

## **TEKS CORRELATIONS & SUGGESTED PACING GUIDE**

# Principles of Agriculture, Food and Natural Resources



iCEV Agricultural Science Site

Meets 100% of TEKS

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Scope & Sequence	Lesson Title	TEKS	Days of Teaching*
	I History & Industry Overview		reaching
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	
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
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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
	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

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Scope &			Days of
Sequence	Lesson Title	TEKS	Teaching*
•	Plant Systems		rodoming
	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
	Animal Systems	1112	
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
	ood 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

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Scope &	Lesson Title	TEKS	Days of	
Sequence	Lesson Title	IENS	Teaching*	
Module 9:	Power, Structural & Technical Systems			
	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	

<sup>\*</sup> 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.

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### **History of Agriculture**

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

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### Value of Agriculture: Agriculture as a Whole

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

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## Value of Agriculture: Determining the Value

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

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### The World of Agriculture

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

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(7) The student applies appropriate research	(A) discuss major research and developments in	(i) discuss major research in the fields of
methods to agriculture, food, and natural resources topics. The student is expected to:	the fields of agriculture, food, and natural resources	agriculture, food, and natural resources
(7) The student applies appropriate research	(A) discuss major research and developments in	(ii) discuss major developments in the fields of
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources
resources topics. The student is expected to:	resources	(i)
(9) The student uses information technology tools	(C) analyze the benefits and limitations of	(i) analyze the benefits of emerging technology
to access, manage, integrate, and create	emerging technology such as online mapping	
information related to agriculture, food, and	systems, drones, and robotics	
natural resources. The student is expected to:		
(9) The student uses information technology tools	1, ,	(ii) analyze the limitations of emerging technology
to access, manage, integrate, and create	emerging technology such as online mapping	
information related to agriculture, food, and	systems, drones, and robotics	
natural resources. The student is expected to:		
(9) The student uses information technology tools		(i) explain the benefits of computer based
to access, manage, integrate, and create	mobile application equipment in agriculture, food,	equipment in agriculture, food, and natural
information related to agriculture, food, and	and natural resources	resources
natural resources. The student is expected to:		
(9) The student uses information technology tools	(D) explain the benefits of computer based and	(ii) explain the benefits of mobile application
to access, manage, integrate, and create	mobile application equipment in agriculture, food,	equipment in agriculture, food, and natural
information related to agriculture, food, and	and natural resources	resources
natural resources. The student is expected to:		
(14) The student safely performs basic power,	(A) identify major areas of power, structural, and	(i) identify major areas of power, structural, and
structural, and technical system skills in	technical systems	technical systems
agricultural applications. The student is expected		
to:		
(15) The student explains the relationship	(A) determine the effects of agriculture, food, and	(i) determine the effects of agriculture, food, and
between agriculture, food, and natural resources	natural resources upon safety, health, and the	natural resources upon safety
and the environment. The student is expected to:	environment	
(15) The student explains the relationship	(A) determine the effects of agriculture, food, and	(ii) determine the effects of agriculture, food, and
between agriculture, food, and natural resources	natural resources upon safety, health, and the	natural resources upon health
and the environment. The student is expected to:	environment	
(15) The student explains the relationship	(A) determine the effects of agriculture, food, and	(iii) determine the effects of agriculture, food, and
between agriculture, food, and natural resources	natural resources upon safety, health, and the	natural resources upon the environment
1	environment	
·		
(15) The student explains the relationship	(B) identify regulations relating to safety, health,	(i) identify regulations relating to safety in
between agriculture, food, and natural resources	and environmental systems in agriculture, food,	agriculture, food, and natural resources
and the environment. The student is expected to:	and natural resources	
·		

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(15) The student explains the relationship	(B) identify regulations relating to safety, health,	(ii) identify regulations relating to health in
between agriculture, food, and natural resources	and environmental systems in agriculture, food,	agriculture, food, and natural resources
and the environment. The student is expected to:	and natural resources	
(15) The student explains the relationship	(B) identify regulations relating to safety, health,	(iii) identify regulations relating to environmental
between agriculture, food, and natural resources	and environmental systems in agriculture, food,	systems in agriculture, food, and natural
and the environment. The student is expected to:	and natural resources	resources
(15) The student explains the relationship	(C) identify and design methods to maintain and	(i) identify methods to maintain safety in
between agriculture, food, and natural resources	improve safety, health, and environmental	agriculture,
and the environment. The student is expected to:	systems in agriculture, food, and natural	
	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(ii) identify methods to maintain health in
between agriculture, food, and natural resources	improve safety, health, and environmental	agriculture, food and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(iii) identify methods to maintain environmental
between agriculture, food, and natural resources	improve safety, health, and environmental	systems in agriculture, food and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(iv) identify methods to improve safety in
between agriculture, food, and natural resources	improve safety, health, and environmental	agriculture, food and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(v) identify methods to improve health in
between agriculture, food, and natural resources	improve safety, health, and environmental	agriculture, food and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(vi) identify methods to improve environmental
between agriculture, food, and natural resources	improve safety, health, and environmental	systems in agriculture, food and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
(45) = 1	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(vii) design methods to maintain safety in
between agriculture, food, and natural resources	improve safety, health, and environmental	agriculture, food and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
(45) 71	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(viii) design methods to maintain health in
between agriculture, food, and natural resources	improve safety, health, and environmental	agriculture, food, and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
	resources	

