

Unit/Standard Number	<p style="text-align: center;"><u>High School Graduation Years 2022, 2023, 2024 and 2025</u></p> <p style="text-align: center;">Applied Horticulture/Horticultural Operations, General CIP 01.0601 Task Grid</p>	<p style="text-align: center;">Proficiency Level Achieved: (X) Indicates Competency Achieved to Industry Proficiency Level</p>
	Secondary Competency Task List	
100	SAFETY	
101	Identify and follow all general safety, laboratory safety and field-site safety practices and procedures in horticulture.	
102	Identify and follow all OSHA safety standards for the horticulture services industry.	
103	Identify and follow procedures written in the Safety Data Sheet (SDS) information system.	
104	Operate horticulture equipment.	
105	Select the proper protective clothing and equipment.	
106	RESERVED	
200	SAFE AND PROPER PLANT HEALTH CARE PRACTICES	
201	Control weeds, insects, and plant diseases.	
202	Interpret horticulture product labels.	
203	Calculate and mix quantities of horticultural products used in plant health care.	
204	RESERVED	
205	Investigate the concept of plant health care, e.g., disease, nutrients.	
206	Distinguish the components of an integrated pest management program including the effects of chemicals and pesticides on the environment.	
207	Analyze various horticultural pests including their signs and symptoms.	
208	RESERVED	
209	Prepare for PA Pesticide Certification.	
300	BASIC BOTANY	
301	Describe the process of photosynthesis, respiration, translocation, and transpiration.	
302	Compare plant cell structure, organization, and function.	
303	Compare plant structures and explain their functions.	
304	Analyze conditions essential for seed germination.	
305	Explain the environmental factors that affect the growth and development of a plant.	
306	Distinguish between sexual and asexual plant reproduction.	
307	Analyze plant nutrient requirements.	
308	Describe the nutrient cycles.	
309	Classify plants and use appropriate binomial taxonomic terminology.	
310	Describe techniques used to control environmental factors.	
311	Describe how weather and climate impact growing conditions and plant selection.	
400	HORTICULTURE BUSINESS OPERATIONS	
401	RESERVED	
402	RESERVED	

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403	Develop a horticultural business plan.	
404	Analyze pricing and mark-up techniques.	
405	RESERVED	
406	Research vendors to obtain product information.	
407	Perform appropriate customer and client relationship attributes.	
408	RESERVED	
409	Analyze record keeping system to determine best management practices.	
410	RESERVED	
500	SOILS AND FERTILIZER	
501	Compare soil/media characteristics.	
502	Analyze soil and/or plant nutrients.	
503	Describe soil management techniques.	
504	Conduct proper soil sampling techniques.	
505	Test soil for pH, texture, macronutrients, and soluble salts.	
506	Interpret commercial soil test reports.	
507	Describe criteria for selecting fertilizers and soil amendments.	
508	Describe factors influencing fertilizer application.	
509	RESERVED	
510	RESERVED	
511	RESERVED	
512	Compare current issues regarding plant and soil management that impacts agronomic and horticultural practices.	
513	Analyze microbial life and its effects on soil.	
600	SUSTAINABLE HORTICULTURE	
601	Identify different methods of sustainable horticulture.	
602	Compare sustainable watering and fertilizing techniques to conventional techniques.	
603	Compare sustainable plant material selection to conventional plant material.	
604	Recycle horticultural waste.	
605	RESERVED	
700	HORTICULTURE TECHNOLOGY	
701	Explain the uses of technologically altered plants.	
702	RESERVED	
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704	Research advanced and emerging technologies in horticulture.	
705	Perform a Point of Sale (POS) transaction.	

