



2023-2024

# Technical Skills Assessment Agriculture Mechanics and Power Systems

## Results by Standard

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

Assessment: Agriculture Mechanics and Power Systems Number tested: 51	% Correct 20-21	% Correct 21-22	% Correct 22-23	% Correct 23-24
<b>1) CONTENT STANDARD 1.0: Occupational Safety and Health in Ag Mechanics</b>	88.94%	85.86%	87.24%	82.87%
<b>Performance Standard 1.1: Safety Practices</b>	88.94%	85.86%	87.24%	82.87%
1.1.2. Identify and differentiate between safe and unsafe work practices.	82.91%	81.58%	86.11%	79.89%
1.1.3. Describe the methods utilized to implement safe work practices.	94.87%	89.47%	94.79%	89.66%
1.1.4. Identify and explain the purpose of signals and symbols in agricultural safety.	94.87%	97.37%	93.75%	75.86%
1.1.5. Explain the importance and function of safety training.	87.18%	86.84%	85.42%	87.93%
1.1.6. Evaluate the importance of occupational safety and health in agriculture mechanics.	89.74%	86.84%	79.17%	72.41%
1.1.7. Identify and explain the role that various agencies play in regulating safety.	71.79%	63.16%	62.50%	65.52%
1.1.8. Identify and demonstrate the proper use of personal protection equipment (PPE).	96.15%	96.05%	94.79%	92.24%
1.1.9. Locate and demonstrate the proper uses of the first aid and emergency equipment.	89.74%	89.47%	85.42%	89.66%
1.1.10. Maintain a general safe working environment.	84.62%	82.89%	81.25%	81.03%
1.1.11. Demonstrate the proper disposal of hazardous waste.	100.00%	84.21%	95.83%	84.48%
1.1.12. Read and understand safety data sheets (SDS).	89.74%	84.21%	93.75%	84.48%
<b>Program 2: CONTENT STANDARD 2.0: TOOLS AND HARDWARE</b>	68.32%	66.54%	64.29%	60.47%
<b>Performance Standard 2.1: Safe and Proper Use of Tools</b>	66.45%	64.91%	60.94%	57.61%
2.1.1. Determine which hand tool, power tool and measuring and marking devices are most	73.93%	75.00%	70.83%	66.95%
2.1.2. Identify and safe use of hand and power tools utilized in agricultural mechanics.	58.97%	69.74%	68.75%	53.45%
2.1.4. Measure and apply metric to standard measurement conversions.	52.99%	36.84%	34.03%	35.06%
2.1.5. Inspect and maintain tools.	76.92%	78.95%	66.67%	77.59%
<b>Performance Standard 2.2: Hardware and Fasteners</b>	79.49%	76.32%	84.38%	77.59%
2.2.1. Identify and select proper common hardware and fasteners.	79.49%	76.32%	84.38%	77.59%
<b>Program 3: CONTENT STANDARD 3.0: METAL TECHNOLOGY</b>	61.70%	62.66%	62.50%	61.13%
<b>Performance Standard 3.1: Welding</b>	67.31%	67.54%	68.75%	66.31%
3.1.1. Demonstrate proper safety practices working with metal technology.	71.79%	75.00%	79.17%	68.10%

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<b>Number tested: 51</b>				
3.1.2. Determine uses of metal.	60.26%	64.47%	59.38%	50.86%
3.1.3. Identify types of metal and the proper welding technique.	60.68%	59.65%	62.50%	58.62%
3.1.5. Properly select and use oxy-fuel equipment.	83.33%	77.63%	79.17%	78.45%
3.1.6. Properly select and use shielded metal arc welding equipment.	82.05%	81.58%	85.42%	74.14%
3.1.7. Properly select and use gas metal arc welding equipment.	30.77%	42.11%	39.58%	93.33%
3.1.10. Properly select welding consumables (i.e. wire, electrode, gas and filler rod).	82.05%	73.68%	77.08%	77.59%
<b>Performance Standard 3.2: Cold Metal Work</b>	44.87%	48.03%	43.75%	46.55%
3.2.2. Properly cut threads with tap and die.	51.28%	52.63%	60.42%	60.34%
3.2.3. Join metal by riveting.	46.15%	57.89%	54.17%	50.00%
3.2.4. Properly thread steel pipe.	41.03%	40.79%	30.21%	37.93%
<b>Program 4: CONTENT STANDARD 4.0: POWER SYSTEMS</b>	72.41%	62.66%	64.48%	62.07%
<b>Performance Standard 4.1: Engines Technology</b>	73.81%	63.16%	63.84%	61.21%
4.1.1. Identify the operating principles of internal combustion engines.	59.62%	54.61%	55.21%	53.45%
4.1.2. Explain the function and operating principles of the fuel, lubrication, governor, and	79.91%	64.91%	63.19%	60.63%
4.1.3. Locate technical information in electronic and print form.	92.31%	82.89%	86.46%	82.76%
4.1.4. Troubleshoot and maintain engines.	65.38%	55.26%	60.42%	56.90%
<b>Performance Standard 4.2: Electric Motors</b>	38.46%	36.84%	35.42%	41.38%
4.2.1. Select motors based on type of application.	38.46%	36.84%	35.42%	41.38%
<b>Performance Standard 4.3: Agricultural Machinery</b>	71.28%	60.53%	67.08%	63.45%
4.3.1. Identify and perform basic equipment maintenance on agricultural machinery.	66.67%	54.39%	62.50%	54.60%
4.3.2. Use mathematics to solve equipment calibration problems.	82.05%	86.84%	83.33%	87.93%
4.3.3. Demonstrate converting common units of measure found in agriculture.	74.36%	52.63%	64.58%	65.52%
<b>Performance Standard 4.4: Hydraulics</b>	92.31%	92.11%	89.58%	87.93%
4.4.2. Identify the applications of hydraulics in agriculture.	92.31%	92.11%	89.58%	87.93%
<b>Program 5: CONTENT STANDARD 5.0: ELECTRICITY</b>	62.72%	61.54%	62.98%	58.36%
<b>Performance Standard 5.1: Basic Electrical Principles</b>	62.72%	61.54%	62.98%	58.36%
5.1.1. Demonstrate proper safety practices when working with electricity.	87.18%	84.21%	93.75%	87.93%
5.1.2. Define basic electrical terminology; identify and explain the basic principles of electricity.	57.95%	56.32%	58.75%	50.69%
5.1.3. Recognize electrical code requirements for wiring.	76.92%	71.05%	63.54%	64.66%
5.1.4. Plan and install an electrical circuit.	69.23%	61.84%	62.50%	57.76%
5.1.5. Measure electrical circuits for voltage, current flow, resistance, and wattage.	82.05%	84.21%	85.42%	84.48%
5.1.7. Describe the relationship of volts, amps, and ohms in terms of Ohm's Law.	32.05%	42.11%	46.88%	43.97%
<b>Program 6: CONTENT STANDARD 6.0: MATHEMATICAL APPLICATIONS</b>	64.10%	48.68%	54.17%	62.93%
<b>Performance Standard 6.1: Mathematical Applications in Agriculture Mechanics &amp; Power</b>	64.10%	48.68%	54.17%	62.93%

