



# 2020-2021

## 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: 25	% Correct 18-19	% Correct 20-21
<b>1) CONTENT STANDARD 1.0: Occupational Safety and Health in Ag Mechanics</b>	88.39%	88.94%
Performance Standard 1.1: Safety Practices	88.39%	88.94%
1.1.2. Identify and differentiate between safe and unsafe work practices.	85.71%	82.91%
1.1.3. Describe the methods utilized to implement safe work practices.	95.24%	94.87%
1.1.4. Identify and explain the purpose of signals and symbols in agricultural safety.	95.24%	94.87%
1.1.5. Explain the importance and function of safety training.	90.48%	87.18%
1.1.6. Evaluate the importance of occupational safety and health in agriculture mechanics.	66.67%	89.74%
1.1.7. Identify and explain the role that various agencies play in regulating safety.	71.43%	71.79%
1.1.8. Identify and demonstrate the proper use of personal protection equipment (PPE).	97.62%	96.15%
1.1.9. Locate and demonstrate the proper uses of the first aid and emergency equipment.	95.24%	89.74%
1.1.10. Maintain a general safe working environment.	83.33%	84.62%
1.1.11. Demonstrate the proper disposal of hazardous waste.	95.24%	100.00%
1.1.12. Read and understand safety data sheets (SDS).	90.48%	89.74%
<b>Program 2: CONTENT STANDARD 2.0: TOOLS AND HARDWARE</b>	65.65%	68.32%
Performance Standard 2.1: Safe and Proper Use of Tools	63.49%	66.45%
2.1.1. Determine which hand tool, power tool and measuring and marking devices are most appropriate for a job.	74.60%	73.93%
2.1.2. Identify and safe use of hand and power tools utilized in agricultural mechanics.	64.29%	58.97%
2.1.4. Measure and apply metric to standard measurement conversions.	34.92%	52.99%
2.1.5. Inspect and maintain tools.	80.95%	76.92%
Performance Standard 2.2: Hardware and Fasteners	78.57%	79.49%
2.2.1. Identify and select proper common hardware and fasteners.	78.57%	79.49%
<b>Program 3: CONTENT STANDARD 3.0: METAL TECHNOLOGY</b>	62.80%	61.70%
Performance Standard 3.1: Welding	68.25%	67.31%
3.1.1. Demonstrate proper safety practices working with metal technology.	66.67%	71.79%

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3.1.2. Determine uses of metal.	59.52%	60.26%
3.1.3. Identify types of metal and the proper welding technique.	68.25%	60.68%
3.1.5. Properly select and use oxy-fuel equipment.	85.71%	83.33%
3.1.6. Properly select and use shielded metal arc welding equipment.	90.48%	82.05%
3.1.7. Properly select and use gas metal arc welding equipment.	28.57%	30.77%
3.1.10. Properly select welding consumables (i.e. wire, electrode, gas and filler rod).	71.43%	82.05%
<b>Performance Standard 3.2: Cold Metal Work</b>	46.43%	44.87%
3.2.2. Properly cut threads with tap and die.	66.67%	51.28%
3.2.3. Join metal by riveting.	47.62%	46.15%
3.2.4. Properly thread steel pipe.	35.71%	41.03%
<b>Program 4: CONTENT STANDARD 4.0: POWER SYSTEMS</b>	65.99%	72.41%
<b>Performance Standard 4.1: Engines Technology</b>	63.95%	73.81%
4.1.1. Identify the operating principles of internal combustion engines.	45.24%	59.62%
4.1.2. Explain the function and operating principles of the fuel, lubrication, governor, and ignition systems.	65.87%	79.91%
4.1.3. Locate technical information in electronic and print form.	92.86%	92.31%
4.1.4. Troubleshoot and maintain engines.	66.67%	65.38%
<b>Performance Standard 4.2: Electric Motors</b>	28.57%	38.46%
4.2.1. Select motors based on type of application.	28.57%	38.46%
<b>Performance Standard 4.3: Agricultural Machinery</b>	73.33%	71.28%
4.3.1. Identify and perform basic equipment maintenance on agricultural machinery.	68.25%	66.67%
4.3.2. Use mathematics to solve equipment calibration problems.	85.71%	82.05%
4.3.3. Demonstrate converting common units of measure found in agriculture.	76.19%	74.36%
<b>Performance Standard 4.4: Hydraulics</b>	95.24%	92.31%
4.4.2. Identify the applications of hydraulics in agriculture.	95.24%	92.31%
<b>Program 5: CONTENT STANDARD 5.0: ELECTRICITY</b>	63.37%	62.72%
<b>Performance Standard 5.1: Basic Electrical Principles</b>	63.37%	62.72%
5.1.1. Demonstrate proper safety practices when working with electricity.	100.00%	87.18%
5.1.2. Define basic electrical terminology; identify and explain the basic principles of electricity.	61.90%	57.95%
5.1.3. Recognize electrical code requirements for wiring.	64.29%	76.92%
5.1.4. Plan and install an electrical circuit.	54.76%	69.23%
5.1.5. Measure electrical circuits for voltage, current flow, resistance, and wattage.	80.95%	82.05%
5.1.7. Describe the relationship of volts, amps, and ohms in terms of Ohm's Law.	47.62%	32.05%
<b>Program 6: CONTENT STANDARD 6.0: MATHEMATICAL APPLICATIONS</b>	54.76%	64.10%
<b>Performance Standard 6.1: Mathematical Applications in Agriculture Mechanics &amp; Power Systems</b>	54.76%	64.10%

