An Analysis of the Differences Between the *Texas College and Career Readiness Standards* and the *Texas Adult Education Standards and Benchmarks*

Texas State University-San Marcos
The Education Institute
Transition Project

October 2011

An Analysis of the Differences Between the *Texas College and Career Readiness Standards* and the *Texas Adult Education Standards and Benchmarks*

Executive Summary

Standards of proficiency/performance help adult basic education teachers of English as a Second Language (ESL), Adult Basic Education (ABE), and Adult Secondary Education (ASE) determine the needs of adult learners as they make the transition from ESL/ABE/ASE to postsecondary education programs. The *Texas Adult Education Standards and Benchmarks* (*TAESB*) for ESL/ABE/ASE Learners was developed by Texas adult education practitioners as a tool to describe what adult learners should know and be able to do as, well as the performance expectations they should master, as they exit from ESL/ABE/ASE programs. The *Texas College and Career Readiness Standards* (*TCCRS*), approved in 2008, represent the content knowledge and skills that students should master before entering postsecondary education.

The two sets of standards, *TCCRS* and *TAESB*, are important as Texas approaches the 2015 deadline to meet the Closing the Gaps goal of increasing participation of all Texans in postsecondary education. This report compares the *TAESB*, representing the National Reporting System (NRS) level six, the highest level, with the *TCCRS* to determine where the two sets of standards match and don't match. The NRS is an outcomes-based reporting system for the state-administered, federally funded adult education program. In particular, this paper addresses the areas in which the two sets of standards agree and the levels of agreement in the disciplines of English language arts and mathematics. The *TAESB* do not address science or social science. The conclusions drawn from this year-long study comparing the *TCCRS* and the *TAESB* are that the two sets of standards are in agreement for many of the English language arts standards and a limited number of the mathematics standards, but they are substantially dissimilar for most of the mathematics section.

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	ii
I. INTRODUCTION	1
II. INTENT AND ORGANIZATION OF THE ANALYSIS	4
III. ANALYSIS PROCEDURE	5
IV. DISCUSSION	5

English Language Arts Standards
- Writing
- Reading
- Speaking
- Listening
- Research

Mathematics Standards
- Numeric Reasoning
- Algebraic Reasoning
- Geometric Reasoning
- Measurement Reasoning Probabilistic Reasoning
- Statistical Reasoning
- Functions
- Problem Solving and Reasoning Communication and Representation
- Connections

Science Standards
- Nature of Science: Scientific Ways of Learning and Thinking
- Foundation Skills: Scientific Applications of Mathematics
- Foundation Skills: Scientific Applications of Communication
- Science, Technology, and Society
- Cross-Disciplinary Themes
- Biology
- Chemistry
- Physics
- Earth and Space Sciences Environmental Science

Social Studies Standards
Interrelated Disciplines and Skills
Diverse Human Perspective and Experiences
Interdependence of Global Communities
Analysis, Synthesis and Evaluation of Information
Effective Communication
Cross-Disciplinary Standards
Key Cognitive Skills Foundational Skills

V. CONCLUSIONS 36

VI. RECOMMENDATOINS 38

Recognize the Extent of the Gaps
Address the Gaps
Professional Development Collaboration with Postsecondary
Developmental Education and College Credit Programs

APPENDIX-COMPARISON OF STANDARDS 45

An Analysis of the Differences Between the *Texas College and Career Readiness Standards* and the *Texas Adult Education Standards and Benchmarks*

Introduction

Educators use standards in teaching to define norms and universal performance measures. Standards enable educators to measure the skills their students can demonstrate as a result of what they have learned. Additionally, such standards of proficiency/performance will help English as a second language (ESL), adult basic education (ABE), and adult secondary education (ASE) teachers determine the needs of adult learners as they prepare to make the transition from ESL/ABE/ASE to postsecondary education. But, with the multiple sets of discipline-specific and generic standards of college readiness, how do program providers determine which standards will best help their teachers seamlessly and successfully move ESL/ABE/ASE students into postsecondary programs?

The creation of the *Texas Adult Education Standards and Benchmarks* (*TAESB)* was proposed and developed by Texas adult education practitioners in 2001 as a tool to describe what adult learners should know and be able to do, as well as the performance expectations they should master, as a result of their enrollment and participation in ESL/ABE/ASE programs. In the first stages of development, practitioners identified the Florida Department of Education Adult Basic Education Curriculum Standards as a potential framework to adopt and adapt for Texas. This adaptation of the Florida standards resulted in the Texas Standardized Curriculum Framework. The Texas Education Agency, through the adult education state office, Texas LEARNS, contracted with the Texas Center for the Advancement of Literacy and Learning (TCALL) at Texas A&M University to oversee the development of the Texas Standardized Curriculum Framework into the *TAESB.* The *TAESB*, created in 2001 and published in 2004, were intended to serve as exit measures for adult learners who complete instruction in ESL/ABE/ASE and successfully earn the General Education Development (GED).

The *TCCRS*, funded and commissioned by a joint team from Texas Education Agency and the Texas Higher Education Coordinating Board, were mandated by the 79th Texas Legislature. The two agencies convened vertical teams of secondary and postsecondary practitioners and researchers from the disciplines of science, mathematics, social studies, and English language arts to develop standards for the content knowledge and skills that students should master before exiting secondary programs and entering postsecondary education. Because some of the necessary knowledge and skills were deemed interdisciplinary, the teams crafted a fifth area that they titled Cross-Disciplinary Standards (CDS). The knowledge and skills in the CDS include the key cognitive skills (such as intellectual curiosity, problem solving, and reasoning) as well as foundational skills (such as reading, writing, and research across the curriculum). The vertical teams of secondary and postsecondary educators in the four disciplines completed their draft of the *TCCRS* in 2007, and they were approved for release in early 2008.

The two sets of standards, *TCCRS* and *TAESB*, have become increasingly important as Texas approaches the 2015 deadline to meet the *Closing the Gaps* goal of increasing participation of all Texans in postsecondary education. In the 2008 Texas Higher Education Coordinating Board publication *Closing the Gaps by 2015: Texas' Strategies for Improving Student Participation and Success*, the authors recommended adding adult basic education to the pre-kindergarten through grade 20 (P-20) initiatives. As non-traditionally prepared adult students complete the GED and make the transition into postsecondary academic and vocational/technical programs, adult education programs are increasingly asked to prepare students to meet entry requirements for two- and four-year colleges. The Texas Higher Education Coordinating Board currently funds adult education projects in the form of Intensive

Programs and Innovation Grants to address the gaps in knowledge and skills that many of these non-traditionally prepared students bring to postsecondary classrooms.

This report compares the *TAESB,* National Reporting System for Adult Education (NRS), level six representing the highest level exit skills of *TAESB,* with *TCCRS* to determine where the two sets of standards match and where there are gaps. The NRS is an outcome-based reporting system for federally funded adult education programs managed by each state's education agency.

The purpose of this analysis is:

1. To help providers of ESL/ABE/ASE programs understand the core college and career readiness knowledge and skills.
2. To help ESL/ABE/ASE providers make policy and practice decisions to assist programs in bridging the gaps between the two sets of standards.
3. To help ESL/ABE/ASE teachers align daily teaching with the specific college and career skills and knowledge that ESL/ABE/ASE students will need to succeed in postsecondary education.

This comparison process was guided by three specific questions:

Question 1. Which key content, organizing components, and performance expectations in the *TCCRS* match the strands and benchmarks in the sixth and highest NRS level of *TAESB*?

Question 2. To what extent do the standards addressed in each document agree on the level and type of knowledge and skills required for students exiting ESL/ABE/ASE and entering postsecondary?

Question 3. To what extent can the two sets of standards assist educators of adult students in determining when their students are ready to proceed successfully to the next level?

This paper addresses the areas of agreement of the *TCCRS* and the sixth and highest level of NRS with the *TAESB*. The two sets of standards were published at different times (2008 and 2004), with different goals (entry level knowledge and skills versus exit level benchmarks), and by professionals representing different disciplines (secondary and postsecondary faculty versus ABE/ESL/ASE teachers) and for different student populations (secondary and postsecondary students versus ABE/ESL/ASE students). Comparing the standards side-by-side can be a powerful way of illustrating the alignment and/or lack of it. The analysis employed the following process:

1. Identify the corresponding standards and content in each subject.
2. Compare the content description of each similar standard to evaluate the level of the agreement.
3. Identify, as needed, the gaps in the two sets of standards. Standards that appeared in one set without corresponding standards in the other set were considered gaps, and that presumed absence was carefully scrutinized to ensure that the standard was not accounted for in another discipline or in the CDS.
4. Review discipline team members' comments at the end of each section/subject to further identify the existing agreements and gaps.

Intent and Organization of the Analysis

This report assumes that the educational standards are like a road map that guides users with accurate information related to their specific purposes and design. In each case, it is expected that standards cover at least the two main disciplines: English language arts and mathematics. Social studies, science and CDS were covered in the *TCCRS* but not in the *TAESB*. Standards should also address the skills that students need to demonstrate at the time of entry

into or exit from a level of education, and standards should be accessible and user friendly for practitioners.

Analysis Procedure

The two sets of standards were reviewed by teams of content experts in the two disciplines that are addressed in both documents: English language arts and mathematics. As stated previously, the table in the appendix compares the *TCCRS* with the *TAESB* by discipline. Because the adult education standards do not specifically address standards in the science and social science disciplines, the respective *TAESB* columns note that there is either no agreement or low agreement in a corresponding standard. The decision was made to include the *TCCRS* standards for those two disciplines as a means of illustrating the contrast between the two documents. In the disciplines where there are corresponding standards in both the *TCCRS* and the *TAESB*, the level of agreement is noted as follows:

- *High agreement* indicates that here there is an identical or near identical match between the standards or strands. High agreement indicates a match of 80 percent or higher.
- *Moderate agreement* indicates that there is general agreement or overlap between the two standards or strands but not enough agreement to qualify as an identical match. Moderate agreement indicates a match of 60 percent to 79 percent.
- *Low agreement* indicates that there is a minimal match of at least a portion of the standard or strand. Low agreement indicates a match of less than 49 percent.
- *No agreement* indicates that there is no corresponding standard or strand.

Discussion

This brief discussion of the levels of agreement is presented from the perspective of the

TCCRS knowledge and skills and is arranged by discipline. The *TCCRS* performance expectations under the specific content standard are compared to the *TAESB* benchmarks under specific strands. For a graphic representation, see the attached appendix.

English Language Arts Standards

Writing

High agreement. The following *TCCRS* writing standards were of high agreement in the *TAESB* standards:

- determine effective approaches, forms, and rhetorical techniques that demonstrate understanding of the writer's purpose and audience;
- edit writing for proper voice, tense, and syntax, assuring that it conforms to standard English, when appropriate;
- recognize the importance of revision as the key to effective writing; each draft should refine key ideas and organize them more precisely and effectively, and draw the reader to the author's purpose.

Moderate agreement. The following *TCCRS* writing standard was of moderate agreement in the *TAESB* standards:

- generate ideas and gather information relevant to the topic and purpose, keeping careful records of outside sources.

Low agreement. The following *TCCRS* writing standard was of low agreement in the *TAESB* standards:

- evaluate relevance, quality, sufficiency, and depth of preliminary ideas and information, organize material generated, and formulate a thesis.

No agreement. No areas were found to have no agreement in the writing standards. In general, the writing standards for *TCCRS* and *TAESB* matched more closely than any other disciplines.

Reading

High agreement. The following *TCCRS* reading standards were of high agreement in the *TAESB* standards:

- use effective reading strategies to determine a written work's purpose and intended audience;
- use text features and graphics to form an overview of informational texts and to determine where to locate information;
- identify explicit and implicit textual information including main ideas and author's purpose;
- analyze the presentation of information and the strength and quality of evidence used by the author, and judge the coherence and logic of the presentation and the credibility of an argument;
- evaluate the use of both literal and figurative language to inform and shape the perceptions of readers;
- identify and analyze the audience, purpose, and message of an informational or persuasive text.

Moderate agreement. The following *TCCRS* reading standard was of moderate agreement in the *TAESB* standards:

- identify new words and concepts acquired through study of their relationships to other words and concepts.

Low agreement. The following *TCCRS* reading standard was of low agreement in the *TAESB* standards:

- apply knowledge of roots and affixes to infer meaning of new words;
- analyze imagery in literary texts.

No agreement. The following *TCCRS* reading standards have no counterparts in the *TAESB* standards:

- draw and support complex inferences from text to summarize, draw conclusions, and distinguish facts from simple assertions and opinions;
- compare and analyze how generic features are used across texts;
- identify and analyze how an author's use of language appeals to the senses, creates imagery, and suggests mood;
- identify, analyze, and evaluate similarities and differences in how multiple texts present information, argue a position, or relate a theme;
- use reference guides to confirm the meanings of new words or concepts;
- read a wide variety of texts from American, European, and world literatures;
- analyze themes, structures, and elements of myths, traditional narratives, and classical and contemporary literature;
- analyze works of literature for what they suggest about the historical period and cultural contexts in which they were written;
- analyze and compare the use of language in literary works from a variety of world cultures;
- describe insights gained about oneself, others, or the world from reading specific texts;

- analyze the influence of myths, folktales, fables, and classical literature from a variety of world cultures on later literature and film.

