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Texas 2017 Proclamation:

§130.2 Principles of Agriculture, Food, and Natural Resources

**Correlations to the Texas Essential Knowledge
and Skills (TEKS)**

**Correlations to the English Language Proficiency
Standards (ELPS)**



Correlation of
Principles of Agriculture, Food, and Natural Resources, 1e, ©2017
to the
Texas Essential Knowledge and Skills (TEKS)
Course: §130.2 Principles of Agriculture, Food, and Natural Resources (MLC 9717)

The following chart lists the Knowledge and Skills Statements and Student Expectations for the Texas Essential Knowledge and Skills (TEKS) for Principles of Agriculture, Food, and Natural Resources. For each Student Expectation, the corresponding pages in *Principles of Agriculture, Food, and Natural Resources* are listed.

Student Expectations	Textbook Page(s)
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	
(1) (A) identify career development, education, and entrepreneurship opportunities in the field of agriculture, food, and natural resources	100, 103, 112, 117, 125
(1) (B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	106–107, 129–130
(1) (C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	144–207, 470–472
(1) (D) analyze employers' expectations, such as appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills	129–130
(1) (E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	119–123
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	
(2) (A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	103, 108–111, 113
(2) (B) apply proper record-keeping skills as they relate to the supervised agriculture experience	110–113
(2) (C) participate in youth leadership opportunities to create a well-rounded experience program	60–61
(2) (D) produce and participate in a local program of activities using a strategic planning process	60–61, 100, 103–110

Student Expectations	Textbook Page(s)
(3) The student analyzes concepts related to global diversity. The student is expected to:	
(3) (A) compare and contrast global agricultural markets, currency, and trends	8, 33, 408–415, 454–469
(3) (B) evaluate marketing factors and practices that impact the global markets	10, 461–467
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	
(4) (A) define the scope of agriculture	5
(4) (B) analyze the scope of agriculture, food, and natural resources and its effect upon society	5, 12
(4) (C) evaluate significant historical and current agriculture, food, and natural resource developments	17–18, 26, 35–37
(4) (D) identify potential future scenarios for agriculture, food, and natural resources systems, including global impacts	37–39
(4) (E) describe how emerging technologies and globalization impacts agriculture, food, and natural resources	228–229, 278–289
(4) (F) compare and contrast issues impacting agriculture, food, and natural resources such as biotechnology, employment, safety, environment, and animal welfare issues	4–15
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	
(5) (A) develop and demonstrate leadership skills and collaborate with others to accomplish organizational goals and objectives	52–57, 59–61
(5) (B) develop and demonstrate personal growth skills and collaborate with others to accomplish organizational goals and objectives	52–61
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	
(6) (A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations	65–71
(6) (B) demonstrate effective listening skills appropriate for formal and informal situations	69
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	

Student Expectations	Textbook Page(s)
(7) (A) discuss major research and developments in the fields of agriculture, food, and natural resources	26–29, 232–247
(7) (B) use a variety of resources for research and development	102, 106–108, 213
(7) (C) describe scientific methods of research	211–217
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	
(8) (A) develop a formal business plan	403–408
(8) (B) develop, maintain, and analyze records	408–415
(9) The student uses information technology tools to access, manage, integrate, and create information related to agriculture, food, and natural resources. The student is expected to:	
(9) (A) apply technology applications such as industry-relevant software and Internet applications	256–295
(9) (B) utilize collaborative, groupware, and virtual meeting software	37, 73, 78–87, 129, 438
(9) (C) analyze the benefits and limitations of emerging technology such as online mapping systems, drones, and robotics	285–286
(9) (D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	280–284
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	
(10) (A) identify the components and properties of soils	929–932, 936–940
(10) (B) identify and describe the process of soil formation	932–936
(10) (C) conduct experiments related to soil chemistry	941, 947
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	
(11) (A) describe the structure and functions of plant parts	738–745, 748–752
(11) (B) discuss and apply plant germination, growth, and development	745–747
(11) (C) describe plant reproduction, genetics, and breeding	750–753
(11) (D) identify plants of importance to agriculture, food, and natural resources	757–763, 773–776, 786
(11) (E) use tools, equipment, and personal protective equipment common to plant systems	159–163, 177–178, 763–766, 776, 780–782

