North Carolina CTE

Agricultural Mechanics I (2004): Grades 9, 10, 11, 12

Adopted 2004

Leadership Development

00. Investigate organizations related to the agricultural mechanics industry. AE01.00

01. Describe opportunities for leadership development in agricultural mechanics industry organizations. AE01.01
02. Examine youth activities provided by agricultural mechanics industry organizations. AE01.02

00. Demonstrate the process used to conduct business meetings in agricultural mechanics organizations. AE02.00

01. Explain the role of parliamentary procedure in conducting business meetings. AE02.01
02. Demonstrate key parliamentary procedure abilities that would be used in a business meeting. AE02.02

00. Research aspects of public speaking and their importance to agricultural mechanics businesses. AE03.00

01. Compare techniques of public speaking. AE03.01
02. Demonstrate a conversational knowledge of agricultural mechanics and the agricultural mechanics industry. AE03.02

Employability Skills

00. Describe skills needed for employment and careers in the agricultural mechanics industry. AE04.00

01. Identify agricultural mechanics industry careers and their required skills. AE04.01
02. Describe various skills that are necessary for employment in an agricultural mechanics career. AE04.02

00. Describe agricultural mechanics as a profession and its importance in relation to the National, State, and local economy. AE05.00

01. Describe the broad field of agricultural mechanics and the different categories. AE05.01
02. Specify how agricultural mechanics is important to our economy. AE05.02

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00. **Explore occupations in the field of agricultural mechanics and its common career paths.** AE06.00

01. Analyze agricultural mechanics industry careers and related employment opportunities. AE06.01

02. Compare characteristics, preparation and credentials needed in agricultural mechanics industry careers. AE06.02

00. **Examine opportunities for work-based learning experiences related to the agricultural mechanics industry.** AE07.00

01. Revise career development plans to reflect agricultural mechanics career opportunities. AE07.01

02. Research opportunities for career development in agricultural mechanics. AE07.02

00. **Examine the Supervised Agricultural Experience component of the agricultural mechanics course.** AE08.00

01. Identify the component parts of the Supervised Agricultural Experience Record used in the agricultural mechanics course. AE08.01

02. Correctly record entries in the SAE Record. AE08.02

00. **Explore methods of financial record keeping in an agricultural mechanics business.** AE09.00

01. Define the terminology used in financial record-keeping systems, such as asset, liability, inventory, net worth, etc. AE09.01

02. Correctly record entries in a financial record system. AE09.02

00. **Research alternative methods of record keeping.** AE10.00

01. Compare computer software programs designed to aid record keeping. AE10.01

02. Examine the Internet for methods of record-keeping assistance. AE10.02

00. **Research customer relations techniques for working in agricultural mechanics businesses.** AE11.00

01. Apply customer relations techniques in an agricultural mechanics business situation. AE11.01

02. Compare various markets, marketing methods, and salesmanship techniques in the agricultural mechanics industry. AE11.02

00. **Investigate techniques for marketing agricultural mechanics products and services.** AE12.00

01. Design advertisements and arrange displays of agricultural mechanics products and services which appeal to the public. AE12.01

02. Explain the principles of supply and demand. AE12.02

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Safe Work Practices

00. **Describe safety aspects of agricultural mechanics.** AE13.00
    01. Explain safety rules including color codes and the importance of good housekeeping. AE13.01
    02. Research safety aspects of agricultural mechanics. AE13.02

Agricultural Tools

00. **Demonstrate the safe use of agricultural mechanics hand tools.** AE14.00
    01. Explain the uses of agricultural mechanics hand tools. AE14.01
    02. Use agricultural mechanics hand tools properly and safely. AE14.02

00. **Demonstrate the proper use of agricultural mechanics power tools.** AE15.00
    01. Explain the uses of power tools to perform tasks in agricultural mechanics. AE15.01
    02. Use agricultural mechanics power tools properly and safely. AE15.02

Electric Wiring

00. **Explain principles of electricity.** AE16.00
    01. Define common electrical terms. AE16.01
    02. Compute electrical energy use and cost. AE16.02
    03. Investigate safe practices involving electricity. AE16.03

00. **Explore basic electrical wiring.** AE17.00
    01. Describe materials used in electric wiring. AE17.01
    02. Explain the procedure for installing switches, making common splices, and doing other electrical wiring tasks. AE17.02
    03. Install switches, receptacles, and light fixtures. AE17.03

Concrete

00. **Examine materials needed for concrete.** AE18.00
    01. Describe characteristics of concrete ingredients. AE18.01
    02. Explain the procedure for mixing concrete. AE18.02

00. **Perform various concrete skills.** AE19.00
    01. Distinguish between site preparation, placing, finishing, and curing. AE19.01
    02. Demonstrate basic concrete tasks. AE19.02

Carpentry

00. **Explore wood construction materials.** AE20.00
    01. Describe grades of lumber and plywood. AE20.01
    02. Calculate board feet. AE20.02

00 **Use nails, staples, screws, bolts, nuts, washers, and corrugated fasteners.** AE21.00
    01. Identify types of fasteners. AE21.01

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02. Use wood fasteners. AE21.02

00. Plan cost-effective construction. AE22.00

01. Explain major factors to consider in planning new construction or repair work. AE22.01
02. Calculate the amount of materials needed for a construction project. AE22.02
03. Explain the purpose of sketching construction plans including the types of drawings used. AE22.03
04. Construct a carpentry project. AE22.04

Paints And Preservatives

00. Prepare materials for painting. AE023.00

01. Describe problems in surface preparation and paint application. AE23.01
02. Compare different painting techniques and the tools and supplies needed. AE23.02

Metal Skills

00. Research cold metal skills. AE24.00

01. Explain which skills are needed to perform cold metal tasks. AE24.01
02. Identify, cut, drill, bend, shape, file, and grind cold metals. AE24.02

00. Demonstrate proper procedures for oxyacetylene processes. AE25.00

01. Examine oxy-fuel procedures. AE25.01
02. Explain how cutting and welding tips are used to cut and weld metal. AE25.02

00. Research arc welding equipment. AE26.00

01. Compare types of arc welding machines, welding equipment, and electrodes. AE26.01
02. Describe the uses of arc welding equipment. AE26.02

00. Demonstrate basic arc welding. AE27.00

01. Explain basic arc welding procedures. AE27.01
02. Practice basic steps of arc welding in the flat position. AE27.02
03. Describe types of out-of-position welds. AE27.03
04. Demonstrate out-of-position welds. AE27.04