Texas English Language Arts Strands/Learning Standards English II	National Essential Skills Study (NESS) Ranking	TAKS	Agriculture, Food and Natural Resources									
			Animal Systems					Plant Systems				
			Principles of Agri., Food, & Natural Resources	Equine Science/ Livestock Production/ Small Animal Mgmt.	Veterinary Medical Applications	Advanced Animal Science	Practicum in Agri., Food, & Natural Resources	Principles of Agri., Food, & Natural Resources	Principles & Elements of Floral Design	Landscape Design & Turf Management/ Horticulture Science	Advanced Plant & Soil Science	Practicum in Agri., Food, & Natural Resources
(19) Oral and Written Conventions/Spelling. Students spell correctly. Students are expected to spell correctly, including using various resources to determine and check correct spellings.	E1 E4	L	★	✓	✓	✓	★	★	✓	✓	✓	★
Research												
(20) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them. Students are expected to: (A) brainstorm, consult with others, decide upon a topic, and formulate a major research question to address the major research topic; and	E6 E7	L	★	✓	✓	✓	★	★	✓	✓	✓	★
(B) formulate a plan for engaging in research on a complex, multi-faceted topic.	E6 E7	L	★	✓	✓	✓	★	★	✓	✓	✓	★
(21) Research/Gathering Sources. Students determine, locate, and explore the full range of relevant sources addressing a research question and systematically record the information they gather. Students are expected to: (A) follow the research plan to compile data from authoritative sources in a manner that identifies the major issues and debates within the field of inquiry;	E7	L	★	✓	✓	✓	★	★	✓	✓	✓	★
(B) organize information gathered from multiple sources to create a variety of graphics and forms (e.g., notes, learning logs); and	E25 E31	L	★	✓	✓	✓	★	★	✓	✓	✓	★
(C) paraphrase, summarize, quote, and accurately cite all researched information according to a standard format (e.g., author, title, page number).	E27	L	★	✓	✓	✓	★	★	✓	✓	✓	★
(22) Research/Synthesizing Information. Students clarify research questions and evaluate and synthesize collected information. Students are expected to: (A) modify the major research question as necessary to refocus the research plan;	E7	L	★	✓	✓	✓	✓	★	★	✓	✓	★
(B) evaluate the relevance of information to the topic and determine the reliability, validity, and accuracy of sources (including Internet sources) by examining their authority and objectivity; and	E13	L	★	✓	✓	✓	✓	★	★	✓	✓	★

Texas English Language Arts Strands/Learning Standards English II	National Essential Skills Study (NESS) Ranking	TAKS	Agriculture, Food and Natural Resources							
			Agribusiness				Food Products & Processing			
			Principles of Agri., Food, & Natural Resources	Pro. Standards in Agribusiness	Agribusiness Management & Marketing	Mathematical Applications in Agriculture	Principles of Agri., Food, & Natural Resources	Food Technology & Safety	Food Processing	Practicum in Agri., Food, & Natural Resources
Writing										
(13) Writing/Writing Process. Students use elements of the writing process (planning, drafting, revising, editing, and publishing) to compose text. Students are expected to: (A) plan a first draft by selecting the correct genre for conveying the intended meaning to multiple audiences, determining appropriate topics through a range of strategies (e.g., discussion, background reading, personal interests, interviews), and developing a thesis or controlling idea;	E6	H	★	✓	✓	✓	★	✓	✓	★
(B) structure ideas in a sustained and persuasive way (e.g., using outlines, note taking, graphic organizers, lists) and develop drafts in timed and open-ended situations that include transitions and rhetorical devices used to convey meaning;	E9 E22	H	★	✓	✓	✓	★	✓	✓	★
(C) revise drafts to improve style, word choice, figurative language, sentence variety, and subtlety of meaning after rethinking how well questions of purpose, audience, and genre have been addressed;	E1 E9	H	★	✓	✓	✓	★	✓	✓	★
(D) edit drafts for grammar, mechanics, and spelling; and	E1	H	★	✓	✓	✓	★	✓	✓	★
(E) revise final draft in response to feedback from peers and teacher and publish written work for appropriate audiences.	E10 E45	H								
(14) Writing//Literary Texts. Students write literary texts to express their ideas and feelings about real or imagined people, events, and ideas. Students are responsible for at least two forms of literary writing. Students are expected to: (A) write an engaging story with a well-developed conflict and resolution, interesting and believable characters, a range of literary strategies (e.g., dialogue, suspense) and devices to enhance the plot, and sensory details that define the mood or tone;	E45	L								
(B) write a poem using a variety of poetic techniques (e.g., structural elements, figurative language) and a variety of poetic forms (e.g., sonnets, ballads); and	E45	L								
(C) write a script with an explicit or implicit theme and details that contribute to a definite mood or tone.	E45	L								

Texas English Language Arts Strands/Learning Standards English III	National Essential Skills Study (NESS) Ranking	TAKS	Agriculture, Food and Natural Resources							
			Power Mechanics				Agriculture Facilities Design & Fabrication			
			Principles of Agri., Food, & Natural Resources	Agricultural Mechanics & Metal Technologies	Agricultural Power Systems	Practicum in Agri., Food, & Natural Resources	Principles of Agri., Food, & Natural Resources	Agricultural Mechanics & Metal Technologies	Agricultural Facilities Design & Fabrication	Practicum in Agri., Food, & Natural Resources
(B) uses a variety of formats and rhetorical strategies to argue for the thesis;	E22	L	✓	✓	✓	✓	✓	✓	✓	✓
(C) develops an argument that incorporates the complexities of and discrepancies in information from multiple sources and perspectives while anticipating and refuting counter-arguments;	E24 E33	L	✓	✓	✓	✓	✓	✓	✓	✓
(D) uses a style manual (e.g., Modern Language Association, Chicago Manual of Style) to document sources and format written materials; and	E27	L	✓	✓	✓	✓	✓	✓	✓	✓
(E) is of sufficient length and complexity to address the topic.	E7	L	✓	✓	✓	✓	✓	✓	✓	✓
Listening and Speaking										
(24) Listening and Speaking/Listening. Students will use comprehension skills to listen attentively to others in formal and informal settings. Students will continue to apply earlier standards with greater complexity. Students are expected to: (A) listen responsively to a speaker by framing inquiries that reflect an understanding of the content and by identifying the positions taken and the evidence in support of those positions; and	E10 E16 E17	L	★	✓	✓	★	★	✓	✓	★
(B) evaluate the clarity and coherence of a speaker's message and critique the impact of a speaker's diction and syntax on an audience.	E17 E18	L	✓	✓	✓	✓	✓	✓	✓	✓
(25) Listening and Speaking/Speaking. Students speak clearly and to the point, using the conventions of language. Students will continue to apply earlier standards with greater complexity. Students are expected to give a formal presentation that exhibits a logical structure, smooth transitions, accurate evidence, well-chosen details, and rhetorical devices, and that employs eye contact, speaking rate (e.g., pauses for effect), volume, enunciation, purposeful gestures, and conventions of language to communicate ideas effectively.	E8 E18	L	★	✓	✓	★	★	✓	✓	★

