

Agricultural Mechanics CDE

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Career Development Purpose and Objectives:

Purpose:

To provide an opportunity for participants to demonstrate their knowledge, skill, technical competence, and problem solving ability in the areas of agricultural systems and mechanics.

Objectives:

Demonstrate competence and skill in the areas of arc and acetylene welding.

Demonstrate competence and skill in the areas of tool and metal identification and tool reconditioning.

Demonstrate competence and skill in the areas of small engine trouble shooting and problem solving.

Demonstrate competence and skill electrical problem solving and wiring.

Demonstrate competence and skill in the areas of copper and PVC pipefitting, soldering and gluing.

Related Content Standards – Humanities:

Standard 1: Acquisition and use of language

Goal 1.1: Listening

7-12.WL1.1.1.1 Comprehend basic vocabulary in isolation and in context.

7-12.WL1.1.1.2 Capture essential information from everyday conversations and short passages (e.g., cognates, context clues).

Goal 1.2: Speaking

7-12.WL1.1.2.1 Use basic vocabulary to respond to familiar prompts.

7-12.WL1.1.2.2 Express preferences, desires, opinions, and feelings.

7-12.WL1.1.2.3 Use appropriate level of politeness in simulated social exchanges.

Goal 1.3: Reading

7-12.WL1.1.3.1 Decode written text, diacritical marks, and symbolic systems.

Standard 2: Critical Thinking

Goal 2.1: Analysis of Language Elements and Products

7-12.WL1.2.1.2 Derive meaning from word order.

Related Content Standards – Language Arts:

Related Content Standards – Mathematics:

9-10 Grade

Goal 1.1: Understand and use numbers.

9,10 .M.1.1.2 Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real world situations. (347.01.a)

9, 10 M.1.1.6 Use appropriate vocabulary.

Goal 1.2: Perform computations accurately.

9.M.1.2.1 Use the order of operations and perform operations with rational numbers. (347.02.a)

Goal 1.3: Estimate and judge reasonableness of results.

9.M.1.3.1 Apply number sense to everyday situations and judge reasonableness of results. (347.03.a)

9.M.1.3.2 Identify that error accumulates in a computation when there is rounding. (349.05.b)

Goal 2.3: Apply dimensional analysis.

9.M.2.3.1 Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature. (349.04.a)

Goal 2.4: Apply appropriate techniques and tools to determine measurements.

9.M.2.4.1 Determine and use appropriate units. (349.01.a)

9.M.2.4.2 Approximate error in measurement situations.

10 Grade Math

Goal 4.5: Use reasoning skills.

10.M.4.5.1 Use logic to make and evaluate mathematical arguments. (348.02.b)

Related Content Standards – Science:

9-10 Grade Biology:

Standard 1: Nature of Science

Goal 1.8: Understand Technical Communication

8-9.ES.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

Goal 1.1: Understand Systems, Order, and Organization

9-10.B.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)

9-10.B.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)

Goal 1.3: Understand Constancy, Change, and Measurement

9-10.B.1.3.1 Measure changes that can occur in and among systems. (648.03b)

9-10.B.1.3.2 Analyze changes that can occur in and among systems. (648.03b)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

9-10.B.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)

9-10.B.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)

9-10.B.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)

9-10.B.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)

9-10.B.1.6.5 Analyze alternative explanations and models. (649.01e)

9-10.B.1.6.6 Communicate and defend a scientific argument. (649.01f)

9-10.B.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)

8-9 Grade Physical Science

Standard 1: Nature of Science

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

8-9.PS.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)

8-9.PS.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)

8-9.PS.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)

8-9.PS.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)

8-9.PS.1.6.5 Analyze alternative explanations and models. (649.01e)

8-9.PS.1.6.6 Communicate and defend a scientific argument. (649.01f)

8-9.PS.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)

Standard 2: Physical Science

Goal 2.4: Understand the Structure of Atoms

8-9.PS.2.4.5 Describe the relationships between magnetism and electricity.

Goal 2.5: Understand Chemical Reactions

8-9.PS.2.5.1 Explain how chemical reactions may release or consume energy while the quantity of matter remains constant. (650.03a)

8 - 9 Grade Earth Science

Goal 1.8: Understand Technical Communication

8-9.ES.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

Related Content Standards – Social Studies Economics: