

**NM** Public Education Department

# INTRODUCTION TO AGRICULTURAL MECHANICS

END-OF-COURSE EXAM | GRADE 9-12 | YEAR 17-18

ASSESSMENT BLUEPRINT

# Purpose Statement

## Introduction to Agricultural Mechanics

The Introduction to Agricultural Mechanics End-of-Course Exam is designed to measure student proficiency of the standards and performance elements aligned to the Common Career Technical Core Standards ([https://cte.careertech.org/sites/default/files/CCTC\\_Standards\\_Formatted\\_2014.pdf](https://cte.careertech.org/sites/default/files/CCTC_Standards_Formatted_2014.pdf)). This course-level exam is provided to all students who have completed Introduction to Agricultural Mechanics.

**This exam can be given for the following STARS course code:**

0151 - Introduction to Agricultural Mechanics

Intended as a final exam for the course, this is a summative exam covering a wide range of content, skills, and applications. Scores are reported to the teacher, school, district, and state levels for the purposes of student grades, curriculum review, and NMTeach summative reports.

### **New Mexico State University College of Agriculture, Consumer and Environmental Sciences**

This blueprint was developed and piloted in 2016 by the New Mexico State University's (NMSU) Secondary Agriculture Education Office (<http://aces.nmsu.edu/>) in partnership with New Mexico agriculture educators. NMSU uses test items with consent from MYCaert, Inc. (<http://www.mycart.com>). MyCaert has given copyright permissions to the New Mexico Public Education Department (NMPED).

### **Sample Questions**

The NMPED has released sample items (prior test exam questions in the test bank) for each performance element. Due to a limited item bank, only five, EOC specific, sample questions have been provided on the blueprint. The depth of knowledge (DOK) level has also been identified for each sample question.

## Blueprint Table—Introduction to Agricultural Mechanics

REPORTING CATEGORY	STANDARD	PERFORMANCE ELEMENT
<b>SAFETY</b>	<b>AG-3</b>	<p>3. Examine and summarize the importance of health, safety, and environmental management systems in Agriculture, Food &amp; Natural Resources (AFNR) activities.</p> <p><b>Sample Question:</b> Henry is welding on a project in the shop when a spark from his weld landed in the trash can. From your observation of the scenario the trash can contained ordinary combustibles. What might these items be?</p> <ul style="list-style-type: none"> <li>A. Gas, Diesel, Oils</li> <li>B. Power Cords, Outlets</li> <li>C. Lead, Cadmium, Galvanized</li> <li>D. Paper, Wood, Trash*</li> </ul> <p>DOK 2</p>
<b>CONSTRUCTION</b>	<b>AG-5</b>	5. Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food, & Natural Resources Career Pathways.
	<b>AG-PST-1, 2</b>	<p>1. Apply physical science principles and engineering applications to solve problems and improve performance in AFNR power, structural, and technical systems.</p> <p>2. Operate and maintain AFNR mechanical equipment and power systems.</p> <p><b>Sample Question:</b> Jerry is manufacturing a bracket to be attached to his hay baler so that it can hold extra</p>

REPORTING CATEGORY	STANDARD	PERFORMANCE ELEMENT
CONSTRUCTION		<p>spools of twine. In order for the bracket to be attached, Jerry must tap existing holes so the bracket may be bolted on. Identify the correct sequence that will allow Jerry to accomplish this task?</p> <ul style="list-style-type: none"> <li>A. Plug Tap, Bottoming Tap, Tapering Tap</li> <li>B. Bottoming Tap, Plug Tap, Tapering Tap</li> <li>C. Plug Tap, Tapering Tap, Bottoming Tap</li> <li>D. Taper Tap, Plug Tap, Bottoming Tap *</li> </ul> <p>DOK 2 <b>AG-PST-1</b></p> <p><b>Sample Question</b> What is a lightweight plastic pipe used for septic tank leach fields and outside drainage pipe?</p> <ul style="list-style-type: none"> <li>A. CPVC pipe</li> <li>B. non-code pipe *</li> <li>C. schedule 40 pipe</li> <li>D. PVC pipe</li> </ul> <p>DOK 1 <b>AG-PST-2</b></p>
EQUIPMENT	AG-PST-2, 3	<p>2. Operate and maintain AFNR mechanical equipment and power systems. 3. Service and repair AFNR mechanical equipment and power systems.</p> <p><b>Sample Question:</b> Which method of herbicide/pesticide application would require the least pump generated pressure?</p> <ul style="list-style-type: none"> <li>A. rope-wick applicator</li> <li>B. foggers *</li> <li>C. control droplet</li> <li>D. air-blast</li> </ul>

REPORTING CATEGORY	STANDARD	PERFORMANCE ELEMENT
		DOK 1 <b>AG-PST-2</b>
<b>ELECTRICITY</b>	<b>AG-PST-2</b>	2. Operate and maintain AFNR mechanical equipment and power systems.  <b>Sample Question:</b> What type of switch is always used in pairs to control lights on receptacles from two locations?  A. 1-way switches B. 2-way switches C. 3-way switches* D. 4-way switches DOK 1 <b>AG-PST-1</b>
<b>METALS</b>	<b>AG-PST-1, 2, 3</b>	1. Apply physical science principles and engineering applications to solve problems in AFNR power, structural, and technical systems. 2. Operate and maintain AFNR mechanical equipment and power systems. 3. Service and repair AFNR mechanical equipment and power systems.
<b>CONCRETE</b>	<b>AG-PST-2, 3</b>	2. Operate and maintain AFNR mechanical equipment and power systems. 3. Service and repair AFNR mechanical equipment and power systems.

<b>Introduction to Agriculture Mechanics EoC Reporting Category Alignment Framework</b>					
<b>Reporting Category</b>	<b>Standard</b>	<b>(Count by DOK)</b>			<b>Grand Total</b>
		<b>1</b>	<b>2</b>	<b>3</b>	
Safety	AG-3	4	7		11
Construction	AG-PST-1		3		3
	AG-PST-2		4		4
Concrete	AG-PST-2	3	3		6
	AG-PST-3		1		1
Equipment	AG-PST-2	3	2		5
	AG-PST-3		1		1
Metal	AG-PST-1	2	3		5
	AG-PST-2		3		3
	AG-PST-3			1	1
Electrical	AG-PST-2	2	2	1	5
<b>Grand Total</b>		<b>14</b>	<b>29</b>	<b>2</b>	<b>45</b>