

Natural Resource Science 1A

Exam Information	Description
Exam number 175 Items 29 National Career Cluster Agriculture Energy & Natural Resources Certification available Yes	The Natural Resource Science 1A industry certification exam assesses knowledge and skills related to the production management and conservation of natural resources. Major units include ecology, range resources, waste management, and land use. Field and laboratory experiences are emphasized in the assessment.

Exam Blueprint and Performance Skills

Standard	Percentage of exam score
1. Student Organizations in Agricultural Education*	4%
2. Agricultural Experience in Agricultural Education*	2%
3. Natural Resource Science and Management*	63%
4. Waste Management	31%

*Includes performance skill evaluation

Standard 1 - Student Organizations in Agricultural Education (Optional) (0% of exam score)

Candidates will explain the role of student organizations in agricultural education.

Objective 1 Discuss the history and organization of student organizations as they relate to the complete program of agricultural education.

1. Explain the interrelationship of classroom and laboratory instruction, supervised agricultural experience, and student organizations.
2. Describe how, when, and why student organizations were organized.
3. Identify key historical events within student organizations.
4. Identify the mission and strategies, colors, motto, emblem and parts of the emblem, and organizational structure of student organizations.
5. Recite and explain the meaning of a student organization's creed.
6. Discuss the meaning and purpose of a program of activities and its committee structure.
7. List student organizations' officers and discuss the role of each.

Objective 2 Identify opportunities in student organizations.

1. Describe student organizations' opportunities that develop leadership skills, personal growth, and career success.
2. Summarize major state and national activities available to members within student organizations

Objective 3 Describe student organizations' degrees, awards, and career development events (CDEs).

1. List and explain student organizations' degree areas.
2. Identify student organizations' proficiency awards.
3. List and discuss various team and individual CDEs.

Optional: Standard performance evaluations on the final page of this document

Standard 2 - Agricultural Experience in Agricultural Education (4%)

Candidates will explain the role of supervised agricultural experience programs in agricultural education.

Objective 1 Examine the responsibilities and benefits associated with an agricultural experience.

1. Explain the meaning and benefits of supervised agricultural experience.
2. Explain the characteristics of an effective agricultural experience program and the responsibilities of those involved.

Objective 2 Determine the types of agricultural experience programs.

1. Compare entrepreneurship agricultural experiences and placement agricultural experiences
2. Describe research/experimentation agricultural experiences.

3. Describe exploratory agricultural experiences.

Objective 3 Plan an agricultural experience program.

1. Identify the steps in planning an agricultural experience program.
2. Describe the function of a business/training plan and/or agreement in an agricultural experience program.
3. Develop a short-range plan and a long-range plan for an agricultural experience program.
4. Relate classroom and laboratory instruction to an agricultural experience program.

Objective 4 Maintain and use agricultural experience records.

1. Explain the importance of keeping records on an agricultural experience program.
2. Explain how agricultural experience records are organized.
3. Follow approved procedures to make entries in agricultural experience records.

Optional: Standard performance evaluations on the final page of this document

Standard 3 - Natural Resource Science and Management (28%)

Candidates will examine natural resource science and management.

Objective 1 Discuss the basics of natural resource science and management.

1. Identify types of natural resources.
2. Distinguish between renewable and nonrenewable resources.
3. Explain the difference between inexhaustible and exhaustible resources.
4. Explain the concept of interdependent relationships.

Objective 2 Examine the relationship between natural resources and society, including conflict management.

1. Define natural resource management.
2. Identify and compare major natural resource management agencies and companies.
3. Describe human demands on natural resources.
4. Compare and contrast conservation and preservation.
5. Provide examples of multiple uses of natural resources. (e.g., recreation, mining, agriculture, forestry, etc.)
6. Explore and describe societal issues related to natural resource management.

Objective 3 Identify career opportunities in natural resource science.

1. Identify and describe the major areas of natural resource science.
2. Identify career opportunities in natural resource science and determine the education and training they entail.

Optional: Standard performance evaluations on the final page of this document

Standard 4 - Waste Management (8%)

Candidates will explain waste management.

Objective 1 Investigate waste generation, waste reduction, and disposal.

1. Describe different types of solid waste.
2. Evaluate environmental hazards created by different types of solid waste, solid waste accumulation, and solid waste disposal.
3. Explain practical management options for treating solid waste.
4. Explain the importance of reducing, reusing, and recycling.
5. Describe recycling methods and identify materials that can be recycled.
6. Define wastewater.
7. Diagram the steps in wastewater treatment.
8. Assess agriculture's impact on the environment through waste generation (e.g., animal waste, pesticide residue, fertilizer runoff, sedimentation/erosion, and odors/dust).
9. Discuss the meaning and use of nutrient management plans

Optional: Standard performance evaluations on the final page of this document

Performance Skills Evaluation

Exam name: Natural Resource Science 1A

Candidate Name: _____

Performance assessments may be completed and evaluated any time before the certification is issued. The following performance skills can be used in connection with the associated standards and exam. The evaluator will function as the subject matter expert to determine if the candidate meets the skills requirements with a Yes/No for passing.

Standard 1 - Student Organizations in Agricultural Education - Attend a student organization meeting. - Research a Human Services career that includes educational requirements, skill development, and income potential.	Pass:
Standard 2 - Agricultural Experience in Agricultural Education Participate in an agricultural experience as part of an integral system approach to Agricultural Education.	Pass:
Standard 3 - Natural Resource Science Management - Participate in a conflict management activity. - Distinguish between renewable and nonrenewable resources. - Identify types of Natural Resources. - Provide examples of multiple uses of natural resources.	Pass:
Standard 4 - Waste management Diagram the steps in wastewater treatment.	Pass:

Evaluator Name: _____

Date: _____