Speaking

The *TCCRS* speaking standards are located under the discipline of English/Language Arts. In the *TAESB* standards, speaking is identified as a standard under the English as a Second Language (ESL) content. There were no areas of high agreement.

Moderate agreement. The following *TCCRS* speaking standards were of moderate agreement in the *TAESB* standards:

- participate actively and effectively in group discussions;
- plan and deliver focused and coherent presentations that convey clear and distinct perspectives and demonstrate solid reasoning.

Low agreement. The following *TCCRS* speaking standard was of low agreement in the *TAESB* standards:

- adjust presentation to particular audiences and purposes.

No agreement. The following *TCCRS* speaking standard was of no agreement in the *TAESB* standards:

- participate actively and effectively in one-on-one oral communication situations.

Listening

The *TAESB* standards for listening for English as a second language (ESL) students had counterparts in the *TCCRS* English language arts standards. There were no moderate or low agreements.

High agreement. The following listening standards were of high agreement in the *TAESB* standards:

- interpret a speaker's message; identify the position taken and the evidence in support of that position;
- use a variety of strategies to enhance listening comprehension.

No agreement. The following listening standards were of no agreement in the *TAESB* standards:

- analyze and evaluate the effectiveness of a public presentation;
- listen critically and respond appropriately to presentations;
- listen actively and effectively in one-on-one communication situations;
- listen actively and effectively in group discussions.

Research

The *TCCRS* research standards under English language arts had no counterparts at any level of agreement in *TAESB* standards.

No agreement. The following research standards were of no agreement in the *TAESB* standards:

- formulate research questions;
- explore a research topic;
- refine research topic and devise a timeline for completing work;
- gather relevant sources;
- evaluate the validity and reliability of sources;
- synthesize and organize information effectively;
- design and present an effective product;
- use source material ethically.

Mathematics Standards

Numeric Reasoning

TCCRS and *TAESB* show no moderate or low agreement in numeric reasoning.

High agreement. The following numeric reasoning standards were of high agreement in the *TAESB* standards:

- comparing real numbers;
- define and give examples of complex numbers;
- perform computations with real and complex numbers.

No agreement. The following numeric reasoning standard was of no agreement in the *TAESB* standards:

- estimate and determine reasonableness of solutions in checking for errors.

Algebraic Reasoning

TCCRS and *TAESB* show no high or moderate agreement in algebraic reasoning.

Low agreement. The following algebraic reasoning standards were of low agreement in the *TAESB* standards:

- recognize and use algebraic properties, concepts, procedures, and algorithms to combine, transform, and evaluate expressions;
- recognize and use algebraic properties, concepts, procedures, and algorithms to solve equations, inequalities, and systems of linear equations;
- interpret multiple representations of equations of relationships.

No agreement. The following algebraic reasoning standards were of no agreement in the *TAESB* standards:

- explain and differentiate between expressions and equations;
- explain the difference between the solution set of an equation and the solution set of an inequality;
- translate among multiple representations of equations and relationships.

Geometric Reasoning

The *TCCRS* and *TAESB* had no high agreement on geometric reasoning.

Moderate agreement. The following geometric reasoning standard was of moderate agreement in the *TAESB* standards:

- identify and representing the features of plane and space figures.

Low agreement. The following geometric reasoning standards were of low agreement in the *TAESB* standards:

- make connections between geometry and algebra;
- recognize and apply right triangle relationships including basic trigonometry;
- make connections between geometry, statistics, and probability.

No agreement. The following geometric reasoning standards were of no agreement in the *TAESB* standards:

- make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties;
- identify and apply transformation to figures;
- identify the symmetries of a plane figure;
- use congruence transformations and dilations to investigate congruence, similarity, and symmetries of plane figures;
- make connections between geometry and measurement;
- make and validate geometric conjectures;
- understand that Euclidean geometry is an axiomatic system.

Measurement Reasoning

The *TCCRS* and *TAESB* had no high agreement or moderate agreement on elements related to measurement reasoning.

Low agreement. The following measurement reasoning standard was of low agreement in the *TAESB* standards:

- select and use the appropriate type of unit for the attribute being measured.

No agreement. The following measurement reasoning standards were of no agreement in the *TAESB* standards:

- convert from one measurement system to another;
- convert within a single measurement system;
- find the perimeter and area of two-dimensional figures;
- determine the surface area and volume of three-dimensional figures;
- determine indirect measurement of figures using scale drawings, similar figures, the Pythagorean Theorem, and basic trigonometry;
- compute and use measures of center and spread to describe data;
- apply probabilistic measures to practical situations to make informed decisions.

Probabilistic Reasoning

The *TCCRS* and *TAESB* had no high agreement or moderate agreement on elements related to probabilistic reasoning.

Low agreement. The following probabilistic reasoning standards were of low agreement in the *TAESB* standards:

- determine the nature and the number of elements in a finite sample space;
- compute and interpret the probability of an event and its complement;
- compute and interpret the probability of conditional and compound events;

The probabilistic reasoning section had no areas where there was no agreement.

Statistical Reasoning

The *TCCRS* and *TAESB* had no high agreement or moderate agreement on elements related to statistical reasoning.

Low agreement. The following statistical reasoning standard was of low agreement in the *TAESB* standards:

- analyze data sets using graphs and summary statistics.

No agreement. The following statistical reasoning standards were of no agreement in the *TAESB* standards:

- plan a study;
- determine types of data;
- select and apply appropriate visual representations of data;
- compute and describe summary statistics of data;
- describe patterns and departure from patterns in a set of data;
- make predictions and draw inferences using summary statistics;
- analyze relationships between paired data using spreadsheets, graphing calculators, or statistical software;
- recognize reliability of statistical results.

Functions

The *TCCRS* and the *TAESB* standards for functions show no elements of high agreement, moderate agreement, or low agreement.

No agreement. The following functions standards were of no agreement in the *TAESB* standards:

- recognize whether a relation is a function;
- recognize and distinguish between different types of functions;
- understand and analyze features of a function;
- algebraically construct and analyze new functions;
- apply known function models;
- develop a function to model a situation.

Problem Solving and Reasoning

The *TCCRS* and the *TAESB* standards for problem solving and reasoning show no elements of high agreement or moderate agreement.

Low agreement. The following problem solving and reasoning standard was of low agreement in the *TAESB* standards:

- evaluate the problem-solving process.

No agreement. The following problem solving and reasoning standards were of no agreement in the *TAESB* standards:

- analyze given information;
- formulate a plan or strategy;
- determine a solution;
- justify a solution;
- evaluate the problem-solving process;
- develop and evaluate convincing arguments;
- use various types of reasoning;
- formulate a solution to a real-world situation based on the solution to a mathematical problem;

- use a function to model a real-world situation.

Communication and Representation

The *TCCRS* and the *TAESB* standards for communication and representation show no elements of high agreement or of moderate agreement.

Low agreement. The following communication and representation standards were of low agreement in the *TAESB* standards:

- use mathematical symbols, terminology, and notation to represent given and unknown information in a problem;
- communicate mathematical ideas, reasoning, and their implications using symbols, diagrams, graphs, and words;
- create and use representations to organize, record, and communicate mathematical ideas.

No agreement. The following communication and representation standards were of no agreement in the *TAESB* standards:

- use mathematical language to represent and communicate the mathematical concepts in a problem;
- use mathematics as a language for reasoning, problem solving, making connections, and generalizing;
- model and interpret mathematical ideas and concepts using multiple representations;
- summarize and interpret mathematical information provided orally, visually, or in written form within the given context;
- explain, display, or justify mathematical ideas and arguments using precise mathematical language in written or oral communications.

Connections

The *TCCRS* and the *TAESB* standards for connections show no elements of high, moderate, or low agreement.

No agreement. The following connections standards were of no agreement in the TAESB standards:

- connect and use multiple strands of mathematics in situations and problems;
- connect mathematics to the study of other disciplines;
- use multiple representations to demonstrate links between mathematical and real-world situations;
- understand and use appropriate mathematical models in the natural, physical, and social sciences;
- know and understand the use of mathematics in a variety of careers and professions.

<u>Science Standards</u>

The *TAESB* contains no section on science to correspond with the *TCCRS* science standards, so there are no elements of high, moderate or low agreement. There was low agreement in the scientific applications of mathematics as indicated in the mathematics standards evaluation, however.

Nature of Science: Scientific Ways of Learning and Thinking

No agreement. The following scientific ways of learning and thinking standards were of no agreement in the *TAESB* standards:

- utilize skepticism, logic, and professional ethics in science;
- use creativity and insight to recognize and describe patterns in natural phenomena;
- formulate appropriate questions to test understanding of natural phenomena;

- rely on reproducible observations of empirical evidence when constructing, analyzing, and evaluating explanation of natural events and processes;
- design and conduct scientific investigations in which hypotheses are formulated and tested;
- collaborate on joint projects;
- understand and apply safe procedures in the laboratory and field, including chemical, electrical, and fire safety and safe handling of live or preserved organisms;
- demonstrate skill in the safe use of a wide variety of apparatuses, equipment, techniques, and procedures;
- demonstrate literacy in computer use;
- use computer models, applications, and simulations;
- demonstrate appropriate use of a wide variety of apparatuses, equipment, techniques, and procedures for collecting quantitative and qualitative data;
- use several modes of expression to describe or characterize natural patterns and phenomena. These modes include narrative, numerical, graphical, pictorial, symbolic, and kinesthetic;
- use essential vocabulary of the discipline being studied.

Foundation Skills: Scientific Applications of Mathematics

The *TCCRS* and the *TAESB* standards for scientific applications of mathematics standards show no elements of high or moderate agreement.

Low agreement. The following scientific applications of mathematics standards were of low agreement in the *TAESB* standards:

- understand the real number system and its properties;

- understand ratios, proportions, percentages, and decimal fractions, and translate from any form to any other;
- use proportional reasoning to solve problems;
- understand basic trigonometric principles, including definitions of terms such as sine, cosine, tangent, cotangent, and their relationships to triangles;
- understand basic geometric principles.

No agreement. The following scientific applications of mathematics standards were of no agreement in the *TAESB* standards:

- use exponents and scientific notation;
- simplify algebraic expressions;
- estimate results to evaluating whether a calculated result is reasonable;
- use calculators, spreadsheets, computers, etc., in data analysis;
- carry out formal operations using standard algebraic symbols and formulae;
- represent natural events, processes, and relationships with algebraic expressions and algorithms;
- understand simple vectors, vector notations, and vector diagrams, and carry out simple calculations involving vectors;
- understand that curve drawn on a defined set of axes is fully equivalent to a set of algebraic equations;
- use dimensional analysis in problem solving;
- understand descriptive statistics;
- select and use appropriate Standard International (SI) units and prefixes to express measurements for real-world problems;

- use appropriate significant digits;
- understand and use logarithmic notation.

Foundation Skills: Scientific Applications of Communication

No agreement. The following scientific applications of communication standards were of no agreement in the *TAESB* standards:

- use correcting applications of writing practices in scientific communication;
- read technical and scientific articles to gain understand of interpretations, apparatuses, techniques or procedures, and data;
- set up apparatuses, carry out procedures, and collect specified data from a given set of appropriate instructions;
- recognize scientific and technical vocabulary in the field of study and use this vocabulary to enhance clarity of communication;
- list, use, and give examples of specific strategies before, during, and after reading to improve comprehension;
- prepare and present scientific/technical information in appropriate formats for various audiences;
- use search engines, databases, and other digital electronic tools effectively to locate information;
- evaluate quality, accuracy, completeness, reliability, and currency of information from any source.

Science, Technology, and Society

No agreement. The following science, technology, and society standards were of no agreement in the *TAESB* standards:

- recognize how scientific discoveries are connected to technological innovations;
- understand how scientific research and technology have an impact on ethical and legal practices;
- understand how commonly held ethical beliefs impact scientific research;
- understand the historical development of major theories in science;
- recognize the role of people in important contributions to scientific knowledge.

Cross-Disciplinary Themes

No agreement. The following cross disciplinary theme standards were of no agreement in the *TAESB* standards:

- know modern theories of atomic structure;
- understand the states of matter (solid, liquid, gas) and phase changes among these;
- understand the Laws of Thermodynamics;
- know the processes of energy transfer;
- recognize patterns of change;
- understand that scientists categorize things according to similarities and differences;
- use models to make predictions;
- use scale to relate models and structures;
- demonstrate familiarity with length scales from sub-atomic particles through macroscopic objects.