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(15) The student explains the relationship	(C) identify and design methods to maintain and	(ix) design methods to maintain environmental
I'v '	1, ,	· /
between agriculture, food, and natural resources	improve safety, health, and environmental	systems in agriculture, food, and natural
and the environment. The student is expected to:	systems in agriculture, food, and natural	resources
	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(x) design methods to improve safety in
between agriculture, food, and natural resources	improve safety, health, and environmental	agriculture, food, and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(xi) design methods to improve health in
between agriculture, food, and natural resources	improve safety, health, and environmental	agriculture, food, and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
	resources	
(15) The student explains the relationship	(C) identify and design methods to maintain and	(xii) design methods to improve environmental
between agriculture, food, and natural resources	improve safety, health, and environmental	systems in agriculture, food and natural resources
and the environment. The student is expected to:	systems in agriculture, food, and natural	
	resources	

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### **Blue & Gold Experience: Introduction**

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

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### **Blue & Gold Experience: SAE Programs**

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

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#### **Introduction to Record Keeping**

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

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## **Blue & Gold Experience: Involvement**

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

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### Blue & Gold Experience: Leadership

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

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#### **Basic Shop Safety Series**

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

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

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#### **Welding Shop Safety**

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

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

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#### **First Aid Basics**

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

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### **Scientific Procedures & Safety**

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

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#### **Hand & Power Tool Safety in Construction Environments**

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

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### **Shielded Metal Arc Welding: Preparation & Safety**

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

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#### Field Trip: U.S. Meat Animal Research Center

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

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### **Biotechnology - Fetal Programming**

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

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### **Biotechnology - Uses in the Food Industry**

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

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### **Emerging Technologies: Molecular Methods**

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

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

Knowledge and Skills Statement	Student Expectation	Breakout
(9) The student uses information technology tools	(D) explain the benefits of computer based and	(i) explain the benefits of computer based
to access, manage, integrate, and create	mobile application equipment in agriculture, food,	equipment in agriculture, food, and natural
information related to agriculture, food, and	and natural resources	resources
natural resources. The student is expected to:		
(9) The student uses information technology tools		(ii) explain the benefits of mobile application
to access, manage, integrate, and create	mobile application equipment in agriculture, food,	equipment in agriculture, food, and natural
information related to agriculture, food, and	and natural resources	resources
natural resources. The student is expected to:		

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### **Agricultural Business: Management**

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

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### **Budgeting for Agribusiness**

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

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#### **Electronic Communication & Scheduling**

Knowledge and Skills Statement	Student Expectation	Breakout
(9) The student uses information technology tools	(A) apply technology applications such as industry-	(i) apply technology applications
to access, manage, integrate, and create	relevant software and Internet applications	
information related to agriculture, food, and		
natural resources. The student is expected to:		

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### **Virtual Meeting Basics**

Knowledge and Skills Statement	Student Expectation	Breakout
(9) The student uses information technology tools	(B) utilize collaborative, groupware, and virtual	(i) utilize collaborative software
to access, manage, integrate, and create	meeting software	
information related to agriculture, food, and		
natural resources. The student is expected to:		
(9) The student uses information technology tools	(B) utilize collaborative, groupware, and virtual	
to access, manage, integrate, and create	meeting software	(ii) utilize groupware software
information related to agriculture, food, and		
natural resources. The student is expected to:		
(9) The student uses information technology tools	(B) utilize collaborative, groupware, and virtual	
to access, manage, integrate, and create	meeting software	(iii) utilize virtual meeting software
information related to agriculture, food, and		
natural resources. The student is expected to:		

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### Field Trip: DigIt! The Secrets of Soil

Knowledge and Skills Statement	Student Expectation	Breakout
i, ,	(A) identify the components and properties of soils	(i) identify the components of soils
,	(A) identify the components and properties of soils	(ii) identify the properties of soils

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#### **Soil Formation & Evaluation**

Knowledge and Skills Statement	Student Expectation	Breakout
	(B) identify and describe the process of soil formation	(i) identify the process of soil formation
1, ,	(B) identify and describe the process of soil formation	(ii) describe the process of soil formation

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#### **Fertilizers & Soil Amendments**

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

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#### **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:	` <i>'</i>	(i) describe the structure of plant parts
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	I · ·	(ii) describe the function of plant parts

