



Results by Standard

2021-2022 Technical Skills Assessment Ornamental Horticulture

Legend (%)		
0-50%	51-75%	76-100%

Assessment: Ornamental Horticulture Number tested: 20	% Correct 17-18	% Correct 18-19	% Correct 20-21	% Correct 21-22
CONTENT STANDARD 1.0: SAFETY IN THE ORNAMENTAL HORTICULTURE INDUSTRY	34.69%	90.48%	78.02%	62.14%
Performance Standard 1.1: Safe Work Practices	34.69%	90.48%	78.02%	62.14%
1.1.1 Identify and properly use personal protection equipment.	28.57%	100.00%	92.31%	75.00%
1.1.2 Read, understand and follow label directions and SDS (safety data sheet).	28.57%	100.00%	80.77%	62.50%
1.1.3 Properly identify common hand tools and power equipment.	28.57%	66.67%	57.69%	45.00%
1.1.4 Safely use common hand tools and power equipment.	71.43%	100.00%	84.62%	70.00%
CONTENT STANDARD 2.0: PLANT ANATOMY	36.19%	62.22%	59.49%	53.67%
Performance Standard 2.1: Plant Cells	14.29%	16.67%	19.23%	22.50%
2.1.1 Label the parts of a plant cell.	14.29%	16.67%	19.23%	22.50%
Performance Standard 2.2: Root Anatomy	71.43%	100.00%	92.31%	85.00%
2.2.1 Investigate the functions of roots in plants.	71.43%	100.00%	92.31%	85.00%
Performance Standard 2.3: Stem Anatomy	7.14%	50.00%	57.69%	40.00%
2.3.1 List the functions of a stem.	0.00%	66.67%	53.85%	40.00%
2.3.2 Recognize the external structures of a stem.	14.29%	33.33%	61.54%	40.00%
Performance Standard 2.4: Leaf Anatomy	50.00%	75.00%	69.23%	63.75%
2.4.1 Name the main parts of a leaf.	50.00%	83.33%	84.62%	77.50%
2.4.3 List three functions of a leaf, including photosynthetic energy conversion.	57.14%	100.00%	100.00%	80.00%
2.4.4 Differentiate major leaf arrangements.	42.86%	33.33%	7.69%	20.00%
Performance Standard 2.5: Flower Anatomy	39.29%	75.00%	61.54%	57.50%
2.5.2 Summarize the purpose of a flower.	57.14%	100.00%	100.00%	100.00%
2.5.3 Distinguish between different types of flowers.	28.57%	50.00%	46.15%	32.50%
2.5.5 Diagram the process of plant pollination and fertilization.	42.86%	100.00%	53.85%	65.00%
Performance Standard 2.6: Fruit Anatomy	35.71%	50.00%	61.54%	55.00%

