



TEKS CORRELATIONS & SUGGESTED PACING GUIDE

Principles of Agriculture, Food and Natural Resources



iCEV Agricultural Science Site

Meets 100% of TEKS

TABLE OF CONTENTS

I. SUGGESTED PACING GUIDE W/TEKS SUMMARY				3 - 5	
II. TEKS BY LESSON				6 - 81	
History of Agriculture	6	Emerging Technologies: Molecular Methods	29	Livestock Breed Identification: Poultry	55
Value of Agriculture: Agriculture as a Whole	7	Geographic Information Systems (GIS) & Global Positioning	30	Livestock Breed Identification: Sheep	55
Value of Agriculture: Determining the Value	8	Cybersecurity in Agriculture	N/A	Livestock Breed Identification: Swine	55
The World of Agriculture	9-12	Agricultural Business: Management	31	Fundamental Animal Microgenetics	56
Blue & Gold Experience: Introduction	13	Budgeting for Agribusiness	32	Basic Animal Reproduction	57
Blue & Gold Experience: SAE Programs	14	Electronic Communication & Scheduling	33	Livestock Breeding Systems	58
Introduction to Record Keeping	15	Virtual Meeting Basics	34	Farm to Plate	59
Blue & Gold Experience: Exploring SAEs - Ownership/Entrepreneurship	N/A	Field Trip: DigIt! The Secrets of Soil	35	Dairy Products Production	60
Blue & Gold Experience: Exploring SAEs - Placement/Internship	N/A	Soil Formation & Evaluation	36	Fruit & Nut Production	61
Blue & Gold Experience: Exploring SAEs - Research	N/A	Fertilizers & Soil Amendments	37	Grades and Classes of Seafood and Fish	62
Blue & Gold Experience: Exploring SAEs - School-Based Enterprise	N/A	Anatomy of Plants	38	Poultry Products Production	63
Blue & Gold Experience: Exploring SAEs - Service-Learning	N/A	Fundamental Plant Processes	39	Vegetable Production	64
Blue & Gold Experience: Involvement	16	Plant Nutrition	40	Value Added & Specialty Products	65
Blue & Gold Experience: Leadership	17	Plant Genetics	41	Carcass Fabrication: Personal Protective Equipment (PPE)	66
Blue & Gold Experience: Opportunities	N/A	Scientific Classification & Nomenclature of Plants	42	Mechanized Agriculture	67
Blue & Gold Experience: The FFA Creed	N/A	Benefits of the Horticulture Industry	43	Project Management Skills	68
Basic Shop Safety: Personal Protection Equipment		Crop Production in the United States: Southern Region	44	Installation: Roofing	69
Basic Shop Safety: Mechanical Hazards		Fertilizers & the Environment	45	Installation: Windows	70
Basic Shop Safety: Non-Mechanical Hazards	18-19	Floral Design Tools	46	Installation: Doors	71
Basic Shop Safety: Elevated Work and Fall Protection		Landscape Tools: Use & Safety	47	Environmental Resources: Renewable & Non-Renewable Resources	72
Basic Shop Safety: Hazard Recognition		Grades & Standards of Livestock	48	Water Resources	73
Welding Shop Safety	20-21	External Anatomy of Livestock: Terms & Terminology	49	Exploring Careers: Agriculture, Food & Natural Resources	74-75
First Aid Basics	22	Digestive System	50	Employability Skills	76
Scientific Procedures & Safety	23	Nervous, Skeletal & Muscular Systems	51	Teamwork & Collaboration	77
Hand & Power Tool Safety in Construction Environments	24	Circulatory & Respiratory Systems	52	Listening 101	78
Shielded Metal Arc Welding: Preparation & Safety	26	Endocrine, Immune & Integumentary Systems	53	Public Speaking Basics	79
Field Trip: U.S. Meat Animal Research Center	26	Basic Animal Science	54	Researching Strategies & Tactics	80
Biotechnology - Fetal Programming	27	Livestock Breed Identification: Cattle	55	Written Communication Practices	81
Biotechnology - Uses in the Food Industry	28	Livestock Breed Identification: Goats	55		
III. ENTIRE TEKS CORRELATION INSTRUMENT				82 - 97	

Scope & Sequence	Lesson Title	TEKS	Days of Teaching*
Module 1: History & Industry Overview			
1	History of Agriculture	4.A; 4.B; 4.C	3
2	Value of Agriculture: Agriculture as a Whole	3.A	2
3	Value of Agriculture: Determining the Value	3.A	2
4	The World of Agriculture	1.A; 1.B; 3.A; 3.B; 4.C; 4.D; 4.E; 4.F; 7.A; 9.C; 9.D; 14.A; 15.A; 15.B; 15.C	12
Module 2: Blue & Gold Experience			
5	Blue & Gold Experience: Introduction	2.C	5
6	Blue & Gold Experience: SAE Programs	2.A	4
7	Introduction to Record Keeping	2.B	
8	Blue & Gold Experience: Exploring SAEs - Ownership/Entrepreneurship	2.A	1
9	Blue & Gold Experience: Exploring SAEs - Placement/Internship	2.A	1
10	Blue & Gold Experience: Exploring SAEs - Research	2.A	1
11	Blue & Gold Experience: Exploring SAEs - School-Based Enterprise	2.A	1
12	Blue & Gold Experience: Exploring SAEs - Service-Learning	2.A	1
13	Blue & Gold Experience: Involvement	2.C; 2.D	Coming Soon
14	Blue & Gold Experience: Leadership	5.A	Coming Soon
15	Blue & Gold Experience: Opportunities	N/A	Coming Soon
16	Blue & Gold Experience: The FFA Creed	N/A	Coming Soon
Module 3: Safety			
17	Basic Shop Safety: Personal Protection Equipment	1.C; 14.B; 14.E	3
18	Basic Shop Safety: Mechanical Hazards	1.C; 14.B; 14.E	3
19	Basic Shop Safety: Non-Mechanical Hazards	1.C; 14.B; 14.E	3
20	Basic Shop Safety: Elevated Work and Fall Protection	1.C; 14.B; 14.E	3
21	Basic Shop Safety: Hazard Recognition	1.C; 14.B; 14.E	3
22	Welding Shop Safety	1.C; 14.B; 14.E	8
23	First Aid Basics	1.C	9
24	Scientific Procedures & Safety	7.C	16
25	Hand & Power Tool Safety in Construction Environments	14.E	2
26	Shielded Metal Arc Welding: Preparation & Safety	14.E	7
Module 4: Research & Technology			
27	Field Trip: U.S. Meat Animal Research Center	7.A	4
28	Biotechnology - Fetal Programming	7.A	1
29	Biotechnology - Uses in the Food Industry	7.A	1
30	Emerging Technologies: Molecular Methods	7.A	1
31	Geographic Information Systems (GIS) & Global Positioning Systems (GPS)	9.D	6
Module 5: Agribusiness Systems			
32	Cybersecurity in Agriculture	N/A	4
33	Agricultural Business: Management	8.A	10
34	Budgeting for Agribusiness	8.B	6
35	Electronic Communication & Scheduling	9.A	7
36	Virtual Meeting Basics	9.B	6

