

Agronomy

Academic Content Area: Environment and Ecology – Grade 10

Career Development Event Content

1. Determine the ability to identify agronomic: crops, weeds, seeds, insects, diseases, plant nutrient deficiencies, plant disorders and crop grading and pricing.
2. Evaluate a scenario and develop a crop management plan including crop selection, production and marketing.
3. Demonstrate understanding of sustainable agriculture and environmental stewardship through the use of Integrated Pest Management and Best Management Practices.
4. Demonstrate a basic knowledge of agronomic sciences.
5. Explore career opportunities, skills and proficiencies in the agronomy industry.

Related Academic Standards/Anchors

Objectives 1-5: **4.4.10.A,C,D; 4.5.10.A,B,C; 4.8.10.C**

Connecting Examples: CDE Objectives and Standards/Anchors

Ex. 1 – Related to 4.4.10.A: Describe the importance of agriculture to society. Sub-point, identify the major cash crops of Pennsylvania. **Through this career development event, students prepare by familiarizing themselves with 114 different plants, seeds, weeds and disorders. Additionally, the students familiarize themselves with 95 botanical names to match with the common names. The major cash crops of Pennsylvania are all included in the plants, seeds, weeds, and disorders.**

Ex. 2 – Related to 4.5.10.B: Analyze the health benefits and risks associated with integrated pest management. Sub-point, assess various levels of control within different integrated pest management practices including increase immunity to pesticides, food safety, sterilization, nutrient management and weed control. **During the career development event, students must participate in a rotational practicum. Each of the practicums are related to crops or pesticide management. Student may have practicums related to seed analysis, fertilizer, insects, grain grading, herbicide & pesticide and disorders. For example, students were given a field management problem that required them to develop a plan for pest identification, pesticide usage and application, cost input sheet and schematic of how to handle the situation.**

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Academic Content Area: Mathematics – Grade 11

Career Development Event Content

1. Determine the ability to identify agronomic: crops, weeds, seeds, insects, diseases, plant nutrient deficiencies, plant disorders and crop grading and pricing.
2. Evaluate a scenario and develop a crop management plan including crop selection, production and marketing.
3. Demonstrate understanding of sustainable agriculture and environmental stewardship through the use of Integrated Pest Management and Best Management Practices.
4. Demonstrate a basic knowledge of agronomic sciences.
5. Explore career opportunities, skills and proficiencies in the agronomy industry.

Related Academic Standards/Anchors

Objectives 1-5: 2.1.11.A; 2.2.11.B; 2.2.11.A,B,C; 2.7.11.E

Connecting Examples: CDE Objectives and Standards/Anchors

Ex. 1 – Related to 2.1.11.A: Use operations (e.g., opposite, reciprocal, absolute value, raising to power, finding roots, finding logarithms). **Students will demonstrate a knowledge and experience of the above examples through each of the practicums within the career development event. Such skills will be displayed when calculating fertilizer/pesticide ratios, calculating area and volume and through analyzes and development of desired plans.**

Ex. 2. – Related to 2.5.11.A: Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems. **Students will be required to use the given information to solve multi-step problems. These problems often require a diverse knowledge and experience in various mathematical concepts and techniques. For example, students were given soil testing analysis sheet to complete. They were required to make identifications, calculate soil analysis in organic matter, pH, Nitrogen, Phosphorus and Potassium and provide fertilizer recommendations including proposed crop, yield goal and N,P,K,L.**

Agronomy

Academic Content Area: Reading, Writing, Speaking and Listening – Grade 11

Career Development Event Content

1. Determine the ability to identify agronomic: crops, weeds, seeds, insects, diseases, plant nutrient deficiencies, plant disorders and crop grading and pricing.
2. Evaluate a scenario and develop a crop management plan including crop selection, production and marketing.
3. Demonstrate understanding of sustainable agriculture and environmental stewardship through the use of Integrated Pest Management and Best Management Practices.
4. Demonstrate a basic knowledge of agronomic sciences.
5. Explore career opportunities, skills and proficiencies in the agronomy industry.

Related Academic Standards/Anchors

Objectives 1-5: 1.1.11.A,E,F; 1.2.11.A; 1.6.11.A,D,E

Connecting Examples: CDE Objectives and Standards/Anchors

Ex. 1 – Related to 1.1.11.A: Locate various texts, media and traditional resources of assigned and independent projects before reading. **Students will prepare for this career development event by making appropriate selections of study material through texts and media. This enables them to develop a good practice locating relevant and appropriate resources for effective studying techniques.**

Ex. 2. – Related to 1.2.11.A: Read and understand essential content of informational texts and documents in all academic areas. Sub-point, distinguish between essential and nonessential information across a variety of sources, identifying the use of proper references or authorities and propaganda techniques where present. **During the career development event students will be provided with multiple resources and forms of informational materials. The students must be able to distinguish between the essential and nonessential information among the sources for successful completion of the practicum.**

Ex. 3. – Related to 1.6.11.A: Listen to others. **Students will demonstrate the practice of listening to others by asking clarifying questions, determining relevancy of opinions and ideas and taking notes during the various practicums.**

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Academic Content Area: Science and Technology – Grade 10

Career Development Event Content

1. Determine the ability to identify agronomic: crops, weeds, seeds, insects, diseases, plant nutrient deficiencies, plant disorders and crop grading and pricing.
2. Evaluate a scenario and develop a crop management plan including crop selection, production and marketing.
3. Demonstrate understanding of sustainable agriculture and environmental stewardship through the use of Integrated Pest Management and Best Management Practices.
4. Demonstrate a basic knowledge of agronomic sciences.
5. Explore career opportunities, skills and proficiencies in the agronomy industry.

Related Academic Standards/Anchors

Objectives 1-5: 3.1.10.D; 3.2.10.D; 3.3.10.A; 3.5.10.B; 3.6.10.A; 3.7.10.A,B

Connecting Examples: CDE Objectives and Standards/Anchors

Ex. 1 – Related to 3.2.10.D: Identify and apply the technological design process to solve problems. Each practicum provided requires the students to use current technologies within the agricultural field to develop a solution to a problem, which relate to the technological design process.

Ex. 2 – Related to 3.5.10.B: Explain sources and uses of earth resources. Sub-point, evaluate land use (e.g., agricultural, recreational, residential, commercial) in Pennsylvania based upon soil characteristics. **A practicum the students are required to complete involves soil science. Within this practicum students must identify soil usage for particular crops or ways to plant crops based on the soil type. They are required to answer questions based on the soil type, symbols, locality, site development, chemical properties, fertilizers needed for particular plants growing in that soil and complete a soil testing analysis.**

Ex. 3 – Related to 3.6.10.A: Apply biotechnologies that relate to propagation, growing, maintaining, adapting, treating and converting. Sub-point, apply knowledge of plant and animal production processes in designing an improvement to existing processes. **Students are required to use their knowledge, experience and background in plant and animal production to complete various practicums within the CDE.**