



**NATURAL RESOURCES SPECIALIST
RANGE & SOIL EMPHASIS
SKILLS STANDARDS
OD46325**

Competency-Based Education: OKLAHOMA'S RECIPE FOR SUCCESS

BY THE INDUSTRY FOR THE INDUSTRY

Oklahoma's *CareerTech* system of competency-based education uses industry professionals and certification standards to identify the knowledge and abilities needed to master an occupation. This industry input provides the foundation for development of instructional materials that help prepare the comprehensively trained, highly skilled employees demanded by our workplace partners.

TOOLS FOR SUCCESS

CareerTech relies on three basic instructional components to deliver competency-based instruction: skills standards, curriculum materials, and competency assessments.

Skills standards provide the foundation for competency-based instruction in Oklahoma's *CareerTech* system. The skills standards outline the knowledge, skills, and abilities needed to perform related jobs within an industry. Skills standards are aligned with national skills standards; therefore, a student trained to the skills standards possesses technical skills that make him/her employable in both state and national job markets.

Curriculum materials contain information and activities that teach students the knowledge and skills outlined in the skills standards. In addition to complementing classroom instruction, curriculum resources provide supplemental activities to enhance learning and provide hands-on training experiences.

Competency Assessments test the student over material outlined in the skills standards and taught using the curriculum materials. When used with classroom performance evaluations, written competency assessments provide a means of measuring occupational readiness.

Although each of these components satisfy a unique purpose in competency-based education, they work together to reinforce the skills and abilities students need to gain employment and succeed on the job.

MEASURING SUCCESS

Written competency assessments are used to evaluate student performance. Results reports communicate competency assessment scores to students and provide a breakdown of assessment results by duty area. The results breakdown shows how well the student has mastered skills needed to perform major job functions and identifies areas of job responsibility that may require additional instruction and/or training.

Group analysis of student results also provides feedback to instructors seeking to improve the effectiveness of career and technology training. Performance patterns in individual duties indicate opportunities to evaluate training methods and customize instruction.

TRUE TO OUR PURPOSE

"Helping Oklahomans succeed in the workplace" defines the mission of Oklahoma *CareerTech* and its competency-based system of instruction. Skills standards, curriculum, and assessments that identify and reinforce industry expectations provide accountability for programs and assure *CareerTech*'s continued role in preparing skilled workers for a global job market

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**NATURAL RESOURCES SPECIALIST
RANGE & SOILS EMPHASIS
SKILLS STANDARDS
Frequency and Criticality Ratings**

- Duty A: Demonstrate Knowledge of Natural Resources and Conservation
- Duty B: Demonstrate Knowledge of Water Resource Management
- Duty C: Demonstrate Knowledge of Land Management
- Duty D: Demonstrate Knowledge of Air Resource Management
- Duty E: Understand Ecosystems
- Duty F: Understand Basic Principles Associated with Plant Science
- Duty G: Explain Principles Associated With Waste Management
- Duty H: Understand Concepts Associated With Wildlife
- Duty I: Exhibit Personal Social Skills for the Workplace
- Duty J: Use Communication and Research Skills
- Duty K: Use Interpersonal Skills in Working With Others
- Duty L: Apply Management Principles

Frequency: represents how often the task is performed on the job. Frequency rating scales vary for different occupations. The rating scale used in this publication is presented below:

- 1 = less than once a week
- 2 = at least once a week
- 3 = once or more a day

Criticality: denotes the level of consequence associated with performing a task incorrectly. The rating scale used in this publication is presented below:

- 1 = slight
- 2 = moderate
- 3 = extreme

DUTY A: Demonstrate Knowledge of Natural Resources and Conservation

CODE	TASK	F/C
A.01	State importance of natural resources and conservation	2/2
A.03	List types of natural resources <ul style="list-style-type: none"> • Renewable • Non-renewable 	2/3
A.04	Discuss components of a given environment <ul style="list-style-type: none"> • Biological • Physical 	3/3
A.05	Distinguish between preservation and conservation activities	3/3
A.06	Generate examples of preservation and conservation activities	2/3
A.07	Identify governmental agencies responsible for natural resources	3/3