Scope & Sequence	Lesson Title	TEKS	Days of Teaching*
Module 6: Plant Systems			
37	Field Trip: DigIt! The Secrets of Soil	10.A	6
38	Soil Formation & Evaluation	10.B	7
39	Fertilizers & Soil Amendments	10.C	7
40	Anatomy of Plants	11.A	5
41	Fundamental Plant Processes	11.B	7
42	Plant Nutrition	11.B	6
43	Plant Genetics	11.C	8
44	Scientific Classification & Nomenclature of Plants	11.D	9
45	Benefits of the Horticulture Industry	11.D	6
46	Crop Production in the United States: Southern Region	11.D	6
47	Fertilizers & the Environment	11.E	5
48	Floral Design Tools	11.E	7
49	Landscape Tools: Use & Safety	11.E	4
Module 7: Animal Systems			
50	Grades & Standards of Livestock	12.A	Coming Soon
51	External Anatomy of Livestock: Terms & Terminology	12.B	6
52	Digestive System	12.B	4
53	Nervous, Skeletal & Muscular Systems	12.B	4
54	Circulatory & Respiratory Systems	12.B	4
55	Endocrine, Immune & Integumentary Systems	12.B	4
56	Basic Animal Science	12.C	5
57	Livestock Breed Identification: Cattle	12.C	6
58	Livestock Breed Identification: Goats	12.C	6
59	Livestock Breed Identification: Poultry	12.C	9
60	Livestock Breed Identification: Sheep	12.C	5
61	Livestock Breed Identification: Swine	12.C	6
62	Fundamental Animal Microgenetics	12.D	5
63	Basic Animal Reproduction	12.D	4
64	Livestock Breeding Systems	12.D	7
Module 8: Food Products & Processing Systems			
65	Farm to Plate	13.B; 13.C	10
66	Dairy Products Production	13.A	7
67	Fruit & Nut Production	13.A	7
68	Grades and Classes of Seafood and Fish	13.A	9
69	Poultry Products Production	13.A	8
70	Vegetable Production	13.A	7
71	Value Added & Specialty Products	13.A	5
72	Carcass Fabrication: Personal Protective Equipment (PPE)	13.D	1

Scope & Sequence	Lesson Title	TEKS	Days of Teaching*
Module 9: Power, Structural & Technical Systems			
73	Mechanized Agriculture	14.A	5
74	Project Management Skills	14.C	13
75	Installation: Roofing	12.D	5
76	Installation: Windows	12.D	5
77	Installation: Doors	12.D	5
Module 10: Environmental Services Systems			
78	Environmental Resources: Renewable & Non-Renewable Resources and Energy	15.D	6
79	Water Resources	15.E	6
Module 11: Career Ready Practices			
80	Exploring Careers: Agriculture, Food & Natural Resources	1.A; 1.B; 1.E	12
81	Employability Skills	1.B; 1.D; 5.B	15
82	Teamwork & Collaboration	1.B; 5.A; 5.B	5
83	Listening 101	6.B	3
84	Public Speaking Basics	6.A	6
85	Researching Strategies & Tactics	7.B	6
86	Written Communication Practices	6.A	15

* *Days of Teaching* identifies the number of days a lesson may take if all lesson plan items (i.e., activities, projects, handouts, etc.) are utilized as written by ICEV curriculum writers. Flexibility within the lesson plan allows instructor autonomy of implementation for each item.

History of Agriculture

Knowledge and Skills Statement	Student Expectation	Breakout
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(A) define the scope of agriculture	(i) define the scope of agriculture
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(B) analyze the scope of agriculture, food, and natural resources and its effect upon society	(i) analyze the scope of agriculture, food, and natural resources
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(B) analyze the scope of agriculture, food, and natural resources and its effect upon society	(ii) analyze the scope of agriculture, food, and natural resources' effect upon society
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(C) evaluate significant historical and current agriculture, food, and natural resource developments	(i) evaluate significant historical agriculture, food, and natural resource developments

Value of Agriculture: Agriculture as a Whole

Knowledge and Skills Statement	Student Expectation	Breakout
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(i) compare and contrast global agricultural markets
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(ii) compare and contrast global currency

Value of Agriculture: Determining the Value

Knowledge and Skills Statement	Student Expectation	Breakout
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(i) compare and contrast global agricultural markets
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(ii) compare and contrast global currency

The World of Agriculture

Knowledge and Skills Statement	Student Expectation	Breakout
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(A) identify career development, education, and entrepreneurship opportunities in the field of agriculture, food, and natural resources	(ii) identify education opportunities in the field of agriculture, food, and natural resources
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(i) apply competencies related to resources
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(ii) apply competencies related to information
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(iii) compare and contrast global trends
(3) The student analyzes concepts related to global diversity. The student is expected to:	(B) evaluate marketing factors and practices that impact the global markets	(i) evaluate marketing factors that impact global markets
(3) The student analyzes concepts related to global diversity. The student is expected to:	(B) evaluate marketing factors and practices that impact the global markets	(ii) evaluate marketing practices that impact global markets
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(C) evaluate significant historical and current agriculture, food, and natural resource developments	(ii) evaluate significant current agriculture, food, and natural resource developments
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(D) identify potential future scenarios for agriculture, food, and natural resources systems, including global impacts	(i) identify potential future scenarios for agriculture, food, and natural resources systems, including global impacts
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(E) describe how emerging technologies and globalization impacts agriculture, food, and natural resources	(i) describe how emerging technologies impact agriculture, food, and natural resources
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(E) describe how emerging technologies and globalization impacts agriculture, food, and natural resources	(ii) describe how globalization impacts agriculture, food, and natural resources
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(F) compare and contrast issues impacting agriculture, food, and natural resources such as biotechnology, employment, safety, environment, and animal welfare issues	(i) compare and contrast issues impacting agriculture, food, and natural resources

(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources
(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:	(C) analyze the benefits and limitations of emerging technology such as online mapping systems, drones, and robotics	(i) analyze the benefits of emerging technology
(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:	(C) analyze the benefits and limitations of emerging technology such as online mapping systems, drones, and robotics	(ii) analyze the limitations of emerging technology
(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:	(D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	(i) explain the benefits of computer based equipment in agriculture, food, and natural resources
(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:	(D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	(ii) explain the benefits of mobile application equipment in agriculture, food, and natural resources
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(A) identify major areas of power, structural, and technical systems	(i) identify major areas of power, structural, and technical systems
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(A) determine the effects of agriculture, food, and natural resources upon safety, health, and the environment	(i) determine the effects of agriculture, food, and natural resources upon safety
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(A) determine the effects of agriculture, food, and natural resources upon safety, health, and the environment	(ii) determine the effects of agriculture, food, and natural resources upon health
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(A) determine the effects of agriculture, food, and natural resources upon safety, health, and the environment	(iii) determine the effects of agriculture, food, and natural resources upon the environment
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(B) identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources	(i) identify regulations relating to safety in agriculture, food, and natural resources

(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(B) identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources	(ii) identify regulations relating to health in agriculture, food, and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(B) identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources	(iii) identify regulations relating to environmental systems in agriculture, food, and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(i) identify methods to maintain safety in agriculture,
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(ii) identify methods to maintain health in agriculture, food and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(iii) identify methods to maintain environmental systems in agriculture, food and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(iv) identify methods to improve safety in agriculture, food and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(v) identify methods to improve health in agriculture, food and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(vi) identify methods to improve environmental systems in agriculture, food and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(vii) design methods to maintain safety in agriculture, food and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(viii) design methods to maintain health in agriculture, food, and natural resources

(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(ix) design methods to maintain environmental systems in agriculture, food, and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(x) design methods to improve safety in agriculture, food, and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(xi) design methods to improve health in agriculture, food, and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(xii) design methods to improve environmental systems in agriculture, food and natural resources

Blue & Gold Experience: Introduction

Knowledge and Skills Statement	Student Expectation	Breakout
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(C) participate in youth leadership opportunities to create a well-rounded experience program	(i) participate in youth leadership opportunities to create a well-rounded experience program

Blue & Gold Experience: SAE Programs

Knowledge and Skills Statement	Student Expectation	Breakout
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(i) plan a supervised agriculture experience program as an experiential learning activity
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(ii) propose a supervised agriculture experience program as an experiential learning activity
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(iii) conduct a supervised agriculture experience program as an experiential learning activity
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(iv) document a supervised agriculture experience program as an experiential learning activity
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(v) evaluate a supervised agriculture experience program as an experiential learning activity

Introduction to Record Keeping

Knowledge and Skills Statement	Student Expectation	Breakout
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(B) apply proper record-keeping skills as they relate to the supervised agriculture experience	(i) apply proper record-keeping skills as they relate to the supervised agriculture experience