Biology

No agreement. The following biology standards were of no agreement in the *TAESB* standards:

- know that although all cells share basic features, cells differentiate to carry out specialized functions;
- explain how cells can be categorized into two major types: prokaryotic and eukaryotic, and describe major features that distinguish one from the other;
- describe the structure and function of major sub-cellular organelles;
- describe the major features of mitosis and relate this process to growth and asexual reproduction;
- understand the process of cytokinesis in plant and animal cells and how this process is related to growth;
- know the structure of membranes and how this relates to permeability;
- understand the major categories of biological molecules: lipids, carbohydrates, proteins, and nucleic acids;
- describe the structure and function of enzymes;
- describe the major features and chemical events of photosynthesis;
- describe the major features and chemical events of cellular respiration;
- know how organisms respond to presence or absence of oxygen, including mechanisms of fermentation;
- understand couple reaction processes and describe the role of ATP in energy coupling and transfer;
- know multiple categories of evidence for evolutionary change and how this evidence is used to infer evolutionary relationships among organisms;
- recognize variations in population sizes, including extinction, and describe mechanisms and conditions that produce these variations;

- understand Mendel's laws of inheritance;
- know modifications to Mendel's laws;
- understand the molecular structures and functions of nucleic acids;
- understand simple principles of population genetics and describe characteristics of Hardy-Weinberg population;
- describe the major features of meiosis and relate this process to Mendel's laws of inheritance;
- know ways in which living things can be classified based on each organism's internal and external structure, development, and relatedness of DNA sequences;
- know that organisms possess various structures and processes (feedback loops) that maintain steady internal conditions;
- describe, compare, and contrast structures and processes that allow gas exchange, nutrient uptake and processing, waste excretion, nervous and hormonal regulation, and reproduction in plants, animals, and fungi; give examples of each;
- identify Earth's major biomes, giving their locations, typical climate conditions, and characteristic organisms;
- know patterns of energy flow and material cycling in Earth's ecosystems;
- understand typical forms of organismal behavior;
- know the process of succession.

Chemistry

No agreement. The following chemistry standards were of no agreement in the *TAESB* standards:

- know that physical and chemical properties can be used to describe and classify matter;
- recognize and classify pure substances (elements, compounds) and mixtures;
- summarize the development of atomic theory, understand that models of the atom are used to help understand the properties of elements and compounds;
- know the organization of the periodic table;
- recognize the trends in physical and chemical properties as one moves across a period or vertically through a group;
- characterize ionic bonds, metallic bonds, and covalent bonds. Describe the properties of metals and ionic and covalent compounds;
- classify chemical reactions by type. Describe the evidence that a chemical reaction has occurred;
- describe the properties of acids and bases, and identify the products of a neutralization reaction;
- understand oxidation-reduction reactions;
- understand chemical equilibrium;
- understand energy changes in chemical reactions;
- understand chemical kinetics;
- know formulas for ionic compounds;
- know formulas for molecular compounds;
- understand the mole concept;
- understand the molar relationships in reactions, stoichiometric calculations, and percent yield;

- understand the Law of Conservation of Energy and processes of heat transfer;
- understand energy changes and chemical reactions;
- understand the behavior of matter in its various states: solid, liquid, and gas;
- understand properties of solutions;
- understand principles of ideal gas behavior and kinetic molecular theory;
- apply the concept of partial pressures in a mixture of gases;
- know properties of liquids and solids;
- understand the effect of vapor pressure on changes in state. Explain heating curves and phase diagrams;
- describe intermolecular forces;
- understand the major categories of biological molecules: proteins, carbohydrates, lipids, and nucleic acids;
- understand radioactive decay.

Physics

No agreement. The following physics standards were of no agreement in the *TAESB* standards:

- demonstrate familiarity with length scales from sub-atomic particles through macroscopic objects;
- understand states of matter and their characteristics;
- understand the concepts of mass and inertia;
- understand the concept of density;
- understand the concepts of gravitational force and weight;
- understand how vectors are used to represent physical quantities;

- demonstrate knowledge of vector mathematics using a graphical representation;
- demonstrate knowledge of vector mathematics using a numerical representation;
- understand the fundamental concepts of kinematics;
- understand forces and Newton's Laws;
- understand the concept of momentum;
- understand potential and kinetic energy;
- understand conservation of energy;
- understand the relationship of work and mechanical energy;
- understand rotational kinematics;
- understand the concept of torque;
- apply the concept of static equilibrium;
- understand angular momentum;
- understand pressure in a fluid and its applications;
- understand Pascal's principle;
- understand buoyancy;
- understand Bernoulli's principle;
- understand basic oscillatory motion and simple harmonic motion;
- understand the difference between transverse and longitudinal waves;
- understand wave terminology: wavelength, period, frequency, and amplitude;
- understand the properties and behavior of sound waves;
- understand the basic laws of thermodynamics;
- discuss electric charge and electric force;
- gain qualitative and quantitative understandings of voltage, current, and resistance;

- understand Ohm's Law;
- apply the concept of power to electricity;
- discuss basic DC circuits that include voltage sources and combinations of resistors;
- discuss basic DC circuits that include voltage sources and combinations of capacitors;
- understand magnetic fields and their relationship to electricity;
- relate electricity and magnetism to everyday life;
- know the electromagnetic spectrum;
- understand the wave/particle duality of light;
- understand concepts of geometric optics.

Earth and Space Sciences

No agreement. The following earth and space sciences standards were of no agreement in the *TAESB* standards:

- know the major features and characteristics of atmosphere, geosphere, hydrosphere, and biosphere;
- understand relationships and interactions among of atmosphere, geosphere, hydrosphere, and biosphere;
- possess a scientific understanding of the history of Earth's systems;
- utilize the tools scientists use to study and understand the Earth's systems;
- understand interactions among the sun, Earth, and moon;
- possess a scientific understanding of the formation of the Earth and moon;
- describe the structure and motions of the solar system and its components;
- possess a scientific understanding of the formation of the solar system;
- understand scientific theories for the formation of the universe;

- describe the evidence that supports the current theory of plate tectonic plates;
- describe the motions and interactions of tectonic plates;
- describe the rock cycle and its products;
- describe matter and energy transfer in the Earth's systems;
- give examples of effects of energy transfer within and among systems.

Environmental Science

No agreement. The following environmental science standards were of no agreement in the *TAESB* standards:

- recognize the Earth's systems;
- know the major features of the geosphere and the factors that modify them;
- know the major features of the atmosphere;
- know the major features of the hydrosphere;
- be familiar with Earth's major biomes;
- describe the Earth's major biogeochemical cycles;
- understand energy transformations;
- know the various sources of energy for humans and other biological systems;
- recognize variations in population sizes, including human population and extinction, and describe mechanisms and conditions that produce these variations;
- name and describe major environmental policies and legislation;
- understand the types, uses, and regulations of the various natural resources;
- describe the different uses for land;
- understand the use and consequences of pest management;
- know the different methods used to increase food production;

- understand land and water usage and management practices;
- understand how human practices affect air, water, and soil quality.

Social Studies Standards

The *TAESB* contains no section on social studies to correspond with the *TCCRS* social studies standards, so there are neither high nor moderate agreements. There are some social studies standards of effective communication that contain low agreements with *TAESB* standards in writing and reading.

Interrelated Disciplines and Skills

No agreement. The following interrelated disciplines and skills standards were of no agreement in the *TAESB* standards:

- use the tools and concepts of geography appropriately and accurately;
- analyze the interaction between human communities and the environment;
- analyze how physical and cultural processes have shaped human communities over time;
- evaluate the causes and effects of human migration patterns over time;
- analyze how various cultural regions have changed over time;
- analyze the relationship between geography and the development of human communities;
- examine how and why historians divide the past into eras;
- identify and evaluate sources and patterns of change and continuity across time and place;
- analyze causes and effects of major political, economic, and social changes in the U.S. and world history;

- evaluate different governmental systems and functions;
- evaluate changes in the functions and structures of government across time;
- explain and analyze the importance of civic engagement;
- identify and evaluate the strengths and weaknesses of different economic systems;
- analyze the basic functions and structures of international economics;
- identify different social groups and examine how they form and how and why they form and how and why they sustain themselves;
- define the concept of socialization and analyze the role socialization plays in human development and behavior;
- analyze how social institutions function and meet the needs of society;
- identify and evaluate the sources and consequences of social conflict;
- use a variety of research and analytical tools to explore questions or issues thoroughly and fairly;
- analyze ethical issues in historical, cultural, and social contexts.

Diverse Human Perspectives and Experiences

No agreement. The following diverse human perspectives and experiences standards were of no agreement in the *TAESB* standards:

- define a "multicultural society" and consider both the positive and negative qualities of multiculturalism;
- evaluate the experiences and contributions of diverse groups to multicultural societies;
- explain and evaluate the concepts of race, ethnicity, and nationalism;
- explain and evaluate the concept of gender;

- analyze diverse religious concepts, structures, and institutions around the world;
- evaluate how major philosophical and intellectual concepts influence human behavior or identify;
- explain the concepts of socioeconomic status and stratification;
- analyze how individual and group identities are established and change over time.

Interdependence of Global Communities

No agreement. The following interdependence of global communities standards were of no agreement in the *TAESB* standards:

- distinguish spatial patterns of human communities that exist between or within contemporary political boundaries;
- connect regional or local developments to global ones;
- analyze how and why diverse communities interact and become dependent on each other;
- apply social studies methodologies to compare societies and cultures.

Analysis, Synthesis, and Evaluation of Information

No agreement. The following analysis, synthesis, and evaluation of information standards were of no agreement in the *TAESB* standards:

- situate an informational source in its appropriate contexts;
- evaluate sources from multiple perspectives;
- understand the differences between a primary and secondary source and use each appropriately to conduct research and construct arguments;
- read narrative texts critically;
- read research data critically;

- use established research methodologies;
- explain how historians and other social scientists develop new and competing views of past phenomena;
- gather, organize, and display the results of data and research;
- identify and collect sources;
- construct a thesis that is supported by evidence;
- recognize and evaluate counter-arguments.

Effective Communication

Low agreement. The TAESB has no section on effective communication to compare to this TCCRS section, but there are elements of effective communication in various sections of TAESB that relate to effective communication. The following effective communication standards in the *TCCRS* social studies section have low agreement in the *TAESB* standards:

- identify and analyze the main idea(s) and point(s) of view in sources (*TAESB* standards in reading);
- use conventions of standard written English (*TAESB* standards in writing);
- use appropriate oral communication techniques depending on the context or nature of the interaction (*TAESB* standards for ESL speaking);
- understand and interpret presentations (*TAESB* standards for ESL listening).

No agreement. The following effective communication standard in the *TCCRS* has no agreement in the *TAESB* standards:

- attribute ideas and information to source material materials and authors.

CDS

The *TAESB* contains no section on CDS to correspond with the *TCCRS* section on CDS, so there are no elements of high, moderate or low agreement. However, a review of the *TAESB* writing and reading sections reflect low agreement related to the CDS foundational skills as shown under that section.

Key Cognitive Skills

No agreement. The following CDS key cognitive skills standards in the *TCCRS* have no agreement in the *TAESB* standards:

- engage in scholarly inquiry and dialogue;
- accept constructive criticism and revise personal views when valid evidence warrants;
- consider arguments and conclusions of self and others;
- construct well-reasoned arguments to explain phenomena, validate conjectures, or support positions;
- gather evidence to support arguments, findings, or lines of reasoning;
- support or modify claims based on the results of an inquiry;
- analyze a situation to identify a problem to be solved;
- develop and apply multiple strategies to solve a problem;
- collect evidence and data systematically and directly relate to solving a problem;
- self-monitor learning needs and seek assistance when needed;
- use study habits necessary to manage academic pursuits and requirements;
- strive for accuracy and precision;
- persevere to complete and master tasks;
- work independently;
- work collaboratively;

- attribute ideas and information to source and materials and people;
- evaluate sources for quality of content, validity, credibility, and relevance;
- include the ideas of others and the complexities of the debate, issue, or problem;
- understand and adhere to ethical codes of conduct.

Foundational Skills

Low agreement. Although the TAESB had no CDS foundational skills section to compare with the TCCRS section, there are several low agreement matches to skill sets in the TAESB reading and writing section. The following CDS foundational skills standards in the *TCCRS* reading and writing across the curriculum have low agreement related to disciplines in the *TAESB* standards:

- use effective prereading strategies (*TAESB* reading);
- use of a variety of strategies to understand the meanings of new words (*TAESB* reading);
- identify the intended purpose and audience of the text (*TAESB* reading);
- identify the key information and supporting details (*TAESB* reading);
- adapt reading strategies according to structure of texts (*TAESB* reading);
- write clearly and coherently using standard writing conventions (*TAESB* writing);
- write in a variety of forms for various audiences and purposes (*TAESB* writing);
- compose and revise drafts (*TAESB* writing).

No agreement. The following foundational skills standards in the *TCCRS* have no agreement in the *TAESB* standards:

- analyze textual information critically;
- annotate, summarize, paraphrase, and outline texts when appropriate;

- understand which topics or questions are to be investigated;
- explore a research topic;
- refine research topic based on preliminary research and devise a timeline for completing work;
- evaluate the validity and reliability of sources;
- synthesize and organize information effectively;
- design and present an effective product;
- integrate source material;
- present final product;
- identify patterns or departures from patterns among data;
- use statistical and probabilistic skills necessary for planning an investigation and collecting, analyzing, and interpreting data;
- present analyzed data and communicate findings in a variety of formats;
- use technology to gather information;
- use technology to organize, manage, and analyze information;
- use technology to communicate and display findings in a clear and coherent manner;
- use technology appropriately.

The most significant high and moderate agreement between the two sets of standards is in the English language arts discipline, with the majority of agreement in more basic skills and the least agreement in areas that require critical writing and reading. The gaps between the two sets of mathematics standards are more significant, particularly in sections in which the *TCCRS* address statistical reasoning, functions, problem solving and reasoning, communication and

representation, and connections. The least agreement between the two sets of standards is in science and social science.