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#### **Fundamental Plant Processes**

Knowledge and Skills Statement	Student Expectation	Breakout
•	l, ,	(i) discuss plant germination
· · · · · · · · · · · · · · · · · · ·	and development	
expected to:		
, ,	(B) discuss and apply plant germination, growth, and development	(ii) discuss plant growth
•	(B) discuss and apply plant germination, growth, and development	(iv) apply plant germination

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#### **Plant Nutrition**

Knowledge and Skills Statement	Student Expectation	Breakout
•	(B) discuss and apply plant germination, growth,	(iii) discuss plant development
' '	and development	
expected to:		
j. ,	(B) discuss and apply plant germination, growth, and development	(v) apply plant growth
1, ,	(B) discuss and apply plant germination, growth, and development	(vi) apply plant development

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#### **Plant Genetics**

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

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#### **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:	1, , , , , , , , , , , , , , , , , , ,	(i) identify plants of importance to agriculture, food, and natural resources

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# 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:	1, , , , , , , , , , , , , , , , , , ,	(i) identify plants of importance to agriculture, food, and natural resources

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#### **Crop Production in the United States: Southern Region**

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

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#### 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:		(iii) use personal protective equipment common to plant systems

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# **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

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#### **Landscape Tools: Use & Safety**

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

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#### **Grades & Standards of Livestock**

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

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# **External Anatomy of Livestock: Terms & Terminology**

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

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#### **Digestive System**

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

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# Nervous, Skeletal & Muscular Systems

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

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# **Circulatory & Respiratory Systems**

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

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# **Endocrine, Immune & Integumentary Systems**

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

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#### **Basic Animal Science**

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

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# **Livestock Breed Identification Series**

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

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# **Fundamental Animal Microgenetics**

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

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# **Basic Animal Reproduction**

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

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#### **Livestock Breeding Systems**

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

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#### **Farm to Plate**

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

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# **Dairy Products Production**

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

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#### **Fruit & Nut Production**

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

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#### **Grades and Classes of Seafood and Fish**

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

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# **Poultry Products Production**

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

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# **Vegetable Production**

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

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# Value Added & Specialty Products

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

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# **Carcass Fabrication: Personal Protective Equipment (PPE)**

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

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# **Mechanized Agriculture**

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

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# **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

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# **Installation: Roofing**

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

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#### **Installation: Windows**

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

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#### **Installation: Doors**

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

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# **Environmental Resources: Renewable & Non-Renewable Resources and Energy**

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

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### **Water Resources**

Knowledge and Skills Statement	Student Expectation	Breakout
j. ,	methods	(ii) evaluate water conservation methods

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# **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	(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

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(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to: language arts, and social studies (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 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,	(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

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### **Teamwork & Collaboration**

Knowledge and Skills Statement	Student Expectation	Breakout
		(iv) apply competencies related to problem solving
	information, interpersonal skills, problem solving,	
business and industry. The student is expected to:	,	
	agriculture, food, and natural resources	
1, ,	(A) develop and demonstrate leadership skills and	•
	·	organizational goals and objectives
leadership in organizations. The student is	organizational goals and objectives	
expected to:		
(5) The student analyzes the structure of	(B) develop and demonstrate personal growth	(iii) collaborate with others to accomplish
agricultural, food, and natural resources	skills and collaborate with others to accomplish	organizational goals and objectives
leadership in organizations. The student is	organizational goals and objectives	-
expected to:	,	

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## Listening 101

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

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# **Public Speaking Basics**

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

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# **Researching Strategies & Tactics**

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

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### **Written Communication Practices**

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

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Correlations to the Texas Essential Knowledge and Skills (TEKS): Student/Teacher Material			
Chapter 130. Texas Essential Knowledge and Skills for Career & Technical Education			
Subchapter A. Agriculture, Food, And Natural Resources			
§130.2. Principles of Agriculture, Food, and Natural Resources (One Credit)			
EV Multimedia, Ltd.			
iCEV Agricultural Science Site			
ogram ISBN 9.78161E+12			
EKS 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.

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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

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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

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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	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

