

Unit/Standard Number	 <p style="text-align: center;"><b>pennsylvania</b> DEPARTMENT OF EDUCATION</p> <p style="text-align: center;"><u>High School Graduation Years 2016, 2017 and 2018</u></p> <p style="text-align: center;"><b>Agricultural Production Operations, General</b> <b>CIP 01.0301</b> <b>Task Grid</b></p>	Proficiency Level Achieved: (X) Indicates Competency Achieved to Industry Proficiency Level
	<p style="text-align: center;"><b>Secondary Competency Task List</b></p>	
<b>100</b>	<b>SUPERVISED AGRICULTURAL EXPERIENCE</b>	
101	Develop short, mid and long-term project plans.	
102	Develop a Supervised Agricultural Experience (SAE) based upon individual interests/career goals.	
103	Maintain complete and accurate records to build financial literacy.	
104	Analyze records to determine strengths and areas for improvement.	
<b>200</b>	<b>DEMONSTRATE KNOWLEDGE OF AGRIBUSINESS SYSTEMS</b>	
201	Differentiate types of ownership and structures of agricultural businesses.	
202	Describe the meaning, importance and economic impact of entrepreneurship.	
203	Compare supply and demand principles in agricultural business.	
204	Identify the components of a business plan: mission, vision, SMART goals, SWOT analysis, risk assessment.	
205	Differentiate between assets and liabilities.	
206	Assess financial records associated with production and profit (cash flow, budget, net worth).	
207	Identify the purpose, components and developmental processes of marketing plans.	
208	Evaluate potential sources for credit.	
209	Identify the economic impact of Pennsylvania agricultural commodities, products and services, both domestic and international.	
<b>300</b>	<b>DEMONSTRATE KNOWLEDGE OF ANIMAL SYSTEMS</b>	
301	Implement disease prevention methods and procedures for the safe handling and treatment of animals by interpreting a drug label.	
302	Identify the societal uses of animals (food, work, companionship, pleasure).	
303	Select animals for specific purposes and maximum performance based on anatomy and physiology.	
304	Utilize a punnett square to determine the potential phenotypes and genotypes of animals.	
305	Classify animals according to taxonomy and agricultural use.	
306	Compare ruminant and monogastric digestive systems.	
307	Identify the common parts of the reproductive systems of small and large animals.	
308	Select appropriate feedstuffs for animals based on factors such as economics, digestive system and nutritional needs.	
309	Analyze feed tags and feed labels.	
310	Identify feedstuffs as roughages, concentrates and supplements.	
311	Demonstrate good production practices to ensure quality and safe food products (quality assurance, GPP's).	
<b>400</b>	<b>DEMONSTRATE KNOWLEDGE OF BIOTECHNOLOGY SYSTEMS</b>	
401	Safely demonstrate laboratory skills as applied to biotechnology.	
402	Apply the steps of the scientific method.	
403	Identify plant and animal cell structures and functions.	
404	Explain the structure of DNA and RNA and how genotype influences phenotype.	
405	Interpret the processes utilized in converting plant material into alternative energy (biofuels and biomass).	

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406	Identify the purposes of biotechnology in animal and plant production.	
407	Differentiate applications of biotechnology in agriculture (GMO's, artificial insemination, embryo transfer, genetic engineering).	
408	Analyze the benefits and risks associated with biotechnology.	
<b>500</b>	<b>DEMONSTRATE KNOWLEDGE OF FOOD PRODUCTS AND PROCESSING SYSTEMS</b>	
501	Analyze and demonstrate food handling safety.	
502	Identify the seven principles of Hazard Analysis and Critical Control Points (HACCP).	
503	Describe the process that an agricultural product takes from the producer to the consumer.	
504	Explain the importance of microbiological tests in food product processing, listing common spoilage and pathogenic microorganisms.	
505	Compare and contrast common food constituents: proteins, carbohydrates, fats, vitamins and minerals.	
<b>600</b>	<b>DEMONSTRATE KNOWLEDGE OF ENVIRONMENTAL AND NATURAL RESOURCE SYSTEMS</b>	
601	Identify hazards associated with the outdoor environment.	
602	Select the proper response to environmental accidents.	
603	Identify on-farm conservation and preservation practices for environmental sustainability.	
604	Differentiate between renewable and nonrenewable natural resources.	
605	Differentiate between point source and nonpoint source pollution.	
606	Describe the interdependence on organisms within an ecosystem.	
607	Describe characteristics used to identify trees and shrubs.	
608	Relate production practices to the prevention of water and air pollution.	
609	Identify the stages of forest succession.	
610	Describe land use planning and growth management methods for sustainable agriculture.	
<b>700</b>	<b>DEMONSTRATE KNOWLEDGE OF PLANT AND SOIL SYSTEMS</b>	
701	Select proper personal protective equipment (PPE) based on a product label.	
702	Distinguish the components of an Integrated Pest Management (IPM) program including the effects of chemicals and pesticides on the environment.	
703	Identify plant structures and functions.	
704	Describe the processes of photosynthesis, respiration, translocation, and transpiration.	
705	Identify plant nutrient requirements.	
706	Explain the environmental factors that affect the growth and development of a plant.	
707	Distinguish between sexual and asexual plant reproduction.	
708	Identify and describe physical characteristics of soil (sand, silt and clay).	
709	Test soil for pH, texture, and macronutrients.	
710	Interpret soil test reports.	
711	Describe criteria for selecting fertilizers (N, P, K).	
712	Calculate area (square feet, square yards and acreage).	

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713	Analyze and interpret soil surveys.	
714	Identify common Pennsylvania field crops and vegetables.	
715	Distinguish between legumes and grasses.	
<b>800</b>	<b>DEMONSTRATE KNOWLEDGE OF POWER, STRUCTURAL AND TECHNICAL SYSTEMS</b>	
801	Identify the dangers in an agricultural mechanics shop and work place.	
802	Identify and demonstrate wearing of personal protective equipment.	
803	Identify and use proper fire fighting equipment (fire extinguisher, fire blankets, etc.).	
804	Identify, select, adjust, maintain and safely use common hand tools and power tools.	
805	Demonstrate accurate use of measurement devices and techniques for calculating measurement.	
806	Identify Electric Arc/Stick welding equipment.	
807	List and identify the components and functions of major engine parts.	
808	Review operating and service manuals and schedules, conduct procedures as needed.	
809	Identify Ag Equipment and their operations: tractor, combine, baler, plow, and no-till drill.	
810	Apply the meaning and measurement of electricity, including amperage, voltage and wattage.	
811	Read and interpret local structural code information.	
<b>900</b>	<b>Leadership</b>	
901	Create short and long term SMART goals (Specific, Measurable, Attainable, Realistic, Timely).	
902	Participate in an intracurricular agricultural student organization, such as FFA.	
903	Develop 21st century skills through performing leadership tasks associated with becoming a global citizen.	
904	Demonstrate oral, written, and verbal skills necessary for employment.	
905	Research and participate in supervised career opportunities in agriculture.	
906	Create a career objective and develop a plan of experiences and academics to meet the objective.	
907	Describe a plan for sound digital citizenship.	