	<ul style="list-style-type: none"> • Local • State • Federal 	
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DUTY B: Demonstrate Knowledge of Water Resource Management

CODE	TASK	F/C
B.01	State the importance of water resource management	3/3
B.02	Identify water uses	3/3
B.03	Explain methods of protecting water sources	3/3
B.04	Describe the hydrologic cycle <ul style="list-style-type: none"> • Distribution • Surface water • Ground water 	2/3
B.05	Identify water pollution sources	3/3
B.06	Explain the effect of water pollution on the eco-system	3/3
B.07	Discuss legislation of environmental protection of water resources	2/2
B.08	Identify types of watersheds	3/3
B.09	Understand water samples	2/3
B.10	Identify and distinguish various types of wetlands	2/3
B.13	Explain the benefits and function of wetlands	2/2
B.14	Describe human impact on wetlands	2/3
B.15	Discuss legislation regarding wetlands	2/3
B.19	Identify point and non-point source pollution	3/3

DUTY C: Demonstrate Knowledge of Land Management

CODE	TASK	F/C
C.01	State the importance of land management	2/2
C.02	Identify soil uses	3/3
C.03	Describe soil formation process	1/2
C.04	Identify major soil texture classes	2/2
C.05	Explain soil composition and functions of organic matter	2/2
C.06	List horizons of a soil profile <ul style="list-style-type: none"> • Topsoil • Subsoil • Parent soil 	2/2
C.07	Categorize soil into land capability classes	2/3
C.08	Interpret a soil survey map	3/3
C.09	Take soil samples	2/3
C.10	Identify types, causes, and effects of erosion	3/3
C.11	Identify methods to control erosion in rural and urban areas	3/3
C.12	Discuss current Farm Bill programs	2/3
C.14	Outline steps in the land use planning process	2/3
C.15	Obtain distances using measuring devices	3/3
C.16	Use appropriate equipment to conduct a basic land survey	2/3

	Differentiate between public and private land	3/3
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DUTY D: Demonstrate Knowledge of Air Resource Management

CODE	TASK	F/C
D.04	Locate sources of air pollution <ul style="list-style-type: none"> • Industry • Electrical power • Motor emissions 	2/3
D.10	Examine wind (air) as an alternative energy source	1/2

DUTY E: Understand Ecosystems

CODE	TASK	F/C
E.01	Define ecosystem	2/3
E.02	Explain types of ecosystems	2/3
E.03	Understand the importance of ecosystems	3/3
E.04	Explain ecosystem management	2/2
E.05	Explain the human impact on ecosystems <ul style="list-style-type: none"> • Agriculture • Forestry • recreation 	3/3

DUTY F: Understand Basic Principles Associated with Plant Science

CODE	TASK	F/C
F.01	Describe approved practices in food plot management	2/2
F.02	Identify and recognize plant species <ul style="list-style-type: none"> • Invasive • Exotic 	3/3
F.03	Demonstrate the ability to use resource information to identify plants	3/3

DUTY G: Explain Principles Associated with Waste Management

CODE	TASK	F/C
G.01	Describe kinds and sources of waste <ul style="list-style-type: none"> • Solid • Hazardous • Liquid • Bio 	2/3
G.02	Interpret MSDS sheets	1/3
G.03	Identify agencies responsible for waste management	1/2
G.04	Identify methods of waste reduction activities	1/2
G.05	State advantages and disadvantages of various methods of waste disposal	1/2
G.06	Explain potential hazards in solid waste materials and disposal	1/3
G.07	Explain the importance of recycling <ul style="list-style-type: none"> • Recyclables vs. non-recyclables 	1/1