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2.6.1 Label and describe the parts of a fruit.	14.29%	100.00%	69.23%	60.00%
2.6.2 Identify and distinguish between basic types of fruits.	57.14%	0.00%	53.85%	50.00%
CONTENT STANDARD 3.0 PLANT PHYSIOLOGY	21.43%	83.33%	46.15%	36.25%
Performance Standard 3.3: Environmental Requirements for Plant Growth	21.43%	83.33%	46.15%	36.25%
3.3.1 Examine the effects of light quality on plant growth (i.e., spectrum, light measurement).	28.57%	33.33%	53.85%	30.00%
3.3.2 Examine the effects of water quality on plant growth (i.e., pH, hardness).	28.57%	100.00%	30.77%	20.00%
3.3.3 Examine the effects of temperature on plant growth.	14.29%	100.00%	50.00%	47.50%
CONTENT STANDARD 4.0: PLANT IDENTIFICATION SKILLS	26.19%	61.11%	53.85%	56.67%
Performance Standard 4.1: Categorize Plants	26.19%	61.11%	53.85%	56.67%
4.1.3 Correctly categorize common plants by life cycle (i.e., annuals, perennials, etc.).	42.86%	100.00%	69.23%	75.00%
4.1.4 Correctly categorize plants by growth habits (i.e., mounding, trailing, etc.).	28.57%	66.67%	65.38%	67.50%
4.1.5 Utilize resources to establish plant suitability for a selected site (i.e., Hardiness Zone Maps, Heat Zone Maps).	28.57%	50.00%	46.15%	40.00%
4.1.6 Identify common plants by botanical and common names.	0.00%	33.33%	30.77%	50.00%
CONTENT STANDARD 5.0: GROWING MEDIA	34.69%	71.43%	56.04%	38.57%
Performance Standard 5.1: Soil Texture and Structure	42.86%	75.00%	65.38%	48.75%
5.1.2 Describe the concept of soil texture and its importance.	42.86%	66.67%	56.41%	40.00%
5.1.3 Classify the texture of a soil sample.	42.86%	100.00%	92.31%	75.00%
Performance Standard 5.2: Soilless Growing Media	28.57%	66.67%	46.15%	40.00%
5.2.1 Identify the components and source of soilless growing media.	28.57%	66.67%	46.15%	40.00%
Performance Standard 5.3: Chemical Characteristics of Growing Media	21.43%	66.67%	42.31%	17.50%
5.3.2 Interpret pH test results of a growing media sample.	28.57%	66.67%	61.54%	35.00%
5.3.5 Interpret soil test results and make recommendation accordingly.	14.29%	66.67%	23.08%	0.00%
CONTENT STANDARD 6.0: PLANT NUTRITION	28.57%	53.33%	50.00%	42.50%
Performance Standards 6.1:Fertilizer Formulation	30.36%	58.33%	54.81%	44.38%
6.1.1 Differentiate between macronutrients and micronutrients.	57.14%	0.00%	15.38%	20.00%
6.1.2 Measure pH and describe how it is modified.	28.57%	66.67%	23.08%	25.00%
6.1.4 Interpret a fertilizer label.	14.29%	55.56%	66.67%	48.33%
6.1.6 Evaluate application methods to ornamental crops.	38.10%	77.78%	66.67%	55.00%
Performance Standards 6.2: Plant Nutrients	21.43%	33.33%	30.77%	35.00%
6.2.1 Correlate plant symptoms to the appropriate nutritional deficiency.	28.57%	0.00%	46.15%	35.00%
6.2.2 Correlate plant symptoms to the appropriate plant toxicity.	14.29%	66.67%	15.38%	35.00%