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Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(2) The student develops an improved supervised	(C) participate in youth leadership opportunities to	11 111	Blue & Gold Experience: Introduction; All Projects; All Activities
agriculture experience program as it relates to	create a well-rounded experience program	create a well-rounded experience program	Blac a Cola Exponence. Inacadoson, 7 an 1 Tojosto, 7 an 7 tournace
agriculture, food, and natural resources. The	ordate a trem realizate expensioned program	oreate a men realizate expenses program	
student is expected to:			
(2) The student develops an improved supervised	(C) participate in youth leadership opportunities to	(i) participate in youth leadership opportunities to	Blue & Gold Experience: Involvement; All Projects; All Activities
agriculture experience program as it relates to	create a well-rounded experience program	create a well-rounded experience program	Blad a Gold Exponence: involvement, 7 th 1 rejecte, 7 th 7 teavilled
agriculture, food, and natural resources. The	ordate a well realitada experience program	ordato a won rounded expending program	
student is expected to:			
	(D) produce and participate in a local program of	(i) produce a local program of activities using a	Blue & Gold Experience: Involvement; All Projects; All Activities
agriculture experience program as it relates to	activities using a strategic planning process	strategic planning process	Blac & Gold Experience: involvement, 7th 1 rojecto, 7th 7tolivides
agriculture, food, and natural resources. The	activities using a strategic planning process	Strategic planning process	
student is expected to:			
(2) The student develops an improved supervised	(D) produce and participate in a local program of	(ii) participate in a local program of activities using	Blue & Gold Experience: Involvement; All Projects; All Activities
agriculture experience program as it relates to	activities using a strategic planning process	a strategic planning process	blue & Gold Experience. Involvement, All Flojects, All Activities
agriculture, food, and natural resources. The	activities using a strategic planning process	la strategic planning process	
student is expected to:			
	(A) compare and contract global agricultural	(i) compare and contract alchel agricultural	Value of Agriculture: Agriculture on a Whole: All Drainete: All
(3) The student analyzes concepts related to	(A) compare and contrast global agricultural	(i) compare and contrast global agricultural markets	Value of Agriculture: Agriculture as a Whole; All Projects; All Activities
global diversity. The student is expected to:	markets, currency, and trends	(i) compare and contrast global agricultural	Value of Agriculture: Determining the Value; All Projects; All
(3) The student analyzes concepts related to	(A) compare and contrast global agricultural		
global diversity. The student is expected to:	markets, currency, and trends	markets	Activities  Value of Agriculture: Agriculture as a Whole; All Projects; All
(3) The student analyzes concepts related to	(A) compare and contrast global agricultural	(ii) compare and contrast global currency	
global diversity. The student is expected to:	markets, currency, and trends	(:)	Activities
(3) The student analyzes concepts related to	(A) compare and contrast global agricultural	(ii) compare and contrast global currency	Value of Agriculture: Determining the Value; All Projects; All
global diversity. The student is expected to:	markets, currency, and trends		Activities
(3) The student analyzes concepts related to	(A) compare and contrast global agricultural	(iii) compare and contrast global trends	The World of Agriculture; Assessment V - Global Agriculture;
global diversity. The student is expected to:	markets, currency, and trends		Assessment V - Global Agriculture Answer Key; Activity - Global
(O) T			Marketing
(3) The student analyzes concepts related to	(B) evaluate marketing factors and practices that	(i) evaluate marketing factors that impact global	The World of Agriculture; Assessment V - Global Agriculture;
global diversity. The student is expected to:	impact the global markets	markets	Assessment V - Global Agriculture Answer Key; Activity - Global
(2) The student analysis concents valeted to	(D) avaluate manufation factors and proceeds a that	/ii\ avalvata magulating muatiana that immast alah al	Marketing The West of Assistant Astistic Clahel Marketing
(3) The student analyzes concepts related to	(B) evaluate marketing factors and practices that		The World of Agriculture; Activity - Global Marketing
global diversity. The student is expected to:	impact the global markets	markets (i) define the scope of agriculture	History of Assis drives All Dusington All Astroitics
(4) The student explains the historical, current,	(A) define the scope of agriculture	(i) define the scope of agriculture	History of Agriculture; All Projects; All Activities
and future significance of the agricultural, food,			
and natural resources industry. The student is			
expected to:	(5)		LE CALLE AUDIT CALLACTE
(4) The student explains the historical, current,	(B) analyze the scope of agriculture, food, and	(i) analyze the scope of agriculture, food, and	History of Agriculture; All Projects; All Activities
and future significance of the agricultural, food,	natural resources and its effect upon society	natural resources	
and natural resources industry. The student is			
expected to:			LET CALL HE AND THE ANALYSIS
(4) The student explains the historical, current,	(B) analyze the scope of agriculture, food, and	(ii) analyze the scope of agriculture, food, and	History of Agriculture; All Projects; All Activities
and future significance of the agricultural, food,	natural resources and its effect upon society	natural resources' effect upon society	
and natural resources industry. The student is			
expected to:			
(4) The student explains the historical, current,	(C) evaluate significant historical and current	(i) evaluate significant historical agriculture, food,	History of Agriculture; All Projects; All Activities
and future significance of the agricultural, food,	agriculture, food, and natural resource	and natural resource developments	
and natural resources industry. The student is	developments		
expected to:			
(4) The student explains the historical, current,	(C) evaluate significant historical and current	(ii) evaluate significant current agriculture, food,	The World of Agriculture; Assessment III - Trends & Technology
and future significance of the agricultural, food,	agriculture, food, and natural resource	and natural resource developments	in Agriculture; Assessment III - Trends & Technology in
and natural resources industry. The student is	developments		Agriculture Answer Key
expected to:			

