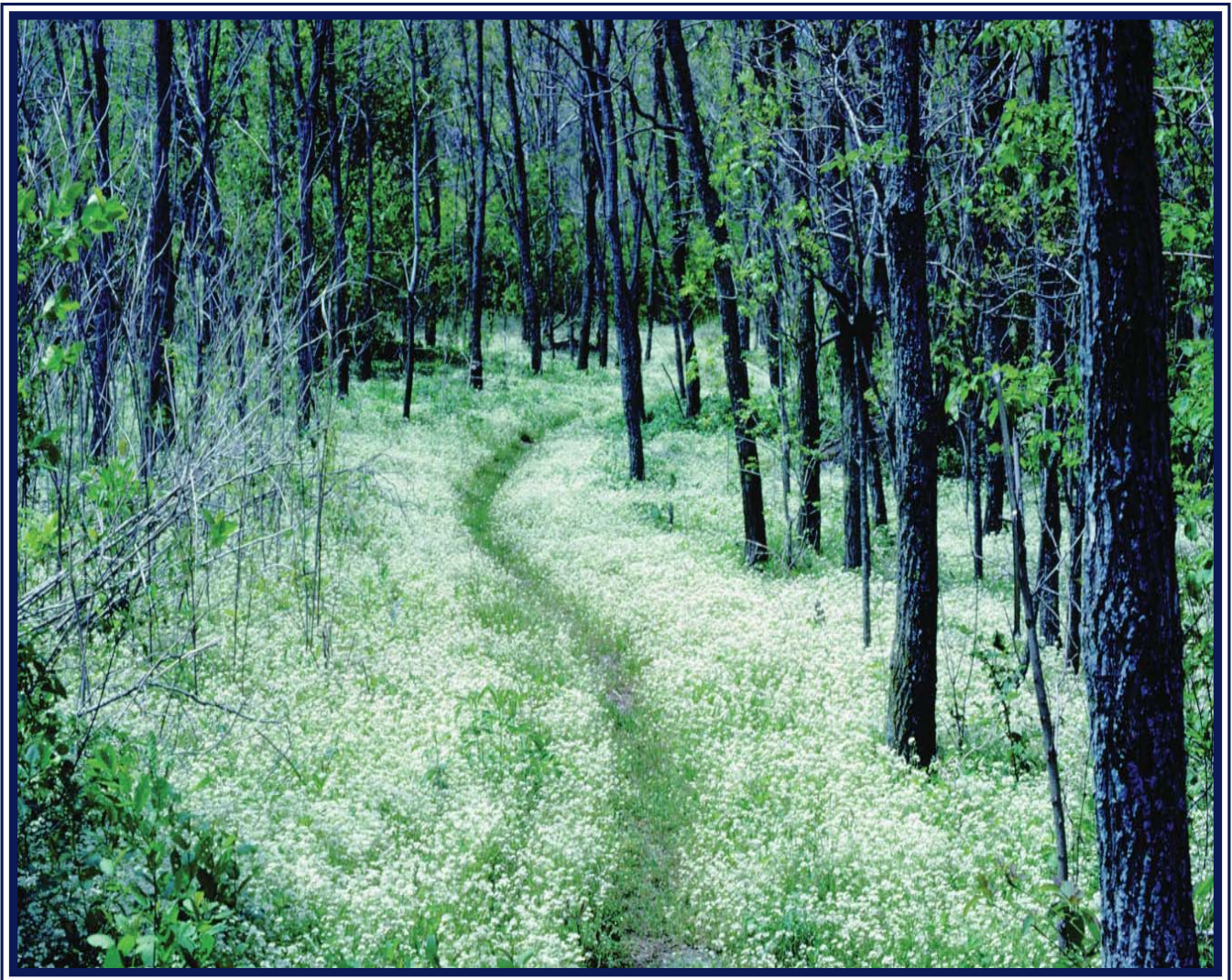


ready or not

A Teacher's Resource for *r u ready?*
and Career Education



*Revised 2009, fifth edition
Commonwealth of Virginia
Virginia Department of Education
Richmond, Virginia*

Cover photo: National Park Service

ready or not

a Teacher's Resource for
r u ready? and Career Education

Developed by

Career Connections
and the
CTE Resource Center

for

Office of Career and Technical Education Services
Virginia Department of Education
Richmond, Virginia

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Virginia Department of Education
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The Center is a grant project of the Virginia Department of Education, Office of Career and Technical Education Services, and is administered by Henrico County Public Schools, Department of Career and Technical Education.

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Introduction

Education, particularly secondary education, is concerned with preparing students for the future and for their transition to adult roles as citizens, parents, and members of the workforce. Frequently, career options are unfamiliar territory for students considering life after high school. They may not recognize the relationship of continuing education programs to career interests and employability skills. They are likely to need help in understanding the process of career choice or in recognizing the need to be a manager of one's own career within the ever-changing workplace. Happiness at work is often a direct result of making wise decisions about a career choice. Whether such decisions are reached by meticulously charting potential career paths or by the usual trial-and-error process of career "hopping," all students, including special-needs youth, require instruction to prepare them to enter and advance in their chosen careers—in the workplace arena where they are likely to spend most of their lives.

ready or not is a companion piece and implementation plan for *r u ready?*, the career guide developed by *Virginia Business* magazine in cooperation with the Virginia Department of Education. Both of these career education publications are designed to shed light on the nature of career development and to encourage students to participate in activities that will enable them to gain insight into the importance of this critical decision-making time of their lives. The major concept is that the next stage of their life will happen anyway...whether they are ready or not. They can get ready through an action plan that is the result of guided career study and exploration, or they can let their life and career just happen.

ready or not provides a flexible plan for using the national and state career classification system. Emphasis is placed on identifying personal strengths and relating these to statewide career opportunities and requirements. This teaching plan helps students adapt to a different, and often difficult, world of work. The relationships between academic and career/technical competencies are underscored, particularly in connection with the Virginia Standards of Learning. Both *r u ready?* and *ready or not* prepare students for career highs and lows as these occur in the ebb and flow of the workplace and of individual lives.