Conclusions

The two sets of standards were developed in isolation from one another. The *TAESB*, which were created in 2001 and published in 2004, were intended to serve as exit benchmarks for adult learners completing ESL/ABE/ASE programs, were developed by ABE, ASE, and ESL practitioners, and address two disciplines, English language arts and mathematics. The *TCCRS*, released in 2008, were intended to align secondary and postsecondary content knowledge and skills, and they were developed by secondary teachers and postsecondary faculty in the four disciplines of English language arts, mathematics, science, and social science.

To draw conclusions about the points where the two sets of standards are in high or moderate agreement and in low or no agreement, it is necessary to revisit the guiding questions from the introduction section:

Question 1. Which key content, organizing components, and performance expectations in the *TCCRS* match the strands and benchmarks in the sixth and highest NRS level of the *TAESB*?

Question 2. To what extent do the standards addressed in each document agree on the level and type of knowledge and skills required for students exiting ESL/ABE/ASE and entering postsecondary education?

Question 3. To what extent can the two sets of standards assist educators of adult students in determining when their students are ready to proceed successfully to the next level?

To answer the first question, one must acknowledge that the *TAESB* do not address social science or science content knowledge or skills. English language arts and mathematics are the two disciplines addressed by both sets of standards. The *TCCRS* include a separate

interdisciplinary section, the CDS, that focus on the key cognitive and foundational skills that students need to succeed in postsecondary education; the *TAESB* do, in some cases, address skills contained in the CDS, but those skills are included under either the English language arts or the mathematics disciplines. The conclusion to be drawn in response to the first guiding question is that both sets of standards, *TCCRS* and *TAESB*, address English language arts and mathematics but not consistently at the high or moderate agreement levels.

Regarding question 2, the extent to which the standards addressed in each document agree on the level and type of knowledge and skills required for students exiting ESL/ABE/ASE and entering postsecondary is more complicated. Generally, the strongest agreement between the standards is in English language arts. Significant gaps exist between the two standards in mathematics knowledge and skills.

Question 3, the extent to which the sets of standards can assist educators of adult standards, is addressed in the Recommendations section.

The conclusions drawn from this year-long study comparing the *TCCRS* and the *TAESB* are that the two sets of standards, while they are in agreement for many of the English language arts standards and some mathematics standards, are substantially dissimilar for most of the mathematics section and wholly dissimilar for the science and social science sections. Readers should be reminded that the *TAESB* and the *TCCRS* were developed for different purposes (the former represent ESL/ABE/ASE exit skills and the latter represent postsecondary entry-level knowledge and skills), that the *TAESB* were developed by ESL/ABE/ASE practitioners and the *TCCRS* by discipline-specific secondary teachers and college faculty, and that the two documents were created several years apart and in isolation from each other. Each set of

standards serves a distinct purpose and is valid for how and what it measures. The Appendix details the points of agreement between the two sets of standards.

Recommendations

To prepare adult learners who earn the GED for successful matriculation into postsecondary programs, ABE ESL/ASE programs must acknowledge the gaps between the existing *TAESB* and the *TCCRS* by accepting that the two documents were created for decidedly different purposes and by practitioners and researchers with dissimilar training and backgrounds.

Recognize the Extent of the Gaps

The *TAESB* were created by ABE ESL/ASE practitioners who had knowledge of their own students' skills and academic backgrounds. In general, adult learners who dropped out of high school in 9th or 10th grade do not bring current knowledge about the four content areas covered in the *TCCRS*. If those adult learners have not worked in jobs that required them to use their skills in reading, writing, and mathematics, they will be underprepared for the expectations of college faculty in courses where those skills are necessary to succeed. The adult education practitioners who wrote the *TAESB* document were mindful of the skills and knowledge they saw in their students and wrote with the exit-level demands of the GED exams in mind. If the *TAESB* are to be revised, the practitioners charged with the task should use the forthcoming GED 21st Century Initiative as a guide for targeting exit levels for adult students. The GED 21st Century Initiative, a collaborative effort between the American Council on Education (ACE) and Pearson Publishing, will align with the Common Core State Standards and will prepare GED test takers for career and college expectations. Increasingly, adult students are eager to develop the skills necessary to enter workforce training programs or postsecondary vocational/technical certificate

or academic degree programs. They want and need the flexibility of developing into lifelong learners who are prepared to acquire new skills and knowledge across the lifespan.

The *TCCRS* were developed by vertical teams of secondary teachers and postsecondary faculty who knew the level of skills and knowledge of their students, namely college-going high school students and college undergraduate students. The developers of the *TCCRS* negotiated the gaps in high school exit expectations with postsecondary entry expectations. The *TCCRS* writers did not collaborate with adult educators as they created their discipline-specific standards because the intent of legislation that mandated the *TCCRS* was to align high school and college curriculum via college entry standards; the legislative intent was not to align the GED to college curriculum via college entrance standards.

It is imperative to recognize that each set of standards was created for wholly different purposes and in isolation from one another and that both documents fulfill legitimate requirements for their separate and different purposes. Given the extent of the gaps identified herein, the *TAESB* should be fully redeveloped; it will not be sufficient to simply revise the existing standards. When the *TAESB* are redeveloped, industry accepted processes, procedures and standards should be adhered to closely. Revision of either set of standards without a clear plan and purpose is not recommended.

Address the Gaps

A plan is needed to help adult learners bridge the gap in knowledge and skills if they are to succeed in postsecondary programs, whether they enroll in programs that will result in vocational/technical certificates or academic degrees. One solution to the problem may come from the Educational Policy Implementation Center (EPIC), the Oregon-based research team that led the vertical teams to develop the *TCCRS*. Van der Valk, in a 2011 address to the College and

Career Keystone Conference hosted by Education Service Center Region 20, promoted the recommendations as requirements for adult student success in postsecondary programs:

- Students in adult education need competency in all four of the Dimensions of College and Career Readiness, not just reading and math content.
- The most important single skill adult students can gain is learning how to learn.
- Successful adult education means more than achieving a reading and math score.
- All students will need cognitive and learning strategies, knowledge of how formal learning environments operate and how to get help in those environments.

To close the gaps for adult students, the CDS may serve as a starting point for adult educators to address the "learning how to learn" element to which van der Valk refers. The CDS are practical and manageable for adult educators to use in the classroom. Incorporating the CDS into ESL/ABE/ASE preparation should not pose a significant challenge to adult educators. While they may not have advanced content training in English language arts, mathematics, science, or social science, adult educators can easily teach students the key cognitive and foundational skills. The key cognitive skills include such global educational objectives as teaching students to be intellectually curious, to reason, to solve problems, to adopt and adapt academic behaviors and good work habits, and to value and engage in academic honesty. The foundational skills are less global and focus on study strategy-oriented objectives, such as reading and writing across the curriculum, how to conduct research, how to use data, and how to use technology.

Professional Development

If ESL/ABE/ASE practitioners are to assist their students in making the transition successfully from adult education to postsecondary vocational or academic programs, the

practitioners must have access to high quality, sustained professional development to prepare them for the job.

ESL/ABE/ASE teachers are required to enter the field with a minimum of a bachelor's degree in any discipline. In their first year of employment, adult educators are required to earn 24 hours of professional development credit in the form, predominately, of half-day and one-day workshops provided by one of the eight regional GREAT (Getting Results Educating Adult Texans) Centers or by local program professional development providers. The required 12 or 24 hours of annual professional development also typically address discussions of local policy and procedures. This observation is based on reviews of professional development offerings and anecdotal teacher reports. The topics of the workshops range from conducting assessment with the Test of Adult Basic Education (TABE) or the BEST-Plus exams to state professional development initiatives on working with students with learning disabilities, adult reading strategies, and industry-specific ESL. A number of regional initiatives such as ABE and ESL academies require more than a one-day commitment.

Other than the state initiatives, there is little standardization in the types and quality of the professional development. Only two state wide initiatives address content-specific professional development: a mathematics initiative and the Student Achievement in Reading (STAR) program. There are no state initiatives on social studies or science curriculum and instruction, and very little on how to teach academic writing. No state-wide initiatives currently address bridging the gap between GED-level knowledge and skills and those required for students to be college-ready in English language arts, mathematics, science, or social science. Another state-wide initiative is the Texas Adult Education Credential Project. The project requires teachers to participate in approved professional development, to implement the new skills or knowledge in

the classroom, to evaluate the effectiveness of the implementation, and to write and submit critical reflections in which the teacher evaluates the process.

If Texas adult educators are expected to prepare their ESL/ABE/ASE students for success in postsecondary vocational or academic programs, state policymakers must address the professional development requirements for educators who work with ESL/ABE/ASE students who are planning to make the transition into postsecondary education. Professional development must address, at a minimum, both the necessary basic skills and the necessary discipline-specific knowledge to prepare adult educators for the job.

The Texas Success Initiative (TSI), currently the gatekeeper for students accessing postsecondary credit programs through basic skills assessment instruments such as the THEA, COMPASS, and Accuplacer, must be part of the discussion on closing the gaps for adult educator professional development. ESL/ABE/ASE educators need to understand the skills levels required in reading, writing, and mathematics if students are to meet the challenge of entering postsecondary education with the skills necessary to succeed. Adult educators must be given the opportunity to increase their own instructional skills to be prepared to teach reading, writing, and mathematics at the college-entry level.

Policymakers must address the issues related to minimum requirements for adult educators entering the field. In adult education classrooms, teachers seldom have the luxury of teaching solely in the discipline in which they hold a bachelor's degree. It is common for ESL/ABE/ASE teachers to teach all subjects regardless of their level of academic preparation in those disciplines. For those teachers who work with students at the GED level, professional development requirements should include in-depth specialization in one of the four core subjects (English language arts, mathematics, science, and social studies). This level of specialization will

not be obtained through workshops taught a mere 12 hours per year (to meet the current requirement of 12 hours of professional development per year). High quality, sustained professional development in the four disciplines delivered through intensive academies or graduate courses may be the solution, but new policies regarding more complex and demanding professional development may not be well received by practitioners in the field and will be more expensive to deliver compared to current professional development offerings.

Collaboration with Postsecondary Developmental Education and College Credit Programs

Adult educators are often disconnected professionally from their postsecondary colleagues. Collaborations among the three groups of educators – adult educators, developmental educators, and college credit instructors – will be necessary if the three groups are to work together in assisting adult non-traditional students to make the transition from adult education to postsecondary education. A common goal in adult education today is to assure that ESL/ABE/ASE students avoid developmental education classes as an entry point into college, often without regard to the struggle those students will face when they attempt to master new content knowledge concurrently with gaining or refining basic skills of academic reading, writing, and mathematics. The expectation that adult students should avoid developmental education may be unattainable when approximately 50 percent of Texas students who graduate from accredited high schools with four years of English, science, social science, and mathematics are required to enroll in one or more developmental classes when they enroll in two-year colleges, and 31percent traditionally prepared high school graduates who enroll in four-year colleges need one or more developmental education classes. GED completers are very likely to need at least one level of developmental education in all three areas of reading, writing, and mathematics. Collaborations, including shared professional development, among the three

groups of educators would help everyone understand the demands that programs place on students at all three levels. Recreating an ESL/ABE/ASE version of the *TCCRS* vertical teams with the goal of revising the *TAESB* would be an unwieldy and expensive endeavor for such a small student population, but bringing adult, developmental, and college credit educators together to talk about strategies for helping adult students prepare for college success could be a good starting point.

Texas College and Career Readiness Standards									ABE/ASE Content Standards and Benchmarks					ESL Content Standards and Benchmarks				
	Key Content		**Organizing Component**		**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**	**Standard**		**Strand**		**Benchmark**
I.	**Writing**	A.	Compose a variety of texts that demonstrate clear focus, the logical development of ideas in well-organized paragraphs, and the use of appropriate language that advances the author's purpose.	1	Determine effective approaches, forms, and rhetorical techniques that demonstrate understanding of the writer's purpose and audience.	1.6				**Writing**	1 of 5	Determine Purpose	1.6	Determine the purpose and audience for communicating in writing independently.	**Writing**	1 of 5	Determine Purpose	1.6	1.6 Write for a self-determined purpose and audience for communicating in writing independently.
				2	Generate ideas and gather information relevant to the topic and purpose, keeping careful records of outside sources.		2.6			**Writing**	2 of 5	Organize Information	2.6	Independently plan and organize information using a variety of resources and strategies to Produce a legible and comprehensible draft.	**Writing**	2 of 5	Organize Information	2.6	2.6 Organize ideas using multiple planning and pre-writing strategies to produce a clear and comprehensible document.
				3	Evaluate relevance, quality sufficiency, and depth of preliminary ideas and information, organize material generated, and formulate a thesis.			2.6		**Writing**	2 of 5	Organize Information	2.6	Independently plan and organize information using a variety of resources and strategies to Produce a legible and comprehensible draft.	**Writing**	2 of 5	Organize Information	2.6	2.6 Organize ideas using multiple planning and pre-writing strategies to produce a clear and comprehensible document.
				4	Recognize the importance of revision as the key ideas and organize them more logically effectively, and draw the reader to the author's purpose.	4.6 5.6				**Writing**	4 of 5	Revise Writing	4.6	Seek out, describe, and work through problems posed by the writing task, including revising to improve * Organization and precision of word choice, * The logic and strength of arguments, * Personal voice, * The tone or style to address the audience, purpose, and formality of the context, * Grammar, and * Sentence structure.	**Writing**	4 of 5	Revise Content of Writing	4.6	4.6 Revise writing independently to check for coherence and progression of ideas.
										Writing	5 of 5	Edit Writing	5.6	Undertake multiple re-readings of text in order to make comprehensive edits for * Grammar: verb tenses including past perfect progressive and future perfect progressive tenses, past unreal conditionals, modals in past tense, * Varied sentence structures with phrases and clauses, * The active voice, * Parallel structures, and * Spelling, punctuation, capitalization, language usage	**Writing**	5 of 5	Edit Grammar and Mechanics of Writing	5.6	5.6 Use multiple strategies to edit self-generated text independently.
				5	Edit writing for proper voice, tense, and syntax, assuring that it conforms to Standard English, when appropriate.	4.6				**Writing**	4 of 5	Revise Writing	4.6	Seek out, describe, and work through problems posed by the writing task, including revising to improve * Organization and precision of word choice, * The logic and strength of arguments, * Personal voice, * The tone or style to address the audience, purpose, and formality of the context, * Grammar, and * Sentence structure.	**Writing**	4 of 5	Revise Content of Writing	4.6	4.6 Revise writing independently to check for coherence and progression of ideas.

