



South Carolina Academic/Career Development Integration Activity (DRAFT)

Title **Chemistry Lab Reflection (HS-1)**
Subject **Chemistry**

Grade Level(s) 9-12

SC Content Standard Chemistry - Standard C-1. The student will demonstrate an understanding of how scientific inquiry and technological design, including mathematical analysis, can be used appropriately to pose questions, seek answers, and develop solutions.

C-1.4. Design a scientific investigation with appropriate methods of control to test a hypothesis (including independent and dependent variables), and evaluate the designs of sample investigations.

National Career Development Guidelines Goal/Indicator

Career Management GOAL CM4. Master academic, occupational, and general employability skills in order to obtain, create, maintain, and/or advance your employment.

Indicator CM4.A3. Demonstrate attainment of general employability skills and personal qualities needed for success in school and employment (e.g., critical thinking; problem solving; resource, information, and technology management; interpersonal skills; honesty; and dependability).

Career Development Objectives

1. The student will plan and conduct a scientific investigation, using appropriate controls.
2. The student will identify employability skills he/she used in the scientific investigation.
3. The student will successfully use a variety of employability skills while conducting the scientific investigation.

Assessment

1. The student will plan and conduct a scientific investigation, using appropriate methods of control, to test a hypothesis. The student will document the results of the investigation (completion of teacher's standard lab report form).
2. The student will complete the *Chemistry Lab Reflection* worksheet.
3. The student will successfully use a variety of employability skills while conducting the scientific investigation. (Teacher observation.)

* Adapted from *Career Development Tool Kit*, Linda Kobylarz & Associates, 2001. Used with permission

Preparation

- Prior Learning—Instruction in the methods of scientific inquiry, prior experience in conducting a scientific investigation, familiarity with employability skills
- Handouts/Worksheets— *Chemistry Lab Reflection* worksheet, *Skills for a Lifetime* handout Optional: *Career Decision-Making Tool* (www.acrnetwork.org/decision.htm)
- Resources/Materials—writing materials, chemistry lab resources
- Time Required—120 minutes (depending on the nature of the scientific investigation)

Procedures

Part One

- In this activity, students will plan and conduct a scientific investigation, using appropriate methods of control, to test a hypothesis. They will see how the thought processes and skills they use in the scientific investigation are employability skills they can use in almost any job.
- Review with students the instructions for the chemistry lab assignment. Have students work in teams of two to complete the assignment.
- Give students a copy of the *Skills for a Lifetime* handout. Explain that they will use many of the skills while doing their assignment. These skills are skills that employers value in employees, no matter what the job. Tell students they will be asked to identify some of the employability skills they used in completing the lab assignment.

Part Two — Career Development Connections (30 minutes)

- Begin by brainstorming some of the employability skills students used during the lab assignment. What employability skills helped them to complete the assignment?
- Give students the *Chemistry Lab Reflection* worksheet and review it with them.
- Tell students to identify five employability skills they used in the lab assignment.
- Invite a few students to share their reflections with the class.
- Optional: Remind students that the ability to make good decisions is an important skill for school and work success. Have students explore questions that must be answered in their own lives and practice decision-making with the free Career Decision-Making Tool (www.acrnetwork.org/decision.htm).

Crosswalks

SC Career Guidance Standard/Competency

Learning to Work Standard 4. Students will demonstrate a positive attitude toward work and the ability to work together.

Competency 4.3. Demonstrate the interpersonal skills required for working with/for others.

Competency 4.10. Acquire employability (SCANS) skills necessary to obtain and maintain jobs.

Key Employability Skills

Personal Qualities—Responsibility, self-management

Interpersonal Skills—Teamwork, diversity

Thinking Skills—Problem-solving, decision-making, critical thinking, reasoning

Information Management—Acquires, interprets, and communicates information

Chemistry Lab Reflection

Name _____

Date _____

Directions: Use the *Skills for a Lifetime* handout to help you think about all of the employability skills you used to complete the chemistry lab assignment. Choose five skills and write below how you used each skill to complete the lab assignment.

1. Employability Skill _____

How I used the skill:

2. Employability Skill _____

How I used the skill:

3. Employability Skill _____

How I used the skill:

4. Employability Skill _____

How I used the skill:

5. Employability Skill _____

How I used the skill:

► SKILLS FOR A LIFETIME ◀

Foundation Skills—Basic Academics	
Reading	Understands written materials
Writing	Communicates thoughts, ideas, and information through writing
Arithmetic/Mathematics	Performs basic computations and chooses appropriate mathematical techniques to solve problems
Listening	Interprets and responds to verbal messages and cues
Speaking	Organizes ideas and communicates orally
Foundation Skills—Thinking Skills	
Creative Thinking	Generates new ideas, tries new things
Problem Solving	Defines, understands, and solves a problem
Decision Making	Specifies a goal, gathers information, identifies alternatives, considers risks, chooses best alternative
Seeing Things in the Mind's Eye	Creates a mental picture from information
Knowing How to Learn	Asks questions, uses resources, researches information
Reasoning	Understands the relationship between things and uses that knowledge to solve a problem
Foundation Skills—Personal Qualities	
Responsibility	Completes tasks on time, has materials ready, is dependable
Self -Esteem	Believes in self, has positive view of self
Sociability	Meets new people, is friendly, is polite
Self Management	Sets priorities and goals, controls behavior and attitude
Integrity/Honesty	Makes ethical choices
Workplace Know—How Skills	
Managing Resources	Managing time, money, materials, and being organized
Interpersonal-Teamwork	Contributes to group effort, cooperates
Interpersonal-Teaches Others	Helps others to learn new skills
Interpersonal-Serves Customers	Works to satisfy customers
Interpersonal-Leadership	Persuades and convinces others, plans to achieve goals
Interpersonal-Negotiates	Works towards agreements with others
Interpersonal-Diversity	Works well with others different than self, sees other's point of view
Information	Obtains, evaluates, organizes, interprets, and communicates information
Technology	Using computers and other technology to process and convey information
Understanding Systems	Knowing how social, organizational, and technology systems work

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