

Career Opportunities Resulting from New Technologies

Unit: Technology

Problem Area: Adapt to Changing Technology

Lesson: Career Opportunities Resulting from New Technologies

■ **Student Learning Objectives.** Instruction in this lesson should result in students achieving the following objectives:

- 1 Identify new technologies.**
- 2 Describe career cluster information.**
- 3 Obtain firsthand knowledge of career opportunities.**

■ **Resources.** The following resources may be useful in teaching this lesson:

Career Click. Accessed Aug. 12, 2009.

<<http://www.workforceinfo.state.il.us/>>.

Career One Stop. Accessed Aug. 12, 2009.

<<http://www.acinet.org/acinet/>>.

Curriculum Revitalization. Accessed Aug. 12, 2009. <<http://ilcte.org>>.

“Illinois Career Clusters,” *Programs of Study.* Accessed Aug. 12, 2009.

<<http://ilprogramsofstudy.org/CareerClusters.action>>.

InformationWeek. Accessed Aug. 12, 2009.

<<http://www.informationweek.com/>>.

“National Sample Definitions,” *States’ Career Clusters.* Accessed Aug. 12,

2009. <<http://www.careerclusters.org/definitions.php>>.



One Source. Accessed Aug. 12, 2009. <<http://www.ilworkinfo.com/>>.

“Sixteen Career Clusters and Their Pathways,” *States’ Career Clusters*. Accessed June 20, 2009. <<http://www.careerclusters.org/list16clusters.php>>.

“Tools and Technology,” *O*NET OnLine*. Accessed Aug. 12, 2009. <<http://online.onetcenter.org/search/t2/?s=&g=Go>>.

■ **Equipment, Tools, Supplies, and Facilities.**

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

■ **Key Terms.** The following terms are presented in this lesson (shown in bold italics):

- ▶ career clusters
- ▶ career pathways
- ▶ new technologies
- ▶ terminology

■ **Interest Approach.** Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situation. A possible approach is included here.

Ask your students the following questions to begin a discussion: Do new and exciting developments always catch your attention? How do you begin to learn about what is about to be created? How can you be a part of the creation and discovery process? What career opportunities result from the creation of new technologies?

SUMMARY OF CONTENT AND TEACHING STRATEGIES

Objective 1: Identify new technologies.

Anticipated Problem: How do you identify new technologies?

- I. New technologies—People are constantly exposed to new technologies. The resulting career opportunities are more difficult to recognize. People can research the new

technology, which points to a career cluster and a career pathway. With knowledge and experience, the door to the actual career opportunity will become more visible and will eventually open.

- A. Exposure to **new technologies** (the application of science for the development of new tools, machines, and systems used for human benefit) occurs via:
1. Exposure as a consumer, employee, and peer
 2. Advertising (e.g., commercials, billboards, and mail)
 3. Grocery (e.g., check-out options, red box videos, and banking)
 4. News (e.g., television, newspapers, and online)
 5. New course offerings at colleges
 6. Hear/see in regular day-to-day activities
 7. Job (e.g., new equipment, conferences, and trade shows)
 8. Reading (e.g., journals and trade magazines)
 9. Social groups
- B. Learning about new technologies
1. Researching (e.g., Web sites, search engines, and Career Resource Center)
 2. Interviewing current users (e.g., family, friends, and local business owners)
 3. Checking school offerings (e.g., high schools, community colleges, four-year colleges, and trade or technical schools)

Use VM–A to help students identify new technologies. Ask the students to list some new technologies they own or have seen advertised recently. List them on the board. Ask the students how these new technologies affect them and their lives.

Objective 2: Describe career cluster information.

Anticipated Problem: For what purpose is career cluster information used, and how is it organized?

II. Career cluster information

- A. There are 16 **career clusters**—a grouping of occupations and broad industries based on commonalities. The career clusters are an organizational tool for linking student interests with the skills and knowledge required for the area of study.
1. Agriculture, Food & Natural Resources
 2. Architecture & Construction
 3. Arts, A/V Technology & Communications
 4. Business Management & Administration
 5. Education & Training
 6. Finance
 7. Government & Public Administration

8. Health Science
 9. Hospitality & Tourism
 10. Human Services
 11. Information Technology
 12. Law, Public Safety, Corrections & Security
 13. Manufacturing
 14. Marketing
 15. Science, Technology, Engineering & Mathematics
 16. Transportation, Distribution & Logistics
- B. **Career pathways** represent a grouping of occupations within a cluster based on commonalities; they are subtopics of the career clusters.
- C. **Terminology** (technical terms of a particular trade) is used in descriptions within the pathways. Each career pathway includes specific knowledge and skills required. New technologies and new terminology are often strongly linked. When a new piece of technology is created, it is given a name.

Use the listed resources and VM–B to help students recognize the career clusters and the career pathways that stem from them.

Objective 3: Obtain firsthand knowledge of career opportunities.

Anticipated Problem: How do you discover what career opportunities exist and may exist?

- III. To obtain firsthand knowledge, people may:
- A. Obtain an educational credential from a:
 1. Community college
 2. University
 3. Trade or technical school
 - B. Work or intern after contacting:
 1. A job placement agency
 2. The Career Resource Center at school
 3. A potential employer online

Have students use the following Web site (<http://www.careerclusters.org/resources/web/ks.php>) to find a career cluster of interest. They should click on that cluster and then click on “pathways” and next on “Knowledge and Skills Chart.” Have them write down terms with which they are unfamiliar for discussion. Assign LS–A.