Texas English Language Arts Strands/Learning Standards English I	National Essential Skills Study (NESS) Ranking	TAKS	Agriculture, Food and Natural Resources							
			Wildlife, Fisheries, Range, Woodland, & Forestry Management				Natural Resources & Environmental Technology			
			Principles of Agri., Food, & Natural Resources	Wildlife, Fisheries & Ecology Management	Range Ecology & Mgmt./Forestry & Woodland Ecosystems	Practicum in Agri., Food, & Natural Resources	Principles of Agri., Food, & Natural Resources	Energy & Natural Resources Technology	Advanced Environmental Technology	Practicum in Agri., Food, & Natural Resources
(D) synthesize and make logical connections between ideas and details in several texts selected to reflect a range of viewpoints on the same topic and support those findings with textual evidence.	E24	H	★	✓	✓	★	★	✓	✓	★
(10) Reading/Comprehension of Informational Text/Persuasive Text. Students analyze, make inferences and draw conclusions about persuasive text and provide evidence from text to support their analysis. Students are expected to: (A) analyze the relevance, quality, and credibility of evidence given to support or oppose an argument for a specific audience; and	E13 E30	H	★	✓	✓	★	★	✓	✓	★
(B) analyze famous speeches for the rhetorical structures and devices used to convince the reader of the authors' propositions.	E19	H		✓	✓			✓	✓	
(11) Reading/Comprehension of Informational Text/Procedural Texts. Students understand how to glean and use information in procedural texts and documents. Students are expected to: (A) analyze the clarity of the objective(s) of procedural text (e.g., consider reading instructions for software, warranties, consumer publications); and	E32	H	★	✓	✓	★	★	✓	✓	★
(B) analyze factual, quantitative, or technical data presented in multiple graphical sources.	E31	H	★	✓	✓	★	★	✓	✓	★
(12) Reading/Media Literacy. Students use comprehension skills to analyze how words, images, graphics, and sounds work together in various forms to impact meaning. Students will continue to apply earlier standards with greater depth in increasingly more complex texts. Students are expected to: (A) compare and contrast how events are presented and information is communicated by visual images (e.g., graphic art, illustrations, news photographs) versus non-visual texts;	E29 E31	L								
(B) analyze how messages in media are conveyed through visual and sound techniques (e.g., editing, reaction shots, sequencing, background music);	E21 E29	L								
(C) compare and contrast coverage of the same event in various media (e.g., newspapers, television, documentaries, blogs, Internet); and	E29 E42	L								

Texas English Language Arts Strands/Learning Standards English II	National Essential Skills Study (NESS) Ranking	TAKS	Architecture and Construction								
			Construction Management				Construction Technology				
			Principles of Architecture & Construction	Construction Management	Advanced Construction Management	Practicum in Construction Management	Principles of Architecture & Construction	Construction Technology	Advanced Construction Technology	Mill & Cabinetmaking Technology	Practicum in Construction Management
(B) organize information gathered from multiple sources to create a variety of graphics and forms (e.g., notes, learning logs); and	E25 E31	L	✓	✓	✓	✓	✓	✓	✓	✓	✓
(C) paraphrase, summarize, quote, and accurately cite all researched information according to a standard format (e.g., author, title, page number).	E27	L	✓	✓	✓	✓	✓	✓	✓	✓	✓
(22) Research/Synthesizing Information. Students clarify research questions and evaluate and synthesize collected information. Students are expected to: (A) modify the major research question as necessary to refocus the research plan;	E7	L	✓	✓	✓	✓	✓	✓	✓	✓	✓
(B) evaluate the relevance of information to the topic and determine the reliability, validity, and accuracy of sources (including Internet sources) by examining their authority and objectivity; and	E13	L	✓	✓	✓	✓	✓	✓	✓	✓	✓
(C) critique the research process at each step to implement changes as the need occurs and is identified.	E7	L	✓	✓	✓	✓	✓	✓	✓	✓	✓
(23) Research/Organizing and Presenting Ideas. Students organize and present their ideas and information according to the purpose of the research and their audience. Students are expected to synthesize the research into a written or an oral presentation that: (A) marshals evidence in support of a clear thesis statement and related claims;	E7 E8	L	★	★	★	★	★	★	✓	✓	★
(B) provides an analysis for the audience that reflects a logical progression of ideas and a clearly stated point of view;	E9	L	★	★	★	★	★	★	✓	✓	★
(C) uses graphics and illustrations to help explain concepts where appropriate;	E31	L	★	★	★	★	★	★	✓	✓	★
(D) uses a variety of evaluative tools (e.g., self-made rubrics, peer reviews, teacher and expert evaluations) to examine the quality of the research; and	E30	L									
(E) uses a style manual (e.g., Modern Language Association, Chicago Manual of Style) to document sources and format written materials.	E27	L									