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How to Use This Teaching Plan

ready or not is an implementation tool for teaching the magazine-formatted guide *r u ready?* at the middle and/or high school level. The *r u ready?* guide and *ready or not* teaching plan may be taught or coordinated by a school counselor or an academic or career/technical teacher. The intent is for the local program administrator to work with business and industry organizations and individuals who represent specific career fields in presenting this information.

The primary purposes of *r u ready?* are to help teachers guide students through the decision-making process related to planning a career, to present the career classification system, and to apply this system to the many career opportunities in Virginia. In addition, the document contains helpful information on topics such as career decision-making, the job market, job-search skills, and postsecondary education. The Virginia Department of Education has distributed *r u ready?* to every 11th grader in Virginia’s public high schools. It is important to coordinate presentation of *r u ready?* and *ready or not* throughout the instructional period.

ready or not contains three major sections. Section I, “Mapping Your Journey,” includes objectives, process questions, and activities. In Section I, students learn the process of career choice and conduct a self-inventory of interests, aptitudes, and skills.

In Section II, “Exploring Career Clusters,” students explore in detail selected career clusters related to their interests, aptitudes, and abilities. A career cluster is a way of grouping occupations having a common core of knowledge and skills. The career cluster approach provides convenient “containers” of career information to present to students as they explore opportunities in Virginia. Within each career cluster, students also learn about the related pathways. For example, the Hospitality and Tourism career cluster includes the pathways of Lodging; Recreation, Amusements, and Attractions; Restaurants and Food/Beverage Services; and Travel and Tourism. A pathway is a broad, flexible subdivision of a career cluster that is specific enough to provide real-life occupational context. Within each pathway, students explore occupations, such as general manager within the Lodging pathway of the Hospitality and Tourism career cluster. Each career cluster description has four subsections. The first subsection, entitled “Inside Track,” provides a brief description of the essence of each of the 16 career clusters. The next two subsections briefly describe the major “Trends” and “Considerations” involved with each cluster. The last subsection, “Discussion Questions,” offers teachers a chance to begin a dialogue with their students about the career clusters.

Section III, “Striking Out on the Trail” features career exploration activities and a student checklist, “The Next Step.” The activities combine online interface and analysis of previously completed career study. Since the completion of the activities is dependent upon the students collecting information on their selected career cluster focus, students should refer to pertinent career cluster information from *r u ready?* and *ready or not*. The activities lead students to explore five career and education Web sites. In preparation for the Section III activities, teachers may wish to access the Web sites and familiarize themselves with these helpful career resources located on page 69.

Students should maintain all of their career work in a portfolio and complete the checklist entitled “The Next Step” on pages 71–72. All students enrolled in the unit or course should meet with a counselor, teacher, and/or person from the career field to discuss next steps toward a career—continuing exploration, work-based learning experiences, postsecondary education, and/or beginning employment in a pathway.

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Mapping Your Journey



Photo: National Forest Service

Finding the Who of You

Introduction

Consider developing a dialogue with students about the following: *Who are you?* A lot of people have a hard time answering that—even people well into adulthood. Still, your first thoughts may revolve around being a son or a daughter, a friend, an artist, an organized person, a dreamer, an animal lover, someone who loves the sound of a car engine. Think a little deeper. What kind of child or friend are you? How do you feel when you are working with clay, spending time with your dog, or fixing your car or truck? How do you feel when months have gone by and you haven't played your guitar? Can you work in an unorganized setting? What does all of this have to do with your career? And what about any significant personal problems you need to resolve before you can clearly focus on your plans? Before you can find a career you love, you must understand the *who* of *you*. That will mean being honest about who you are and what you value.

To frame the context of self-understanding in terms of a career:

- Define the term *career*.
- Analyze the importance of work/career.
- Identify career education within the school curriculum, extracurricular activities, at home, in the community, and through volunteerism.
- Analyze career as a personal choice.

Even if you already have a career in mind, it is wise to reexamine your personal values at this critical crossroad and make use of the most current resources available.

Objectives

1. Define the term *career*.

Definition should include different aspects of *career*, such as

- a progression of related jobs or work experiences that encompasses employment, continuing education, and personal growth
- an expression of lifestyle and personality
- a responsibility to family, community, and society
- a goal or aspiration.

Process Questions

Can a career just happen, or do you have to plan it?

What are the advantages and disadvantages of career planning?

As a student, when should you start planning your career?

What are some reasons that people change careers?

What might a change of career entail?

What are some of the consequences of failing to plan a career?

Can you name some events that might spark future career planning as you get older?

Notes

2. Analyze the importance of work/career.

Identification should include

- definitions of *work* and *job*
- potential benefits of work/career
- personal reasons for working.

Work: the physical or mental effort or activity directed toward the production or accomplishment of an objective. Work means different things to different people; one person's work is another's play.

Job: A specific situation in which a person performs particular tasks or duties (work) for compensation. A person is employed to work at a specific job.

Process Questions

Aside from income, what else can a job provide?

What do you know about the kinds of health insurance and ways to attain it?

What is the difference between a job and a career?

How would you describe a good job? A bad job?

3. Identify career education within school curriculum, in extracurricular activities, at home, in the community, and through volunteerism.

Identification should include personal examples of direct and indirect career education occurring in each of the five settings:

- school
- extracurricular activities
- home
- community
- volunteerism

Process Questions

What are some examples of commonly available sources through which you may learn more about careers?

