Applied Horticulture/Horticultural Operations, General, Classification of Instructional Program (CIP) 01.0601

Units of Instruction and Task Grid Linked to Pennsylvania Core Standards

100 SAFETY

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
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** Demonstrate the safe use of horticulture equipment. **105** Select the proper protective clothing and equipment. **106** Demonstrate basic first aid procedures for injuries.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** COMMON CAREER TECHNICAL CORE STANDARDS: AGRICULTURE/FOOD AND NATIONAL RESOURCES CLUSTER AG-1, AG-3 PLANT SYSTEMS CAREER PATHWAY None Listed	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D. Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12***	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H	**NUMBERS AND OPERATIONS** Standard PCS.2.1.HS.F.1 Standard PCS.2.1.HS.F.2 Standard PCS.2.1.HS.F.3 Standard PCS.2.1.HS.F.4 Standard PCS.2.1.HS.F.5 Standard PCS.2.1.HS.F.6 Standard PCS.2.1.HS.F.7

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
		Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I **RANGE OF READING/LEVEL OF COMPLEX TEXTS** ***GRADES 9-10*** Standard PCS.3.5.9-10.J ***GRADES 11-12*** Standard PCS.3.5.11-12.J	**RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12***	

200 SAFE AND PROPER PLANT HEALTH CARE PRACTICES

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
201 Practice safety when controlling weeds, insects, and plant diseases. 202 Read and interpret horticulture product labels. 203 Properly calculate and mix quantities of horticultural products used in plant health care. 204 Demonstrate knowledge of federal and state pesticide laws. 205 Define the concept of plant health care, such as disease, nutrients, etc. 206 Distinguish the components of an integrated pest management program including the effects of chemicals and pesticides on the environment. 207 Identify various horticultural pests including their signs and symptoms. 208 Identify and use equipment for the application of plant health care products.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** COMMON CAREER TECHNICAL CORE STANDARDS: AGRICULTURE/FOOD AND NATIONAL RESOURCES CLUSTER AG-3 PLANT SYSTEMS CAREER PATHWAY AG-PL1 AG-PL3	**KEY IDEAS/DETAILS** *GRADES 9-10* Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C *GRADES 11-12* Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** *GRADES 9-10* Standard PCS.3.5.9-10.D. Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F *GRADES 11-12* Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/IDEAS** *GRADES 9-10* Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I *GRADES 9-12* Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I **RANGE OF READING/LEVEL OF COMPLEX TEXTS** *GRADES 9-10* Standard PCS.3.5.9-10.J *GRADES 11-12*	**TEXT TYPES/ PURPOSE** *GRADES 9-10* Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B *GRADES 11-12* Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** *GRADES 9-10* Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E *GRADES 11-12* Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** *GRADES 9-10* Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H *GRADES 11-12* Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** *GRADES 9-10* Standard PCS.3.5.9-10.I *GRADES 11-12*	**NUMBERS AND OPERATIONS** Standard PCS.2.1.HS.F.1 Standard PCS.2.1.HS.F.2 Standard PCS.2.1.HS.F.3 Standard PCS.2.1.HS.F.4 Standard PCS.2.1.HS.F.5 Standard PCS.2.1.HS.F.6 Standard PCS.2.1.HS.F.7

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
		Standard PCS.3.5.11-12.J		

300 BASIC BOTANY

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
301 Describe the process of photosynthesis, respiration, translocation, and transpiration. 302 Identify plant cell structure, organization and function. 303 Identify plant structures and explain their functions. 304 Identify 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 Identify plant nutrient requirements. 308 Describe the nutrient cycles. 309 Classify plants and use appropriate binomial taxonomic terminology.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** COMMON CAREER TECHNICAL CORE STANDARDS: AGRICULTURE/FOOD AND NATIONAL RESOURCES CLUSTER AG-1 PLANT SYSTEMS CAREER PATHWAY AG-PL2 AG-PL3	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D. Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I **RANGE OF READING/LEVEL OF COMPLEX TEXTS** ***GRADES 9-10*** Standard PCS.3.5.9-10.J ***GRADES 11-12*** Standard PCS.3.5.11-12.J	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12***	