Texas English Language Arts Strands/Learning Standards English III	National Essential Skills Study (NESS) Ranking	TAKS	Architecture and Construction							
			Architectural Interior Design				Architectural Design			
			Principles of Architecture & Construction	Interior Design	Advanced Interior Design	Practicum in Interior Design	Principles of Architecture & Construction	Architectural Design	Advanced Architectural Design	Practicum in Architectural Design
(18) Oral and Written Conventions/Handwriting, Capitalization, and Punctuation. Students write legibly and use appropriate capitalization and punctuation conventions in their compositions. Students are expected to correctly and consistently use conventions of punctuation and capitalization.	E1	L	★	✓	★	✓	★	★	★	★
(19) Oral and Written Conventions/Spelling. Students spell correctly. Students are expected to spell correctly, including using various resources to determine and check correct spellings.	E1 E4	L	★	✓	★	✓	★	★	★	★
Research										
(20) Research/Research Plan. Students ask open-ended research questions and develop a plan for answering them. Students are expected to: (A) brainstorm, consult with others, decide upon a topic, and formulate a major research question to address the major research topic; and	E6 E7	L	✓	★	✓	✓	✓	✓	✓	✓
(B) formulate a plan for engaging in in-depth research on a complex, multi-faceted topic.	E6 E7	L	✓	★	✓	✓	✓	✓	✓	✓
(21) Research/Gathering Sources. Students determine, locate, and explore the full range of relevant sources addressing a research question and systematically record the information they gather. Students are expected to: (A) follow the research plan to gather evidence from experts on the topic and texts written for informed audiences in the field, distinguishing between reliable and unreliable sources and avoiding over-reliance on one source;	E7	L	★	✓	✓	✓	★	✓	✓	✓
(B) systematically organize relevant and accurate information to support central ideas, concepts, and themes, outline ideas into conceptual maps/timelines, and separate factual data from complex inferences; and	E9 E31	L	★	✓	✓	✓	★	✓	✓	✓
(C) paraphrase, summarize, quote, and accurately cite all researched information according to a standard format (e.g., author, title, page number), differentiating among primary, secondary, and other sources.	E27	L	★	✓	✓	✓	★	✓	✓	✓
(22) Research/Synthesizing Information. Students clarify research questions and evaluate and synthesize collected information. Students are expected to: (A) modify the major research question as necessary to refocus the research plan;	E7	L	★	✓	✓	✓	★	✓	✓	✓

Texas English Language Arts Strands/Learning Standards English III	National Essential Skills Study (NESS) Ranking	TAKS	Architecture and Construction											
			Electrical Technology				HVAC & Refrigeration Technology				Piping & Plumbing Technology			
			Principles of Architecture & Construction	Construction Technology	Electrical Technology	Advanced Electrical Technology	Principles of Architecture & Construction	Construction Technology	HVAC & Refrigeration Technology	Advanced HVAC & Refrigeration Technology	Principles of Architecture & Construction	Construction Technology	Piping & Plumbing Technology	Advanced Piping & Plumbing Technology
(16) Writing/Persuasive Texts. Students write persuasive texts to influence the attitudes or actions of a specific audience on specific issues. Students are expected to write an argumentative essay (e.g., evaluative essays, proposals) to the appropriate audience that includes: (A) a clear thesis or position based on logical reasons supported by precise and relevant evidence, including facts, expert opinions, quotations, and/or expressions of commonly accepted beliefs;	E33	L	✓				✓				✓			
(B) accurate and honest representation of divergent views (i.e., in the author's own words and not out of context);	E33	L	✓				✓				✓			
(C) an organizing structure appropriate to the purpose, audience, and context;	E9	L	✓				✓				✓			
(D) information on the complete range of relevant perspectives;	E33	L	✓				✓				✓			
(E) demonstrated consideration of the validity and reliability of all primary and secondary sources used; and	E13	L	✓				✓				✓			
(F) language attentively crafted to move a disinterested or opposed audience, using specific rhetorical devices to back up assertions (e.g., appeals to logic, emotions, ethical beliefs).	E33	L	✓				✓				✓			
Oral and Written Conventions														
(17) Oral and Written Conventions/Conventions. Students understand the function of and use the conventions of academic language when speaking and writing. Students will continue to apply earlier standards with greater complexity. Students are expected to: (A) use and understand the function of different types of clauses and phrases (e.g., adjectival, noun, adverbial clauses and phrases); and	E1 E18	L	★	★	✓	✓	★	★	✓	✓	★	★	✓	✓
(B) use a variety of correctly structured sentences (e.g., compound, complex, compound-complex).	E1 E18	L	★	✓	✓	✓	★	✓	✓	✓	★	✓	✓	✓

Texas
Career and Technical Education Curriculum Matrix for English Language Arts

The "✓" designations in the program columns under each career pathway identify significant opportunities for academic instruction within career and technical education (CTE) programs. The "★" designations identify an alignment of an academic Texas Essential Knowledge and Skills (TEKS) with a CTE TEKS. The absence of a "✓" or "★" should not, however, be interpreted as offering little opportunity for interdisciplinary instruction. Teachers should base instructional decisions on their program goals, best judgments, assessment priorities, and student interests.

Texas English Language Arts Strands/Learning Standards English II	National Essential Skills Study (NESS) Ranking	TAKS	Architecture and Construction							
			Mill and Cabinet Making Technology				Maintenance Technology			
			Principles of Architecture & Construction	Construction Technology	Mill & Cabinetmaking Technology	Practicum in Construction Management	Principles of Architecture & Construction	Construction Technology	Building Maintenance Technology	Advanced Building Maintenance Technology
Reading										
(1) Reading/Vocabulary Development. Students understand new vocabulary and use it when reading and writing. Students are expected to: (A) determine the meaning of grade-level technical academic English words in multiple content areas (e.g., science, mathematics, social studies, the arts) derived from Latin, Greek, or other linguistic roots and affixes;	E5	M	★	✓	✓	✓	★	✓	✓	✓
(B) analyze textual context (within a sentence and in larger sections of text) to distinguish between the denotative and connotative meanings of words;	E5	M	★				★			
(C) infer word meaning through the identification and analysis of analogies and other word relationships;	E5	M	✓				✓			
(D) show the relationship between the origins and meaning of foreign words or phrases used frequently in written English and historical events or developments (e.g., glasnost, avant-garde, coup d'état); and	E5	M	✓	✓	✓	✓	✓	✓	✓	✓
(E) use a dictionary, a glossary, or a thesaurus (printed or electronic) to determine or confirm the meanings of words and phrases, including their connotations and denotations, and their etymology.	E5	L	★	✓	✓	✓	★	✓	✓	✓