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800	HISTORY AND CURRENT STATUS OF HORTICULTURE		
801	Describe major historical developments in the field of horticulture.		
802	Compare/contrast the effect human beings have had on various plant species.		
803	Determine how development of certain plant species has affected cultural development.		
804	Describe the role horticulture plays in the economy of the state and nation.		
805	RESERVED		
806	Critique the impact that botanical gardens, public parks, and plants have on people in a society.		
900	PLANT IDENTIFICATION		
901	Outline the proper use of plant material in various segments of the horticulture industry.		
902	Determine the impact of environmental factors on plant materials.		
903	List the identifying characteristics of various plant categories including woody and herbaceous plants in the horticulture industry.		
904	Identify 100 plants used in horticulture industry by horticultural reference/botanical reference. (70 need to be deciduous, evergreen, annuals, perennials and house plants)		
1000	HORTICULTURAL CAREERS AND OPPORTUNITIES		
1001	Describe careers and working conditions in the Horticulture industry.		
1002	Perform job readiness skills needed in the Horticulture industry.		
1003	Research horticultural industry certifications.		
1004	Explore postsecondary opportunities.		
1100	HORTICULTURAL PATHWAYS		
1101	Apply concepts of landscape, hardscape, or floral design.		
1102	Create various horticulture designs.		
1103	Calculate measurements, areas, and volumes of horticulture designs.		
1104	Interpret landscape design, symbols, and abbreviations.		
1105	Transplant various types of plant material.		
1106	Prune various types of plant material.		
1107	Describe the characteristics of lawn/turfgrass installation and maintenance.		
1108	Describe the characteristics and features of various types of growing structures.		
1109	Prepare plant material for marketing or sales.		
1110	Recognize non-traditional growth and propagation of various plant materials. (examples may include but are not limited to: hydroponics, aquaponics, aeroponics, and tissue culture)		
3000	ORIENTATION		
3060	Identify and follow the Horticultural Landscaping and Design Program's Rules and procedures		

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3061	Describe display positive student/teacher and employer/employee student/worker attributes	
3062	Demonstrate safety awareness and accident prevention practices	
3100	HAND AND POWER TOOLS	
3160	Match terms associated with hand and power tools to their correct definitions.	
3161	State safety rules for using hand tools.	
3162	Match hand tools to their uses.	
3163	Select from a list characteristics of quality tools.	
3164	Complete procedures for storing and maintaining hand and power tools.	
3165	Match correct use of the body with specific tools.	
3166	State fuel safety practices for power equipment.	
3168	State safety rules for operating gas and electric power equipment.	
3169	State safety rules for specific pieces of equipment.	
3200	HARDSCAPING	
3260	Plan and document a hardscape	
3261	Understand jobsite topography	
3262	Estimate quantities, job layout, and flow	
3263	Understand Excavation of Soil, Hauling, and Disposal	
3264	Estimate base,sand,and paver materials	
3265	Estimate cut pavers and edge restraints	
3266	Describe a job layout for excavation	
3267	Describe geotextiles, their purpose and uses	
3268	Demonstrate installation of correct base materials, thickness and compaction.	
3269	Understand the types and purpose of edge restraints	
3270	Differentiate between bedding and joint sands	
3271	Demonstrate paver installation	
3272	Estimate and develop cost for a hardscaping job	
3273	Define contract basics	
3300	STUDENT ORGANIZATIONS	
3360	Understand student chapter and community development	
3361	Participate in student organization activities and community involvement	
3362	Understand and explain the FFA mission and leadership opportunities	
3363	Participate in FFA meetings and understand parliamentary procedures	
3400	LANDSCAPING TECHNOLOGY SKILLS	
3460	Describe and apply principles of landscape and hardscaping design.	

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3461	Calculate areas and volumes from information shown on a blueprint.	
3462	Explain the purpose of Pennsylvania "One Call" service.	
3463	Read and interpret blueprints, blueprint symbols and abbreviations.	
3464	Prepare, plant and maintain turf grass areas.	
3465	Install plants that are bare-root, containerized, balled and burlapped, boxed, or machine-moved.	
3466	Prune evergreen and deciduous trees and shrubs.	
3467	Create landscape bed edges.	
3500	PLANT PRODUCTION (GREENHOUSE/NURSERY)	
3560	Demonstrate proper safety, operating techniques, and sanitation for greenhouse/nursery tools and equipment.	
3561	Describe the characteristics and features of various types of growing structure.	
3562	Plant, propagate or harvest various seedlings or plants.	
3563	Properly identify and label plant material.	
3564	Maintain greenhouse/nursery plants (watering, pruning, and fertilizing, repotting, and disease management).	
3565	Demonstrate methods of sexual and asexual plant propagation.	
3566	Recognize proper operation of the environmental control systems of a growing structure.	