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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:	<ul> <li>(A) demonstrate written and oral communication skills appropriate for formal and informal situations such as prepared and extemporaneous presentations</li> </ul>	(i) demonstrate written communication skills appropriate for formal situations	Written Communication Practices; Project - Informative Pamphlet
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

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Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(6) The student demonstrates appropriate	(A) demonstrate written and oral communication	(iv) demonstrate oral communication skills	Public Speaking Basics; Activity - Communication Circle Teacher
1:	skills appropriate for formal and informal situations	appropriate for informal situations	Instruction Sheet; Activity - Audience Mix Up Teacher Instruction
expected to:	such as prepared and extemporaneous		Sheet; Project - City Council; Project - City Council Teacher
	presentations		Instruction Sheet; Project - Speech Evaluation
(6) The student demonstrates appropriate	(B) demonstrate effective listening skills	(i) demonstrate effective listening skills	Listening 101; Activity - Bus Driver Listening Teacher Instruction
personal and communication skills. The student is	appropriate for formal and informal situations	appropriate for formal situations	Sheet; Project - Newsletter
expected to:			
(6) The student demonstrates appropriate	(B) demonstrate effective listening skills	(ii) demonstrate effective listening skills	Listening 101; Activity - Bus Driver Listening Teacher Instruction
personal and communication skills. The student is	appropriate for formal and informal situations	appropriate for informal situations	Sheet; Activity - Draw What You Hear Teacher Instruction Sheet
expected to:			
(7) The student applies appropriate research	(A) discuss major research and developments in	(i) discuss major research in the fields of	The World of Agriculture; Assessment III - Trends & Technology
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources	in Agriculture; Assessment III - Trends & Technology in
resources topics. The student is expected to:	resources		Agriculture Answer Key
(7) The student applies appropriate research	(A) discuss major research and developments in	(i) discuss major research in the fields of	Field Trip: U.S. Meat Animal Research Center
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources	
resources topics. The student is expected to:	resources		
(7) The student applies appropriate research	(A) discuss major research and developments in	(i) discuss major research in the fields of	Biotechnology - Uses in the Food Industry
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources	
resources topics. The student is expected to:	resources		
(7) The student applies appropriate research	(A) discuss major research and developments in	(i) discuss major research in the fields of	Biotechnology - Fetal Programming
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources	
resources topics. The student is expected to:	resources		
(7) The student applies appropriate research	(A) discuss major research and developments in	(i) discuss major research in the fields of	Emerging Technologies: Molecular Methods
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources	
resources topics. The student is expected to:	resources		
(7) The student applies appropriate research	(A) discuss major research and developments in	(ii) discuss major developments in the fields of	The World of Agriculture; Assessment III - Trends & Technology
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources	in Agriculture; Assessment III - Trends & Technology in
resources topics. The student is expected to:	resources		Agriculture Answer Key
(7) The student applies appropriate research	(A) discuss major research and developments in	(ii) discuss major developments in the fields of	Field Trip: U.S. Meat Animal Research Center
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources	
resources topics. The student is expected to:	resources	(ii) discours as sign developments in the fields of	Distribution Uses in the Food by distribution
(7) The student applies appropriate research	(A) discuss major research and developments in	(ii) discuss major developments in the fields of	Biotechnology - Uses in the Food Industry
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources	
resources topics. The student is expected to:	resources	(ii) dia i d i th . field f	Distriction Control December 1
(7) The student applies appropriate research	(A) discuss major research and developments in	(ii) discuss major developments in the fields of	Biotechnology - Fetal Programming
methods to agriculture, food, and natural	the fields of agriculture, food, and natural	agriculture, food, and natural resources	
resources topics. The student is expected to:  (7) The student applies appropriate research	resources (A) discuss major research and developments in	(ii) discuss major developments in the fields of	Emerging Technologies: Molecular Methods
	1, ,		Efferging rechnologies, Molecular Methods
methods to agriculture, food, and natural resources topics. The student is expected to:	the fields of agriculture, food, and natural resources	agriculture, food, and natural resources	
(7) The student applies appropriate research	(B) use a variety of resources for research and	(i) use a variety of resources for research	Researching Strategies & Tactics; Activity - Who's Your Source?
methods to agriculture, food, and natural	development	(i) use a variety of resources for research	Researching Strategies & ractics, Activity - who's four Source?
resources topics. The student is expected to:	l development		
(7) The student applies appropriate research	(B) use a variety of resources for research and	(ii) use a variety of resources for development	Researching Strategies & Tactics; Project - Blog/Movie; Project -
methods to agriculture, food, and natural	development	(ii) use a variety of resources for development	Historical Figure Essay
resources topics. The student is expected to:	development		i listolical i igule Essay
(7) The student applies appropriate research	(C) describe scientific methods of research	(i) describe scientific methods of research	Scientific Procedures & Safety; Activity - Designing an
methods to agriculture, food, and natural	(O) describe scientific metrious of research	(1) describe scientific metrious of research	Experiment; Activity - Designing an Experiment Answer Key
resources topics. The student is expected to:			Experiment, Activity - Designing an Experiment Answer Rey