What are the benefits of exploring a variety of activities and interests?

Why do you think career education is often not emphasized in the academic education setting? Would you like to see that change? Explain.

What does volunteerism mean to you?

4. Analyze career as a personal choice.

Analysis should involve each student taking the initiative to understand his or her personality/character traits. Some means for self-analysis are

- introspection
- journal
- personal value inventory
- peer response
- personality assessment
- consultation with parent/guardian
- consultation with teachers/counselors.

Process Questions

What does understanding your personality have to do with making career decisions?

Why is it important to listen to advice from others?

What is the most important source of advice and information for you: family, friends, media, or school? Other sources? Explain.

Why is it important to formulate your own decisions once you have considered advice from others?

What might be the consequences of allowing someone else to "make up your mind" for you?

What are the consequences of choosing a career that allows you to do what you love? Of not choosing a career that allows you to do what you love?

Activities

Activity: How We See Ourselves, How Others See Us

Have students construct a two-column list. In the left column, have students describe themselves using single adjectives and check off the words that they think others would agree with. In the second column, have students explain how others may have different impressions of them from how they view themselves.

Notes

As a class, discuss the difference between how we perceive ourselves and how others perceive us.

Activity: The Good Stuff

Have students write a descriptive paragraph about their most positive abilities and traits. Then have students explain how they express these (i.e., through service, sports, extracurricular activities, art, or hobbies). Now have them list a number of jobs in which they might be rewarded for applying these abilities and traits. Teachers should emphasize the connection between personality and interests and the potential careers of their students. Develop a discussion about the distinct benefits of each person pursuing a career in which he or she uses his or her gifts and shares them with the world.

Activity: Learning Is Everywhere

Have students identify examples of career education occurring in their daily lives, either directly or indirectly. Have them list several events that have taught some potentially valuable career-building skills. After students have identified several examples of each, ask them the following questions:

- *Why is career education needed?*
- *What are the primary goals of education?*
- *Can a person have a job and not a career? Explain.*

Activity: Who Am I?

Have students complete an online personality self-assessment.

Have students critique the assessment by

- gauging the accuracy of the assessment
- summarizing what they learned about themselves.

Resources for Self-Assessment

(Other resources may be used.)

Kuder: Virginia's Career Planning System

<http://va.kuder.com/>

The Keirsey Temperament Sorter II

www.advisorteam.com/user/ktsintro.asp

Activity: Matchmaker—You and a Career

Give each student two notecards. On one notecard, have students write the names of three careers that interest them. Give each student a copy of the handout, "Career Value Descriptions." On the second notecard, have the students rank the 10 career values described on the handout (1 = highest/most important; 10 = lowest/least important).

Go around the room, and have each student read his or her list of job titles, and, as a group, assess the relationship between career interests and career value descriptions. In other words, you are trying to determine if job titles and descriptions fit the value system of the individual being assessed. If not, what is compromised? Why? Why is it important to understand compromise? Talk about possible short-term and long-term consequences of such compromise. Have students share stories about people they know or have heard about whose compromises have affected them in negative and in positive ways.

Activity: Nontraditional Careers

Have students visit www.ctetrailblazers.org, click on Project Leaders, then Resources: Which CTE Courses Are Nontraditional? Direct students to explore the nontraditional careers. Have students select one or more they may be interested in and research it in the online Occupational Outlook Handbook: www.bls.gov/oco. Have a classroom discussion about what they discovered. Points to talk about: *Are students interested in a nontraditional career? Why or why not? Did they learn anything they did not know before?*

Notes

Handout: Career Value Descriptions

Security

Security is important for everyone. If you rank the security value highly, it means that you prefer an occupation that is stable, predictable, and has some permanence rather than one that is risky, changeable, and subject to seasonal demands. You prefer to work for a well-established company, quite possibly in areas that are basic to human needs and not likely to become obsolete. For example, hospitals, military service, and civil service are areas that have a degree of stability and an ongoing need for employees.

Personal Integrity

If you rank personal integrity highly, you will not be satisfied with any type of work that does not reflect your personal morals and ethics. You may narrow your career choices to ones with high ethical standards and ones in which you can take pride.

Recognition

If you rank recognition highly, you prefer occupations that put you in the spotlight. Status and recognition can come from a variety of sources, such as power, intelligence, money, or social usefulness. Keep in mind, however, that status and recognition depend on how well you do your job, not on job title alone. Being in a position of recognition may also make you vulnerable to criticism.

Adventure

If you rank adventure highly, then trying out new ideas and taking thought-out risks appeal to you, as do occupations requiring you to travel to other cities, states, and countries. You would not be satisfied with a job that requires a rigid schedule or strict deadlines.

Economic Reward

If you rank economic reward highly, your primary purpose for working is to make money. People with high economic reward values spend many hours on the job. Sometimes their hard work in the pursuit of making money results in their having limited time for family, friends, social activities, and hobbies.

Self-Expression

If you rank self-expression highly, you value creativity. You want a career that will enable you to put your own ideas to work. You like to make your own choices and decisions regarding how to perform your work. Artists, writers, musicians, and actors share this value.

Helping Others

If helping others ranks highly, careers in teaching, medicine, social work, and the clergy may appeal to you. Some other pathways to consider are politics and protective services.

Relationships

If friendship and companionship rank highly, you will enjoy a job that involves working closely with others. Being part of a friendly and congenial work team appeals to you; working in isolation does not.

Leadership

If being in charge ranks highly, occupations that complement leadership skills may appeal to you. You prefer to plan and organize tasks for others to complete. You have no desire to take orders or to be assigned tasks. Entry-level leadership positions, though limited, can be found in many career fields. Be prepared to pursue higher education however, to develop your leadership skills.