Texas College and Career Readiness Standards									ABE/ASE Content Standards and Benchmarks					ESL Content Standards and Benchmarks				
	Key Content		Organizing Component		Performance expectations	HA	MA	LA	NA	Standard		Strand		Benchmark	Standard		Strand		Benchmark
II.	Reading	A.	Locate explicit textual information, draw complex inferences, and analyze and evaluate the information within and across texts of varying lengths.	1	Use effective reading strategies to determine a written work's purpose and intended audience.	1.6 6.6				Reading	1 of 6	Determine Purpose	1.6	Determine the appropriate purpose for reading a variety of materials.	Reading	1 of 6	Purpose	1.6	1.6 Read for real-life purposes by independently selecting appropriate materials.
										Reading	6 of 6	Analyze and Organize Information	6.6	Gain underlying meaning of specialized text using a wide range of strategies such as recognizing unstated assumptions, applying relevant information to multiple scenarios, summarizing, synthesizing information from multiple texts, and interpreting figurative language.	Reading	6 of 6	Monitor Reading	6.6	6.6 Self-monitor accuracy in comprehension using multiple advanced strategies.
				2	Use text features and graphics to form an overview of informational texts and to determine where to locate information.	4.6				Reading	4 of 6	Locate Information	4.6	Identify both directly stated and implied information using a variety of strategies to guide reading of long and varied texts and graphic sources (e.g., recognize bias and propaganda).	Reading	4 of 6	Locating Information	4.6	4.6 Locate information in a variety of text and graphs using increasingly complex strategies.
				3	Identify explicit and implicit textual information including main ideas and author's purpose.	5.6				Reading	5 of 6	Build Comprehension	5.6	Independently monitor and build comprehension strategies with a variety of texts.	Reading	5 of 6	Comprehension	5.6	5.6 Comprehend, interpret, and draw conclusions in a variety of more complex texts and documents.
				4	Draw and support complex inferences from text to summarize, draw conclusions, and distinguish facts from simple assertions and opinions.				x										
				5	Analyze the presentation of information and the strength and quality of evidence used by the author, and judge the coherence and logic of the presentation and the credibility of an argument.	6.6				Reading	6 of 6	Analyze and Organize Information	6.6	Gain underlying meaning of specialized text using a wide range of strategies such as recognizing unstated assumptions, applying relevant information to multiple scenarios, summarizing, synthesizing information from multiple texts, and interpreting figurative language.	Reading	6 of 6	Monitor Reading	6.6	6.6 Self-monitor accuracy in comprehension using multiple advanced strategies.
				6	Analyze imagery in literary texts.		6.6			Reading	6 of 6	Analyze and Organize Information	6.6	Gain underlying meaning of specialized text using a wide range of strategies such as recognizing unstated assumptions, applying relevant information to multiple scenarios, summarizing, synthesizing information from multiple texts, and interpreting figurative language.	Reading	6 of 6	Monitor Reading	6.6	6.6 Self-monitor accuracy in comprehension using multiple advanced strategies.
				7	Evaluate the use of both literal and figurative language to inform and shape the perceptions of readers.	6.6				Reading	6 of 6	Analyze and Organize Information	6.6	Gain underlying meaning of specialized text using a wide range of strategies such as recognizing unstated assumptions, applying relevant information to multiple scenarios, summarizing, synthesizing information from multiple texts, and interpreting figurative language.	Reading	6 of 6	Monitor Reading	6.6	6.6 Self-monitor accuracy in comprehension using multiple advanced strategies.
				8	Compare and analyze how generic features are used across texts.				x										
				9	Identify and analyze the audience, purpose, and message of an informational or persuasive text.	1.6				Reading	1 of 6	Determine Purpose	1.6	Determine the appropriate purpose for reading a variety of materials.	Reading	1 of 6	Purpose	1.6	1.6 Read for real-life purposes by independently selecting appropriate materials.
				10	Identify and analyze how an author's use of language appeals to the senses, creates imagery, and suggests mood.				x										
				11	Identify, analyze, and evaluate similarities and differences in how multiple texts present information, argue a position, or relate a theme.				x										
		B.	Understand new vocabulary and concepts and use them accurately in reading, speaking, and writing.	1	Identify new words and concepts acquired through study of their relationships to other words and concepts.		3.6 6.6			Reading	3 of 6	Vocabulary Development	3.6	Demonstrate familiarity with specialized content vocabulary in complex documents and literature (e.g. science, social studies, and literature).	Reading	3 of 6	Vocabulary and Language Structure	3.6	3.6 Demonstrate increased knowledge of everyday and some specialized vocabulary in preparation for transition to other educational programs.
										Reading	6 of 6	Analyze and Organize Information	6.6	Gain underlying meaning of specialized text using a wide range of strategies such as recognizing unstated assumptions, applying relevant information to multiple scenarios, summarizing, synthesizing information from multiple texts, and interpreting figurative language.	Reading	6 of 6	Monitor Reading	6.6	6.6 Self-monitor accuracy in comprehension using multiple advanced strategies.
				2	Apply knowledge of roots and affixes to infer the meanings of new words.			4.6		Reading	4 of 6	Locate Information	4.6	Identify both directly stated and implied information using a variety of strategies to guide reading of long and varied texts and graphic sources (e.g., recognize bias and propaganda).	Reading	4 of 6	Locating Information	4.6	4.6 Locate information in a variety of text and graphs using increasingly complex strategies.
				3	Use reference guides to confirm the meanings of new words or concepts.			4.6		Reading	4 of 6	Locate Information	4.6	Identify both directly stated and implied information using a variety of strategies to guide reading of long and varied texts and graphic sources (e.g., recognize bias and propaganda).	Reading	4 of 6	Locating Information	4.6	4.6 Locate information in a variety of text and graphs using increasingly complex strategies.

Texas College and Career Readiness Standards										ABE/ASE Content Standards and Benchmarks					ESL Content Standards and Benchmarks				
	Key Content		Organizing Component		Performance expectations	HA	MA	LA	NA	Standard		Strand		Benchmark	Standard		Strand		Benchmark
		C.	Describe, analyze, and evaluate information within and across literary and other texts from a variety of cultures and historical periods.	1	Read a wide variety of texts from American, European, and world literatures.				x										
				2	Analyze themes, structures, and elements of myths, traditional narratives, and classical and contemporary literature.				x										
				3	Analyze works of literature for what they suggest about the historical period and cultural contexts in which they were written.				x										
				4	Analyze and compare the use of language in literary works from a variety of world cultures.				x										
		D.	Explain how literary and other texts evoke personal experience and reveal character in particular historical circumstances.	1	Describe insights gained about oneself, others, or the world from reading specific texts.				x										
				2	Analyze the influence of myths, folktales, fables, and classical literature from a variety of world cultures on later literature and film.				x										
III.	**Speaking**	A.	Understand the elements of communication both in informal group discussions and formal presentations (e.g., accuracy, relevance, rhetorical features, and organization of information).	1	Understand how style and content of spoken language varies in different contexts and influences the listener's understanding.			3.6							**Speaking**	3 of 5	Monitor Communication	3.6	3.6 Use complex strategies to frequently monitor communication with accuracy.
				2	Adjust presentation (delivery, vocabulary, length) to particular audiences and purposes.			3.6							**Speaking**	3 of 5	Monitor Communication	3.6	3.6 Use complex strategies to frequently monitor communication with accuracy.
		B.	Develop effective speaking styles for both group and one-on-one situations.	1	Participate actively and effectively in one-on-one oral communication situations.				x										
				2	Participate actively and effectively in group discussions.				x										
				3	Plan and deliver focused and coherent presentations that convey clear and distinct perspectives and demonstrate solid reasoning.		4.6								**Speaking**	4 of 5	Pronunciation	4.6	4.6 Produce spontaneous comprehensible oral language independently with appropriate control of pronunciation, rhythm, stress, and intonation.
IV.	**Listening**	A.	Apply listening skills as an individual and as a member of a group in a variety of settings (e.g., lectures, discussions, conversations, team projects, presentations, interviews).	1	Analyze and evaluate the effectiveness of a public presentation.	1.6									**Listening**	1 of 5	Attend to Oral Communication	1.6	1.6 Understand and respond to extended explanations and narratives, detailed instructions, and complex conversations in varied contexts where language is not adjusted for English language learners.
				2	Interpret a speaker's message; identify the position taken and the evidence in support of that position.	4.6									**Listening**	4 of 5	Develop Comprehension Strategies	4.6	4.6 Use a wide range of strategies to repair gaps in understanding, taking into account implied meaning, the level of formality of the situation, and other socio-cultural factors.
				3	Use a variety of strategies to enhance listening comprehension (e.g., focus attention on message, monitor message for clarity and understanding, provide verbal and nonverbal feedback, note cues such as change of pace or particular words that indicate a new point is about to be made, select and organize key information).	5.6									**Listening**	5 of 5	Recognize Cultural Conventions of Speech	5.6	5.6 Use knowledge of a wide range of more complex cultural conventions to understand oral communication.
		B.	Listen effectively in informal and formal situations.	1	Listen critically and respond appropriately to presentations.	5.6									**Listening**	5 of 5	Recognize Cultural Conventions of Speech	5.6	5.6 Use knowledge of a wide range of more complex cultural conventions to understand oral communication.
				2	Listen actively and effectively in one-on-one communication situations.				x										
				3	Listen actively and effectively in group discussions.				x										
V.	**Research**	A.	Formulate topic and questions.	1	Formulate research questions.				x										
				2	Explore a research topic.				x										
				3	Refine research topic and devise a timeline for completing work.				x										
		B.	Select information from a variety of sources.	1	Gather relevant sources.				x										
				2	Evaluate the validity and reliability of sources.				x										
				3	Synthesize and organize information effectively.				x										
		C.	Produce and design a document.	1	Design and present an effective product.				x										
				2	Use source material ethically.				x										

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks					ESL Content Standards and Benchmarks				
Key Content	Organizing Component	Performance expectations	HA	MA	LA	NA	Standard		Strand		Benchmark	Standard		Strand		Benchmark
							Texas Adult Education Standards and Benchmarks with NO match in CCRS					**Texas Adult Education Standards and Benchmarks with NO match in CCRS**				
							ABE/ASE Content Standards and Benchmarks					ESL Content Standards and Benchmarks				
							Standard		Strand		Benchmark	Standard		Strand		Benchmark
							Writing	3 of 5	Present Information	3.6	Convey ideas in medium length, well-sequenced, and detailed text with appropriate voice, tone, rhetorical forms and style, suitable for a variety of audiences by Appropriately using varied and descriptive word choices including colloquialisms, and cultural references and Appropriately using a variety of sentence length, structure, and complexity (including those reflecting logical relations).	Writing	3 of 5	Present Information	3.6	3.6 Convey ideas coherently with several supporting facts, details, appropriate vocabulary, and examples, using a variety of simple and complex sentence structures.
							Writing	5 of 5	Edit Writing	5.6	Undertake multiple re-readings of text in order to make comprehensive edits for * Grammar: verb tenses including past perfect progressive and future perfect progressive tenses, past unreal conditionals, modals in past tense, * Varied sentence structures with phrases and clauses, * The active voice, * Parallel structures, and * Spelling, punctuation, capitalization, language usage	Writing	5 of 5	Edit Grammar and Mechanics of Writing	5.6	5.6 Use multiple strategies to edit self-generated text independently.
							Reading	2 of 6	Decode and Recognize Words	2.6	Recognize and interpret terms, signs, symbols, acronyms, and abbreviations independently.	Reading	2 of 6	Decoding	2.6	2.6 Recognize and use multiple decoding strategies to read with fluency.
												Speaking	1 of 5	Vocabulary for Communication	1.6	1.6 Use complex vocabulary and phrases (including idioms) in familiar and unfamiliar situations.
												Speaking	2 of 5	Grammar Usage	2.6	2.6 Demonstrate consistent control of most grammar conventions and complex sentences in authentic communication.
												Listening	2 of 5	Recognize Grammar Usage	2.6	2.6 Understand highly complex sentences used in speech, including the integration of most grammatical forms.
												Listening	3 of 5	Attend to Pronunciation	3.6	3.6 Begin to distinguish regional and non-native pronunciation of sounds in words to determine meaning.