Blue & Gold Experience: Involvement

Knowledge and Skills Statement	Student Expectation	Breakout
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(C) participate in youth leadership opportunities to create a well-rounded experience program	(i) participate in youth leadership opportunities to create a well-rounded experience program
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(D) produce and participate in a local program of activities using a strategic planning process	(i) produce a local program of activities using a strategic planning process
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(D) produce and participate in a local program of activities using a strategic planning process	(ii) participate in a local program of activities using a strategic planning process

Blue & Gold Experience: Leadership

Knowledge and Skills Statement	Student Expectation	Breakout
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(A) develop and demonstrate leadership skills and collaborate with others to accomplish organizational goals and objectives	(i) develop leadership skills
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(A) develop and demonstrate leadership skills and collaborate with others to accomplish organizational goals and objectives	(ii) demonstrate leadership skills

Basic Shop Safety Series

Knowledge and Skills Statement	Student Expectation	Breakout
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(i) demonstrate knowledge of personal safety in the workplace
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(ii) demonstrate knowledge of occupational safety in the workplace
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(iii) demonstrate knowledge of health in the workplace
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(iv) demonstrate knowledge of environmental regulations in the workplace
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(i) use safe laboratory procedures
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(ii) use safe laboratory policies
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(iii) use appropriate laboratory procedures
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(iv) use appropriate laboratory policies
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(i) use tools common to power, structural, and technical systems
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(ii) use equipment common to power, structural, and technical systems

(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(iii) use personal protective equipment common to power, structural, and technical systems
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Welding Shop Safety

Knowledge and Skills Statement	Student Expectation	Breakout
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(i) demonstrate knowledge of personal safety in the workplace
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(ii) demonstrate knowledge of occupational safety in the workplace
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(iii) demonstrate knowledge of health in the workplace
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(iv) demonstrate knowledge of environmental regulations in the workplace
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(v) demonstrate knowledge of first-aid policy in the workplace
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(i) use safe laboratory procedures
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(ii) use safe laboratory policies
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(iii) use appropriate laboratory procedures
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(iv) use appropriate laboratory policies
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(i) use tools common to power, structural, and technical systems

(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(ii) use equipment common to power, structural, and technical systems
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(iii) use personal protective equipment common to power, structural, and technical systems

First Aid Basics

Knowledge and Skills Statement	Student Expectation	Breakout
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(v) demonstrate knowledge of first-aid policy in the workplace

Scientific Procedures & Safety

Knowledge and Skills Statement	Student Expectation	Breakout
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(C) describe scientific methods of research	(i) describe scientific methods of research

Hand & Power Tool Safety in Construction Environments

Knowledge and Skills Statement	Student Expectation	Breakout
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(i) use tools common to power, structural, and technical systems
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(ii) use equipment common to power, structural, and technical systems
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(iii) use personal protective equipment common to power, structural, and technical systems

Shielded Metal Arc Welding: Preparation & Safety

Knowledge and Skills Statement	Student Expectation	Breakout
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(i) use tools common to power, structural, and technical systems
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(ii) use equipment common to power, structural, and technical systems
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(iii) use personal protective equipment common to power, structural, and technical systems

Field Trip: U.S. Meat Animal Research Center

Knowledge and Skills Statement	Student Expectation	Breakout
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources

Biotechnology - Fetal Programming

Knowledge and Skills Statement	Student Expectation	Breakout
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources

Biotechnology - Uses in the Food Industry

Knowledge and Skills Statement	Student Expectation	Breakout
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources

Emerging Technologies: Molecular Methods

Knowledge and Skills Statement	Student Expectation	Breakout
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources

Geographic Information Systems (GIS) & Global Positioning Systems (GPS)

Knowledge and Skills Statement	Student Expectation	Breakout
(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:	(D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	(i) explain the benefits of computer based equipment in agriculture, food, and natural resources
(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:	(D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	(ii) explain the benefits of mobile application equipment in agriculture, food, and natural resources

Agricultural Business: Management

Knowledge and Skills Statement	Student Expectation	Breakout
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(A) develop a formal business plan	(i) develop a formal business plan

Budgeting for Agribusiness

Knowledge and Skills Statement	Student Expectation	Breakout
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(B) develop, maintain, and analyze records	(i) develop records
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(B) develop, maintain, and analyze records	(ii) maintain records
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(B) develop, maintain, and analyze records	(iii) analyze records

Electronic Communication & Scheduling

Knowledge and Skills Statement	Student Expectation	Breakout
(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:	(A) apply technology applications such as industry-relevant software and Internet applications	(i) apply technology applications

Virtual Meeting Basics

Knowledge and Skills Statement	Student Expectation	Breakout
(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:	(B) utilize collaborative, groupware, and virtual meeting software	(i) utilize collaborative software
(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:	(B) utilize collaborative, groupware, and virtual meeting software	(ii) utilize groupware software
(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:	(B) utilize collaborative, groupware, and virtual meeting software	(iii) utilize virtual meeting software

Field Trip: DigIt! The Secrets of Soil

Knowledge and Skills Statement	Student Expectation	Breakout
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(A) identify the components and properties of soils	(i) identify the components of soils
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(A) identify the components and properties of soils	(ii) identify the properties of soils

Soil Formation & Evaluation

Knowledge and Skills Statement	Student Expectation	Breakout
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(B) identify and describe the process of soil formation	(i) identify the process of soil formation
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(B) identify and describe the process of soil formation	(ii) describe the process of soil formation

Fertilizers & Soil Amendments

Knowledge and Skills Statement	Student Expectation	Breakout
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(C) conduct experiments related to soil chemistry	(i) conduct experiments related to soil chemistry
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(ii) use equipment common to plant systems
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(iii) use personal protective equipment common to plant systems

Anatomy of Plants

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(A) describe the structure and functions of plant parts	(i) describe the structure of plant parts
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(A) describe the structure and functions of plant parts	(ii) describe the function of plant parts

Fundamental Plant Processes

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(i) discuss plant germination
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(ii) discuss plant growth
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(iv) apply plant germination

Plant Nutrition

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(iii) discuss plant development
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(v) apply plant growth
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(vi) apply plant development

Plant Genetics

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(C) describe plant reproduction, genetics, and breeding	(i) describe plant reproduction
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(C) describe plant reproduction, genetics, and breeding	(ii) describe plant genetics
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(C) describe plant reproduction, genetics, and breeding	(iii) describe plant breeding

Scientific Classification & Nomenclature of Plants

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(D) identify plants of importance to agriculture, food, and natural resources	(i) identify plants of importance to agriculture, food, and natural resources

Benefits of the Horticulture Industry

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(D) identify plants of importance to agriculture, food, and natural resources	(i) identify plants of importance to agriculture, food, and natural resources

Crop Production in the United States: Southern Region

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(D) identify plants of importance to agriculture, food, and natural resources	(i) identify plants of importance to agriculture, food, and natural resources

Fertilizers & the Environment

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(ii) use equipment common to plant systems
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(iii) use personal protective equipment common to plant systems

Floral Design Tools

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(i) use tools common to plant systems

Landscape Tools: Use & Safety

Knowledge and Skills Statement	Student Expectation	Breakout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(i) use tools common to plant systems
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(iii) use personal protective equipment common to plant systems

Grades & Standards of Livestock

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(A) describe animal growth and development	(i) describe animal growth
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(A) describe animal growth and development	(ii) describe animal development

External Anatomy of Livestock: Terms & Terminology

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology

Digestive System

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology

Nervous, Skeletal & Muscular Systems

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology

Circulatory & Respiratory Systems

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology

Endocrine, Immune & Integumentary Systems

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology

Basic Animal Science

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(ii) identify classes of livestock
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(iv) evaluate classes of livestock

Livestock Breed Identification Series

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(i) identify breeds of livestock
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(iii) evaluate breeds of livestock

Fundamental Animal Microgenetics

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(D) explain animal selection, reproduction, breeding, and genetics	(iv) explain animal genetics

Basic Animal Reproduction

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(D) explain animal selection, reproduction, breeding, and genetics	(ii) explain animal reproduction