Autonomy

If your freedom or independence ranks highly, you may enjoy entrepreneurial occupations. Free-lance artists, writers, tutors, and consultants pick their own working hours. Because they are independent workers, they can also pick and choose the company or individual(s) for whom they will work. However, independent workers do not receive company fringe benefits, such as sick pay, vacation time, life insurance, retirement, or hospitalization.

Introduction

This section encourages students to link what they know about their individual interests, values, and talents to career potential. Students will focus on the whole of *r u ready?* by

- outlining *r u ready?*
- explaining the relationship between a career choice and “living within your means”
- identifying personal career education strategies.

“Looking at the Map” emphasizes decision-making skills, organizational strategies, and planning. By following the activities in this section, students should begin to narrow the field of opportunity. A sample outline of *r u ready?* appears at the end of “Looking at the Map.”

Objectives

1. Outline *r u ready?*

The student’s informal outline should include the following headings along with brief descriptions of each. (Sample appears at the end of this section.)

- Letter from Governor Kaine
- Web Site Directory
- Use the Web
- Career clusters provide pathways to success
- Sixteen career clusters
- Options to get ahead while still in high school: A career-orientation class
- Connect school to real life through work-based learning
- Don’t limit your options... explore nontraditional careers
- Work-based learning through volunteerism
- It’s your money, so manage it well
- Commonwealth Scholars: from competence to excellence
- Virginia colleges and universities
- Earn while you learn: apprenticeship programs open doors
- Finding ways to pay for the journey
- Students learn sustainable-design skills
- Map out your teaching adventure
- Loudoun governor’s academy meets work-force needs
- Governor’s career and technical academies give students a step up
- IGNITE brings women and technology together
- Job vs. career: finding the right path
- Your résumé: An instant introduction
- Making the right impression: Behavior tips for interviewing and the workplace
- Don’t let senioritis keep you from reaching the summit

- Choosing your own path: Options after high school
- Career and technical schools: getting the right amount of education
- What to pack for college
- Career coaching: Why head off on the career journey alone?
- Military education options

Process Questions

After reading r u ready?, what new information did you learn?

What is the most interesting aspect of your career search? Why?

Can you describe some unique jobs?

After reading about work-based learning and the two profiles of volunteers, would you consider any of these options? Explain.

How are you planning for the next phase of your life?

2. **Explain the relationship between a career choice and the quote “the most humble thing in life is to live within your means. The sooner you learn it, the quicker you’re going to be successful.” — James Shepherd, in “It’s your money, so manage it well”**

Process Questions

What is the relationship between integrity and living within your means?

Have you ever developed a budget?

Do you think it is important to have a savings account? Why, or why not?

What are the most important concepts you learned from the article “It’s your money, so manage it well” ?

How would you relate this article to the current economic climate?

3. **Identify personal career education strategies after reading “Use the Web to start planning your career path” and exploring the Web site: www.knowhowvirginia.org.**

Process Questions

Can you name ways in which you are currently working toward your future career?

Have you participated in or experienced any of the following? If so, please describe.

- internship
- mentorship
- co-op education
- student organizations
- part-time job
- study abroad
- volunteer work
- Tech Prep programs
- job shadowing
- job fair
- media sources concerned with the job market and employment

Activities

Activity: Either/Or

Give students a list of “either/or” questions to help them understand their priorities. Begin with “Which is more important to you...”

- earning a good salary or spending time with your family?
- being a big fish in a small pond or a small fish in a big pond?
- achieving awards and recognition or being well liked at work?
- having job security or the chance to quickly move up the career ladder?
- maintaining low stress at work or tackling difficult jobs?
- being a good leader or being a good team player?
- being competitive or being supportive?

Notes

- working in the field or working behind a desk?
- helping others or helping your business?
- success now or success later?
- moving around or staying in one place?
- working for someone else or working for yourself?
- having a steady income or the chance for larger amounts all at once?
- being good at many different tasks or being an expert at one?
- being master of your domain or seeking out new challenges?"

Note: Most of the above are not opposites. Prioritizing values is crucial when both options are similarly desirable.

Using their responses, have students rank each of their answers from most important to least. Before they begin, tell them not to think about any specific career they may already have in mind. Explain that this allows them to objectively decide what they value.

Activity: Recap

Group students, and have each group deliver an oral report to the class on one of the main topics from their outline of *r u ready?*.

Activity: Classifieds

Have students search the employment want ads. Have them bring to class any ads for entry-level jobs that interest them. At least one of those ads should be for a job they might be qualified for after graduation from high school. Have students gather in pairs or small groups to talk about the reasons they selected the jobs and if/how the jobs reflect their priorities in the "Either/Or" activity. Follow up with an informal class discussion addressing the influence of priorities on job choice and vice versa.

Activity: The Clubs

Have students investigate the official student organizations and clubs at their school. Often, joining a club in a prospective field of interest can lead to networking and learning from professionals already working. Provide an opportunity for students to talk about organizations and clubs they belong to or would like to join, in relation to their field of work interest.

Activity: Career Day

Invite someone from the community who has an interesting job or career, and have him or her talk about the following:

- high school experience
- career education experience
- how he/she attained current position
- work and training experience
- description of current position
 - duties/responsibilities
 - misgivings
 - opportunities
 - future plans

Allow students to ask the speaker questions. Have students discuss the topics that interested or affected them.

Activity: Hitting Home

Have students interview a working adult within their own family or community using the same topics and criteria as the "Career Day" activity. This will allow each student more opportunity to delve into specific information about a career and how that career may affect his or her life. It may also help make the student aware of career resources existing within his or her community or family.

Note: As a safety measure, tell students to conduct the interview in a non-isolated setting if interviewee is not a trusted family member or friend. Phone and e-mail interviews may be an option.