400 HORTICULTURE BUSINESS OPERATIONS

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
401 Determine criteria for selecting a site for a horticulture business. 402 Research state and local requirements for horticulture businesses. 403 Develop a horticultural business plan. 404 Analyze pricing and mark up techniques. 405 Determine human resource needs in a horticulture business. 406 Research vendors to obtain product information. 407 Demonstrate appropriate customer/client relationship attributes. 408 Identify and develop various horticulture record keeping systems. 409 Analyze record keeping system to determine best management practices. 410 Analyze business ethics.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** COMMON CAREER TECHNICAL CORE STANDARDS: AGRICULTURE/FOOD AND NATIONAL RESOURCES CLUSTER AG-5 PLANT SYSTEMS CAREER PATHWAY AG-PL3	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D. Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I **RANGE OF READING/LEVEL OF COMPLEX TEXTS**	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12***	**NUMBERS AND OPERATIONS** Standard PCS.2.1.HS.F.1 Standard PCS.2.1.HS.F.2 Standard PCS.2.1.HS.F.3 Standard PCS.2.1.HS.F.4 Standard PCS.2.1.HS.F.5 Standard PCS.2.1.HS.F.6 Standard PCS.2.1.HS.F.7 **MEASUREMENT, DATA AND PROBABILITY** Standard PCS.2.4.HS.B.1 Standard PCS.2.4.HS.B.2 Standard PCS.2.4.HS.B.3 Standard PCS.2.4.HS.B.4 Standard PCS.2.4.HS.B.5 Standard PCS.2.4.HS.B.6 Standard PCS.2.4.HS.B.7

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
		GRADES 9-10 Standard PCS.3.5.9-10.J **GRADES 11-12** Standard PCS.3.5.11-12.J		

500 SOILS AND CLIMATE

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
501 Identify and describe soil characteristics. 502 Identify 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 Identify environmental factors that affect plant growth. 510 Describe techniques used to control environmental factors. 511 Describe how weather and climate impact growing conditions and plant selection.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** COMMON CAREER TECHNICAL CORE STANDARDS: AGRICULTURE/FOOD AND NATIONAL RESOURCES CLUSTER AG-4 PLANT SYSTEMS CAREER PATHWAY AG-PL1 AG-PL3	**KEY IDEAS/DETAILS** *GRADES 9-10* Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C *GRADES 11-12* Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** *GRADES 9-10* Standard PCS.3.5.9-10.D. Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F *GRADES 11-12* Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/IDEAS** *GRADES 9-10* Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I *GRADES 9-12* Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I **RANGE OF READING/LEVEL OF COMPLEX TEXTS** *GRADES 9-10* Standard PCS.3.5.9-10.J *GRADES 11-12*	**TEXT TYPES/ PURPOSE** *GRADES 9-10* Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B *GRADES 11-12* Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** *GRADES 9-10* Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E *GRADES 11-12* Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RANGE OF WRITING** *GRADES 9-10* Standard PCS.3.5.9-10.I *GRADES 11-12*	**NUMBERS AND OPERATIONS** Standard PCS.2.1.HS.F.1 Standard PCS.2.1.HS.F.2 Standard PCS.2.1.HS.F.3 Standard PCS.2.1.HS.F.4 Standard PCS.2.1.HS.F.5 Standard PCS.2.1.HS.F.6 Standard PCS.2.1.HS.F.7

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
		Standard PCS.3.5.11-12.J		

600 SUSTAINABLE HORTICULTURE

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
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 Compare the efficiency of current energy sources with future energy sources in horticulture.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** COMMON CAREER TECHNICAL CORE STANDARDS: AGRICULTURE/FOOD AND NATIONAL RESOURCES CLUSTER AG-4, AG- PLANT SYSTEMS CAREER PATHWAY AG-PL1 AG-PL2 AG-PL3	**KEY IDEAS/DETAILS** *GRADES 9-10* Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C *GRADES 11-12* Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** *GRADES 9-10* Standard PCS.3.5.9-10.D. Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F *GRADES 11-12* Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/IDEAS** *GRADES 9-10* Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I *GRADES 9-12* Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I **RANGE OF READING/LEVEL OF COMPLEX TEXTS** *GRADES 9-10* Standard PCS.3.5.9-10.J *GRADES 11-12* Standard PCS.3.5.11-12.J	**TEXT TYPES/ PURPOSE** *GRADES 9-10* Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B *GRADES 11-12* Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** *GRADES 9-10* Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E *GRADES 11-12* Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RANGE OF WRITING** *GRADES 9-10* Standard PCS.3.5.9-10.I *GRADES 11-12*	

700 HORTICULTURE TECHNOLOGY

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
701 Explain the uses of technologically altered plants. **702** Research advanced technologies in horticulture equipment. **703** Describe the use of different methods of plant tissue culture. **704** Research new and emerging technologies in horticulture.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** COMMON CAREER TECHNICAL CORE STANDARDS: AGRICULTURE/FOOD AND NATIONAL RESOURCES CLUSTER AG-1, AG-2 PLANT SYSTEMS CAREER PATHWAY AG-PL1 AG-PL3	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D. Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I **RANGE OF READING/LEVEL OF COMPLEX TEXTS**	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12***	

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
		GRADES 9-10 Standard PCS.3.5.9-10.J **GRADES 11-12** Standard PCS.3.5.11-12.J		