Livestock Breeding Systems

Knowledge and Skills Statement	Student Expectation	Breakout
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(D) explain animal selection, reproduction, breeding, and genetics	(i) explain animal selection
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(D) explain animal selection, reproduction, breeding, and genetics	(iii) explain animal breeding

Farm to Plate

Knowledge and Skills Statement	Student Expectation	Breakout
(13) The student describes the principles of food products and processing systems. The student is expected to:	(B) determine trends in world food production	(i) determine trends in world food production
(13) The student describes the principles of food products and processing systems. The student is expected to:	(C) discuss current issues in food production	(i) discuss current issues in food production

Dairy Products Production

Knowledge and Skills Statement	Student Expectation	Breakout
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems

Fruit & Nut Production

Knowledge and Skills Statement	Student Expectation	Breakout
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems

Grades and Classes of Seafood and Fish

Knowledge and Skills Statement	Student Expectation	Breakout
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems

Poultry Products Production

Knowledge and Skills Statement	Student Expectation	Breakout
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems

Vegetable Production

Knowledge and Skills Statement	Student Expectation	Breakout
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems

Value Added & Specialty Products

Knowledge and Skills Statement	Student Expectation	Breakout
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems

Carcass Fabrication: Personal Protective Equipment (PPE)

Knowledge and Skills Statement	Student Expectation	Breakout
(13) The student describes the principles of food products and processing systems. The student is expected to:	(D) use tools, equipment, and personal protective equipment common to food products and processing systems	(i) use tools common to food products and processing systems
(13) The student describes the principles of food products and processing systems. The student is expected to:	(D) use tools, equipment, and personal protective equipment common to food products and processing systems	(ii) use equipment common to food products and processing systems
(13) The student describes the principles of food products and processing systems. The student is expected to:	(D) use tools, equipment, and personal protective equipment common to food products and processing systems	(iii) use personal protective equipment common to food products and processing systems

Mechanized Agriculture

Knowledge and Skills Statement	Student Expectation	Breakout
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(A) identify major areas of power, structural, and technical systems	(i) identify major areas of power, structural, and technical systems

Project Management Skills

Knowledge and Skills Statement	Student Expectation	Breakout
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(i) create proposals that include bill of materials developed for basic power, structural, and technical system projects or structures
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(ii) create proposals that include budget developed for basic power, structural, and technical system projects or structures
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(iii) create proposals that include schedule developed for basic power, structural, and technical system projects or structures
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(iv) create proposals that include drawings developed for basic power, structural, and technical system projects or structures
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(v) create proposals that include technical skills developed for basic power, structural, and technical system projects or structures

Installation: Roofing

Knowledge and Skills Statement	Student Expectation	Breakout
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(i) identify building materials
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(ii) identify fasteners

Installation: Windows

Knowledge and Skills Statement	Student Expectation	Breakout
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(i) identify building materials
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(ii) identify fasteners

Installation: Doors

Knowledge and Skills Statement	Student Expectation	Breakout
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(i) identify building materials
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(ii) identify fasteners

Environmental Resources: Renewable & Non-Renewable Resources and Energy

Knowledge and Skills Statement	Student Expectation	Breakout
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(D) research and analyze alternative energy sources that stem from or impact agriculture, food, and natural resources	(i) research alternative energy sources that stem from or impact agriculture, food, and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(D) research and analyze alternative energy sources that stem from or impact agriculture, food, and natural resources	(ii) analyze alternative energy sources that stem from or impact agriculture, food, and natural resources
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(E) evaluate energy and water conservation methods	(i) evaluate energy conservation methods

Water Resources

Knowledge and Skills Statement	Student Expectation	Breakout
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(E) evaluate energy and water conservation methods	(ii) evaluate water conservation methods

Exploring Careers: Agriculture, Food & Natural Resources

Knowledge and Skills Statement	Student Expectation	Breakout
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(A) identify career development, education, and entrepreneurship opportunities in the field of agriculture, food, and natural resources	(i) identify career development opportunities in the field of agriculture, food, and natural resources
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(A) identify career development, education, and entrepreneurship opportunities in the field of agriculture, food, and natural resources	(iii) identify entrepreneurship opportunities in the field of agriculture, food, and natural resources
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(vi) apply competencies related to systems of operation in agriculture, food, and natural resources
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(i) Identify careers in agriculture, food, and natural resources with required aptitudes in science
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(ii) Identify careers in agriculture, food, and natural resources with required aptitudes in technology
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(iii) Identify careers in agriculture, food, and natural resources with required aptitudes in engineering
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(iv) Identify careers in agriculture, food, and natural resources with required aptitudes in mathematics
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(v) Identify careers in agriculture, food, and natural resources with required aptitudes language arts

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(vi) Identify careers in agriculture, food, and natural resources with required aptitudes in social studies
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Employability Skills

Knowledge and Skills Statement	Student Expectation	Breakout
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(iii) apply competencies related to interpersonal skills
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(v) apply competencies related to critical thinking
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(D) analyze employers' expectations, such as appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills	(i) analyze employers' expectations
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(B) develop and demonstrate personal growth skills and collaborate with others to accomplish organizational goals and objectives	(i) develop personal growth skills
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(B) develop and demonstrate personal growth skills and collaborate with others to accomplish organizational goals and objectives	(ii) demonstrate personal growth skills

Teamwork & Collaboration

Knowledge and Skills Statement	Student Expectation	Breakout
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(iv) apply competencies related to problem solving
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(A) develop and demonstrate leadership skills and collaborate with others to accomplish organizational goals and objectives	(iii) collaborate with others to accomplish organizational goals and objectives
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(B) develop and demonstrate personal growth skills and collaborate with others to accomplish organizational goals and objectives	(iii) collaborate with others to accomplish organizational goals and objectives

Listening 101

Knowledge and Skills Statement	Student Expectation	Breakout
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(B) demonstrate effective listening skills appropriate for formal and informal situations	(i) demonstrate effective listening skills appropriate for formal situations
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(B) demonstrate effective listening skills appropriate for formal and informal situations	(ii) demonstrate effective listening skills appropriate for informal situations

Public Speaking Basics

Knowledge and Skills Statement	Student Expectation	Breakout
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations	(iii) demonstrate oral communication skills appropriate for formal situations
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations	(iv) demonstrate oral communication skills appropriate for informal situations

Researching Strategies & Tactics

Knowledge and Skills Statement	Student Expectation	Breakout
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(B) use a variety of resources for research and development	(i) use a variety of resources for research
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(B) use a variety of resources for research and development	(ii) use a variety of resources for development

Written Communication Practices

Knowledge and Skills Statement	Student Expectation	Breakout
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations	(i) demonstrate written communication skills appropriate for formal situations
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations	(ii) demonstrate written communication skills appropriate for informal situations

Correlations to the Texas Essential Knowledge and Skills (TEKS): Student/Teacher Material

Subject	Chapter 130. Texas Essential Knowledge and Skills for Career & Technical Education		
Subchapter	Subchapter A. Agriculture, Food, And Natural Resources		
Course	§130.2. Principles of Agriculture, Food, and Natural Resources (One Credit)		
Publisher	CEV Multimedia, Ltd.		
Program Title	iCEV Agricultural Science Site		
Program ISBN	9.78161E+12		
TEKS Coverage (%)	1		
(a) General Requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.			
(b) Introduction.			
(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.			
(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.			
(3) Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations. To prepare for careers in agriculture, food, and natural resources, students must attain academic skills and knowledge in agriculture. To prepare for success, students need opportunities to learn, reinforce, experience, apply, and transfer their knowledge and skills in a variety of settings.			
(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.			
(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.			
(c) Knowledge and Skills.			
Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(A) identify career development, education, and entrepreneurship opportunities in the field of agriculture, food, and natural resources	(i) identify career development opportunities in the field of agriculture, food, and natural resources	Exploring Careers: Agriculture, Food & Natural Resources; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(A) identify career development, education, and entrepreneurship opportunities in the field of agriculture, food, and natural resources	(ii) identify education opportunities in the field of agriculture, food, and natural resources	The World of Agriculture; Activity - Career Opportunities; Activity - Career Opportunities Teacher Instruction Sheet
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(A) identify career development, education, and entrepreneurship opportunities in the field of agriculture, food, and natural resources	(iii) identify entrepreneurship opportunities in the field of agriculture, food, and natural resources	Exploring Careers: Agriculture, Food & Natural Resources; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(i) apply competencies related to resources	The World of Agriculture; Activity - Career Opportunities; Activity - Career Opportunities Teacher Instruction Sheet
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(ii) apply competencies related to information	The World of Agriculture; Activity - Career Opportunities; Activity - Career Opportunities Teacher Instruction Sheet
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(iii) apply competencies related to interpersonal skills	Employability Skills; Activity - Skills Flashcards; Project - Personal Skills
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(iv) apply competencies related to problem solving	Teamwork & Collaboration; Activity - Team Roles; Project - Work-Related Problem Solving