Notes

Sample Outline of *r u ready?*

r u ready? is a guide to careers and continuing education designed primarily for high school juniors. However, it is appropriate to other high school grade levels as well as middle school levels for beginning career exploratory activities. The following is a brief outline and explanation of each topic in the *r u ready?* directory.

1. **Letter from Governor Kaine**—Celebrates Virginia’s educational standing in the nation
2. **Web Site Directory**—Provides an entire page of career, industry, job search, education, internship, tuition, volunteering, and military Internet resources
3. **Use the Web**—Highlights four Virginia Web sites that help you plan your career path
4. **Career Pathways Provide Pathways to Success**—Explains how Career Clusters work and includes related Web sites
5. **Sixteen career clusters**—Describes the career clusters with projections and resources:
 - A. Agriculture, Food & Natural Resources
 - B. Architecture & Construction
 - C. Arts, A/V Technology & Communications
 - D. Business Management & Administration
 - E. Education & Training
 - F. Finance
 - G. Government & Public Administration
 - H. Health Science
 - I. Hospitality & Tourism
 - J. Human Services
 - K. Information Technology
 - L. Law, Public Safety, Corrections & Security
 - M. Manufacturing
 - N. Marketing
 - O. Science, Technology, Engineering & Mathematics
 - P. Transportation, Distribution & Logistics
6. **Options to get ahead while still in high school: A career-orientation class**—Discusses “Early College Scholars,” “Get Training Now,” and “High School Industry Credentials”
7. **Connect school to real life through work-based learning**—Examines job shadowing, mentorship, internship, service learning, and cooperative education
8. **Don’t limit your options... explore nontraditional careers**—Addresses nontraditional careers, what it means and what they are
9. **Work-based learning through volunteerism**—Highlights three well-known programs and profiles two young women’s experiences as volunteers
10. **It’s your money, so manage it well**—Features five steps to managing your money
11. **Commonwealth Scholars: from competence to excellence**—Explains the initiative that encourages and rewards students who follow a rigorous course of high school studies
12. **Virginia colleges and universities**—Lists the names and Web sites of every private, public, and community and junior college in Virginia
13. **Earn while you learn: apprenticeship programs open doors**—Details apprenticeship programs and includes four Web sites
14. **Finding ways to pay for the journey**—Provides detailed information and resources about scholarships, grants and loans, military student aid, and college savings plans
15. **Students learn sustainable-design skills**—Profiles the “green” residential building program at the Charlottesville Albemarle Technical Education Center (CATEC)
16. **Map out your teaching adventure**—Details steps to take and resources to use to become a teacher
17. **Loudoun governor’s academy meets work-force needs**—Features the academy that opened in the fall of 2008: how the academy worked with regional and state employers to identify work-force needs and created four career paths
18. **Governor’s career and technical academies give students a step up**—Outlines six academies created by Governor Kaine to improve the state’s education in science, technology, engineering, and mathematics (STEM)
19. **IGNITE brings women and technology together**—Explains the program of Inspiring Girls Now in Technology Evolution

20. **Job vs. career: finding the right path**—Answers the question “What’s the difference between a job and a career?” and points the way to launching a career
21. **Your résumé: An instant introduction**—Provides information, resources, and an example for preparing a résumé
22. **Making the right impression: Behavior tips for interviewing and the workplace**—Explores the importance and how-to of making a good first impression
23. **Don’t let senioritis keep you from reaching the summit**—Offers “action steps” to take to keep seniors moving toward their goals
24. **Choosing your own path: Options after high school**—Summarizes the big-picture of the career and college paths presented throughout the magazine, *ru ready?*
25. **Career and technical schools: getting the right amount of education**—Gives students the exact information they need to assess their options with career and technical schools
26. **What to pack for college**—Lists the practical essentials to pack for college
27. **Career coaching: Why head off on the career journey alone?**—Introduces the career coach as someone whose sole purpose is to help students explore career and postsecondary educational options and come up with a career plan to follow
28. **Military education options**—Examines the military as a means of attaining an education

Planning for the Adventure Ahead

Introduction

Once students begin to identify their skills, values, and interests and gravitate toward a career cluster or pathway, there are a few practical concerns for them to consider before they begin designing a particular career path.

This section focuses on job-market information and emphasizes real-world concerns. If the previous two sections are about imagining what is possible, this section is about forming a plan to accomplish goals.

“Planning for the Adventure Ahead” encourages research on topics in the economic and industrial climate of the local region and the ways these factors can influence the job market. It also allows students to begin thinking about their target income and level of training and education. There are only three objectives in this section, and yet students should consult them time and again when considering future occupations. Students should be taught

- to analyze cost-of-living in relation to income
- to plan for the unknown
- to determine worker characteristics currently sought by employers
- to analyze aspects of hiring trends.

Objectives

1. Identify issues of instability in the economic and social sectors.

Identification should include basic facts of the Emergency Economic Stabilization Act of 2008 (commonly referred to as a bailout of the U.S. financial system) and the implications for your personal life.

Process Questions

How might a climate of economic uncertainty affect your educational goals, job search, medical insurance, and job/career?

What steps can you take to achieve a greater degree of stability?

What resources can you find to help you retain stability in critical areas of your life?

What can you do if things spiral out of control? What are ways to cope to get you and your life back in control?