(8) The student applies problem-solving,	(A) develop a formal business plan	(i) develop a formal business plan	Agricultural Business: Management; Project - Business Plan
mathematical, and organizational skills in order to	(A) develop a formal business plan	(i) develop a lottilal busiliess plati	Agricultural Business. Management, Froject - Business Flati
maintain financial and logistical records. The			
student is expected to:			
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Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(8) The student applies problem-solving,	(B) develop, maintain, and analyze records	(i) develop records	Budgeting for Agribusiness; Activity - Types of Budgets; Project -
mathematical, and organizational skills in order to	(b) develop, maintain, and analyze records	(i) develop records	Budgeting for Agribusiness; Project - Budgeting for Agribusiness
maintain financial and logistical records. The			Teacher Instruction Sheet
student is expected to:			Todolici motidotori oricci
(8) The student applies problem-solving,	(B) develop, maintain, and analyze records	(ii) maintain records	Budgeting for Agribusiness; Activity - Types of Budgets; Project -
mathematical, and organizational skills in order to	(b) develop, maintain, and analyze records	(ii) maintain records	Budgeting for Agribusiness; Project - Budgeting for Agribusiness
maintain financial and logistical records. The			Teacher Instruction Sheet
student is expected to:			Teacher instruction Sheet
(8) The student applies problem-solving,	(B) develop, maintain, and analyze records	(iii) analyze records	Budgeting for Agribusiness; Activity - Types of Budgets; Project -
	(b) develop, maintain, and analyze records	(III) analyze records	
mathematical, and organizational skills in order to			Budgeting for Agribusiness; Project - Budgeting for Agribusiness Teacher Instruction Sheet
maintain financial and logistical records. The			reacher instruction Sheet
student is expected to:	(A) apply to about any applications are by a findington	(i) apply to also also an also tions	Clarifornia Communication & Cabadulinas All Dunicatos All Asticitica
	(A) apply technology applications such as industry-	(i) apply technology applications	Electronic Communication & Scheduling; All Projects; All Activities
to access, manage, integrate, and create	relevant software and Internet applications		
information related to agriculture, food, and			
natural resources. The student is expected to:			
(9) The student uses information technology tools		(i) utilize collaborative software	Virtual Meeting Basics; Project - Virtual Meeting Demo
to access, manage, integrate, and create	meeting software		
information related to agriculture, food, and			
natural resources. The student is expected to:			
(9) The student uses information technology tools	, , , , , , , , , , , , , , , , , , , ,		Virtual Meeting Basics; Project - Virtual Meeting Demo
to access, manage, integrate, and create	meeting software	(ii) utilize groupware software	
information related to agriculture, food, and			
natural resources. The student is expected to:			
(9) The student uses information technology tools	. ,		Virtual Meeting Basics; Project - Virtual Meeting Demo
to access, manage, integrate, and create	meeting software	(iii) utilize virtual meeting software	
information related to agriculture, food, and			
natural resources. The student is expected to:			
(9) The student uses information technology tools	(C) analyze the benefits and limitations of	(i) analyze the benefits of emerging technology	The World of Agriculture; Assessment III - Trends & Technology
to access, manage, integrate, and create	emerging technology such as online mapping		in Agriculture; Assessment III - Trends & Technology in
information related to agriculture, food, and	systems, drones, and robotics		Agriculture Answer Key
natural resources. The student is expected to:			
(9) The student uses information technology tools	(C) analyze the benefits and limitations of	(ii) analyze the limitations of emerging technology	The World of Agriculture; Assessment III - Trends & Technology
to access, manage, integrate, and create	emerging technology such as online mapping		in Agriculture; Assessment III - Trends & Technology in
information related to agriculture, food, and	systems, drones, and robotics		Agriculture Answer Key
natural resources. The student is expected to:			
(9) The student uses information technology tools	(D) explain the benefits of computer based and	(i) explain the benefits of computer based	The World of Agriculture; Assessment III - Trends & Technology
to access, manage, integrate, and create	mobile application equipment in agriculture, food,	equipment in agriculture, food, and natural	in Agriculture; Assessment III - Trends & Technology in
information related to agriculture, food, and	and natural resources	resources	Agriculture Answer Key
natural resources. The student is expected to:			
(9) The student uses information technology tools	(D) explain the benefits of computer based and	(i) explain the benefits of computer based	Geographic Information Systems (GIS) & Global Positioning
to access, manage, integrate, and create	mobile application equipment in agriculture, food,	equipment in agriculture, food, and natural	Systems (GPS); Activity - Land, Sea & Air
information related to agriculture, food, and	and natural resources	resources	
natural resources. The student is expected to:			
(9) The student uses information technology tools	(D) explain the benefits of computer based and	(ii) explain the benefits of mobile application	The World of Agriculture; Assessment III - Trends & Technology
to access, manage, integrate, and create	mobile application equipment in agriculture, food,	equipment in agriculture, food, and natural	in Agriculture; Assessment III - Trends & Technology in
information related to agriculture, food, and	and natural resources	resources	Agriculture Answer Key
natural resources. The student is expected to:			, , , , , , , , , , , , , , , , , , ,
(9) The student uses information technology tools	(D) explain the benefits of computer based and	(ii) explain the benefits of mobile application	Geographic Information Systems (GIS) & Global Positioning
to access, manage, integrate, and create	mobile application equipment in agriculture, food,	equipment in agriculture, food, and natural	Systems (GPS); Activity - Land, Sea & Air
information related to agriculture, food, and	and natural resources	resources	, (,,,,,
natural resources. The student is expected to:			
natural resources. The student is expected to:			