- **Review/Summary.** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle.
- **Application.** Use the included visual masters to apply the information presented in the lesson.
- **Evaluation.** Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

■ **Answers to Sample Test:**

Part One: Completion

1. career pathway
2. terminology
3. human benefit
4. career cluster
5. work
6. research
7. users
8. school offerings

Part Two: Short Answer

1. Answers will vary but should include three of the following:
 - ◆ Exposure as a consumer, employee, and peer
 - ◆ Advertising (e.g., commercials, billboards, and mail)
 - ◆ Grocery (e.g., check-out options, red box videos, and banking)
 - ◆ News (e.g., television, newspapers, and online)
 - ◆ New course offerings at colleges
 - ◆ Hear/see in regular day-to-day activities
 - ◆ Job (e.g., new equipment, conferences, and trade shows)
 - ◆ Reading (e.g., journals and trade magazines)
 - ◆ Social groups
2. The three ways in which you can learn about new technologies:
 - ◆ Researching (e.g., Web sites, search engines, and Career Resource Center)
 - ◆ Interviewing current users (e.g., family, friends, and local businesses)
 - ◆ Checking school offerings (e.g., high school, community college, four-year college, and trade or technical school)

Part Three: True/False

1. F
2. F
3. T
4. T
5. T
6. T
7. T
8. T

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► Part One: Completion

Instructions: Provide the word or words to complete the following statements.

1. A(n) _____ is a grouping of occupations within a career cluster based on commonalities.
2. The technical terms of a particular trade are known as _____.
3. New technology is the application of science for the development of new tools, machines, and systems used for _____.
4. A(n) _____ is a grouping of occupations and broad industries based on commonalities.
5. An example of firsthand knowledge is an educational credential or actual _____ experience.
6. One way to learn about new technologies is to conduct _____.
7. Another way to learn about new technologies is to interview current _____.
8. Yet another way to learn about new technologies is to check _____.



▶ Part Two: Short Answer

Instructions: Answer the following.

1. List three ways in which you are exposed to new technology.

2. What are the three ways in which you learn about a new technology?

▶ Part Three: True/False

Instructions: Write *T* for true or *F* for false.

- ___ 1. To see new technology, you have to research it.
- ___ 2. “New technology” only applies to computer-related products.
- ___ 3. Every job fits into one of the 16 career clusters.
- ___ 4. New technology is often linked to new terminology.
- ___ 5. Specific knowledge and experience help identify career opportunities.
- ___ 6. If you want firsthand experience, you need to work, intern, or obtain an educational credential.
- ___ 7. In general, new terms indicate there is a new technology.
- ___ 8. New technology typically creates new terms.

THE 16 CAREER CLUSTERS

A short description of each cluster can be found at <http://www.careerclusters.org/16clusters.cfm>.

- ◆ Agriculture, Food & Natural Resources
- ◆ Architecture & Construction
- ◆ Arts, A/V Technology & Communications
- ◆ Business Management & Administration
- ◆ Education & Training
- ◆ Finance
- ◆ Government & Public Administration
- ◆ Health Science
- ◆ Hospitality & Tourism
- ◆ Human Services
- ◆ Information Technology
- ◆ Law, Public Safety, Corrections & Security
- ◆ Manufacturing
- ◆ Marketing
- ◆ Science, Technology, Engineering & Mathematics
- ◆ Transportation, Distribution & Logistics

CAREER PATHWAYS

A complete listing of the pathways for each career cluster can be found at <http://www.careerclusters.org/list16clusters.php>.

- ◆ Agriculture, Food & Natural Resources
 - *Food Products and Processing Systems*
 - *Plant Systems*
- ◆ Architecture & Construction
 - *Design/Pre-Construction*
 - *Construction*
- ◆ Arts, Audio/Video Technology & Communications
 - *Audio and Video Technology and Film*
 - *Printing Technology*
- ◆ Business Management & Administration
 - *General Management*
 - *Business Information Management*



- ◆ Education & Training
 - *Administration and Administrative Support*
 - *Professional Support Services*
- ◆ Finance
 - *Securities & Investments*
 - *Business Finance*
- ◆ Government & Public Administration
 - *Governance*
 - *National Security*
- ◆ Health Science
 - *Therapeutic Services*
 - *Diagnostic Services*
- ◆ Hospitality & Tourism
 - *Restaurants and Food/Beverage Services*
 - *Lodging*
- ◆ Human Services
 - *Early Childhood Development & Services*
 - *Counseling & Mental Health Services*
- ◆ Information Technology
 - *Network Systems*
 - *Information Support and Services*

- ◆ Law, Public Safety, Corrections & Security
 - *Correction Services*
 - *Emergency and Fire Management Services*
- ◆ Manufacturing
 - *Production*
 - *Manufacturing Production Process Development*
- ◆ Marketing
 - *Marketing Management*
 - *Professional Sales*
- ◆ Science, Technology, Engineering & Mathematics
 - *Engineering and Technology*
 - *Science and Math*
- ◆ Transportation, Distribution & Logistics
 - *Transportation Operations*
 - *Logistics Planning and Management Services*

New Technology Terms

Purpose

The purpose of this activity is to enhance your understanding of the new technology terms and the career opportunities that result from the new terms.

Objectives

1. Research new technology terms on the Internet.
2. Identify the new careers that support these terms.
3. Complete some research on these careers using the Internet and the career clusters.

Materials

- ◆ computer with Internet access
- ◆ writing utensil
- ◆ paper

Procedure

1. Think of some new terms you have heard recently. Perhaps it is a term that you do not really understand (e.g., blog, wiki, Clusty, wifi, or retinal scan).
2. Research these new technology terms on the Internet by going to the following Web site: <http://online.onetcenter.org/search/t2/?s=&g=Go>.
3. Identify the new careers that support these terms, and write them down.
4. Complete some additional research on these careers by using the Internet and the career clusters.