Texas English Language Arts Strands/Learning Standards English III	National Essential Skills Study (NESS) Ranking	TAKS	Arts, A/V Technology and Communication Technology									
			Audio Video Production					Fashion Design				
			Principles of Arts, A/V Technology & Communications	Audio Video Production	Advanced Audio Video Production	Practicum in Audio Video Production	Professional Communications	Principles of Arts, A/V Technology & Communications	Fashion Design	Advanced Fashion Design	Practicum in Fashion Design	Professional Communications
(C) evaluate the objectivity of coverage of the same event in various types of media; and	E29 E30 E42	L	★	★	★	★	★	★	★	★	★	★
(D) evaluate changes in formality and tone across various media for different audiences and purposes.	E21 E42	L	★	★	★	★	★	★	★	★	★	★
Writing												
(13) Writing/Writing Process. Students use elements of the writing process (planning, drafting, revising, editing, and publishing) to compose text. Students are expected to: (A) plan a first draft by selecting the correct genre for conveying the intended meaning to multiple audiences, determining appropriate topics through a range of strategies (e.g., discussion, background reading, personal interests, interviews), and developing a thesis or controlling idea;	E6	H	★	★	★	★	★	★	✓	✓	✓	★
(B) structure ideas in a sustained and persuasive way (e.g., using outlines, note taking, graphic organizers, lists) and develop drafts in timed and open-ended situations that include transitions and rhetorical devices to convey meaning;	E9 E22	H	★	★	★	★	★	★	✓	✓	✓	★
(C) revise drafts to clarify meaning and achieve specific rhetorical purposes, consistency of tone, and logical organization by rearranging the words, sentences, and paragraphs to employ tropes (e.g., metaphors, similes, analogies, hyperbole, understatement, rhetorical questions, irony), schemes (e.g., parallelism, antithesis, inverted word order, repetition, reversed structures), and by adding transitional words and phrases;	E1 E9	H	★	★	★	★	★	★	✓	✓	✓	★
(D) edit drafts for grammar, mechanics, and spelling; and	E1	H	★	★	★	★	★	★	✓	✓	✓	★
(E) revise final draft in response to feedback from peers and teacher and publish written work for appropriate audiences.	E10 E45	H	★	★	★	★	★	★	✓	✓	✓	★

Texas Mathematics Essential Knowledge and Skills Grade 11 Exit Level	National Essential Skills Study (NESS) Ranking	TAKS	Arts, A/V Technology and Communication Technology									
			Graphic Design and Illustration					Photography				
			Principles of Arts, A/V Technology & Communications	Graphic Design and Illustration	Advanced Graphic Design and Illustration	Practicum in Graphic Design and Illustration	Professional Communications	Principles of Arts, A/V Technology & Communications	Graphic Design and Illustration	Commercial Photography	Advanced Commercial Photography	Professional Communications
(8.12) Probability and statistics. The student uses statistical procedures to describe data. The student is expected to:												
(A) select the appropriate measure of central tendency or range to describe a set of data and justify the choice for a particular situation; and	M14 M31	M	✓				✓	✓				✓
(C) select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, [stem and leaf plots,] circle graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams, with and without the use of technology.	M21	M	★	✓	✓	✓	★	★	✓	✓	✓	★
8.13 Probability and statistics. The student evaluates predictions and conclusions based on statistical data. The student is expected to:												
(B) recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis.	M17 M21	M	✓				✓	✓				✓
Objective 10: The student will demonstrate an understanding of the mathematical process and tools used in problem solving.												
(8.14) Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:												
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;	M10	H	★	★	★	★	★	★	★	★	★	★
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; and	M10	H	★	✓	✓	✓	✓	★	✓	✓	✓	✓
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	M10 M16 M21	H	★	✓	✓	✓	✓	★	✓	✓	✓	✓

Texas Mathematics Essential Knowledge and Skills Grade 10	National Essential Skills Study (NESS) Ranking	TAKS	Arts, A/V Technology and Communication Technology									
			Printing and Imaging Technology					Graphic Design - Animation				
			Principles of Arts, A/V Technology & Communications	Printing and Imaging Technology	Advanced Printing and Imaging Technology	Practicum in Printing and Imaging Technology	Professional Communications	Principles of Arts, A/V Technology & Communications	Graphic Design and Illustration	Animation	Advanced Animation	Professional Communications
(8.12) Probability and statistics. The student uses statistical procedures to describe data. The student is expected to:												
(A) select the appropriate measure of central tendency or range to describe a set of data and justify the choice for a particular situation;	M14 M31	M	✓				✓	✓				✓
(C) select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams, with and without the use of technology.	M21	M	★	✓	✓	✓	★	★	✓	✓	✓	★
(8.13) Probability and statistics. The student evaluates predictions and conclusions based on statistical data. The student is expected to:												
(B) recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis.	M17 M21	M	✓				✓	✓				✓
Objective 10: The student will demonstrate an understanding of the mathematical process and tools used in problem solving.												
(8.14) Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:												
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;	M10	H	★	★	★	★	★	★	★	★	★	★
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	M10	H	★	★	★	★	✓	★	★	★	★	✓
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	M10 M16 M21	H	★	✓	✓	✓	✓	★	✓	✓	✓	✓

Texas Mathematics Essential Knowledge and Skills Grade 10	National Essential Skills Study (NESS) Ranking	TAKS	Business Management and Administration												
			Business Management							Business Information Management					
			Principles of Business, Marketing, & Finance	Human Resources Management	Business Law	Virtual Business	Global Business	Business Management	Practicum in Business Management	Principles of Business, Marketing, & Finance	Touch System Data Entry	Business Information Management I	Business Information Management II	Practicum in Business Management
(D) represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities; and	M7 M11 M21 M27	M	★	✓	✓	★	✓	✓	★	★	✓	✓	★	★
(E) interpret and make decisions, predictions, and critical judgments from functional relationships	M10 M21 M53	M	★		✓	✓	✓	✓	★	★		✓	★	★
Objective 2: The student will demonstrate an understanding of the properties and attributes of functions.														
A.2 Foundations for functions. The student uses the properties and attributes of functions. The student is expected to:														
(A identifies [and sketches] the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions.	M44 M53 M66	M												
(B) identify the mathematical domains and ranges and determine reasonable domain and range values for given situations. both continuous and discrete;	M10 M37	M	✓						✓	✓				✓
(C) interpret situations in terms of given graphs [or creates situations that fit given graphs]; and	M10 M21 M46 M53	M	✓	✓					✓	✓		✓	✓	✓
(D) [collect and organize data], makes and interprets scatterplots, (including recognizing positive, negative, or nor correlation for data approximating linear situations),and model, predict, and make decisions and critical judgments in problem situations..	M21	M	✓		✓	✓	✓	✓	★	✓		✓	★	★