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(v) apply competencies related to critical thinking	Employability Skills; Activity - Skills Flashcards; Activity - Critical & Creative; Activity - Critical & Creative Answer Key; Activity - Problem Solving; Activity - Problem Solving Answer Key
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources	(vi) apply competencies related to systems of operation in agriculture, food, and natural resources	Exploring Careers: Agriculture, Food & Natural Resources; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(i) demonstrate knowledge of personal safety in the workplace	Basic Shop Safety Series; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(i) demonstrate knowledge of personal safety in the workplace	Welding Shop Safety; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(ii) demonstrate knowledge of occupational safety in the workplace	Basic Shop Safety Series; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(ii) demonstrate knowledge of occupational safety in the workplace	Welding Shop Safety; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(iii) demonstrate knowledge of health in the workplace	Basic Shop Safety Series; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(iii) demonstrate knowledge of health in the workplace	Welding Shop Safety; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(iv) demonstrate knowledge of environmental regulations in the workplace	Basic Shop Safety Series; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(iv) demonstrate knowledge of environmental regulations in the workplace	Welding Shop Safety; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(v) demonstrate knowledge of first-aid policy in the workplace	First Aid Basics; Project - First Aid Procedure Brochure; Project - First Aid Procedure Brochure Teacher Instruction Sheet
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(C) demonstrate knowledge of personal and occupational safety, health, environmental regulations, and first-aid policy in the workplace	(v) demonstrate knowledge of first-aid policy in the workplace	Welding Shop Safety; Activity - Emergency Plans
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(D) analyze employers' expectations, such as appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills	(i) analyze employers' expectations	Employability Skills; Project - Personal Skills; Activity - Skills Flashcards; Activity - Work Habits: Good vs Bad; Activity - Work Habits: Good vs Bad Answer Key

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(i) Identify careers in agriculture, food, and natural resources with required aptitudes in science	Exploring Careers: Agriculture, Food & Natural Resources; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(ii) Identify careers in agriculture, food, and natural resources with required aptitudes in technology	Exploring Careers: Agriculture, Food & Natural Resources; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(iii) Identify careers in agriculture, food, and natural resources with required aptitudes in engineering	Exploring Careers: Agriculture, Food & Natural Resources; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(iv) Identify careers in agriculture, food, and natural resources with required aptitudes in mathematics	Exploring Careers: Agriculture, Food & Natural Resources; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(v) Identify careers in agriculture, food, and natural resources with required aptitudes language arts	Exploring Careers: Agriculture, Food & Natural Resources; All Projects; All Activities
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) Identify careers in agriculture, food, and natural resources with required aptitudes in science, technology, engineering, mathematics, language arts, and social studies	(vi) Identify careers in agriculture, food, and natural resources with required aptitudes in social studies	Exploring Careers: Agriculture, Food & Natural Resources; All Projects; All Activities
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(i) plan a supervised agriculture experience program as an experiential learning activity	Blue & Gold Experience: SAE Programs; All Projects; All Activities
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(ii) propose a supervised agriculture experience program as an experiential learning activity	Blue & Gold Experience: SAE Programs; All Projects; All Activities
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(iii) conduct a supervised agriculture experience program as an experiential learning activity	Blue & Gold Experience: SAE Programs; All Projects; All Activities
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(iv) document a supervised agriculture experience program as an experiential learning activity	Blue & Gold Experience: SAE Programs; All Projects; All Activities
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity	(v) evaluate a supervised agriculture experience program as an experiential learning activity	Blue & Gold Experience: SAE Programs; All Projects; All Activities
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(B) apply proper record-keeping skills as they relate to the supervised agriculture experience	(i) apply proper record-keeping skills as they relate to the supervised agriculture experience	Introduction to Record Keeping; Project - Introduction to Record Keeping

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(C) participate in youth leadership opportunities to create a well-rounded experience program	(i) participate in youth leadership opportunities to create a well-rounded experience program	Blue & Gold Experience: Introduction; All Projects; All Activities
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(C) participate in youth leadership opportunities to create a well-rounded experience program	(i) participate in youth leadership opportunities to create a well-rounded experience program	Blue & Gold Experience: Involvement; All Projects; All Activities
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(D) produce and participate in a local program of activities using a strategic planning process	(i) produce a local program of activities using a strategic planning process	Blue & Gold Experience: Involvement; All Projects; All Activities
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(D) produce and participate in a local program of activities using a strategic planning process	(ii) participate in a local program of activities using a strategic planning process	Blue & Gold Experience: Involvement; All Projects; All Activities
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(i) compare and contrast global agricultural markets	Value of Agriculture: Agriculture as a Whole; All Projects; All Activities
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(i) compare and contrast global agricultural markets	Value of Agriculture: Determining the Value; All Projects; All Activities
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(ii) compare and contrast global currency	Value of Agriculture: Agriculture as a Whole; All Projects; All Activities
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(ii) compare and contrast global currency	Value of Agriculture: Determining the Value; All Projects; All Activities
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	(iii) compare and contrast global trends	The World of Agriculture; Assessment V - Global Agriculture; Assessment V - Global Agriculture Answer Key; Activity - Global Marketing
(3) The student analyzes concepts related to global diversity. The student is expected to:	(B) evaluate marketing factors and practices that impact the global markets	(i) evaluate marketing factors that impact global markets	The World of Agriculture; Assessment V - Global Agriculture; Assessment V - Global Agriculture Answer Key; Activity - Global Marketing
(3) The student analyzes concepts related to global diversity. The student is expected to:	(B) evaluate marketing factors and practices that impact the global markets	(ii) evaluate marketing practices that impact global markets	The World of Agriculture; Activity - Global Marketing
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(A) define the scope of agriculture	(i) define the scope of agriculture	History of Agriculture; All Projects; All Activities
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(B) analyze the scope of agriculture, food, and natural resources and its effect upon society	(i) analyze the scope of agriculture, food, and natural resources	History of Agriculture; All Projects; All Activities
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(B) analyze the scope of agriculture, food, and natural resources and its effect upon society	(ii) analyze the scope of agriculture, food, and natural resources' effect upon society	History of Agriculture; All Projects; All Activities
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(C) evaluate significant historical and current agriculture, food, and natural resource developments	(i) evaluate significant historical agriculture, food, and natural resource developments	History of Agriculture; All Projects; All Activities
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(C) evaluate significant historical and current agriculture, food, and natural resource developments	(ii) evaluate significant current agriculture, food, and natural resource developments	The World of Agriculture; Assessment III - Trends & Technology in Agriculture; Assessment III - Trends & Technology in Agriculture Answer Key