	Texas College and Career Readiness Standards									ABE/ASE Content Standards and Benchmarks				
	Key Content		**Organizing Component**		**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
I.	**Numeric reasoning**	A.	Number Representation	1	Compare Real Numbers	1.6				Use Math to Solve Problems and Communicate for ABE/ASE	1 of 14	Recognize and Compare Numbers	1.6	Compare, convert and order non-equivalent forms of commonly used fractions, decimals, and percents.
				2	Define and give examples of complex numbers	4.6				Use Math to Solve Problems and Communicate for ABE/ASE	4 of 14	Application of Mathematical Operations	4.6	Use four basic operations with exponents, including addition and subtractions of like terms and multiplication and division of monomials.
		B.	Number operations	1	Perform computations with real and complex numbers		4.6			Use Math to Solve Problems and Communicate for ABE/ASE	4 of 14	Application of Mathematical Operations	4.6	Use four basic operations with exponents, including addition and subtractions of like terms and multiplication and division of monomials.
		C.	Number sense and number concepts	1	Use estimation to check for errors and reasonableness of solutions		14.6			Use Math to Solve Problems and Communicate for ABE/ASE	14 of 14	Rounding and Estimation	14.4	Apply the concept of rounding and estimation to solve multi-step problems.
II.	**Algebraic Reasoning**	A.	Expressions and equations	1	Explain and differentiate between expressions and equations using words such as *"solve" "evaluate,"* and *"simplify"*				x					
			Manipulating expressions	2	Recognize and use algebraic (field) properties, concepts, procedures, and evaluate expressions (e.g., polynomials, radicals, rational expressions)			1.6		Use Math to Solve Problems and Communicate for ABE/ASE	1 of 14	Recognize and Compare Numbers	1.6	Compare, convert and order non-equivalent forms of commonly used fractions, decimals, and percents.
			Solving equations, inequalities, and systems of equations	1	Recognize and use algebraic (field) properties, concepts, procedures, and algorithms to solve equations, inequalities, and systems of linear equations.			12.6		Use Math to Solve Problems and Communicate for ABE/ASE	12 of 14	Order of Operations and Linear Equations	12.6	(a) Solve linear equations with one variable using strategies such as the distributive property and/or transposition. (b) Add and subtract polynomials. (c) Factor binomials and trinomials using strategies such as greatest common factor, difference of two squares, and/or x2+ bx + c form.
				2	Explain the difference between the solution set of an equation and the solution set of an inequality.				x					
			Representations	1	Interpret multiple representations of equations and relationships.			10.6		Use Math to Solve Problems and Communicate for ABE/ASE	10 of 14	Graphs and Charts	10.6	Interpret, represent, and identify trends and/or make inferences and draw conclusions from complex graphs, schedules, tables, and diagrams.
				2	Translate among multiple representations of equations and relationships.			12.6		Use Math to Solve Problems and Communicate for ABE/ASE	12 of 14	Order of Operations and Linear Equations	12.6	(a) Solve linear equations with one variable using strategies such as the distributive property and/or transposition. (b) Add and subtract polynomials. (c) Factor binomials and trinomials using strategies such as greatest common factor, difference of two squares, and/or x2+ bx + c form.

	Texas College and Career Readiness Standards									ABE/ASE Content Standards and Benchmarks				
	Key Content		**Organizing Component**		**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
III.	**Geometric Reasoning**	A.	Figures and their properties	1	Identify and represent the features of plane and space figures		7.6							
				2	Make, test, and use conjectures about one-, two-, and three-dimensional figures and their properties				x					
				3	Recognize and apply right triangle relationships				x					
		B.	Transformations and symmetry	1	Identify and apply transformations to figures.				x					
				2	Identify the symmetries of a plane figure.				x					
				3	Use congruence transformations and dilations to investigate congruence, similarity, and symmetries of plane figures.				x					
		C.	Connections between geometry and other mathematical content strands	1	Make connections between geometry and algebra.			10.6		Use Math to Solve Problems and Communicate for ABE/ASE	10 of 14	Graphs and Charts	10.6	Interpret, represent, and identify trends and/or make inferences and draw conclusions from complex graphs, schedules, tables, and diagrams.
				2	Make connections between geometry, statistics, and probability.			9.6		Use Math to Solve Problems and Communicate for ABE/ASE	9 of 14	Probabilities	9.6	Use probabilities with dependent events to predict outcomes.
				3	Make connections between geometry and measurement.				x					
		D.	Logic and reasoning in geometry	1	Make and validate geometric conjectures.				x					
				2	Understand that Euclidean geometry is an axiomatic system.				x					
IV.	**Measurement Reasoning**	A.	Measurement involving physical and natural attributes	1	Select or use the appropriate type of unit for the attribute being measured			6.6		Use Math to Solve Problems and Communicate for ABE/ASE	6 of 14	Measurements	6.6	Apply appropriate units and instruments of length, weight, volume, time, and temperature to solve a variety of problems.
		B.	Systems of measurement	1	Convert from one measurement system to another.				x					
					Convert within a single measurement system.				x					
		C.	Measurement involving geometry and algebra	1	Find the perimeter and area of two-dimensional figures				x					
				2	Determine the surface area and volume of three-dimensional figures.				x					
				3	Determine indirect measurements of figures using scale drawings, similar figures, the Pythagorean Theorem, and basic trigonometry.				x					
		D.	Measurement involving statistics and probability	1	Compute and use measures of center and spread to describe data.				x					
				2	Apply probabilistic measures to practical situations to make an informed decision.				x					

	Texas College and Career Readiness Standards									ABE/ASE Content Standards and Benchmarks				
	Key Content		**Organizing Component**		**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
V.	**Probabilistic Reasoning**	A.	Counting principles	1	Determine the nature and the number of elements in a finite sample space.			9.6		Use Math to Solve Problems and Communicate for ABE/ASE	9 of 14	Probabilities	9.6	Use probabilities with dependent events to predict outcomes.
		B.	Computation and interpretation of probabilities	1	Compute and interpret the probability of an event and its complement.			9.6		Use Math to Solve Problems and Communicate for ABE/ASE	9 of 14	Probabilities	9.6	Use probabilities with dependent events to predict outcomes.
				2	Compute and interpret the probability of conditional and compound events.			9.6		Use Math to Solve Problems and Communicate for ABE/ASE	9 of 14	Probabilities	9.6	Use probabilities with dependent events to predict outcomes.
VI.	**Statistical Reasoning**	A.	Data collection	1	Plan a study.				x					
		B.	Describe data	1	Determine types of data.				x					
				2	Select and apply appropriate visual representations of data.				x					
				3	Compute and describe summary statistics of data				x					
				4	4. Describe patterns and departure from patterns in a set of data.				x					
		C.	Read, analyze, interpret, and draw conclusions from data	1	Make predictions and draw inferences using summary statistics.				x					
				2	Analyze data sets using graphs and summary statistics.			10.6		Use Math to Solve Problems and Communicate for ABE/ASE	10 of 14	Graphs and Charts	10.6	Interpret, represent, and identify trends and/or make inferences and draw conclusions from complex graphs, schedules, tables, and diagrams.
				3	Analyze relationships between paired data using spreadsheets, graphing calculators, or statistical software.				x					
				4	Recognize reliability of statistical results.				x					
VII.	**Functions**	A.	Recognition and representation of functions	1	Recognize whether a relation is a function.				x					
				2	Recognize and distinguish between different types of functions.				x					
		B.	Analysis of functions	1	Understand and analyze features of a function.				x					
				2	Algebraically construct and analyze new functions.				x					
		C.	Model real world situations with functions	1	Apply known function models.				x					
				2	Develop a function to model a situation.				x					

	Texas College and Career Readiness Standards									ABE/ASE Content Standards and Benchmarks				
	Key Content		**Organizing Component**		**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
VIII.	**Problem Solving and Reasoning**	A.	Mathematical problem solving	1	Analyze given information.				x					
				2	Formulate a plan or strategy.				x					
				3	Determine a solution.				x					
				4	Justify the solution.				x					
				5	Evaluate the problem-solving process.			12.6		Use Math to Solve Problems and Communicate for ABE/ASE	12 of 14	Order of Operations and Linear Equations	12.6	(a) Solve linear equations with one variable using strategies such as the distributive property and/or transposition. (b) Add and subtract polynomials. (c) Factor binomials and trinomials using strategies such as greatest common factor, difference of two squares, and/or x2+ bx + c form.
		B.	Logical reasoning	1	Develop and evaluate convincing arguments.				x					
				2	Use various types of reasoning.				x					
		C.	Real world problem solving	1	Formulate a solution to a real world situation based on the solution to a mathematical problem.				x					
				2	Use a function to model a real world situation.				x					
				3	Evaluate the problem-solving process.				x					
IX.	**Communication and Representation**	A.	Language, terms, and symbols of mathematics	1	Use mathematical symbols, terminology, and notation to represent given and unknown information in a problem.			2.6		Use Math to Solve Problems and Communicate for ABE/ASE	2 of 14	Mathematical Symbols	2.6	Identify and use mathematical symbols (square root of n, [ ], { }) and words that represent those symbols. (b) Understand the meaning of absolute value. (e.g. |-8| =8).
				2	Use mathematical language to represent and communicate the mathematical concepts in a problem.				x					
				3	Use mathematics as a language for reasoning, problem solving, making connections, and generalizing.				x					
		B.	Interpretation of mathematical work	1	Model and interpret mathematical ideas and concepts using multiple representations.				x					
				2	Summarize and interpret mathematical information provided orally, visually, or in written form within the given context.				x					
		C.	Presentation and representation of mathematical work	1	Communicate mathematical ideas, reasoning, and their implications using symbols, diagrams, graphs, and words.			2.6 12.6		Use Math to Solve Problems and Communicate for ABE/ASE	2 of 14	Mathematical Symbols	2.6	Identify and use mathematical symbols (square root of n, [ ], { }) and words that represent those symbols. (b) Understand the meaning of absolute value. (e.g. |-8| =8).
										Use Math to Solve Problems and Communicate for ABE/ASE	12 of 14	Order of Operations and Linear Equations	12.6	(a) Solve linear equations with one variable using strategies such as the distributive property and/or transposition. (b) Add and subtract polynomials. (c) Factor binomials and trinomials using strategies such as greatest common factor, difference of two squares, and/or x2+ bx + c form.
				2	Create and use representations to organize, record, and communicate mathematical ideas.			2.6 10.6		Use Math to Solve Problems and Communicate for ABE/ASE	2 of 14	Mathematical Symbols	2.6	Identify and use mathematical symbols (square root of n, [ ], { }) and words that represent those symbols. (b) Understand the meaning of absolute value. (e.g. |-8| =8).
										Use Math to Solve Problems and Communicate for ABE/ASE	10 of 14	Graphs and Charts	10.6	Interpret, represent, and identify trends and/or make inferences and draw conclusions from complex graphs, schedules, tables, and diagrams.

	Texas College and Career Readiness Standards									ABE/ASE Content Standards and Benchmarks				
	Key Content		**Organizing Component**		**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
				3	Explain, display, or justify mathematical ideas and arguments using precise mathematical language in written or oral communications.				x					

	Texas College and Career Readiness Standards									ABE/ASE Content Standards and Benchmarks				
	Key Content		**Organizing Component**		**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
X.	**Connections**	A.	Connections among the strands of mathematics	1	Connect and use multiple strands of mathematics in situations and problems.				x					
				2	Connect mathematics to the study of other disciplines.				x					
		B.	Connections of mathematics to nature, real world situations, and everyday life	1	Use multiple representations to demonstrate links between mathematical and real world situations.				x					
				2	Understand and use appropriate mathematical models in the natural, physical, and social sciences.				x					
				3	Know and understand the use of mathematics in a variety of careers and professions.				x					

Texas Adult Education Standards and Benchmarks with NO match in CCRS

Standard		Strand		Benchmark
Use Math to Solve Problems and Communicate for ABE/ASE	3 of 14	Number Line and Grids	3.6	Find slope and distance on a coordinate grid
Use Math to Solve Problems and Communicate for ABE/ASE	5 of 14	Currency	5.6	Count and make change using all U.S. coins and currency. (b) Model meanings of multiplication and division (inverse operations) using facts through 12 x 1
Use Math to Solve Problems and Communicate for ABE/ASE	7 of 14	Area, Perimeters, and Angles	7.6	Use basic trigonometric functions - sine, cosine, and tangent.
Use Math to Solve Problems and Communicate for ABE/ASE	8 of 14	Using Ratios, Proportions, and Percents	8.6	Use ratios, proportions, and percents to solve multi-step, algebraic problems
Use Math to Solve Problems and Communicate for ABE/ASE	11 of 14	Averages	11.5	Find mean, range, median, and mode.
Use Math to Solve Problems and Communicate for ABE/ASE	13 of 14	Patterns and Sequences	13.6	Determine the missing terms from arithmetic and/or geometric sequences