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6.1.2. Demonstrate converting common units of measure found in agriculture.	57.14%	58.97%
6.1.3. Explain the meaning of accuracy verses precision.	52.38%	69.23%
<b>Program 7: CONTENT STANDARD 7.0: INSULATION</b>	47.62%	50.00%
<b>Performance Standard 7.1: Insulation</b>	47.62%	50.00%
7.1.1. Explain the importance of insulation.	33.33%	38.46%
7.1.2. Explain the theory behind insulation.	59.52%	60.26%
7.1.3. Identify and select insulation materials.	38.10%	41.03%
<b>Program 8: CONTENT STANDARD 8.0: EMERGING TECHNOLOGIES</b>	86.67%	83.59%
<b>Performance Standard 8.1: Emerging Technologies in Ag Systems</b>	86.67%	83.59%
8.1.1. Identify uses of precision and emerging technology in agriculture.	78.57%	74.36%
8.1.2. Understand the potential applications of new technology in agriculture.	92.06%	89.74%
<b>Program 9: CONTENT STANDARD 9.0: CAREERS</b>	61.90%	53.85%
<b>Performance Standard 9.1: Careers in Ag Mechanics</b>	61.90%	53.85%
9.1.1. Research potential careers in ag mechanics.	85.71%	89.74%
9.1.3. Research additional industry certifications available.	38.10%	17.95%
<b>Program 10: CONTENT STANDARD 10.0: LEADERSHIP TRAINING THROUGH AGRICULTURAL EDUCATION</b>	73.81%	73.08%
<b>Performance Standard 10.1: Effective Leadership and Leadership Training</b>	71.43%	76.07%
10.1.2. Participate in a career development event at the local level or above.	61.90%	66.67%
10.1.3. Exhibit leadership skills by demonstrating proper parliamentary procedure.	76.19%	74.36%
10.1.4. Participate in a speech or presentation activity.	76.19%	87.18%
<b>Performance Standard 10.2: School and Community Awareness</b>	80.95%	64.10%
10.2.1. Participate in a school improvement or community development project.	80.95%	64.10%
<b>Program 11: CONTENT STANDARD 11.0: SUPERVISED AGRICULTURAL EXPERIENCE</b>	85.71%	83.76%
<b>Performance Standard 11.1: Maintain a Supervised Agricultural Experience</b>	85.71%	83.76%
11.1.1. Accurately maintain SAE record books.	85.71%	82.05%
11.1.2. Investigate the proficiency award areas related to SAE program area.	100.00%	92.31%
11.1.3. Actively pursue necessary steps to receive higher degrees in FFA.	71.43%	76.92%