G.08	Develop a recycling plan	1/3
	Describe composting <ul style="list-style-type: none"> • Methods • Benefits 	1/2

DUTY H: Understand Concepts Associated with Wildlife

CODE	TASK	F/C
H.01	Define and describe habitat and wildlife management	2/3
H.02	Discuss wildlife laws	2/3
H.03	Discuss ethics associated with wildlife	2/1
H.04	Identify agricultural management practices for improvement of habitat	3/3
H.05	Identify rural and urban assistance available for habitat improvement	3/3
H.06	Explain concepts of wildlife management <ul style="list-style-type: none"> • Carrying capacity • Inter relationships • Territoriality • Succession stages • Migration • Life cycles 	2/3
H.07	Design a wildlife management plan	2/3
H.08	Evaluate and define wildlife habitat <ul style="list-style-type: none"> • Components 	2/3
H.09	Identify wildlife resources <ul style="list-style-type: none"> • Economic benefits • Social value • Aesthetic value • Scientific and educational value 	2/3
H.10	Estimate wildlife populations on given areas of land	2/2
H.13	Identify current issues in wildlife diseases	2/3
H.14	Investigate methods to control nuisance wildlife	2/3

DUTY I: Exhibit Personal Social Skills for the Workplace

CODE	TASK	F/C
I.01	Use good work habits such as punctuality, orderliness, and patience	3/3
I.02	Effectively plan and schedule work tasks and assignments	3/3
I.03	Maintain appearance and health	3/3
I.04	Participate in applicable training opportunities	2/2
I.05	Use appropriate ethical behavior such as integrity and honesty	3/3
I.06	Adjust and adapt to new and unique ideas and situations	2/2
I.07	Assume responsibility for individual actions and/or department and company operations	3/3
I.08	Maintain a positive attitude toward individual responsibilities and/or department and company operations	3/3
I.09	Accept constructive criticism and take appropriate corrective actions	3/3
I.10	Maintain necessary endurance, forbearance, and persistence in order to accomplish goals and objectives	3/2

I.11	Display appropriate sense of humor	2/2
I.12	Budget time effectively	3/3
I.13	Use success or failure constructively in a work situation	3/2

DUTY J: Use Communication and Research Skills

CODE	TASK	F/C
J.01	Use legible handwriting in preparing forms, messages, and reports	3/3
J.02	Listen attentively to directions, assignments, and information from customers, supervisors, or managers	3/3
J.03	Communicate verbally with clientele, employees, supervisors, suppliers, etc.	3/3
J.04	Understand reports, forms, policies, and product information	3/3
J.05	Complete correspondence, reports, forms, and notes	3/3
J.06	Interpret work schedules	3/3
J.07	Manage information from tables, graphs, and charts such as tax tables, work schedules, organizational charts, etc.	2/2
J.08	Use the telephone correctly and courteously	3/3
J.09	Use and interpret computer output such as printouts, visual display screens, etc.	3/2

DUTY K: Use Interpersonal Skills in Working with Others

CODE	TASK	F/C
K.01	Exhibit cooperative work habits with other employees, supervisors, and managers	3/3
K.02	Exhibit courtesy toward clientele, suppliers, and others	3/3
K.03	Use appropriate assertiveness with others in the workplace	3/2
K.04	Exhibit sensitivity to the needs of individuals	3/3
K.05	Assume shared responsibility for the success or failure for the workgroup	3/3
K.06	Maintain credibility with customers, co-workers, employees, and managers	3/3
K.07	Adjust to the demands of the job requirements such as deadlines, pressures, conflicts, etc.	3/2
K.08	Recognize different client types and meet the special needs of each type, including: individuals, groups, associations, educational groups, corporations, leisure tour groups, etc.	3/3
K.09	Manage difficult clientele	2/3

DUTY L: Apply Management Principles

CODE	TASK	F/C
L.01	Discuss industry related trends and developments	2/2
L.02	Understand the concepts of budgets	3/3