Student Expectations	Textbook Page(s)
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	
(12) (A) describe animal growth and development	509–510, 529–531, 539–540, 574–578, 618–619, 629
(12) (B) identify animal anatomy and physiology	532–533, 548–549, 581–582, 608–610, 612–613, 629–632
(12) (C) identify and evaluate breeds and classes of livestock	508, 516–522, 526, 533–535, 541–548, 555–562, 574–575
(12) (D) explain animal selection, reproduction, breeding, and genetics	233–235, 510–511, 650–680
(13) The student describes the principles of food products and processing systems. The student is expected to:	
(13) (A) evaluate food products and processing systems	443–444, 449–451, 458
(13) (B) determine trends in world food production	454–458
(13) (C) discuss current issues in food production	454–458
(13) (D) use tools, equipment, and personal protective equipment common to food products and processing systems	159–163, 379–391
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	
(14) (A) identify major areas of power, structural, and technical systems	380–384
(14) (B) use safe and appropriate laboratory procedures and policies	158–159
(14) (C) create proposals that include bill of materials, budget, schedule, drawings, and technical skills developed for basic power, structural, and technical system projects or structures	374–375, 407
(14) (D) identify building materials and fasteners	333, 337–339, 340–344, 376, 1057–1058
(14) (E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	177–178, 331–363
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	
(15) (A) determine the effects of agriculture, food, and natural resources upon safety, health, and the environment	144–207, 852
(15) (B) identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources	146–157, 470–472

Student Expectations	Textbook Page(s)
(15) (C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	159, 167, 852, 862, 922–923, 968, 983–984
(15) (D) research and analyze alternative energy sources that stem from or impact agriculture, food, and natural resources	32–39, 298–317, 320–328
(15) (E) evaluate energy and water conservation methods	35, 298–319, 964–974, 977–988

English Language Proficiency Standards (ELPS) Correlation for *Principles of Agriculture, Food, and Natural Resources* by Rayfield, Smith, Park, and Croom, ©2017

This following chart identifies some of the content in *Principles of Agriculture, Food, and Natural Resources* that may provide useful support when addressing specific Texas English Language Proficiency Standards (ELPS).

Standard	Page(s)	Specific Location
(1) Cross-curricular second language acquisition/learning strategies. The ELL uses language learning strategies to develop an awareness of his or her own learning processes in all content areas. In order for the ELL to meet grade-level learning expectations across the foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student's level of English language proficiency. The student is expected to:		
(1)(A) use prior knowledge and experiences to understand meanings in English	63	Thinking Critically #3
(1)(B) monitor oral and written language production and employ self-corrective techniques or other resources	31	Thinking Critically #2
(1)(C) use strategic learning techniques such as concept mapping, drawing, memorizing, comparing, contrasting, and reviewing to acquire basic and grade-level vocabulary	31 47 95 143	Analyze and Apply #1 Communicating... activity #4 Communicating... activity #3 STEM and Academic... #2
(1)(F) use accessible language and learn new and essential language in the process	47 47 94	Communicating... activity #1 Communicating... activity #1 Communicating... activity #4
(2) Cross-curricular second language acquisition/listening. The ELL listens to a variety of speakers including teachers, peers, and electronic media to gain an increasing level of comprehension of newly acquired language in all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in listening. In order for the ELL to meet grade-level learning expectations across the foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student's level of English language proficiency. The student is expected to:		
(2)(C) learn new language structures, expressions, and basic and academic vocabulary heard during classroom instruction and interactions	47 255 392 680	Communicating... activity #6 Communicating...activity #3 Thinking Critically #1 Analyze and Apply #1
(2)(D) monitor understanding of spoken language during classroom instruction and interactions and seek clarification as needed	47	Communicating... activity #3

Standard	Page(s)	Specific Location
(2)(E) use visual, contextual, and linguistic support to enhance and confirm understanding of increasingly complex and elaborated spoken language	47	Communicating... activity #5
(2)(F) listen to and derive meaning from a variety of media such as audio tape, video, DVD, and CD ROM to build and reinforce concept and language attainment	94	Communicating... activity #1
	94	Communicating... activity #2
	505	Communicating... activity #1
(2)(G) understand the general meaning, main points, and important details of spoken language ranging from situations in which topics, language, and contexts are familiar to unfamiliar	95	Extending Your Knowledge #2
(2)(I) demonstrate listening comprehension of increasingly complex spoken English by following directions, retelling or summarizing spoken messages, responding to questions and requests, collaborating with peers, and taking notes commensurate with content and grade-level needs	95	Communicating... activity #5
(3) Cross-curricular second language acquisition/speaking. The ELL speaks in a variety of modes for a variety of purposes with an awareness of different language registers (formal/informal) using vocabulary with increasing fluency and accuracy in language arts and all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in speaking. In order for the ELL to meet grade-level learning expectations across the foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student's level of English language proficiency. The student is expected to:		
(3)(B) expand and internalize initial English vocabulary by learning and using high-frequency English words necessary for identifying and describing people, places, and objects, by retelling simple stories and basic information represented or supported by pictures, and by learning and using routine language needed for classroom communication	143	STEM and Academic... #4
(3)(C) speak using a variety of grammatical structures, sentence lengths, sentence types, and connecting words with increasing accuracy and ease as more English is acquired	143	Communicating... activity #3
(3)(D) speak using grade-level content area vocabulary in context to internalize new English words and build academic language proficiency	47	Communicating... activity #1
	207	Communicating... activity #1
	295	Communicating... activity #1
(3)(E) share information in cooperative learning interactions	47	Communicating... activity #2
	47	Communicating... activity #6
	998	Communicating... activity #3