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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: Digltt 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: Diglt! 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

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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:		(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

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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

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Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(12) The student develops technical knowledge	(C ) identify and evaluate breeds and classes of	(iii) evaluate breeds of livestock	Livestock Breed Identification: Cattle; Activity - Board Races
and skills related to animal systems. The student	livestock	() 5 (4.144.6 2.1554.5 5) 117555511	and the second s
is expected to:			
(12) The student develops technical knowledge	(C) identify and evaluate breeds and classes of	(iii) evaluate breeds of livestock	Livestock Breed Identification: Goats; Activity - Breed Match;
and skills related to animal systems. The student	livestock	(,	Activity - Breed Match Answer Key; Activity - Breed Match
is expected to:			Teacher Instruction Sheet
(12) The student develops technical knowledge	(C) identify and evaluate breeds and classes of	(iii) evaluate breeds of livestock	Livestock Breed Identification: Sheep
and skills related to animal systems. The student	livestock	( )	'
is expected to:			
(12) The student develops technical knowledge	(C) identify and evaluate breeds and classes of	(iii) evaluate breeds of livestock	Livestock Breed Identification: Swine
and skills related to animal systems. The student	livestock		
is expected to:			
(12) The student develops technical knowledge	(C) identify and evaluate breeds and classes of	(iii) evaluate breeds of livestock	Livestock Breed Identification: Poultry
and skills related to animal systems. The student	livestock		·
is expected to:			
(12) The student develops technical knowledge	(C) identify and evaluate breeds and classes of	(iv) evaluate classes of livestock	Basic Animal Science; Project - Animal Evaluation
and skills related to animal systems. The student	livestock		
is expected to:			
(12) The student develops technical knowledge	(D) explain animal selection, reproduction,	(i) explain animal selection	Livestock Breeding Systems; Activity - Suffolk Ram Lambs
and skills related to animal systems. The student	breeding, and genetics		Scenario
is expected to:			
(12) The student develops technical knowledge	(D) explain animal selection, reproduction,	(ii) explain animal reproduction	Basic Animal Reproduction; Activity - System Outline; Project -
and skills related to animal systems. The student	breeding, and genetics		Model Systems
is expected to:			
(12) The student develops technical knowledge	(D) explain animal selection, reproduction,	(iii) explain animal breeding	Livestock Breeding Systems; Activity - Create a Composite
and skills related to animal systems. The student	breeding, and genetics		
is expected to:			
(12) The student develops technical knowledge	(D) explain animal selection, reproduction,	(iv) explain animal genetics	Fundamental Animal Microgenetics; All Projects; All Activities
and skills related to animal systems. The student	breeding, and genetics		
is expected to:			
(13) The student describes the principles of food	(A) evaluate food products and processing	(i) evaluate food products and processing systems	Dairy Products Production; Activity - Production Design
products and processing systems. The student is	systems		
expected to:			
(13) The student describes the principles of food	(A) evaluate food products and processing	(i) evaluate food products and processing systems	Value Added & Specialty Products; Activity - Value Added
products and processing systems. The student is	systems		Process
expected to:			
(13) The student describes the principles of food	(A) evaluate food products and processing	(i) evaluate food products and processing systems	Vegetable Production
products and processing systems. The student is	systems		
expected to:			
(13) The student describes the principles of food	(A) evaluate food products and processing	(i) evaluate food products and processing systems	Fruit & Nut Production
products and processing systems. The student is	systems		
expected to:			
(13) The student describes the principles of food	(A) evaluate food products and processing	(i) evaluate food products and processing systems	Poultry Products Production
products and processing systems. The student is	systems		
expected to:			
(13) The student describes the principles of food	(A) evaluate food products and processing	(i) evaluate food products and processing systems	Grades and Classes of Seafood and Fish
products and processing systems. The student is	systems		
expected to:		(0)	
(13) The student describes the principles of food	(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
products and processing systems. The student is			
expected to:			
(13) The student describes the principles of food	(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
products and processing systems. The student is			
expected to:			