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
I. Nature of Science: Scientific Ways of Learning and Thinking	A. Cognitive skills in science	1. Utilize skeptiscism,locgic and professional ethics in science.				x					
		2. Use creativity and insignt to recognize and describe patterns in natural phenomena				x					
		3. Forumlate appropriate questions to test understanding of natural phenomena.				x					
		4. Rely on repoductible observations of empirical evidence when constructing, analyzing and evaluating explanations of antural events and processes.				x					
	B. Scientific inquiry	1. Design and conduct scientific investigations in which hypotheses are formulated and tested				x					
	C. Collaborative and safe working places	1. Collaborate on joint projects				x					
		2. Understand and apply safe procedures in the laboratory and field, including chemical, electrical, and fire safety and safe handling of live or preserved organisms				x					
		3. Demonstrate skill in the safe use of a wide variety of apparatuses, equipment, techniques, and procedures.				x					
	D. Current scientific technology	1. Demonstrate literacy in computer use				x					
		2. Use computer models, applications, and simulations				x					
		3. Demonstrate appropriate use of a wide variety of apparatuses, equipment, techniques, and procedures for collecting quantitative and qualitative data.				x					
	E. Effective communication of scientific information	1. Use several modes of expression to describe or characterize natural patterns and phenomena. These modes of expression include narrative, numerical, graphical, pictoral, symbolic, and kinesthenic				x					
		2. Use essential vocabulary of the discipline being studied				x					
II. Foundation Skills: Scientific Applications of Mathematics	A. Basic mathematic conventions	1. Understand the real number system and its properties.			1.6 4.6	x	Use **Math** to Solve Problems and Communicate for ABE/ASE	1 of 14	Recognize and Compare Numbers	1.6	Compare, convert and order non-equivalent forms of commonly used fractions, decimals, and percents.
							Use **Math** to Solve Problems and Communicate for ABE/ASE	4 of 14	Application of Mathematical Operations	4.6	Use four basic operations with exponents, including addition and subtractions of like terms and multiplication and division of monomials.
		2. Use exponents and scientific notation.				x					
		3. Understand ratios, proportions, percentages, and decimal fractions, and translate from any form to any other.			1.6 8.6	x	Use **Math** to Solve Problems and Communicate for ABE/ASE	1 of 14	Recognize and Compare Numbers	1.6	Compare, convert and order non-equivalent forms of commonly used fractions, decimals, and percents.
							Use **Math** to Solve Problems and Communicate for ABE/ASE	8 of 14	Using Ratios, Proportions, and Percents	8.6	Use ratios, proportions, and percents to solve multi-step, algebraic problems
		4. Use proportional reasoning to solve problems.			8.6		Use **Math** to Solve Problems and Communicate for ABE/ASE	8 of 14	Using Ratios, Proportions, and Percents	8.6	Use ratios, proportions, and percents to solve multi-step, algebraic problems
		5. Simplify algebraic expressions.				x					
		6. Estimate results to evaluate whether a calculated result is reasonable				x					
		7. Use calculators, spreadsheets, computers, ect., in data analysis				x					

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
	B. Mathematics as a symbolic language	1. Carry out formal operations using standard algebraic symbols and formulate				x					
		2. Represent natural events, processes, and relationships with algebraic expressions and algorithms				x					
	C. Understand relationships among geometry, algebra, and trigonometry	1. Understand simple vectors, vector notations, and vector diagrams, and carry out simple calculations involving vectors.				x					
		2. Understand that a curve drawn on a defined set of axes is fully equivalent to a set of algebraic equations.				x					
		3. Understand basic trigonometric principles, including definitions of terms such as sine, cosine, cotangent, and their relationshit to triangles.			7.6	x	Use **Math** to Solve Problems and Communicate for ABE/ASE	7 of 14	Area, Perimeters, and Angles	7.6	Use basic trigonometric functions - sine, cosine, and tangent.
		4. Understand basic geometric principles.			13.6	x	Use **Math** to Solve Problems and Communicate for ABE/ASE	13 of 14	Patterns and Sequences	13.6	Determine the missing terms from arithmetic and/or geometric sequences
	D. Scientific problem solving	1. Use dimensional analysis in problem solving.				x					
	E. Scientific application of probabiltiy and statistics	1. Understand descriptive statistics.				x					
	F. Scientific measurement	1. Select and use appropriate Standard International (SI) units and prefixes to express measurements for real world problems.				x					
		2. Use appropriate significant digits.				x					
		3. Understand and use logarithmic notation (base 10)				x					
III. Foundation Skills: Scientific Applications of Communication	A. Scientific writing	1. Use correct applications of writing practices in scientific communication.				x					
	B. Scientific reading	1. Read techincal and scientific articles to gain understanding of interpretations, apparatuses, techniques or procedures, and data.				x					
		2. Set up apparatuses, carry out procedures, and cololect specified data from a given set of appropriate instructions.				x					
		3. Recognize scientific and technical vocabulary to enhance clarity of communication.				x					
		4. List, use, and give examples of specific strategies before, during, and after reading to improve comprehension.				x					
	C. Presentation of scientific/technical information	1. Prepare and present scientific/technical information in appropriate formats for various audiences				x					
	D. Research skills/information literacy	1. Use search engines, databases, and other digital electronic tools effectively to locate information.				x					
		2. Evaluate quality, accuracy, completeness, reliability, and currency of information from any source.				x					
IV. Science, Technology, and Society	A. Interactions between innovations and science	1. Recognize how scientific discoveries are connected to technological innovations.				x					
	B. Social ethics	1. Understand how scientific research and technology have an impact on ethical and legal practices.				x					
		2. Understand how commonly held ethical beliefs impact scientific research.				x					
	C. History of science	1. Understand the historical development of major theories in science.				x					
		2. Recognize the role of people in important contributions to scientific knowledge.				x					

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
V. Cross-Disciplinary Themes	A. Matter/states of matter	1. Know modern theories of atomic structure.				x					
		2. Understand the typical states of matter (solid, liquid, gas) and phase changes among these				x					
	B. Energy (thermodynamics, kinetic, potential, energy transfers)	1. Understand the Laws of Thermodynamics.				x					
		2. Know the processes of energy transfer.				x					
	C. Change over time/equilibrium	1. Recognize patterns of change.				x					
	D. Classification	1. Understand that scientists categorize things according to similarities and differences				x					
	E. Measurements and models	1. Use models to make predictions.				x					
		2. Use scale to relate models and structures.				x					
		3. Demonstrate familiarity with length scales from sub-atomic particles through macroscopic objects.				x					
VI. Biology	A. Structure and function of cells	1. Know that although all cells share basic features, cells differentiate to carry out specialized functions.				x					
		2. Explain how cells can be categorized into two major types: prokaryotic and eukaryotic, and describe major features that distinguish one from another.				x					
		3. Describe the structure and function of major sub-cellular organelles.				x					
		4. Describe the major features of mitosis and relate this process to growth and asexual reproduction.				x					
		5. Understand the process of cytokinesis in plant and animal cells and how this process is related to growth.				x					
		6. Know the structure of membranes and how this relates to permeability.				x					
	B. Biochemistry	1. Understand the major categories of biological molecules: lipids, carbohydrates, proteins, and nucleic acids.				x					
		2. Describe the structure and function of enzymes.				x					
		3. Describe the major features and chemical events of photosynthesis.				x					
		4. Describe the major features and chemical events of cellular respiration				x					
		5. Know how organisms respond tp presence or absence of oxygen, including mechanisms of fermentation.				x					
		6. Understand coupled reaction processes and describe the role of ATP in energy coupling and transfer.				x					
	C. Evolution and populations	1. Know multiple categories of evidence for evolutionary change and how this evidence is used to infer evolutionary relationships among organisms.				x					
		2. Recognize variations in population sizes, including extinction, and describe mechanisms and conditions that produce these variations.				x					
	D. Molecular genetics and heredity	1. Understand Mendel's law of inheritance				x					
		2. Know modifications to Mendel's laws.				x					
		3. Undrstand the molecular structures and functions of nucleic acids.				x					
		4. Understand simple principles of population genetics and describe characteristics of a Hardy-Weinberg population.				x					
		5. Describe the major features of meiosis and relate this process to Mendel's laws of inheritence				x					
	E. Classification and taxonomy	1. Know ways in which living things can be classified based on each organism's internal and external structure, development, and relatedness of DNA sequences.				x					
	F. Systems and homeostasis.	1. Know that organisms posses various structures and processes (feedback loops) that maintain steady internal conditions.				x					
		2. Describe, compare, and contrast structures and processes that allow gas exchange, nutrient uptake and processing, waste excretion, nervous and hormonal regulation, and reproduction in plants animals, and fungi; give examples of each.				x					
	G. Ecology	1. Identify Earth's major biomes, giving their locations, typical climate conditions, and characteristic organisms.				x					
		2. Know patterns of energy flow and material cycling in Earth's ecosystems.				x					
		3. Understand typical forms of organismal behavior.				x					
		4. Know the process of succession.				x					

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
VII. Chemistry	A. Matter and its properties	1. Know that physical and chemical properties can be used to describe and classify matter.				x					
		2. Recognize and classify pure substances (elements, compounds) and mixtures.				x					
	B. Atomic structure	1. Summarize the development of atomic theory. Understand the models of the atom are used to help understand the properties of elements and compounds.				x					
	C. Periodic table	1. Know the organization of the period table.				x					
		2. Recognize the trends in physical and chemical properties as one moves across a period or vertically through a group.				x					
	D. Chemical bonding	1. Characterize ionic bonds, metallic bonds, and covalent bonds, Describe the properites of metals and ionic and covalent compounds.				x					
	E. Chemical reactions	1. Classify chemical reactions by type. Describe the evidence that a chemical reaction has occurred				x					
		2. Describe the properties of acids and bases, and identify the products of a neutralization reaction				x					
		3. Understand the oxidation-reduction reactions.				x					
		4. Understand chemical equilibrium.				x					
		5. Understand energy changes in chemical reactions.				x					
		6. Understand chemical kinetics.				x					
	F. Chemical nomenclature	1. Know formulas for ionic compounds.				x					
		2. Know formulas for molecular compounds.				x					
	G. The mole and stoichiometry	1. Understand the mole concept.				x					
		2. Understand molar relationships in reactions, stoichiometric calculations, and percent yield				x					
	H. Thermochemistry	1. Understand the Law of Conservation of Energy and processes of heat transfer.				x					
		2. Understand energy changes and chemical reactions				x					
	I. Properties and behavior of gases, liquids, and solids	1. Understand the behavior of matter in its various states:solid, liquid, and gas.				x					
		2. Understand properties of solution				x					
		3. Understand principles of ideal gas behavior and kinetic molecular theory.				x					
		4. Apply the concept of partial pressures in a mixture of gases				x					
		5. Know properties of liquids and solids				x					
		6. Understand the effect of vapor pressure on change in state; explain heating curves and phase diagrams.				x					
		7. Describe intermolecular forces.				x					
	J. Basic structure and function of biological molecules:protein, carbohydrates,lipids, and nucleic acids	1. Understand the major categories of biological molecules: lipids, carbohydrates, proteins, and nucleic acids.				x					
	K. Nuclear chemistry	1. Understand radioactive decay.				x					

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
VIII. Physics	A. Matter	1. Demonstrate familiarity with length scales from sub-atomic particles through macroscopic objects.				x					
		2. Understand states of matter and their characteristics				x					
		3. Undertstand the concepts of mass and inertia				x					
		4. Understand the concept of density				x					
		5. Understand the concepts of gravitational force and weight				x					
	B. Vectors	1. Understand how vectors are used to represent physical quantities.				x					
		2. Demonstrate knowledge of vector mathematics using a graphical representation				x					
		3. Demonstrate knowledgeof vector mathematics using a numerical representation				x					
	C. Forces and motion	1. Understand the fundamental concepts of kinematics.				x					
		2. Understand forces and Newton's Laws				x					
		3. Understand the concept of momentum.				x					
	D. Mechanical energy	1. Understand potential and kinetic energy.				x					
		2. Understand conservation of energy.				x					
		3. Understand the relationship of work and mechanical energy.				x					
	E. Rotating systems	1. Understand rotational kinematics.				x					
		2. Understand the concept of torque.				x					
		3. Apply the concept of static equilibrium.				x					
		4. Understand angular momentum				x					
	F. Fluids	1. Understand pressure in a fluid and its applications.				x					
		2. Understand Pascal's Principle.				x					
		3. Understand buoyancy.				x					
		4. Understand Bernoulli's principle.				x					
	G. Oscillations and waves	1. Understand basic oscillatory motion and simple harmonic motion.				x					
		2. Understand the difference between transverse and longitudinal waves.				x					
		3. Understand wave terminology:wavelength, period, frequency, and amplitude.				x					
		4. Understand the properties and behavior of sound waves.				x					
	H. Thermodynamics	1. Understand the gain and loss of heat energy in matter.				x					
		2.Understand the basic laws of thermodynamics				x					
	I. Electromagnetism	1. Discuss electric charge and electric force				x					
		2. Gain qualitative and quantitative understandings of voltage, current, and resistance				x					
		3. Understand Ohm's Law				x					
		4. Apply the concept of power to electricity.				x					
		5. Discuss basic DC circuits that include voltage sources and combinations of resistors.				x					
		6. Discuss basic DC circuits that include voltage sources and combinations of capacitors.				x					
		7. Understand magnetic fields and their relationship to electricity				x					
		8. Relate electricity and magnetism to everyday life				x					
	J. Optics	1. Know the electromagnetic spectrum				x					
		2. Understand the wave/particle duality of light.				x					
		3. Understand concepts of geometric optics.				x					
IX. Earth and Space Sciences	A. Earth systems	1. Know the major features and characteristics of atmosphere, geosphere, hydrosphere, and biosphere				x					
		2. Understand relationships and interactions among atmosphere, geosphere, hydrosphere, and biosphere				x					
		3. Possess a scientific understanding of the history of Earth's systems.				x					
		4. Utilize the tools scientists use to study and understand the Earth's systems				x					
	B. Sun, Earth, and moon system	1. Understand interactions among the sun, Earth, and moon				x					
		2. Possess a scientific understanding of the formation of the Earth and moon.				x					
	C. Solar system	1. Describe the structure and motions of the motions of the solar system and its comonents.				x					
		2. Possess a scientific understanding of the formation of the solar system.				x					
	D. Origin and structure of the universe	1. Understand scientific theories for the formation of the universe				x					
		2. Know the current scientific descriptions of the components of the universe.				x					
	E. Plate tectonics	1. Describe the evidence that supports the current theory of plate tectonics.				x					
		2. Identify the major tectonic plates.				x					
		3. Describe the motions and interactions of tectonic plates.				x					
		4. Describe the rock cycle and its products.				x					
	F. Energy transfer within and among systems	1. Describe matter and energy transfer in the Earth's sytems.				x					
		2. Give examples of effects of energy transfer within and among systems.				x					