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(D) identify potential future scenarios for agriculture, food, and natural resources systems, including global impacts	(i) identify potential future scenarios for agriculture, food, and natural resources systems, including global impacts	The World of Agriculture; Assessment III - Trends & Technology in Agriculture; Assessment III - Trends & Technology in Agriculture Answer Key; Assessment V - Global Agriculture; Assessment V - Global Agriculture Answer Key
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(E) describe how emerging technologies and globalization impacts agriculture, food, and natural resources	(i) describe how emerging technologies impact agriculture, food, and natural resources	The World of Agriculture; Assessment III - Trends & Technology in Agriculture; Assessment III - Trends & Technology in Agriculture Answer Key
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(E) describe how emerging technologies and globalization impacts agriculture, food, and natural resources	(ii) describe how globalization impacts agriculture, food, and natural resources	The World of Agriculture; Assessment V - Global Agriculture; Assessment V - Global Agriculture Answer Key; Activity - Global Marketing
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(F) compare and contrast issues impacting agriculture, food, and natural resources such as biotechnology, employment, safety, environment, and animal welfare issues	(i) compare and contrast issues impacting agriculture, food, and natural resources	The World of Agriculture; Project - Agricultural Solutions
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(A) develop and demonstrate leadership skills and collaborate with others to accomplish organizational goals and objectives	(i) develop leadership skills	Blue & Gold Experience: Leadership; All Projects; All Activities
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(A) develop and demonstrate leadership skills and collaborate with others to accomplish organizational goals and objectives	(ii) demonstrate leadership skills	Blue & Gold Experience: Leadership; All Projects; All Activities
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(A) develop and demonstrate leadership skills and collaborate with others to accomplish organizational goals and objectives	(iii) collaborate with others to accomplish organizational goals and objectives	Teamwork & Collaboration; Activity - Words of Teamwork; Activity - Team Roles; Project - Work-Related Problem Solving
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(B) develop and demonstrate personal growth skills and collaborate with others to accomplish organizational goals and objectives	(i) develop personal growth skills	Employability Skills; Activity - Skills Flashcards; Project - Personal Skills
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(B) develop and demonstrate personal growth skills and collaborate with others to accomplish organizational goals and objectives	(ii) demonstrate personal growth skills	Employability Skills; Activity - Skills Flashcards; Project - Personal Skills
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(B) develop and demonstrate personal growth skills and collaborate with others to accomplish organizational goals and objectives	(iii) collaborate with others to accomplish organizational goals and objectives	Teamwork & Collaboration; Activity - Words of Teamwork; Activity - Team Roles; Project - Work-Related Problem Solving
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations	(i) demonstrate written communication skills appropriate for formal situations	Written Communication Practices; Project - Informative Pamphlet
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations	(ii) demonstrate written communication skills appropriate for informal situations	Written Communication Practices; Activity - Blog
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations	(iii) demonstrate oral communication skills appropriate for formal situations	Public Speaking Basics; Activity - Communication Circle Teacher Instruction Sheet; Activity - Audience Mix Up Teacher Instruction Sheet; Project - City Council; Project - City Council Teacher Instruction Sheet; Project - Speech Evaluation

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations	(iv) demonstrate oral communication skills appropriate for informal situations	Public Speaking Basics; Activity - Communication Circle Teacher Instruction Sheet; Activity - Audience Mix Up Teacher Instruction Sheet; Project - City Council; Project - City Council Teacher Instruction Sheet; Project - Speech Evaluation
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(B) demonstrate effective listening skills appropriate for formal and informal situations	(i) demonstrate effective listening skills appropriate for formal situations	Listening 101; Activity - Bus Driver Listening Teacher Instruction Sheet; Project - Newsletter
(6) The student demonstrates appropriate personal and communication skills. The student is expected to:	(B) demonstrate effective listening skills appropriate for formal and informal situations	(ii) demonstrate effective listening skills appropriate for informal situations	Listening 101; Activity - Bus Driver Listening Teacher Instruction Sheet; Activity - Draw What You Hear Teacher Instruction Sheet
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources	The World of Agriculture; Assessment III - Trends & Technology in Agriculture; Assessment III - Trends & Technology in Agriculture Answer Key
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources	Field Trip: U.S. Meat Animal Research Center
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources	Biotechnology - Uses in the Food Industry
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources	Biotechnology - Fetal Programming
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(i) discuss major research in the fields of agriculture, food, and natural resources	Emerging Technologies: Molecular Methods
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources	The World of Agriculture; Assessment III - Trends & Technology in Agriculture; Assessment III - Trends & Technology in Agriculture Answer Key
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources	Field Trip: U.S. Meat Animal Research Center
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources	Biotechnology - Uses in the Food Industry
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources	Biotechnology - Fetal Programming
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	(ii) discuss major developments in the fields of agriculture, food, and natural resources	Emerging Technologies: Molecular Methods
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(B) use a variety of resources for research and development	(i) use a variety of resources for research	Researching Strategies & Tactics; Activity - Who's Your Source?
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(B) use a variety of resources for research and development	(ii) use a variety of resources for development	Researching Strategies & Tactics; Project - Blog/Movie; Project - Historical Figure Essay
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(C) describe scientific methods of research	(i) describe scientific methods of research	Scientific Procedures & Safety; Activity - Designing an Experiment; Activity - Designing an Experiment Answer Key
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(A) develop a formal business plan	(i) develop a formal business plan	Agricultural Business: Management; Project - Business Plan

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(B) develop, maintain, and analyze records	(i) develop records	Budgeting for Agribusiness; Activity - Types of Budgets; Project - Budgeting for Agribusiness; Project - Budgeting for Agribusiness Teacher Instruction Sheet
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(B) develop, maintain, and analyze records	(ii) maintain records	Budgeting for Agribusiness; Activity - Types of Budgets; Project - Budgeting for Agribusiness; Project - Budgeting for Agribusiness Teacher Instruction Sheet
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(B) develop, maintain, and analyze records	(iii) analyze records	Budgeting for Agribusiness; Activity - Types of Budgets; Project - Budgeting for Agribusiness; Project - Budgeting for Agribusiness Teacher Instruction Sheet
(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:	(A) apply technology applications such as industry-relevant software and Internet applications	(i) apply technology applications	Electronic Communication & Scheduling; All Projects; All Activities
(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:	(B) utilize collaborative, groupware, and virtual meeting software	(i) utilize collaborative software	Virtual Meeting Basics; Project - Virtual Meeting Demo
(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:	(B) utilize collaborative, groupware, and virtual meeting software	(ii) utilize groupware software	Virtual Meeting Basics; Project - Virtual Meeting Demo
(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:	(B) utilize collaborative, groupware, and virtual meeting software	(iii) utilize virtual meeting software	Virtual Meeting Basics; Project - Virtual Meeting Demo
(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:	(C) analyze the benefits and limitations of emerging technology such as online mapping systems, drones, and robotics	(i) analyze the benefits of emerging technology	The World of Agriculture; Assessment III - Trends & Technology in Agriculture; Assessment III - Trends & Technology in Agriculture Answer Key
(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:	(C) analyze the benefits and limitations of emerging technology such as online mapping systems, drones, and robotics	(ii) analyze the limitations of emerging technology	The World of Agriculture; Assessment III - Trends & Technology in Agriculture; Assessment III - Trends & Technology in Agriculture Answer Key
(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:	(D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	(i) explain the benefits of computer based equipment in agriculture, food, and natural resources	The World of Agriculture; Assessment III - Trends & Technology in Agriculture; Assessment III - Trends & Technology in Agriculture Answer Key
(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:	(D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	(i) explain the benefits of computer based equipment in agriculture, food, and natural resources	Geographic Information Systems (GIS) & Global Positioning Systems (GPS); Activity - Land, Sea & Air
(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:	(D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	(ii) explain the benefits of mobile application equipment in agriculture, food, and natural resources	The World of Agriculture; Assessment III - Trends & Technology in Agriculture; Assessment III - Trends & Technology in Agriculture Answer Key
(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:	(D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	(ii) explain the benefits of mobile application equipment in agriculture, food, and natural resources	Geographic Information Systems (GIS) & Global Positioning Systems (GPS); Activity - Land, Sea & Air