Advice from Year’s Gone By

The Great Depression Era

Self-preservation was something that was instilled in Thelma Crump Wilson of New Kent, Virginia early on in life. Born in 1911, she spent her childhood in “Big Sky” country Montana where homesteaders had no choice but to be self-sufficient in every way. She was a young woman during the Great Depression of the 1930s. Her motivation was ingrained early on when you had to do what you could to survive. “You don’t blame others,” she said. “You don’t depend on others. You just get up and do. It’s not what happens to you; it’s how you let it affect you.” —“Portrait of a Pioneer” by Karen Mountcastle-Westermann

Notes

Money Tips for an Economic Crisis

- Concentrate on necessary expenses, and make a detailed budget every month.
- Develop the practice of saving some money each month, even if it is \$10.
- Get rid of the credit cards as soon as you pay them off, then pay cash.
- Do not buy anything costly, be it a car or a house, unless you are overflowing with excess cash.
- Wherever possible, use public transportation.
- Make a grocery list and don't deviate. You'll save a bundle and you'll also improve your health by no longer buying junk food and sweets. Don't grocery shop when hungry.
- Get rid of small expenses that add up.
- Check your phone bill's extra features and eliminate them.
- Bottom-line: Be smart and be prepared. There are many more places you can probably squeeze more dollars from things such as utility bills, big ticket purchases, and holiday shopping.

Resources

Jean Chatzky: Personal finance expert

www.jeanchatzky.com

Federal Reserve

www.federalreserve.gov

Suze Orman: Personal finance expert

www.suzeorman.com

Jane Bryant Quinn: Personal finance columnist and author

authors.simonandschuster.com/Jane-Bryant-Quinn/9715

Virginia Department of the Treasury

www.trs.virginia.gov

2. Analyze cost-of-living in relation to income.

Analysis should focus on current major factors that comprise "cost-of-living" in Virginia and the impact of

these factors on a person's ability to earn a living.

Process Questions

What is the relationship between salary/pay and consumer habits and goals?

What are some cost-of-living elements you can control?

What are some cost-of-living elements you cannot control?

What is meant by good credit rating, and what can it do for you? How can a bad credit rating hurt you?

What is debt? What is savings?

3. Determine worker characteristics currently sought by employers.

Identification must include strong work ethic, positive attitude, independence and initiative, self presentation, flexibility, communication, and continuing education.

Process Questions

What are actions and behaviors that demonstrate a strong work ethic?

What does having a positive attitude mean in terms of work behavior?

How do you demonstrate independence and initiative at work?

What is the relationship between self-image and self-presentation skills?

How do you acquire and demonstrate flexibility and communication skills?

What are some forms of continuing education?

Why do employers seek out employees with the characteristics named above?

Why are interviews just as beneficial for the applicant as they are for the employer?

Notes

What are some shortcomings of the interview process?

4. Analyze aspects of hiring trends.

Analysis should address the major factors in the job market, such as

- economy
- political climate
- geographical location
- consumer trends
- salary
- openings/closings
- job security
- job longevity
- training/education
- technology trends.

Process Questions

What are the major trends influencing business and industry today?

Aside from additional training, what is the value of a college degree today?

Of the job-market factors in the bulleted list above, which are the ones you can control and which are the ones you cannot? Why or why not?

What is the World Trade Organization (WTO), and why are its meetings commonly protested?

What are the world's most powerful economic markets?

Why is it in the government's interest to educate its citizens?

How do immigration and naturalization policies affect the labor pool?

Activities

Activity: Cost of Living

Have students compose a list of "cost-of-living" items (e.g., cost of a gallon of milk, a dinner at a restaurant, a pair of dress shoes, tuition at a 4-year college, tuition at a 2-year community college, car payment and insurance, rent, mortgage payment and insurance, health insurance, income tax percentage, social

security percentage, and others). Divide the items among class members, and have them find the cost of each item 10 years ago and at present. Then have them project the cost of those same items 10 years into the future.

Note: In most cases, items should be specific (i.e., not just a car payment, but an average payment on a new Honda Civic or a Ford Escape Hybrid for example). To estimate payments, the students must take into account loans and interest rates.

Resources

Car Loan Calculator

<http://calculator-loan.info/car-loan-calculator.php>

Consumer Price Index (Bureau of Labor Statistics)

www.bls.gov/cpi

Federal Consumer Information Center

www.pueblo.gsa.gov

Inflation Conversion Factors for Dollars 1665 to Estimated 2018 (Robert Sahr, Oregon State University)

www.oregonstate.edu/cla/polisci/faculty-research/sahr/sahr.htm

Mortgage and Real Estate Calculators

www.realestateabc.com/calculator/html?art=bc_financial

Activity: Profile of Success

Have the class select several job titles and describe the personality traits associated with the workers who hold these jobs. Sample job titles might include but certainly are not limited to

- firefighter
- attorney
- medical doctor
- brick/stone mason
- advertiser

Notes

- marketing professional
- salesperson
- truck driver
- architect
- graphic artist
- electrician.

Reinforce the connection between personality and job skills by explaining that when members of the workforce have jobs that reflect their personality traits and values, they are more likely to keep those jobs and become successful.

Activity: Mock Job Interview

Conduct a mock interview. Select a panel of students to interview job applicants. Decide on the company and the company vision. Have the panel members form a list of questions for the applicants. Choose several students to interview for the job. Lead the class in a critique of the interview process, and form a list of *do's* and *don'ts*. To conclude the exercise, have the panel choose one of the applicants for the position. Have the class critique the panel's decision and decide if the best applicant was chosen.

Notes

Exploring Career Clusters



Photo: National Park Service

How to Use This Section

Objectives

The 16 Virginia career clusters reflect those defined by the United States Department of Education. Career clusters were created as a means of grouping occupations that have a core of common knowledge and skills that result in an occupational framework for organizing careers. By grouping occupations in this way, students may find it easier to see the connections among diverse occupations within the cluster. By understanding relationships that exist among occupations, students may subsequently broaden their interests, discover alternative career pathways, and envision career pathways that were not evident before their career cluster investigation began. Most importantly, using the career clusters, students can begin to narrow their focus from a general level to a more specific job title search.