Standard	Page(s)	Specific Location
(3)(F) ask and give information ranging from using a very limited bank of high-frequency, high-need, concrete vocabulary, including key words and expressions needed for basic communication in academic and social contexts, to using abstract and content-based vocabulary during extended speaking assignments	139	Analyze and Apply #2
	143	Communicating... activity #1
	143	Communicating... activity #3
	294	STEM and Academic... #3
	570	STEM and Academic... #5
	998	Communicating... activity #1
(3)(G) express opinions, ideas, and feelings ranging from communicating single words and short phrases to participating in extended discussions on a variety of social and grade-appropriate academic topics	254	STEM and Academic... #5
	255	Communicating... activity #2
	291	Thinking Critically #1
	295	Communicating... activity #3
	565	Thinking Critically #2
	647	Communicating... activity #2
	715	Thinking Critically #2
(3)(H) narrate, describe, and explain with increasing specificity and detail as more English is acquired	76	Analyze and Apply #2
	207	Communicating... activity #3
	255	Communicating... activity #3
	255	Communicating... activity #4
	439	Communicating... activity #3
	505	Communicating... activity #2
	571	Communicating... activity #2
	914	Communicating... activity #2
(4) Cross-curricular second language acquisition/reading. The ELL reads a variety of texts for a variety of purposes with an increasing level of comprehension in all content areas. ELLs may be at the beginning, intermediate, advanced, or advanced high stage of English language acquisition in reading. In order for the ELL to meet grade-level learning expectations across the foundation and enrichment curriculum, all instruction delivered in English must be linguistically accommodated (communicated, sequenced, and scaffolded) commensurate with the student's level of English language proficiency. For kindergarten and first grade, certain of these student expectations apply to text read aloud for students not yet at the stage of decoding written text. The student is expected to:		
(4)(C) develop basic sight vocabulary, derive meaning of environmental print, and comprehend English vocabulary and language structures used routinely in written classroom materials	47	Communicating... activity #1
	207	Communicating... activity #1
	295	Communicating... activity #1
(4)(D) use prereading supports such as graphic organizers, illustrations, and pretaught topic-related vocabulary and other prereading activities to enhance comprehension of written text	31	Analyzed and Apply #1
	47	Communicating... activity #1
	207	Communicating... activity #1
	295	Communicating... activity #1
(4)(E) read linguistically accommodated content area material with a decreasing need for linguistic accommodations as more English is learned	47	Communicating... activity #3
	47	Communicating... activity #6
	143	Communicating... activity #2
	207	Communicating... activity #3

**ELPS-Principles of Agriculture, Food, and Natural Resources
Correlation Chart—page 4**

Standard	Page(s)	Specific Location
(4)(F) use visual and contextual support and support from peers and teachers to read grade-appropriate content area text, enhance and confirm understanding, and develop vocabulary, grasp of language structures, and background knowledge needed to comprehend increasingly challenging language	31	Analyze and Apply #1
	94	STEM and Academic...#1
	95	Communicating... activity #1
	142	STEM and Academic...#2
	504	STEM and Academic...#5
	537	STEM and Academic...#2
	627	Analyze and Apply #1
	732	STEM and Academic...#1
(4)(G) demonstrate comprehension of increasingly complex English by participating in shared reading, retelling or summarizing material, responding to questions, and taking notes commensurate with content area and grade level needs	976	Analyze and Apply #1
	95	Extending Your Knowledge #2
	255	Communicating...activity #3
	295	Communicating...activity #3
	571	Communicating...activity #2
	839	Extending Your Knowledge #3