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
X. Environmental Science	A. Earth systems	1. Recognize the Earth's systems.				x					
		2. Know the major features of the geosphere and the factors that modify them.				x					
		3. Know the major features of the atmosphere.				x					
		4. Know the major features of the hydrosphere.				x					
		5. Be familiar with Earth's major biomes.				x					
		6. Describe the Earth's major biogeochemical cycles.				x					
	B. Energy	1. Understand energy transformations.				x					
		2. Know the various sources of energy for humans and other biological systems.				x					
	C. Population	1. Recognize variations in population sizes, including human population and extinction, and describe mechanisms and conditions that produce these variations.				x					
	D. Economics and politics	1. Name and describe major environmental policies and legislation.				x					
		2. Understand the types, uses, and regulations of the various natural resources				x					
	E. Human practices and their impacts	1. Describe the different uses for land (land management)				x					
		2. Understand the use and consequences of pest management.				x					
		3. Know the different methods used to increase food production.				x					
		4. Understand land and water usage and management practices.				x					
		5. Understand how human practices affect air, water, and soil quality.				x					

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
I. Interrlated Disciplines and Skills	A. Spatial analysis of physical and cultural processes that shape the human experience	1. Use the tools and concepts of geography appropriately and accurately.				x					
		2. Analyze the interaction between human communities and the environment.				x					
		3. Analyze how physical and cultural processes have shaped communities over time.				x					
		4. Evaluate the causes and effects of migration patterns over time.				x					
		5. Analyze how various cultural regions have changed over time.				x					
		6. Analyze the relationship between geography and the development of human communities.				x					
	B. Periodization and chronological reasoning	1. Examine how and why historians divide the past into eras.				x					
		2. Identify and evaluate sorces and patterns of change and continuity across time and place.				x					
		3. Analyze causes and effects of major political, economic, and social changes in U.S. and world history.				x					
	C. Change and continuity of political ideologies, constitutions, and political behavior	1. Evaluate different governmental systems and functions.				x					
		2. Evaluate changes in the functions and structures of government across time.				x					
		3. Explain and analyze the importance of civic engagement.				x					
	D. Change and continuity of economic systems and processes	1. Identify and evaluate the strengths and weakness of different economic systems.				x					
		2. Analyze the basic functions and structures of international economics.				x					
	E. Change and continuity of social groups, civiv organizations, institutions, and their interaction.	1. Identify different social groups (e.g., clubs, religious organizations) and examine how they form and why they sustain themselves				x					
		2. Define the concept of socialization and analyze the role socialization plays in human development and behavior.				x					
		3. Analyze how social institutions (e.g.,marriage, family, churches, schools) function and meet the needs of society.				x					
		4. Identify and evaluate the sources and consequences of social conflict.				x					
	F. Problem solving and decision making skills.	1. Use a variety of research and analytical tools to explore questions or issues thoroughly and fairly.				x					
		2. Analyze ethical issues in historical, cultural, and social contexts.				x					
II. Diverse Human Perspectives and Experiences	A. Multicultural societies	1. Define a "multicultural society" and consider both the positive and negative qualities of multiculturalism.				x					
		2. Evaluate the experiences and contributions of diverse groups to multicultural societies.				x					
	B. Factors that influence personal and group identities (e.g.,race, ethnicity, gender, nationality, institutional affiliations, socioeconomic status.	1. Explain and evaluate the concepts of race, ethnicity, and nationalism.				x					
		2. Explain and evaluate the concept of gender.				x					
		3. Analyze diverse religious concepts, structures, and instituions around the world.				x					
		4. Evaluate how major philosophical and intellectual concepts influence human behavior or identity.				x					
		5. Explain the concepts of socioeconomic status and stratification.				x					
		6. Analyze how individual and group identities are established and change over time.				x					
III. Interdependence of Global Communities	A. Spatial understanding of global, regional, national, and local communities	1. Distinguish spatial patterns of human communities that exist between or within contemporary political boundaries.				x					
		2. Connect regional or local developments to global ones.				x					
		3. Analyze how and why diverse communities interact and become dependent on each other.				x					
	B. Global Analysis	1. Apply social studies methodologies to compare societies and cultures.				x					

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
IV. Analysis, Synthesis, and Evaluation of Information	A. Critical examination of texts, images, and other sources of information	1. Identify and analyze the main idea(s) and point(s) of views in sources.			6.6		**Reading**	6 of 6	Analyze and Organize Information	6.6	Gain underlying meaning of specialized text using a wide range of strategies such as recognizing unstated assumptions, applying relevant information to multiple scenarios, summarizing, synthesizing information from multiple texts, and interpreting figurative language.
		2. Situate an informational source in its appropriate contexts (contemporary, historical, cultural).				x					
		3. Evaluate sources from multiple perspectives.				x					
		4. Understand the differences between a primary and secondary source and use each appropriately to conduct research and construct arguments.				x					
		5. Read narrative texts critically.			6.6	x	**Reading**	6 of 6	Analyze and Organize Information	6.6	Gain underlying meaning of specialized text using a wide range of strategies such as recognizing unstated assumptions, applying relevant information to multiple scenarios, summarizing, synthesizing information from multiple texts, and interpreting figurative language.
		6. Read research data critically.				x					
	B. Research and methods	1. Use established research methodologies.				x					
		2. Explain how historians and other social scientists develop new and competitive views of past phenomena.				x					
		3. Gather, organize, and display the results of data and research.				x					
		4. Identify and collect sources				x					
	C. Critical listening	1. Understand and interpret presentations (e.g., speeches, lectures, informal presentations) critically.				x					
	D. Research conclusions	1. Construct a thesis that is supported by evidence.				x					
		2. Recognize and evaluate counter arguments				x					
V. Effective Communication	A. Clear and coherent oral and written communication	1. Use appropriate oral communication techniques depending on the context or nature of the interaction.				x					
		2. Use conventions of standard written English			3.6		**Writing**	3 of 5	Present Information	3.6	Convey ideas in medium length, well-sequenced, and detailed text with appropriate voice, tone, rhetorical forms and style, suitable for a variety of audiences by Appropriately using varied and descriptive word choices including colloquialisms, and cultural references and Appropriately using a variety of sentence length, structure, and complexity (including those reflecting logical relations).
	B. Academic integrity	1. Attribute ideas and information to source materials and authors.				x					

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
I. Key Cognitive Skills	A. Intellectual curiosity	1. Engage in scholarly inquiry and dialogue.				x					
		2. Accept constructive criticism and revise personal views when valid evidence warrants				x					
	B. Reasoning	1. Consider arguments and conclusions of self and others.				x					
		2. Construct well-reasoned arguments to explain phenomena, validate conjectures, or support positions.				x					
		3. Gather evidence to support arguments, findings, or lines of reasoning.				x					
		4. Support or modify claims based on the results of an inquiry.				x					
	C. Problem Solving	1. Analyze a situation to identify a problem to be solved.				x					
		2. Develop and apply multiple strategies to solve a problem.				x					
		3. Collect evidence and data systematically and directly relate to solving a problem.				x					
	D. Academic Behaviors	1. Self monitor learning needs and seek assistance when needed.				x					
		2. Use study habits necessary to manage academic pursuits and requirements.				x					
		3. Strive for accuracy and precision.				x					
		4. Perserve to compete and master tasks.				x					
	E. Work Habits	1. Work independently				x					
		2. Work collaboratively				x					
	F. Academic integrity	1. Attribute ideas and information to source materials and people.				x					
		2. Evaluate sources for quality of content, validity, credibility, and relevance.				x					
		3. Include the ideas of others and the complexities of the debate, issue, or problem.				x					
		4. Understand and adhere to ethical codes of conduct.				x					
II. Foundational Skills	A. Reading across the curriculum	1. Use effective prereading strategies.			1.6		**Reading**	1 of 6	Determine Purpose	1.6	Determine the appropriate purpose for reading a variety of materials.
		2. Use a variety of strategies to understand the meanings of new words.			3.6		**Reading**	3 of 6	Vocabulary Development	3.6	Demonstrate familiarity with specialized content vocabulary in complex documents and literature (e.g. science, social studies, and literature).
		3. Identify the intended purpose and audience of the text.			1.6		**Reading**	1 of 6	Determine Purpose	1.6	Determine the appropriate purpose for reading a variety of materials.
		4. Identify the key information and supporting details.			5.6		**Reading**	5 of 6	Build Comprehension	5.6	Independently monitor and build comprehension strategies with a variety of texts.
		5. Analyze textual information critically.				x					
		6. Annotate, summarize, paraphrase, and outline texts when appropriate.				x					
		7. Adapt reading strategies according to structure or texts.			5.6		**Reading**	5 of 6	Build Comprehension	5.6	Independently monitor and build comprehension strategies with a variety of texts.
		8. Connect reading to historical and current events and personal interest.				x					

Texas College and Career Readiness Standards							ABE/ASE Content Standards and Benchmarks				
Key Content	**Organizing Component**	**Performance expectations**	**HA**	**MA**	**LA**	**NA**	**Standard**		**Strand**		**Benchmark**
	B. Writing across the curriculum	1. Write clearly and coherently using standard writing conventions.			3.6 4.6		**Writing**	3 of 5	Present Information	3.6	Convey ideas in medium length, well-sequenced, and detailed text with appropriate voice, tone, rhetorical forms and style, suitable for a variety of audiences by Appropriately using varied and descriptive word choices including colloquialisms, and cultural references and Appropriately using a variety of sentence length, structure, and complexity (including those reflecting logical relations).
							Writing	4 of 5	Revise Writing	4.6	Seek out, describe, and work through problems posed by the writing task, including revising to improve * Organization and precision of word choice, * The logic and strength of arguments, * Personal voice, * The tone or style to address the audience, purpose, and formality of the context, * Grammar, and * Sentence structure.
		2. Write in a variety of forms for various audiences and purposes.			1.6		**Writing**	1 of 5	Determine Purpose	1.6	Determine the purpose and audience for communicating in writing independently.
		3. Compose and revise drafts.			4.6 5.6		**Writing**	4 of 5	Revise Writing	4.6	Seek out, describe, and work through problems posed by the writing task, including revising to improve * Organization and precision of word choice, * The logic and strength of arguments, * Personal voice, * The tone or style to address the audience, purpose, and formality of the context, * Grammar, and * Sentence structure.
							Writing	5 of 5	Edit Writing	5.6	Undertake multiple re-readings of text in order to make comprehensive edits for * Grammar: verb tenses including past perfect progressive and future perfect progressive tenses, past unreal conditionals, modals in past tense, * Varied sentence structures with phrases and clauses, * The active voice, * Parallel structures, and * Spelling, punctuation, capitalization, language usage
	C. Research across the curriculum	1. Understand which topics or questions are to be investigated.				x					
		2. Explore a research topic.				x					
		3. Refine research topic based on preliminary research and devise a timeline for completing work.				x					
		4. Evaluate the validity and reliability of sources.				x					
		5. Synthesize and organize information effectively.				x					
		6. Design and present an effective product.				x					
		7.Integrate source material.				x					
		8. Present final product.				x					
	D. Use of data	1. Identify patterns or departures from patterns among data.				x					
		2. Use statistical and probabilistic skills necessary for planning an investigation and collecting, analyzing, and interpreting data.				x					
		3. Present analyzed data and communicate findings in a variety of formats.				x					
	E. Technology	1. Use technology to gather information				x					
		2. Use technology to organize, manage, and analyze information.				x					
		3. Use technology to communicate and display findings in a clear and coherent manner.				x					
		4. Use technology appropriately.				x					