**Science TEKS Overview for Grades K-12**

Examine the new 2010 science TEKS to improve overall science instruction. Explore models of vertical alignment that strengthen participants' knowledge of science concepts and processes, leading to student success on statewide assessments and post-secondary readiness.


**Biology EOCS**

Experience lessons designed to facilitate implementation of the new Biology 2010 TEKS. During this 3 day professional development, engage in instructional strategies designed to prepare your students for success on the End of Course assessment. Participants will explore hands-on, student-centered lessons framed in the research-based 5E instructional model. These sessions provide connections to and strengthen participants' knowledge of College and Career Readiness Standards (CCRS), English Language Proficiency Standards (ELPS), and Response to Intervention (RtI).

**Science Academies for Grades 5-8**

Experience a total immersion in lessons designed to implement the new 2010 science TEKS for grades 5-8. During this 3 day professional development, participants will explore hands-on, student-centered lessons framed in the research-based 5E instructional model. These sessions provide connections to and strengthen participants' knowledge of College and Career Readiness Standards (CCRS), English Language Proficiency Standards (ELPS), and Response to Intervention (RtI).


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We strive to provide leadership, guidance, and resources to help schools meet the educational needs of all students.

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