Description of Elements

Each career cluster summary in *ready or not* contains four main elements. “Inside Track” introduces the career cluster and describes the personality types of those who normally fill the jobs associated with the cluster. “Trends” predicts opportunity growth or decline in each cluster so that students may realistically judge the level of competition for jobs and, subsequently, judge the potential market value of those jobs. “Considerations” contains critical information about basic working conditions and ethical concerns associated with employment in the career cluster. To make a responsible career choice, students should be made aware of the personal sacrifice that all work demands. “Discussion Questions” lists a number of thought-provoking questions that encourage students to further analyze issues associated with each career cluster. Teachers may use these questions to help students begin to identify classmates who may share common interests and to help students begin a more in-depth examination of the career cluster at hand. In addition, to encourage students to make the leap from the general career cluster to a specific career, a listing of “Pathways and Job Title Samples” has been posted as a sidebar. Teachers should note that a **pathway** is defined as a broad and flexible subdivision of a career cluster that is specific enough to provide real-life occupational context. The information included in the *ready or not* career clusters supplements and supports *ready?*.

Note: It is important to mention that the information described above was determined before the economic downturn of 2008. While projections are made through 2016, the predictions for the next couple of years at least will likely vary from those stated. For students planning careers, it is good to keep in mind that innovative, keener, and transparent strategies—and the skills to carry them out—will be essential to navigate the job market during these uncertain economic times.

Procedure

Teachers may give a general overview of each career cluster by using the discussion questions and then divide the class into groups for a deeper study of particular clusters. Supporting information from this section should be duplicated and distributed to students assigned to further investigate the career cluster of choice. The structure for their investigation is contained in the next section, “Striking Out on the Trail,” the major culminating activity of this career education unit.

One of the major things of which students should be made aware in their general career cluster investigation is the extent to which similar jobs can be found in more than one cluster. For instance, if a student is interested in biochemistry, he or she might gravitate to career clusters as diverse as Agriculture, Food and Natural Resources; Health Science; Science, Technology, Engineering and Mathematics; Government and Public Administration; or Education and Training.

Another interesting concept is that of “similar characteristics occupations” wherein a skill set can cross a wide range of careers. This is explored in “Striking Out on the Trail.”

Sources

The information contained in this Career Cluster section was gathered from six major sources.

Occupational Outlook Handbook

from The United States Department of Labor, Bureau of Labor Statistics
www.bls.gov/oco

O*NET OnLine

<http://online.onetcenter.org>

Overview of Bureau of Labor Statistics by Industry

from The United States Department of Labor, Bureau of Labor Statistics
www.bls.gov/bls/industry.htm

States' Career Clusters

www.careerclusters.org

Virginia Employment Commission

www.vec.state.va.us

Virginia Career VIEW

www.vacareerview.org

Agriculture, Food & Natural Resources

Inside Track

Agriculture, Food and Natural Resources career cluster attracts people who are hardworking and physical, independent, consistent, resilient, and self-reliant. At its core, this career cluster is focused on predicting and managing patterns in nature. Industries within this cluster include farming, mining, logging, forestry, animal health/science, agriscience, aquaculture, fishing, ecology, conservation, and geology.

The agricultural production industry consists of noncommercial and commercial farms. Commercial farms, though few in number, make up about 90 percent of total agricultural sales. Among wage and salary workers, the single most common occupation belongs to farmworkers, who make up about 46 percent of the entire sector.

Instructional programs in agriculture and natural resources deal with the growth and harvest of crops for commercial and scientific purposes, the raising and training of animals, the health of plants and animals, the use of natural resources, the management of agricultural businesses, and the production of agricultural goods.

Since the 1950s, both agricultural employment and the number of farms have dropped significantly because of mechanization and other technological advancements. Although approximately one-third the number of farms exist today as compared to 50 years ago, output has more than doubled, exports of agricultural goods continue to contribute positively to the trade balance, and agricultural production remains one of the nation's top 10 industries in terms of total employment.

Trends

Overall employment of agricultural workers is projected to undergo little or no change over the 2006–2016 decade. Employment in forestry, conservation, and logging is expected to experience little or no change through 2016. Employment in the fishing industries however is projected to decline rapidly as regulations relating to the replenishment of fish stocks reduce allowable fishing.

The end of the 20th century witnessed the near disappearance of the family farm and the emergence of the commercial farm. Farm workers will increasingly work for farm labor contractors rather than being hired directly by the farm.

New developments in the marketing of milk and other agricultural produce through farmer-owned and operated cooperatives hold promise for some dairy and other farms.

Organic farming has seen many gains. Organic food production is the fastest growing segment in agriculture. From the money standpoint, the news is excellent, for example with organic dairy farms. More organic grain farmers are in demand to produce feed for organically raised livestock.

Nursery and greenhouse workers should have a rapid job growth, reflecting the increasing demand for landscaping services.