800 HISTORY AND CURRENT STATUS OF HORTICULTURE

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
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 Identify current issues regarding plant and soil management that impacts agronomic and horticultural practices. 806 Explain the psychological impact of botanical gardens, public parks, trees, flowers and plants have on people in a society.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** COMMON CAREER TECHNICAL CORE STANDARDS: AGRICULTURE/FOOD AND NATIONAL RESOURCES CLUSTER AG-1, AG-2, AG-4, AG-5 PLANT SYSTEMS CAREER PATHWAY AG-PL3	**KEY IDEAS/DETAILS** *GRADES 9-10* Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C *GRADES 11-12* Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** *GRADES 9-10* Standard PCS.3.5.9-10.D. Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F *GRADES 11-12* Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/IDEAS** *GRADES 9-10* Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I *GRADES 9-12* Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I **RANGE OF READING/LEVEL OF COMPLEX TEXTS** *GRADES 9-10* Standard PCS.3.5.9-10.J *GRADES 11-12*	**TEXT TYPES/ PURPOSE** *GRADES 9-10* Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B *GRADES 11-12* Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** *GRADES 9-10* Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E *GRADES 11-12* Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** *GRADES 9-10* Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H *GRADES 11-12* Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** *GRADES 9-10* Standard PCS.3.5.9-10.I *GRADES 11-12*	

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
		Standard PCS.3.5.11-12.J		

900 PLANT IDENTIFICATION

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
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 associated with plants in the horticulture industry. **904** Identify one hundred plants used in horticulture industry by horticultural reference/botanical reference. Sixty five need to be woody trees and shrubs; and, herbaceous annuals and perennials.	**Refer to the end of this document for an explanation of the following standards and sample indicators:** COMMON CAREER TECHNICAL CORE STANDARDS: AGRICULTURE/FOOD AND NATIONAL RESOURCES CLUSTER AG-1 PLANT SYSTEMS CAREER PATHWAY AG-PL2 AG-PL3	**KEY IDEAS/DETAILS** ***GRADES 9-10*** Standard PCS.3.5.9-10.A Standard PCS.3.5.9-10.B Standard PCS.3.5.9-10.C ***GRADES 11-12*** Standard PCS.3.5.11-12A Standard PCS.3.5.11-12.B Standard PCS.3.5.11-12.C **CRAFT AND STRUCTURE** ***GRADES 9-10*** Standard PCS.3.5.9-10.D. Standard PCS.3.5.9-10.E Standard PCS.3.5.9-10.F ***GRADES 11-12*** Standard PCS.3.5.11-12.D Standard PCS.3.5.11-12.E Standard PCS.3.5.11-12.F **INTEGRATE KNOWLEDGE/IDEAS** ***GRADES 9-10*** Standard PCS.3.5.9-10.G Standard PCS.3.5.9-10.H Standard PCS.3.5.9-10.I ***GRADES 9-12*** Standard PCS.3.5.11-12.G Standard PCS.3.5.11-12.H Standard PCS.3.5.11-12.I **RANGE OF READING/LEVEL OF COMPLEX TEXTS** ***GRADES 9-10*** Standard PCS.3.5.9-10.J ***GRADES 11-12*** Standard PCS.3.5.11-12.J	**TEXT TYPES/ PURPOSE** ***GRADES 9-10*** Standard PCS.3.6.9-10.A Standard PCS.3.6.9-10.B ***GRADES 11-12*** Standard PCS.3.6.11-12.A Standard PCS.3.6.11-12.B **PRODUCTION AND DISTRIBUTION OF WRITING** ***GRADES 9-10*** Standard PCS.3.6.9-10.C Standard PCS.3.6.9-10 D Standard PCS.3.6.9-10.E ***GRADES 11-12*** Standard PCS.3.6.11-12 C Standard.PCS.3.6.11-12.D Standard PCS.3.6.11- 12 E **RESEARCH** ***GRADES 9-10*** Standard PCS.3.6.9-10.F Standard PCS.3.6.9-10.G Standard PCS.3.6.9-10.H ***GRADES 11-12*** Standard PCS.3.6.11-12.F Standard PCS.3.6.11-12.G Standard PCS.3.6.11-12.H **RANGE OF WRITING** ***GRADES 9-10*** Standard PCS.3.5.9-10.I ***GRADES 11-12***	

Reference List for 12 Common Core Technical Standards
in Communication Technology/Technicians and Support Services
with Sample Indicators for each Standard

