Natural Resource Science 1A

Exam Information

Exam number
175

Items
29

Points
52

Prerequisites
None

Recommended course length
One semester

National Career Cluster
Agriculture, Food & Natural Resources

Performance standards
Included (Optional)

Certificate available
Yes

Description

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

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

Standard 1

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

Objective 1 Discuss the history and organization of a student organization as it relates 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 a student organization was organized.
3. Identify key student organization historical events.
4. Identify the mission and strategies, colors, motto, emblem and parts of the emblem, and organizational structure of a student organization.
5. Recite and explain the meaning of a student organization creed.
6. Discuss the meaning and purpose of a program of activities and its committee structure.
7. List student organization chapter officers and discuss the role of each.

Objective 2 Identify opportunities in student organizations.

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

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

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

Standard 1 Performance Evaluation included below (Optional)

Standard 2

Students 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.

Standard 2 Performance Evaluation included below (Optional)

Standard 3

Students 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. Explain natural resource conservation.
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 resources science.
2. Identify career opportunities in natural resource science and determine the education and training they entail.

Standard 3 Performance Evaluation included below (Optional)

Standard 4

Students 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.

Standard 4 Performance Evaluation included below (Optional)

Natural Resource Science 1A

Performance assessments may be completed and evaluated at any time during the course. The following performance skills are to be used in connection with the associated standards and exam. To pass the performance standard the student must attain a performance standard average of 8 or higher on the rating scale. Students may be encouraged to repeat the objectives until they average 8 or higher.

Student's Name: _____

Class: _____

Performance standards rating scale

0	Limited skills	2	→	4	Moderate skills	6	→	8	High skills	10

Standard 1 – Student Organization in Agricultural Education Score:

- Attend a student organization meeting.
- Research a Human Services career that includes educational requirements, skill development, and income potential.

Standard 2 – Agricultural Experience in Agricultural Education Score:

- Participate in an agricultural experience as part of an integral system approach to Agricultural Education.

Standard 3 – Natural Resource Science Management Score:

- 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.

Standard 4 – Waste Management **Score:**

- Diagram the steps in wastewater treatment.

Performance standard average score:

Evaluator Name: _____

Evaluator Title: _____

Evaluator Signature: _____

Date: _____