Texas Mathematics Essential Knowledge and Skills Grade 9	National Essential Skills Study (NESS) Ranking	TAKS	Education and Training				Finance								
			Teaching and Training				Finance and Accounting								
			Principles of Education & Training	Human Growth & Development	Instructional Practice in Education & Training	Practicum in Education & Training	Principles of Business, Marketing, & Finance	Money Matters	Banking & Financial Services	Securities & Investments	Insurance Operations	Accounting I	Accounting II	Financial Analysis	Statistics & Risk Management
Objective 3: The student will demonstrate an understanding of linear functions.															
(A.5) Linear functions: The student understands that linear functions can be represented in different ways and translates among their various representations. The student is expected to:															
(A) determine whether or not given situations can be represented by linear functions.	M37 M53 M56	H													
(B) determine the domain and range values for which linear functions in given situations; and	M37 M53 M56	L													
(C) use, translate among and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions.	M21 M37 M44 M53 M56	H	✓	✓	✓	✓	✓	★	✓	✓	✓	✓	✓	★	★
(A.6) Linear Functions. The student understands the meaning of the slope and intercepts of the graphs of linear functions zeros of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations. The student is expected to:															
(A) develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations.	M21 M44 M46 M53	H					★	★	✓	✓		✓	✓	✓	★

Texas Mathematics Essential Knowledge and Skills Grade 10	National Essential Skills Study (NESS) Ranking	TAKS	Government and Public Administration										
			Public Administration					Foreign Service					
			Principles of Govt. & Public Administration	Planning & Governance	Public Management & Administration	Revenue, Taxation, & Regulation	Practicum in Local, State, & Federal Govt.	Principles of Govt. & Public Administration	Planning & Governance	Public Management & Administration	Foreign Service	Revenue, Taxation, & Regulation	Practicum in Local, State, & Federal Govt.
(C) select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams, with and without the use of technology.	M21	M	✓	★	★	✓	★	✓	★	★	✓	✓	★
(8.13) Probability and statistics. The student evaluates predictions and conclusions based on statistical data. The student is expected to:													
(B) recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis.	M17 M21	M	✓	★	✓	★	✓	✓	★	✓	✓	★	✓
Objective 10: The student will demonstrate an understanding of the mathematical process and tools used in problem solving.													
(8.14) Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:													
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;	M10	H	✓	★	★	★	★	✓	★	★	✓	★	★
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	M10	H	✓	★	★	★	★	✓	★	★	✓	★	★
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	M10 M16 M21	H		★	✓	✓	✓		★	✓		✓	✓
(8.15) Underlying processes and mathematical tools. The student communicates about Grade 8 mathematics through informal and mathematical language, representations, and models. The student is expected to:													
(A) communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models.	M10 M11 M13 M21	H	✓	★	★	★	★	✓	★	★	✓	★	★

Texas
Career and Technical Education Curriculum Matrix for Mathematics

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Texas Mathematics Essential Knowledge and Skills Grade 9	**National Essential Skills Study (NESS) Ranking**	**TAKS**	**Government and Public Administration**									
			National Security						**Political Science**			
			Principles of Govt. & Public Administration	**Planning & Governance**	**Public Management & Administration**	**National Security**	**Revenue, Taxation, & Regulation**	**Practicum in Local, State, & Federal Govt.**	**Principles of Govt. & Public Administration**	**Political Science I**	**Political Science II**	**Practicum in Local, State, & Federal Govt.**
Objective 1: The student will describe functional relationships in a variety of ways.												
(A.1) Foundations for functions. The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways. The student is expected to:												
(A) describe independent and dependent quantities in functional relationships.	M37 M53 M56	H		★	✓	✓	★	✓		✓	✓	✓
(B) gather and record data, and use data sets, to determine functional (systematic) relationships between quantities.	M21 M37 M53 M56	H	✓	★	★	✓	★	★	✓	★	✓	★
(C) describe functional relationships for given problem situations and writes equations or inequalities to answer questions arising from the situations.	M21 M27 M37 M53 M56	H		✓	✓		✓			✓		
(D) represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities; and	M11 M21 M27 M53	H		✓	✓	✓	✓			✓		

Texas
Career and Technical Education Curriculum Matrix for Mathematics

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Texas Mathematics Essential Knowledge and Skills Grade 11 Exit Level	National Essential Skills Study (NESS) Ranking	TAKS	Health Science									
			Bioresearch Technology				Therapeutic & Diagnostic Services					
			Principles of Health Science	Health Science	World Health Research	Practicum in Health Science	Principles of Health Science	Health Science	Anatomy & Physiology	Medical Microbiology	Pathophysiology	Practicum in Health Science
Objective 1: The student will describe functional relationships in a variety of ways.												
(A.1) Foundations for functions. The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways. The student is expected to:												
(A) describe independent and dependent quantities in functional relationships.	M37 M53 M56	H	✓	✓	✓	✓	✓	✓	★	★	★	✓
(B) gather and record data, and use data sets, to determine functional (systematic) relationships between quantities.	M21 M37 M53 M56	H	★	★	★	★	★	★	★	★	★	★
(C) describe functional relationships for given problem situations and writes equations or inequalities to answer questions arising from the situations.	M21 M27 M37 M53 M56	H	★	✓	★	✓	★	✓	★	★	★	✓

Texas Mathematics Essential Knowledge and Skills Grade 11 Exit Level	National Essential Skills Study (NESS) Ranking	TAKS	Hospitality & Tourism												
			Lodging				Travel & Tourism				Restaurant & Food/ Beverage Services				Any Sequence
			Principles of Hospitality & Tourism	Hotel Management	Hospitality Services	Practicum in Hospitality Services	Principles of Hospitality & Tourism	Travel & Tourism Management	Hospitality Services	Practicum in Hospitality Services	Principles of Hospitality & Tourism	Restaurant Management	Culinary Arts	Practicum in Culinary Arts	Food Science
Objective 10: The student will demonstrate an understanding of the mathematical process and tools used in problem solving.															
(8.14) Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:															
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;	M10	H	★	★	★	★	★	★	★	★	★	★	★	★	★
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; and	M10	H	✓	★	★	★	✓	★	★	★	✓	★	✓	★	★
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	M10 M16 M21	H		✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
(8.15) Underlying processes and mathematical tools. The student communicates about Grade 8 mathematics through informal and mathematical language, representations, and models. The student is expected to:															
(A) communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models.	M10 M11 M13 M21	H	★	★	✓	★	★	★	✓	★	★	★	★	★	★