1. Demonstrate effective professional communication skills and practices that enable positive customer relationships.
    - 1 a. Identify organization's products and services (including own strengths as an agent of the company).
    - 1 b. Recognize the importance of all customers to the business.
2. Use product or service design processes and guidelines to produce a quality information technology (IT) product or service.
    - 2 a. Test products for reliability.
    - 2 b. Initiate predictive maintenance procedures.
    - 2 c. Document a Quality Assurance (QA) program (includes creating a plan and evaluating effectiveness of the program).
    - 2 d. Plan for products/services using reliability factors.
    - 2 e. Create products/services using reliability factors.
    - 2 f. Test new products/services for reliability.
    - 2 g. Maintain the reliability of new products/services.
3. Demonstrate the use of cross functional teams in achieving IT project goals.
    - 3 a. Consider the benefits of using a cross functional team in policy and procedure development.
    - 3 b. Identify desired group and team behavior in an IT context.
    - 3 c. Explain technical concepts to various audiences in nontechnical terms.
    - 3 d. Describe strategies for maximizing productivity in a high tech environment.
4. Demonstrate positive cyber citizenry by applying industry accepted ethical practices and behaviors.
    - 4 a. Demonstrate knowledge of the legal issues that face IT professionals.
    - 4 b. Identify issues and trends affecting computers and information privacy.
    - 4 c. Explain legal issues involved in a company security policy.
        Identify legal issues involved concerning a security breach. Summarize the rights and responsibilities of IT workers. Identify ethical issues common to the IT field.
5. Explain the implications of IT on business development.
    - 5 a. Demonstrate knowledge of how both PCs and larger computer systems impact people and are used in business/industry/government and other institutions.
    - 5 b. Demonstrate knowledge of the impact of computers on career pathways in business/industry (e.g. how computers have eliminated and created jobs).
    - 5 c. Demonstrate knowledge of the impact of computers on access to information and information exchange worldwide.
    - 5 d. Demonstrate knowledge of ethical issues that have surfaced in the information age.
6. Describe trends in emerging and evolving computer technologies and their influence on IT practices.

6 a. Identify new technologies relevant to information technology.

6 b. Assess the importance of new technologies to future developments and to future knowledge worker productivity.

6 c. Identify new and emerging drivers and inhibitors of information technology change.

6 d. Assess the potential importance and impact of new IT technologies in the future.

7. Perform standard computer backup and restore procedures to protect IT information.

   7 a. Recognize the need for regular backup procedures.

   7 b. Load backup software.

   7 c. Load compression drive backup software.

   7 d. Install surge suppression protection.

   7 e. Identify battery backup equipment.

   7 f. Maintain battery backup system.

   7 g. Identify hot and warm site backup concepts.

8. Recognize and analyze potential IT security threats to develop and maintain security requirements.

   8 a. Describe potential security threats to information systems.

   8 b. Identify the range of security needs and the problems that can occur due to security lapses.

   8 c. Maximize threat reduction.

   8 d. Assess exposure to security issues.

   8 e. Implement countermeasures.

   8 f. Ensure compliance with security rules, regulations and codes.

   8 g. Demonstrate knowledge of virus protection strategy.

   8 h. Implement security procedures in accordance with business ethics.

   8 i. Develop plans to address secure threats.

   8 j. Document security procedures.

9. Describe quality assurance practices and methods employed in producing and providing quality IT products and services.

   8 a. Demonstrate knowledge of the historical evolution of quality assurance/total quality management (e.g., Deming, ISO 9000).

   9 a. Demonstrate knowledge of changes brought about by quality leaders in the world.

   9 b. Demonstrate knowledge of the ISO 9000 process.

   9 c. Demonstrate knowledge of the standards/requirements for the Baldridge award.

   9 d. Demonstrate knowledge of successful efforts by industry to improve quality and/or reduce costs.

   9 e. Demonstrate knowledge of the control devices used in functional areas (e.g. SPC, equipment).

   9 f. Demonstrate knowledge of the relationship among organizational structures, policies, procedures and quality assurance.

   9 g. Identify internal and external customers.

   9 h. Differentiate between prevention and detection.

   9 i. Differentiate between variable and attribute data.

   9 j. Identify types of control charts.

   9 k. Demonstrate knowledge of how statistical techniques are used to control quality (e.g., SPC, DOE, CR).

9 l. Demonstrate knowledge of quality management terminology.

9 m. Identify the role of quality within the organization.

9 n. Identify the features and benefits of quality planning.

10. Describe the use of computer forensics to prevent and solve information technology crimes and security breaches.

   10 a. Define computer forensics.

   10 b. List some of the basic skills and knowledge a computer forensics specialist should possess.

   10 c. Identify the circumstances under which computer forensics evidence is typically used, who typically uses such evidence and how it is used.

   10 d. Identify and attempt to retrieve possible evidence that may exist on a computer system.

   10 e. List what should and should not be done with the computer and evidence during an investigation.

   10 f. List common internet crimes.

   10 g. List some prevention actions related to cybercrime.

   10 h. Describe techniques to identify criminal activity.

   10 i. Identify how one files a complaint if a cybercrime is suspected or has occurred.

11. Demonstrate knowledge of the hardware components associated with information systems.

12. Compare key functions and applications of software and determine maintenance strategies for computer systems.