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<b>Number tested: 51</b>				
6.1.2. Demonstrate converting common units of measure found in agriculture.	58.97%	47.37%	56.25%	56.90%
6.1.3. Explain the meaning of accuracy verses precision.	69.23%	50.00%	52.08%	68.97%
<b>Program 7: CONTENT STANDARD 7.0: INSULATION</b>	50.00%	51.97%	53.13%	48.28%
<b>Performance Standard 7.1: Insulation</b>	50.00%	51.97%	53.13%	48.28%
7.1.1. Explain the importance of insulation.	38.46%	42.11%	50.00%	36.21%
7.1.2. Explain the theory behind insulation.	60.26%	64.47%	55.21%	56.03%
7.1.3. Identify and select insulation materials.	41.03%	36.84%	52.08%	44.83%
<b>Program 8: CONTENT STANDARD 8.0: EMERGING TECHNOLOGIES</b>	83.59%	83.68%	84.58%	76.90%
<b>Performance Standard 8.1: Emerging Technologies in Ag Systems</b>	83.59%	83.68%	84.58%	76.90%
8.1.1. Identify uses of precision and emerging technology in agriculture.	74.36%	77.63%	82.29%	70.69%
8.1.2. Understand the potential applications of new technology in agriculture.	89.74%	87.72%	86.11%	81.03%
<b>Program 9: CONTENT STANDARD 9.0: CAREERS</b>	53.85%	57.89%	56.25%	56.03%
<b>Performance Standard 9.1: Careers in Ag Mechanics</b>	53.85%	57.89%	56.25%	56.03%
9.1.1. Research potential careers in ag mechanics.	89.74%	86.84%	89.58%	84.48%
9.1.3. Research additional industry certifications available.	17.95%	28.95%	22.92%	27.59%
<b>Program 10: CONTENT STANDARD 10.0: LEADERSHIP TRAINING THROUGH AGRICULTURAL</b>	73.08%	59.21%	69.79%	64.66%
<b>Performance Standard 10.1: Effective Leadership and Leadership Training</b>	76.07%	60.53%	70.14%	65.52%
10.1.2. Participate in a career development event at the local level or above.	66.67%	42.11%	54.17%	51.72%
10.1.3. Exhibit leadership skills by demonstrating proper parliamentary procedure.	74.36%	68.42%	79.17%	72.41%
10.1.4. Participate in a speech or presentation activity.	87.18%	71.05%	77.08%	72.41%
<b>Performance Standard 10.2: School and Community Awareness</b>	64.10%	55.26%	68.75%	62.07%
10.2.1. Participate in a school improvement or community development project.	64.10%	55.26%	68.75%	62.07%
<b>Program 11: CONTENT STANDARD 11.0: SUPERVISED AGRICULTURAL EXPERIENCE</b>	83.76%	84.21%	88.19%	72.41%
<b>Performance Standard 11.1: Maintain a Supervised Agricultural Experience</b>	83.76%	84.21%	88.19%	72.41%
11.1.1. Accurately maintain SAE record books.	82.05%	84.21%	87.50%	72.41%
11.1.2. Investigate the proficiency award areas related to SAE program area.	92.31%	81.58%	87.50%	82.76%
11.1.3. Actively pursue necessary steps to receive higher degrees in FFA.	76.92%	86.84%	89.58%	62.07%