



Great Oaks Sustainable Urban Agriculture Essential Skills Profile

This profile provides an outline of the skills required for successful completion of this career program. Additional information is located on the Great Oaks website at <http://hs.greatoaks.com/essential-skills-high-school-programs/> and selecting the corresponding career program.

Recommended Work Keys Scores for Sustainable Agriculture

Applied Mathematics-4	Locating Information-4
Reading for Information-4	

*Practice tests and more information at www.act.org/workkeys

Essential Skills Needed to Successfully Complete the Program

Rating Key:	Low = Slightly Essential	Medium = Essential	High = Very Essential
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Key Vocational Factors		Rating
Visual Acuity	The ability to detect differences/details visually	High
Depth Perception	The ability to detect the physical distance/depth of objects in space and time	High
Oral Communication	The ability to express/explain ideas.	Medium
Oral Expression	The ability to verbally explain and express self in an intelligible manner so others will understand	Medium
Written Communication	The ability to communicate in a written format and record information accurately	Medium
Physical Mobility/Strength	Extended standing, bending, stooping, use of machines, and working inside and outside	High
Eye-hand Coordination	The ability to use tools	High
Auditory Acuity	The ability to detect differences in pitch and sound	Medium
Safety Understanding	Able to comprehend hazards of working with tools, materials, equipment, and environmental conditions; able to wear personal protective equipment suitable for task	High

Worker Trait Skills	Rating
Ability to get along with others	High
Ability to work independently, without close supervision	High
Ability to work toward work including tasks of minimal interest	High
Ability to follow and retain:	
Multi step oral instructions	High
Written instructions/technical manuals-multi step	High
Simple to complex diagram instructions	Medium
Visual models or demonstrated instructions	Medium

Ability to use tools of trade (sprayers, water sprinklers, secateurs or pruning shears, irrigation trickles, greenhouse equipment, fertilizer spreaders or distributors, complex controlling devices, etc.)	High
Ability to use numerical data (count, measure, compute, etc.) in applied setting	Medium
Ability to discriminate between objects of similar:	
Size	Medium
Shape	Medium
Color	Medium
Spatial relationship	Medium
Ability to organize work process/follow defined procedures	High
Coordination (eye-hand)	High
Able to sequence events or follow a sequence as necessary	High
Management of Personnel Resources: Motivating, developing, and directing people as they work, identifying the best people for the job.	High
Speaking: Talking to others to convey information effectively.	High
Coordination: Adjusting actions in relation to others' actions.	High
Complex Problem Solving: Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.	High

Reading Skills *See Recommended Work Key Scores	
Math Skills *See Recommended Work Key Scores	
Counting-Recording-Comparing-Calculating	Whole numbers and decimals
Calculating Fractions, decimals, ratios, order of operations	Pre-Algebra and Geometry
Ratio, Algebra, Formulas, Square Roots	Geometry

Additional Abilities Required

Oral Expression	The ability to communicate information and ideas in speaking so others will understand.
Problem Sensitivity	The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
Oral Comprehension	The ability to listen to and understand information and ideas presented through spoken words and sentences.

Knowledge Required in Sustainable Urban Agriculture Field

Administration and Management	Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
Production and Processing	Knowledge of raw materials, production processes, quality control, costs, and other

	techniques for maximizing the effective manufacture and distribution of goods.
Personnel and Human Resources	Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.

Technology

Word processing software	Spreadsheet software
Office suite software	Internet browser software
Enterprise resource planning ERP software	

Sustainable Urban Agriculture Activities

Manage nurseries that grow horticultural plants for sale to trade or retail customers, for display or exhibition, or for research.	Select and purchase seeds, plant nutrients, disease control chemicals, and garden and lawn care equipment.
Identify plants as well as problems such as diseases, weeds, and insect pests.	Assign work schedules and duties to nursery or greenhouse staff, and supervise their work.
Tour work areas to observe work being done, to inspect crops, and to evaluate plant and soil conditions.	Determine plant growing conditions, such as greenhouses, hydroponics, or natural settings, and set planting and care schedules.
Apply pesticides and fertilizers to plants.	Hire employees, and train them in gardening techniques.
Determine types and quantities of horticultural plants to be grown, based on budgets, projected sales volumes, or executive directives.	Position and regulate plant irrigation systems, and program environmental and irrigation control computers.
Explain and enforce safety regulations and policies.	Inspect facilities and equipment for signs of disrepair, and perform necessary maintenance work.
Coordinate clerical, record-keeping, inventory, requisitioning, and marketing activities.	Provide information to customers on the care of trees, shrubs, flowers, plants, and lawns.
Prepare soil for planting, and plant or transplant seeds, bulbs, and cuttings.	Confer with horticultural personnel to plan facility renovations or additions.
Cut and prune trees, shrubs, flowers, and plants.	Graft plants
Construct structures and accessories such as greenhouses and benches.	Negotiate contracts such as those for land leases or tree purchases.
Monitor or track sustainability indicators, such as energy usage, natural resource usage, waste generation, and recycling.	Identify or investigate violations of natural resources, waste management, recycling, or other environmental policies.

Research or review regulatory, technical, or market issues related to sustainability.	Identify or procure needed resources to implement sustainability programs or projects.
Plant, spray, weed, fertilize, and water plants, shrubs, and trees, using hand tools and gardening tools.	Regulate greenhouse conditions, and indoor and outdoor irrigation systems.
Harvest plants, and transplant or pot and label them.	Feel plants' leaves and note their coloring to detect the presence of insects or disease.
Provide information and advice to the public regarding the selection, purchase, and care of products.	Dig, rake, and screen soil, filling cold frames and hot beds in preparation for planting.
Maintain and repair irrigation and climate control systems.	Dig, cut, and transplant seedlings, cuttings, trees, and shrubs.
Fill growing tanks with water.	Maintain inventory, ordering materials as required.
Record information about plants and plant growth.	Trap and destroy pests such as moles, gophers, and mice, using pesticides.
Inspect plants and bud ties to assess quality.	Prepare or present agricultural demonstrations.
Haul and spread topsoil, fertilizer, peat moss, and other materials to condition soil, using wheelbarrows or carts and shovels.	Operate tractors and other machinery and equipment to fertilize, cultivate, harvest, and spray fields and plants.
Perform general nursery duties, such as propagating standard varieties of plant materials, collecting and germinating seeds, maintaining cuttings of plants, or controlling environmental conditions.	

Available Certifications

Ohio Certified Nursery Technician-Landscape (12 Points)	CPR/First Aid Certification (1 Point)
Forklift Certification (1 Point)	Occupational Safety and health Administration-10 hour card (1 Point)
Skid Steering Operators Certification	

Possible College Credits

College Credit Plus in English, Math, Social Studies, or Science	Must be preapproved. Must pass a college course at an Ohio college or College Credit Plus class at Great Oaks.
Career Technical Credit Transfer	The Ohio Transfer to Degree Guarantee helps career and technical students transfer credits

	<p>earned in high school to community college or four-year degree programs. The credit can be used at any Ohio public college or university:</p> <ul style="list-style-type: none"> • If you successfully completed your career-technical program and passed certain required assessments. • If you attend a similar program at a public Ohio college or university. <p>For more information, go to www.transfercredit.ohio.gov.</p>
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*Additional college or post-secondary education may be required in this field

Possible Career Pathways

Nursery/greenhouse/landscape technician	Greenhouse grower
Park/greenspace manager	Urban farmer
Landscape designer/architect	Landscape manager/owner
Hydroponic grower	