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Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
(13) The student describes the principles of food	(D) use tools, equipment, and personal protective		Carcass Fabrication: Personal Protective Equipment (PPE); All
	equipment common to food products and	processing systems	Projects; All Activities
	processing systems	processing cycleme	
	(D) use tools, equipment, and personal protective	(ii) use equipment common to food products and	Carcass Fabrication: Personal Protective Equipment (PPE); All
	equipment common to food products and	processing systems	Projects; All Activities
expected to:	processing systems		
(13) The student describes the principles of food	(D) use tools, equipment, and personal protective	(iii) use personal protective equipment common to	Carcass Fabrication: Personal Protective Equipment (PPE); All
products and processing systems. The student is	equipment common to food products and	food products and processing systems	Projects; All Activities
expected to:	processing systems		
(14) The student safely performs basic power,	(A) identify major areas of power, structural, and	(i) identify major areas of power, structural, and	The World of Agriculture
structural, and technical system skills in	technical systems	technical systems	
agricultural applications. The student is expected			
to:			
(14) The student safely performs basic power,	(A) identify major areas of power, structural, and		Mechanized Agriculture; Project - Invention of Machinery
structural, and technical system skills in	technical systems	technical systems	
agricultural applications. The student is expected			
to:	(D)	(:)	Desir Ohan Osfata Osalasa All Dasis atas All Astribita
(14) The student safely performs basic power,	(B) use safe and appropriate laboratory	(i) use safe laboratory procedures	Basic Shop Safety Series; All Projects; All Activities
	procedures and policies		
agricultural applications. The student is expected to:			
(14) The student safely performs basic power,	(B) use safe and appropriate laboratory	(i) use safe laboratory procedures	Welding Shop Safety; All Projects; All Activities
	procedures and policies	(i) use sale laboratory procedures	I rojects, All Activities
agricultural applications. The student is expected	procedures and policies		
to:			
(14) The student safely performs basic power,	(B) use safe and appropriate laboratory	(ii) use safe laboratory policies	Basic Shop Safety Series; All Projects; All Activities
structural, and technical system skills in	procedures and policies	(ii) use sais laberatory pensiss	2455 5756 5475 5575 5575 5775 5775 5775 5
agricultural applications. The student is expected			
to:			
(14) The student safely performs basic power,	(B) use safe and appropriate laboratory	(ii) use safe laboratory policies	Welding Shop Safety; All Projects; All Activities
structural, and technical system skills in	procedures and policies		
agricultural applications. The student is expected			
to:			
(14) The student safely performs basic power,	(B) use safe and appropriate laboratory	(iii) use appropriate laboratory procedures	Basic Shop Safety Series; All Projects; All Activities
	procedures and policies		
agricultural applications. The student is expected			
to:	(D)	(1)	W. I. C. C. C. C. A. I. D. C. C. A. II. D. C.
(14) The student safely performs basic power,	(B) use safe and appropriate laboratory	(iii) use appropriate laboratory procedures	Welding Shop Safety; All Projects; All Activities
structural, and technical system skills in	procedures and policies		
agricultural applications. The student is expected			
to: (14) The student safely performs basic power,	(B) use safe and appropriate laboratory	(iv) use appropriate laboratory policies	Basic Shop Safety Series; All Projects; All Activities
	procedures and policies	(iv) use appropriate laboratory policies	Dasic Shop Salety Series, All Projects, All Activities
agricultural applications. The student is expected	procedures and policies		
to:			
(14) The student safely performs basic power,	(B) use safe and appropriate laboratory	(iv) use appropriate laboratory policies	Welding Shop Safety; All Projects; All Activities
structural, and technical system skills in	procedures and policies	() and appropriate laboratory policies	The state of the s
agricultural applications. The student is expected			
to:			
(14) The student safely performs basic power,	(C) create proposals that include bill of materials,	(i) create proposals that include bill of materials	Project Management Skills; Project - Project Phases &
	budget, schedule, drawings, and technical skills	developed for basic power, structural, and	Organization
	developed for basic power, structural, and	technical system projects or structures	
to:	technical system projects or structures		

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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:	equipment common to power, structural, and	(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

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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:	equipment common to power, structural, and technical systems	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:	natural resources upon safety, health, and the	(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

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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	
(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	( )	Environmental Resources: Renewable & Non-Renewable Resources and Energy; Activity - Biomass Speech

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Knowledge and Skills Statement	Student Expectation	Breakout	Page (s)
between agriculture, food, and natural resources	sources that stem from or impact agriculture, food,	(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

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