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(A) identify the components and properties of soils	(i) identify the components of soils	Field Trip: DigIt! The Secrets of Soil; Activity - Importance of Soil; Activity - Importance of Soil Answer Key; Activity - Soil Horizons; Activity - Soil Horizons Answer Key; Activity - Soil Orders; Project - Presentation; Project - Soil Texture; Project - State Soils
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(A) identify the components and properties of soils	(ii) identify the properties of soils	Field Trip: DigIt! The Secrets of Soil; Activity - Importance of Soil; Activity - Importance of Soil Answer Key; Activity - Soil Horizons; Activity - Soil Horizons Answer Key; Activity - Soil Orders; Project - Presentation; Project - Soil Texture; Project
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(B) identify and describe the process of soil formation	(i) identify the process of soil formation	Soil Formation & Evaluation; Activity - Soil Profile Illustration; Activity - Soil Water Types; Project - Soil Food Web
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(B) identify and describe the process of soil formation	(ii) describe the process of soil formation	Soil Formation & Evaluation; Activity - Soil Profile Illustration; Activity - Soil Water Types; Project - Soil Food Web
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(C) conduct experiments related to soil chemistry	(i) conduct experiments related to soil chemistry	Fertilizers & Soil Amendments; Activity - Ideal pH Ranges; Project - Soil pH Test
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(A) describe the structure and functions of plant parts	(i) describe the structure of plant parts	Anatomy of Plants; Activity - Flower Identification; Activity - Flower Identification Answer Key; Activity - Fruit Types; Activity - Fruit Types Answer Key; Activity - Plant Cell Structure; Activity - Plant Cell Structure Answer Key; Project - 3-D Diagram; Project - Leaf Structure; Project - Plant Part Presentation
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(A) describe the structure and functions of plant parts	(ii) describe the function of plant parts	Anatomy of Plants; Project - Plant Part Presentation
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(i) discuss plant germination	Fundamental Plant Processes; Activity - Germination Test
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(ii) discuss plant growth	Fundamental Plant Processes; Vocabulary Handout; Assessment IV - Plant Growth; Assessment IV - Plant Growth Answer Key
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(iii) discuss plant development	Plant Nutrition; Vocabulary Handout; Activity - Crop Nutrient Requirements; Activity - Plant Adaptations; Activity - Plant Adaptations Answer Key; Activity - Soil Types; Project - Fertilizer Bags; Project - Phototropism; Project - Plant Adaptations
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(iv) apply plant germination	Fundamental Plant Processes; Activity - Germination Test
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(v) apply plant growth	Plant Nutrition; Vocabulary Handout; Activity - Crop Nutrient Requirements; Activity - Plant Adaptations; Activity - Plant Adaptations Answer Key; Activity - Soil Types; Project - Fertilizer Bags; Project - Phototropism; Project - Plant Adaptations

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	(vi) apply plant development	Plant Nutrition; Vocabulary Handout; Activity - Crop Nutrient Requirements; Activity - Plant Adaptations; Activity - Plant Adaptations Answer Key; Activity - Soil Types; Project - Fertilizer Bags; Project - Phototropism; Project - Plant Adaptations
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(C) describe plant reproduction, genetics, and breeding	(i) describe plant reproduction	Plant Genetics; Activity - Plant Reproduction; Project - Mitosis; Vocabulary Handout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(C) describe plant reproduction, genetics, and breeding	(ii) describe plant genetics	Plant Genetics; Activity - Probability Theory; Activity - Probability Theory Teacher Instruction Sheet; Vocabulary Handout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(C) describe plant reproduction, genetics, and breeding	(iii) describe plant breeding	Plant Genetics; Project - Cross Breeding Plants; Vocabulary Handout
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(D) identify plants of importance to agriculture, food, and natural resources	(i) identify plants of importance to agriculture, food, and natural resources	Benefits of the Horticulture Industry; Activity - Erosion Study
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(D) identify plants of importance to agriculture, food, and natural resources	(i) identify plants of importance to agriculture, food, and natural resources	Scientific Classification & Nomenclature of Plants; Activity - Plant Uses
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(D) identify plants of importance to agriculture, food, and natural resources	(i) identify plants of importance to agriculture, food, and natural resources	Crop Production in the United States: Southern Region; Activity - County Crop Production; Activity - Think-Pair-Share; Activity - Think-Pair-Share Teacher Instruction Sheet; Activity - Tic-Tac-Toe Quiz; Activity - Tic-Tac-Toe Quiz Teacher Instruction Sheet
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(i) use tools common to plant systems	Landscape Tools: Use & Safety; Vocabulary Handout; Assessment; Assessment Answer Key
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(i) use tools common to plant systems	Floral Design Tools; Project - Floral Design Tools
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(ii) use equipment common to plant systems	Fertilizers & the Environment; Activity - Fertilizer Equipment; Activity - Fertilizer Equipment Answer Key
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(iii) use personal protective equipment common to plant systems	Fertilizers & the Environment; Activity - Fertilizer Equipment; Activity - Fertilizer Equipment Answer Key
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	(iii) use personal protective equipment common to plant systems	Landscape Tools: Use & Safety
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(A) describe animal growth and development	(i) describe animal growth	Grades & Standards of Livestock; All Projects; All Activities
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(A) describe animal growth and development	(ii) describe animal development	Grades & Standards of Livestock; All Projects; All Activities

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy	External Anatomy of Livestock: Terms & Terminology; Activity - Anatomical Terms of Location; Activity - Cattle Parts Diagram; Activity - Cattle Parts Diagram Answer Key; Activity - Goat Parts Diagram; Activity - Goat Parts Diagram Answer Key; Activity - Horse Parts Diagram; Activity - Horse Parts Diagram Answer Key; Activity - Sheep Parts Diagram; Activity - Sheep Parts Diagram Answer Key
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy	Digestive System; Activity - System Outline; Project - Model System
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy	Endocrine, Immune & Integumentary Systems; Activity - System Outline; Project - Model System
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy	Nervous, Skeletal & Muscular Systems; Activity - System Outline; Project - Model System
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(i) identify animal anatomy	Circulatory & Respiratory Systems; Activity - System Outline; Project - Model System
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology	External Anatomy of Livestock: Terms & Terminology; Activity - Anatomical Terms of Location; Activity - Cattle Parts Diagram; Activity - Cattle Parts Diagram Answer Key; Activity - Goat Parts Diagram; Activity - Goat Parts Diagram Answer Key; Activity - Horse Parts Diagram; Activity - Horse Parts Diagram Answer Key; Activity - Sheep Parts Diagram; Activity - Sheep Parts Diagram Answer Key
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology	Digestive System; Activity - System Outline; Project - Model System
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology	Endocrine, Immune & Integumentary Systems; Activity - System Outline; Project - Model System
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology	Nervous, Skeletal & Muscular Systems; Activity - System Outline; Project - Model System
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	(ii) identify animal physiology	Circulatory & Respiratory Systems; Activity - System Outline; Project - Model System
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(i) identify breeds of livestock	Livestock Breed Identification: Cattle; Activity - Board Races
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(i) identify breeds of livestock	Livestock Breed Identification: Goats; Activity - Breed Match; Activity - Breed Match Answer Key; Activity - Breed Match Teacher Instruction Sheet
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(i) identify breeds of livestock	Livestock Breed Identification: Sheep
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(i) identify breeds of livestock	Livestock Breed Identification: Swine
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(i) identify breeds of livestock	Livestock Breed Identification: Poultry
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(ii) identify classes of livestock	Basic Animal Science; Project - Animal Evaluation