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CONTENT STANDARD 7.0: INTEGRATED PEST MANAGEMENT (IPM)	42.24%	75.36%	69.90%	61.52%
Performance Standard 7.1: Integrated Pest Management	33.33%	77.78%	87.18%	81.67%
7.1.1 Define Integrated Pest Management (IPM).	33.33%	77.78%	87.18%	81.67%
Performance Standard 7.2: Common Pests and Diseases	48.21%	79.17%	56.73%	52.50%
7.2.1 Identify types of plant pests and diseases.	38.10%	77.78%	56.41%	63.33%
7.2.2 Identify weed, insect, rodent, and fungi pests.	57.14%	66.67%	30.77%	30.00%
7.2.3 Differentiate between infectious and noninfectious diseases.	64.29%	100.00%	88.46%	70.00%
7.2.4 Identify abiotic plant injuries.	28.57%	66.67%	46.15%	30.00%
Performance Standard 7.3: Safe Handling, Use, and Storage of Pesticides	40.48%	72.22%	74.36%	62.50%
7.3.1 Identify and utilize appropriate safety measures when applying pesticides.	35.71%	50.00%	57.69%	47.50%
7.3.2 Interpret pesticide labels.	42.86%	88.89%	87.18%	75.00%
7.3.3 Explain procedures for storing and disposing of pesticides.	28.57%	66.67%	80.77%	77.50%
7.3.4 Evaluate environmental and consumer concerns regarding pest management and biodiversity.	42.86%	66.67%	38.46%	35.00%
7.3.5 Demonstrate how to mix pesticides according to label directions.	28.57%	66.67%	100.00%	65.00%
7.3.6 Calibrate common application equipment and calculate application rate.	57.14%	66.67%	57.69%	62.50%
7.3.7 Explore requirements for obtaining pesticide applicator licenses.	42.86%	100.00%	100.00%	50.00%
CONTENT STANDARD 8.0: PLANT PROPAGATION	35.71%	100.00%	76.92%	65.00%
Performance Standard 8.1: Sexual Propagation of Ornamental Plants	35.71%	100.00%	76.92%	65.00%
8.1.3 Identify the conditions needed for seed germination.	42.86%	100.00%	69.23%	60.00%
8.1.4 Compare the methods of seed preparation.	28.57%	100.00%	84.62%	70.00%
CONTENT STANDARD 9.0: ORNAMENTAL HORTICULTURE CROPS	33.33%	75.56%	67.18%	56.00%
Performance Standard 9.1: Crop Production	28.57%	100.00%	92.31%	80.00%
9.1.1 Plan a growing schedule to maximize the production of a growing facility.	28.57%	100.00%	92.31%	80.00%
Performance Standard 9.2: Growth Maintenance Procedures	40.82%	71.43%	64.84%	54.29%
9.2.2 Pinch plants using best management practices.	71.43%	100.00%	100.00%	85.00%
9.2.3 Examine proper pruning techniques.	21.43%	50.00%	30.77%	27.50%
9.2.4 Demonstrate proper watering techniques.	42.86%	75.00%	73.08%	60.00%
Performance Standard 9.3: Transplanting	22.86%	66.67%	75.38%	53.00%
9.3.1 Identify the proper stage of plant growth for transplanting.	28.57%	100.00%	61.54%	30.00%
9.3.2 Select appropriate plants for transplanting.	14.29%	66.67%	53.85%	80.00%
9.3.3 Demonstrate transplanting procedures to industry standards.	23.81%	55.56%	87.18%	51.67%
Performance Standard 9.4: Production Standards	35.71%	100.00%	42.31%	57.50%
9.4.1 Compare hardening processes	42.86%	100.00%	38.46%	50.00%
9.4.2 Prepare plants for sale using best management practices.	28.57%	100.00%	46.15%	65.00%

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CONTENT STANDARD 10.0: BUSINESS CONCEPTS	50.00%	33.33%	57.69%	32.50%
Performance Standard 10.2: Principles of Sales	50.00%	33.33%	57.69%	32.50%
10.2.3 Complete a sales ticket.	42.86%	33.33%	76.92%	55.00%
10.2.5 Determine cost of sales.	57.14%	33.33%	38.46%	10.00%
1 CONTENT STANDARD 11.0: PLANT TECHNOLOGIES	0.00%	0.00%	0.00%	0.00%
Performance Standard 11.2: Genetic Engineering of Plants	0.00%	0.00%	0.00%	0.00%
11.2.2 Identify transgenic plants on the market.	0.00%	0.00%	0.00%	0.00%
1CONTENT STANDARD 12.0: ORNAMENTAL DESIGN STANDARDS	39.29%	66.67%	65.38%	57.50%
Performance Standards 12.1: Principles and Elements of Design	39.29%	66.67%	65.38%	57.50%
12.1.1 Compare and contrast balance using symmetry, asymmetry, and massing.	50.00%	83.33%	96.15%	75.00%
12.1.3 Determine appropriate proportion and scale in a design.	28.57%	50.00%	34.62%	40.00%
1CONTENT STANDARD 13.0: CAREER OPPORTUNITIES IN ORNAMENTAL HORTICULTURE	23.81%	77.78%	92.31%	76.67%
Performance Standard 13.1: Careers in Ornamental Horticulture	23.81%	77.78%	92.31%	76.67%
13.1.1 Research potential careers in ornamental horticulture and plant science.	23.81%	77.78%	92.31%	76.67%
1CONTENT STANDARD 14.0: LEADERSHIP TRAINING THROUGH AGRICULTURAL EDUCATION	42.86%	100.00%	92.31%	90.00%
Performance Standard 14.1: Effective Leadership and Leadership Training	42.86%	100.00%	92.31%	90.00%
14.1.2 Participate in a career development event at the local level or above.	42.86%	100.00%	92.31%	90.00%