Texas Mathematics Essential Knowledge and Skills Grade 9	National Essential Skills Study (NESS) Ranking	TAKS	Human Services							
			Consumer Services			Counseling & Mental Health				Any Sequence
			Principles of Human Services	Dollars and Sense	Practicum in Human Services	Principles of Human Services	Interpersonal Studies	Counseling & Mental Health	Practicum in Human Services	Lifetime Nutrition & Wellness
(B) look for patterns and represent generalizations algebraically.	M11 M16 M37 M53	H								
(A.4) Foundations for functions. The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations. The student is expected to:										
(A) find specific function values, simplify polynomial expressions, transform and solve equations, and factor as necessary in problem situations.	M7 M11 M27 M36 M47 M53	H		★	✓				✓	★
(B) use the commutative, associative, and distributive properties to simplify algebraic expressions; and	M2 M7	H		✓						✓
(C) connect equation notation with function notation, such as y = x + 1 and $f(x) = x + 1$.	M27 M53 M56	H								
Objective 3: The student will demonstrate an understanding of linear functions.										
(A.5) Linear functions: The student understands that linear functions can be represented in different ways and translates among their various representations. The student is expected to:										
(A) determine whether or not given situations can be represented by linear functions.	M37 M53 M56	H								
(B) determine the domain and range values for which linear functions in given situations; and	M37 M53 M56	L								

Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	National Essential Skills Study (NESS) Ranking	TAKS 10th Grade	TAKS 11th Grade	Human Services											
				Early Childhood				Family & Community Services			Personal Care				Any Sequence
				Principles of Human Services	Childhood Development	Child Guidance	Practicum in Human Services	Principles of Human Services	Family & Community Services	Practicum in Human Services	Principles of Human Services	Introduction to Cosmetology	Cosmetology I	Cosmetology II	Lifetime Nutrition & Wellness
(B) identify cell differentiation in the development of organisms; and	S21B S30 S38	L	L	✓	★	✓		✓			✓	★	★	★	✓
(C) sequence the levels of organization in multicellular organisms to relate the parts to each other and to the whole.	S38 S50	L	L	✓	★	✓		✓			✓	★	★	★	✓
BIO (6). Science concepts. The student knows the structures and functions of nucleic acids in the mechanisms of genetics. The student is expected to:															
(A) describe components of deoxyribonucleic acid (DNA), and illustrate how information for specifying the traits of an organism is carried in the DNA;	S32	H	H	✓	★	✓		✓			✓	✓	✓	✓	✓
(B) explain replication, transcription, and translation using models of DNA and ribonucleic acid (RNA);	S32	L	H	✓	★	✓		✓			✓	✓	✓	✓	✓
(C) identify and illustrate how changes in DNA cause mutations and evaluate the significance of these changes;	S32 S37	H	H	✓	★	✓		✓			✓	✓	✓	✓	✓
(D) compare genetic variations observed in plants and animals;	S14 S37 S67	H	L	✓	★	✓		✓			✓	✓	✓	✓	✓
(E) compare the processes of mitosis and meiosis and their significance to sexual and asexual reproduction; and	S23 S66	L	L	✓	★	✓		✓			✓	✓	✓	✓	✓
(F) identify and analyze karyotypes.	S14	L	L	✓	★	✓		✓			✓	✓	✓	✓	✓
BIO (7). Science concepts. The student knows the theory of biological evolution. The student is expected to:															
(A) identify evidence of change in species using fossils, DNA sequences, anatomical similarities, physiological similarities, and embryology; and	S43 S48B S67	L	H												

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Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	**National Essential Skills Study (NESS) Ranking**	**TAKS 10th Grade**	**TAKS 11th Grade**	**Information Technology**											
				Networking Systems				**Computer Programming**				**Interactive Media**			
				Principles of Information Technology	**Computer Maintenance**	**Telecommunications & Networking**	**Computer Technician**	**Principles of Information Technology**	**Computer Programming**	**Advanced Computer Programming**	**Research in IT Solutions**	**Principles of Information Technology**	**Digital & Interactive Multimedia**	**Web Technologies**	**Research in IT Solutions**
BIO (1). Science processes. The student, for at least 40% of instructional time, participates in field and laboratory investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:															
(A) demonstrate safe practices during field and laboratory investigations; and	S18	H	H	✓	★	★	★	✓	✓	✓	✓	✓	★	✓	✓
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	S9	L	L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BIO (2). Science processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:.															
(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;	S1 S3 S15	H	H	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(B) collect data and make measurements with precision;	S3 S4 S12 M21	H	H	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	National Essential Skills Study (NESS) Ranking	TAKS 10th Grade	TAKS 11th Grade	Law, Public Safety, Corrections & Security											
				Security Services				Law Enforcement				Firefighter			
				Principles of Law, Public Safety, Corrections, & Security	Law Enforcement I	Security Services	Practicum in Law, Public Safety, Corrections, & Security	Principles of Law, Public Safety, Corrections, & Security	Law Enforcement I	Forensic Science	Law Enforcement II	Principles of Law, Public Safety, Corrections, & Security	Firefighter I	Firefighter II
IPC (4). Science concepts. The student knows concepts of force and motion evident in everyday life. The student is expected to:														
(A) calculate speed, momentum, acceleration, work, and power in systems such as in the human body, moving toys, and machines;	S6 S39A S61 S79	H	H		✓				✓	★	✓		✓	★
(B) investigate and describe [applications of (tested at 10th grade)] Newton's laws such as in vehicle restraints, sports activities, geological processes, and satellite orbits;	S15 S17	H	H		✓				✓	★	✓		✓	★
(D) investigate and demonstrate [mechanical advantage] and efficiency of various machines such as levers, motors, wheels and axles, pulleys, and ramps.	S6 S39A	L	H							✓			✓	★
IPC (5). Science concepts. The student knows the effects of waves on everyday life. The student is expected to:														
(A) demonstrate wave types and their characteristics through a variety of activities such as modeling with ropes and coils, activating tuning forks, and interpreting data on seismic waves;	S13 S46	H	L		✓	✓			✓	★	✓			
(B) demonstrate wave interactions including interference, polarization, reflection, refraction, and resonance within various materials;	S46 S59	L	H		✓	✓			✓	★	✓			
ICP (6). Science concepts. The student knows the impact of energy transformations in everyday life. The student is expected to:														
(A) describe the law of conservation of energy;	S52	H	H							✓			★	✓
(B) investigate and demonstrate the movement of heat through solids, liquids, and gases by convection, conduction, and radiation;	S21A S27	H	H							✓			★	✓

Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	National Essential Skills Study (NESS) Ranking	TAKS 10th Grade	TAKS 11th Grade	Law, Public Safety, Corrections & Safety							
				Correctional Services				Legal Services			
				Principles of Law, Public Safety, Corrections, & Security	Law Enforcement I	Correctional Services	Practicum in Law, Public Safety, Corrections, & Security	Principles of Law, Public Safety, Corrections, & Security	Law Enforcement I	Courts & Criminal Procedures	Practicum in Law, Public Safety, Corrections, & Security
The following Integrated Physics and Chemistry (IPC) TEKS are tested on the 10th Grade and 11th Grade Exit TAKS											
IPC (3). Science processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:											
(A) analyze, review, [and critique] scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	S1 S3 S12 E13	H	H	★	★	★	✓	★	★	★	✓
(B) draw inferences based on data related to promotional materials for products and services;	S3 S4 S13	H	H	✓	✓	✓	✓	✓	✓	✓	✓
IPC (4). Science concepts. The student knows concepts of force and motion evident in everyday life. The student is expected to:											
(A) calculate speed, momentum, acceleration, work, and power in systems such as in the human body, moving toys, and machines;	S6 S39A S61 S79	H	H		✓				✓		
(B) investigate and describe [applications of (tested at 10th grade)] Newton's laws such as in vehicle restraints, sports activities, geological processes, and satellite orbits;	S15 S17	H	H		✓				✓		
(D) investigate and demonstrate [mechanical advantage] and efficiency of various machines such as levers, motors, wheels and axles, pulleys, and ramps.	S6 S39A	L	H								
IPC (5). Science concepts. The student knows the effects of waves on everyday life. The student is expected to:											
(A) demonstrate wave types and their characteristics through a variety of activities such as modeling with ropes and coils, activating tuning forks, and interpreting data on seismic waves;	S13 S46	H	L		✓				✓		

Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	National Essential Skills Study (NESS) Ranking	TAKS 10th Grade	TAKS 11th Grade	Manufacturing														
				Flexible Manufacturing				Welding				Metal Manufacturing				Manufacturing Engineering		
				Principles of Manufacturing	Flexible Manufacturing	Advanced Flexible Manufacturing	Practicum in Manufacturing	Principles of Manufacturing	Welding	Advanced Welding	Practicum in Manufacturing	Principles of Manufacturing	Precision Metal Manufacturing	Advanced Precision Metal Manufacturing	Practicum in Manufacturing	Principles of Manufacturing	Manufacturing Engineering	Practicum in Manufacturing
(B) collect data and make measurements with precision;	S3 S4 S12 M21	H	H	★	✓	✓	✓	★	✓	✓	✓	★	✓	✓	✓	★	★	✓
(C) organize, analyze, evaluate, make inferences, and predict trends from data; and	S3 S4 S12 M21	H	H	★	✓	✓	✓	★	✓	✓	✓	★	✓	✓	✓	★	★	✓
(D) communicate valid conclusions.	S12 E7	H	H	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★
BIO (3). Science processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:																		
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	S1 S3 S12 S47 E13	L	L	★	✓	✓	✓	★	✓	✓	✓	★	✓	✓	✓	★	★	✓
(B) evaluate promotional claims that relate to biological issues such as product labeling and advertisements;	S7 S10 S42 S47 E13	L	L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(C) evaluate the impact of research on scientific thought, society, and the environment;	S10 S42 S47	L	L	★	✓	✓	✓	★	✓	✓	✓	★	✓	✓	✓	★	✓	✓

Texas
Career and Technical Education Curriculum Matrix for Science

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Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	**National Essential Skills Study (NESS) Ranking**	**TAKS 10th Grade**	**TAKS 11th Grade**	**Marketing**											
				Entrepreneurship				**Professional Sales & Marketing**				**Fashion Marketing**			
				Principles of Business, Marketing, & Finance	**Entrepreneurship**	**Marketing Dynamics**	**Practicum in Marketing Dynamics**	**Principles of Business, Marketing, & Finance**	**Advertising & Sales Promotion**	**Marketing Dynamics**	**Practicum in Marketing Dynamics**	**Principles of Business, Marketing, & Finance**	**Fashion Marketing**	**Marketing Dynamics**	**Practicum in Marketing Dynamics**
BIO (1). Science processes. The student, for at least 40% of instructional time, participates in field and laboratory investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:															
(A) demonstrate safe practices during field and laboratory investigations; and	S18	H	H	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.	S9	L	L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BIO (2). Science processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:.															
(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;	S1 S3 S15	H	H	✓	✓	✓	★	✓	✓	✓	★	✓	✓	✓	★
(B) collect data and make measurements with precision;	S3 S4 S12 M21	H	H	✓	✓	★	★	✓	✓	★	★	✓	✓	★	★

Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	National Essential Skills Study (NESS) Ranking	TAKS 10th Grade	TAKS 11th Grade	Marketing							
				Retailing & E-Marketing				Sports & Entertainment Marketing			
				Principles of Business, Marketing, & Finance	Retailing & E-tailing	Marketing Dynamics	Practicum in Marketing Dynamics	Principles of Business, Marketing, & Finance	Sports & Entertainment Marketing	Marketing Dynamics	Practicum in Marketing Dynamics
BIO (13). Science concepts. The student knows the significance of plants in the environment. The student is expected to:											
(A) evaluate the significance of structural and physiological adaptations of plants to their environments; and	S16 S34	H	H								
(B) survey and identify methods of reproduction, growth, and development of various types of plants.	S4 S12 S15 S66	L	L								
The following Integrated Physics and Chemistry (IPC) TEKS are tested on the 10th Grade and 11th Grade Exit TAKS											
IPC (3). Science processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:											
(A) analyze, review, [and critique] scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	S1 S3 S12 E13	H	H	✓	★	✓	✓	✓	✓	✓	✓
(B) draw inferences based on data related to promotional materials for products and services;	S3 S4 S13	H	H	✓	★	★	★	✓	✓	★	★
IPC (4). Science concepts. The student knows concepts of force and motion evident in everyday life. The student is expected to:											
(A) calculate speed, momentum, acceleration, work, and power in systems such as in the human body, moving toys, and machines;	S6 S39A S61 S79	H	H								
(B) investigate and describe [applications of (tested at 10th grade)] Newton's laws such as in vehicle restraints, sports activities, geological processes, and satellite orbits;	S15 S17	H	H								

Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	National Essential Skills Study (NESS) Ranking	TAKS 10th Grade	TAKS 11th Grade	Science, Technology, Engineering, & Mathematics																	
				Biotechnology				Electronics					Engineering				Any Sequence				
				Concepts of Engineering & Technology	Biotechnology	Advanced Biotechnology	Practicum in STEM	Concepts of Engineering & Technology	Electronics	Advanced Electronics	Robotics & Automation	Practicum in STEM	Concepts of Engineering & Technology	Engineering Design	Advanced Engineering Design	Practicum in STEM	Principles of Technology	Engineering Mathematics	Engineering Design & Problem Solving	Science Research & Design
IPC (4). Science concepts. The student knows concepts of force and motion evident in everyday life. The student is expected to:																					
(A) calculate speed, momentum, acceleration, work, and power in systems such as in the human body, moving toys, and machines;	S6 S39A S61 S79	H	H														★	★	✓	✓
(B) investigate and describe [applications of (tested at 10th grade)] Newton's laws such as in vehicle restraints, sports activities, geological processes, and satellite orbits;	S15 S17	H	H														★	✓	✓	✓
(D) investigate and demonstrate [mechanical advantage] and efficiency of various machines such as levers, motors, wheels and axles, pulleys, and ramps.	S6 S39A	L	H														★	★	✓	✓
IPC (5). Science concepts. The student knows the effects of waves on everyday life. The student is expected to:																					
(A) demonstrate wave types and their characteristics through a variety of activities such as modeling with ropes and coils, activating tuning forks, and interpreting data on seismic waves;	S13 S46	H	L		✓	✓			★	★	★						★	✓	✓	✓
(B) demonstrate wave interactions including interference, polarization, reflection, refraction, and resonance within various materials;	S46 S59	L	H		✓	✓			★	★	★						★	✓	✓	✓
ICP (6). Science concepts. The student knows the impact of energy transformations in everyday life. The student is expected to:																					
(A) describe the law of conservation of energy;	S52	H	H		✓	✓											★	✓	✓	✓

Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	National Essential Skills Study (NESS) Ranking	TAKS 10th Grade	TAKS 11th Grade	Transportation, Distribution and Logistics											
				Aircraft Technology				Automotive Technology				Collision Repair			
				Principles of Transportation, Distribution and Logistics	Energy, Power, & Transportation Systems	Aircraft Technology	Advanced Aircraft Technology	Principles of Transportation, Distribution and Logistics	Energy, Power, & Transportation Systems	Automotive Technology	Advanced Automotive Technology	Principles of Transportation, Distribution and Logistics	Energy, Power, & Transportation Systems	Collision Repair & Refinishing	Advanced Collision Repair & Refinishing
(C) organize, analyze, evaluate, make inferences, and predict trends from data; and	S3 S4 S12 M21	H	H	★	✓	✓	✓	★	✓	✓	✓	★	✓	✓	✓
(D) communicate valid conclusions.	S12 E7	H	H	★	✓	✓	✓	★	✓	✓	✓	★	✓	✓	✓
BIO (3). Science processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:															
(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;	S1 S3 S12 S47 E13	L	L	★	✓	✓	✓	★	✓	✓	✓	★	✓	✓	✓
(B) evaluate promotional claims that relate to biological issues such as product labeling and advertisements;	S7 S10 S42 S47 E13	L	L												
(C) evaluate the impact of research on scientific thought, society, and the environment;	S10 S42 S47	L	L												
(D) describe the connection between biology and future careers;	S26	L	L												

Texas Science Essential Knowledge and Skills Biology I & Partial Integrated Physics and Chemistry	National Essential Skills Study (NESS) Ranking	TAKS 10th Grade	TAKS 11th Grade	Transportation, Distribution and Logistics													
				Engine Technology					Transportation Systems Management				Logistics Planning & Management				
				Principles of Transportation, Distribution and Logistics	Energy, Power, & Transportation Systems	Small Engine Technology	Advanced Small Engine Technology	Practicum in Transportation, Distribution & Logistics	Principles of Transportation, Distribution and Logistics	Energy, Power, & Transportation Systems	Transportation Systems Management	Practicum in Transportation, Distribution & Logistics	Principles of Transportation, Distribution and Logistics	Energy, Power, & Transportation Systems	Logistics, Planning, & Management Systems	Practicum in Transportation, Distribution & Logistics
ICP (6). Science concepts. The student knows the impact of energy transformations in everyday life. The student is expected to:																	
(A) describe the law of conservation of energy;	S52	H	H	✓	✓		✓		✓	✓	✓		✓	✓	✓	
(B) investigate and demonstrate the movement of heat through solids, liquids, and gases by convection, conduction, and radiation;	S21A S27	H	H		✓		✓			✓	✓			✓	★	
(D) investigate and compare economic and environmental impacts of using various energy sources such as rechargeable or disposable batteries and solar cells;	S7 S10 S42 S47	L	H	✓	✓		✓		✓	✓	✓		✓	✓	★	
(F) investigate and compare series and parallel circuits;	S41	H	L				★				✓					
IPC (7). Science concepts. The student knows relationships exist between properties of matter and its components. The student is expected to:																	
(A) investigate and identify properties of fluids including density, viscosity, and buoyancy;	S19	H	H	✓					✓		✓		✓		★	
(D) relate the chemical behavior of an element including bonding, to its placement on the periodic table; and	S53	L	H	✓					✓		✓		✓		✓	
(E) classify samples of matter from everyday life as being elements, compounds, or mixtures.	S20 S53	H	L	✓					✓		✓		✓		✓	