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(iii) evaluate breeds of livestock	Livestock Breed Identification: Cattle; Activity - Board Races
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(iii) evaluate breeds of livestock	Livestock Breed Identification: Goats; Activity - Breed Match; Activity - Breed Match Answer Key; Activity - Breed Match Teacher Instruction Sheet
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(iii) evaluate breeds of livestock	Livestock Breed Identification: Sheep
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(iii) evaluate breeds of livestock	Livestock Breed Identification: Swine
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(iii) evaluate breeds of livestock	Livestock Breed Identification: Poultry
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	(iv) evaluate classes of livestock	Basic Animal Science; Project - Animal Evaluation
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(D) explain animal selection, reproduction, breeding, and genetics	(i) explain animal selection	Livestock Breeding Systems; Activity - Suffolk Ram Lambs Scenario
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(D) explain animal selection, reproduction, breeding, and genetics	(ii) explain animal reproduction	Basic Animal Reproduction; Activity - System Outline; Project - Model Systems
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(D) explain animal selection, reproduction, breeding, and genetics	(iii) explain animal breeding	Livestock Breeding Systems; Activity - Create a Composite
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(D) explain animal selection, reproduction, breeding, and genetics	(iv) explain animal genetics	Fundamental Animal Microgenetics; All Projects; All Activities
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems	Dairy Products Production; Activity - Production Design
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems	Value Added & Specialty Products; Activity - Value Added Process
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems	Vegetable Production
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems	Fruit & Nut Production
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems	Poultry Products Production
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	(i) evaluate food products and processing systems	Grades and Classes of Seafood and Fish
(13) The student describes the principles of food products and processing systems. The student is expected to:	(B) determine trends in world food production	(i) determine trends in world food production	Farm to Plate; Activity - Trust but Verify; Activity - True or False
(13) The student describes the principles of food products and processing systems. The student is expected to:	(C) discuss current issues in food production	(i) discuss current issues in food production	Farm to Plate; Activity - Trust but Verify; Activity - True or False

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(13) The student describes the principles of food products and processing systems. The student is expected to:	(D) use tools, equipment, and personal protective equipment common to food products and processing systems	(i) use tools common to food products and processing systems	Carcass Fabrication: Personal Protective Equipment (PPE); All Projects; All Activities
(13) The student describes the principles of food products and processing systems. The student is expected to:	(D) use tools, equipment, and personal protective equipment common to food products and processing systems	(ii) use equipment common to food products and processing systems	Carcass Fabrication: Personal Protective Equipment (PPE); All Projects; All Activities
(13) The student describes the principles of food products and processing systems. The student is expected to:	(D) use tools, equipment, and personal protective equipment common to food products and processing systems	(iii) use personal protective equipment common to food products and processing systems	Carcass Fabrication: Personal Protective Equipment (PPE); All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(A) identify major areas of power, structural, and technical systems	(i) identify major areas of power, structural, and technical systems	The World of Agriculture
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(A) identify major areas of power, structural, and technical systems	(i) identify major areas of power, structural, and technical systems	Mechanized Agriculture; Project - Invention of Machinery
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(i) use safe laboratory procedures	Basic Shop Safety Series; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(i) use safe laboratory procedures	Welding Shop Safety; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(ii) use safe laboratory policies	Basic Shop Safety Series; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(ii) use safe laboratory policies	Welding Shop Safety; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(iii) use appropriate laboratory procedures	Basic Shop Safety Series; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(iii) use appropriate laboratory procedures	Welding Shop Safety; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(iv) use appropriate laboratory policies	Basic Shop Safety Series; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	(iv) use appropriate laboratory policies	Welding Shop Safety; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(i) create proposals that include bill of materials developed for basic power, structural, and technical system projects or structures	Project Management Skills; Project - Project Phases & Organization

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(ii) create proposals that include budget developed for basic power, structural, and technical system projects or structures	Project Management Skills; Project - Project Phases & Organization
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(iii) create proposals that include schedule developed for basic power, structural, and technical system projects or structures	Project Management Skills; Project - Project Phases & Organization
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(iv) create proposals that include drawings developed for basic power, structural, and technical system projects or structures	Project Management Skills; Project - Project Phases & Organization
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(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	(v) create proposals that include technical skills developed for basic power, structural, and technical system projects or structures	Project Management Skills; Project - Project Phases & Organization
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(i) identify building materials	Installation: Roofing; Activity - Tool & Material ID; Activity - Tool & Material ID Answer Key
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(i) identify building materials	Installation: Windows; Activity - Tool & Material ID; Activity - Tool & Material ID Answer Key
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(i) identify building materials	Installation: Doors; Activity - Tool & Material ID; Activity - Tool & Material ID Answer Key
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(ii) identify fasteners	Installation: Roofing; Activity - Tool & Material ID; Activity - Tool & Material ID Answer Key
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(ii) identify fasteners	Installation: Windows; Activity - Tool & Material ID; Activity - Tool & Material ID Answer Key
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	(ii) identify fasteners	Installation: Doors; Activity - Tool & Material ID; Activity - Tool & Material ID Answer Key
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(i) use tools common to power, structural, and technical systems	Basic Shop Safety Series; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(i) use tools common to power, structural, and technical systems	Welding Shop Safety; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(i) use tools common to power, structural, and technical systems	Hand & Power Tool Safety in Construction Environments

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(i) use tools common to power, structural, and technical systems	Shielded Metal Arc Welding: Preparation & Safety
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(ii) use equipment common to power, structural, and technical systems	Basic Shop Safety Series; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(ii) use equipment common to power, structural, and technical systems	Welding Shop Safety; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(ii) use equipment common to power, structural, and technical systems	Hand & Power Tool Safety in Construction Environments
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(ii) use equipment common to power, structural, and technical systems	Shielded Metal Arc Welding: Preparation & Safety
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(iii) use personal protective equipment common to power, structural, and technical systems	Basic Shop Safety Series; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(iii) use personal protective equipment common to power, structural, and technical systems	Welding Shop Safety; All Projects; All Activities
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(iii) use personal protective equipment common to power, structural, and technical systems	Hand & Power Tool Safety in Construction Environments
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	(iii) use personal protective equipment common to power, structural, and technical systems	Shielded Metal Arc Welding: Preparation & Safety
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(A) determine the effects of agriculture, food, and natural resources upon safety, health, and the environment	(i) determine the effects of agriculture, food, and natural resources upon safety	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(A) determine the effects of agriculture, food, and natural resources upon safety, health, and the environment	(ii) determine the effects of agriculture, food, and natural resources upon health	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(A) determine the effects of agriculture, food, and natural resources upon safety, health, and the environment	(iii) determine the effects of agriculture, food, and natural resources upon the environment	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(B) identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources	(i) identify regulations relating to safety in agriculture, food, and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(B) identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources	(ii) identify regulations relating to health in agriculture, food, and natural resources	The World of Agriculture; Project - Agricultural Solutions

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(B) identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources	(iii) identify regulations relating to environmental systems in agriculture, food, and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(i) identify methods to maintain safety in agriculture,	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(ii) identify methods to maintain health in agriculture, food and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(iii) identify methods to maintain environmental systems in agriculture, food and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(iv) identify methods to improve safety in agriculture, food and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(v) identify methods to improve health in agriculture, food and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(vi) identify methods to improve environmental systems in agriculture, food and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(vii) design methods to maintain safety in agriculture, food and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(viii) design methods to maintain health in agriculture, food, and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(ix) design methods to maintain environmental systems in agriculture, food, and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(x) design methods to improve safety in agriculture, food, and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(xi) design methods to improve health in agriculture, food, and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	(xii) design methods to improve environmental systems in agriculture, food and natural resources	The World of Agriculture; Project - Agricultural Solutions
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(D) research and analyze alternative energy sources that stem from or impact agriculture, food, and natural resources	(i) research alternative energy sources that stem from or impact agriculture, food, and natural resources	Environmental Resources: Renewable & Non-Renewable Resources and Energy; Activity - Biomass Speech

Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(D) research and analyze alternative energy sources that stem from or impact agriculture, food, and natural resources	(ii) analyze alternative energy sources that stem from or impact agriculture, food, and natural resources	Environmental Resources: Renewable & Non-Renewable Resources and Energy; Activity - Biomass Speech
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(E) evaluate energy and water conservation methods	(i) evaluate energy conservation methods	Environmental Resources: Renewable & Non-Renewable Resources and Energy; Activity - Resource Preservation Paper
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(E) evaluate energy and water conservation methods	(ii) evaluate water conservation methods	Water Resources; Project - Water Conservation Plan