Niche farming, defined as a small segment of a market that is targeted by those individuals who have a specialized product to sell, is

Pathways and Job Title Samples

Pathway: Agribusiness Systems

Agricultural Chemical Dealer
Agricultural Commodity Broker
Agricultural Economist
Agricultural Loan Officer
Agricultural Products Buyer-Distributor
Agricultural Salesperson
Chemical Sales Representative
Dairy Herd Supervisor
Entrepreneur
Farm Manager
Farmer-Rancher-Feedlot Operator
Feed-Supply Store Manager
Field Representatives for Bank,
Insurance Company or Government
Program
Livestock Manager
Sales Manager

Pathway: Animal Systems

Animal Caretaker
Animal Geneticist
Animal Husbandry Worker
Animal Nutritionist
Animal Scientist
Aquaculturalist
Artificial Insemination Technician
Dairy Producer
Equine Manager
Feed Sales Representative
Livestock Buyer
Livestock Inspector
Livestock Producer
Poultry Manager
Physiologist
USDA Inspector
Veterinarian
Veterinary Assistant
Wildlife Biologist
Zoologist

Pathway: Environmental Service Systems

Agricultural Educator
Chemical Engineer
Environmental Science Technician
Geoscientist
Hazardous Materials Handler
Health and Safety Sanitarian
Pollution Prevention Technician
Recycler
Toxicologist
Waste Technician
Water Quality Manager

Pathway: Food Products and Processing Systems

Agricultural Communications Specialist
Agricultural Salesperson
Biochemist
Butcher
Dietician

Pathways and Job Title Samples

Food and Drug Inspector
Food Meal Supervisor
Food Processor
Food Scientist
Meat Cutter-Meat Grader
Meat Processor
Nutritionist Bacteriologist
Produce Buyer
Quality Control Specialist

Pathway: Natural Resources Systems

Cartographer
Commercial Fisherman
Ecologist
Fish & Game Officer
Fisheries Technician
Forest Manager
General Operations Manager
Geology Technician
Landscape/groundskeeper
Logger
Microbiologist
Mining Engineer
Natural Science Manager
Park Manager
Park Technician
Range Manager
Surveyor
Water Monitoring Technician
Wildlife Technician

Pathway: Plant Systems

Agricultural Journalist
Agriculture Lender
Biological Technician
Botanist
Certified Crop Advisor
Commodity Marketing Specialist
Farmer
Farm Worker
Floral Designer
Florist Manager
Forest Geneticist
Geneticist
Golf Course Manager
Greenhouse Manager
Grower
Ornamental Horticulturist
Plant Breeder
Plant Pathologist
Rancher
Soil/Water Specialist
Tree Surgeon

Pathway: Power, Structural & Technical Systems

Agricultural Educator
Agricultural Engineer
Agriculture Equipment Operator
Communication Technician
Database Administrator
Electrical Engineering Technician
Electronic Systems Technician
Equipment/Parts Manager

another way to profit. Creative, entrepreneurial undertakings, such as setting up small shops with homemade farm products, demonstrations, and hay rides during pumpkin season can boost farm income as well.

The agriculture industry also is expected to face increased competition from foreign countries and rising imports, particularly from Central America, owing to the passing of a free trade agreement with that region.

While the demand for natural resources such as coal and oil continues to rise, so has the need to develop better technologies to locate and drill for new energy sources. There is also an increasing thrust to develop alternative forms of fuel and greater conservation methods.

Fishers face growing restrictions on where they can fish and how much they can harvest, because many fisheries (fish habitats) have been depleted due to years of overfishing. Employment in aquaculture has been growing steadily over the past 12 years in response to growth in the demand for fish. However, competition from imported fish and an unsettled regulatory environment that is placing restrictions on some fish farms may slow the growth of this sector of agriculture.

In forestry, imports of wood and wood products are expected to continue to grow.

Considerations

- Agricultural and mining work is extremely demanding and labor intensive.
- Workers are often expected to perform their duties without close supervision in rural and remote areas. If contact with other people is not a passion, but the worker enjoys the company of animals/nature, farm life might be a good fit.
- Beware, a fondness for animals will only take the worker so far. There is great skill in understanding how to treat and relate to animals in an effective and safe manner.
- Genetic manipulation and hormonal alteration have increased production dramatically, but questions remain about the potential residual effects and implications these drugs and procedures may have over long-term use.
- Coupled with pesticides, erosion, nitrogen depletion, flood plain expansion, unpredictable weather events, and pollution and waste issues, agricultural production is a serious endeavor that demands a great deal of planning and discipline.
- In the natural resources area, one must consider the ethical and economic ramifications of steadily depleting resources. Nowhere is this more apparent today than with deforestation and the gradual disappearance of federally protected lands. Finding workable solutions to all these problems is one of the most challenging agricultural/scientific occupational areas.

Discussion Questions

Approximately one-third the number of farms exist today as compared to 50 years ago; however, output has more than doubled and agricultural

production remains one of the United States' top 10 industries in terms of total employment. How is this possible?

Why are hourly wages often deceptive when considering a job in the agricultural field?

What are some of the pros and cons of working conditions in the Agriculture, Food and Natural Resources career cluster?

What may the future hold in store for the Agriculture, Food and Natural Resources industries?

What is the status of small, independent, local farmers, including organic and specialty farmers?

Pathways and Job Title Samples

GPS Technician
Heavy Equipment Maintenance Technician
Information Lab Specialist
Machine Operator
Machinist
Parts Salesperson
Recycling Technician
Remote Sensing Specialist
Waste Water Treatment Plant Operator
Welder

Inside Track

Architects are licensed professionals trained in the art and science of building design who develop the concepts for structures and turn those concepts into images and plans. Many of those attracted to careers in architecture and construction are naturally disposed to structured thinking and are focused on building. They enjoy seeing their plans, work, and materials successfully come together. In its essence, construction is a reaction to fulfilling a basic individual need for shelter and an ever-increasing social need for infrastructure. Form and function come together to tailor structures and accessories with design elements to suit their inhabitants or users.

Houses, apartments, factories, offices, schools, roads, and bridges are only some of the products of the construction industry. This industry's activities include work on new structures, as well as additions, alterations, and repairs. Architects may be involved in every phase of construction, but primarily their skill involves vision and design. The construction industry is divided into three major segments. The construction segment includes contractors, usually called general contractors, who build residential, industrial, commercial, and other buildings. Heavy and civil engineering construction contractors build sewers, roads, highways, bridges, tunnels, and other projects. Specialty trade contractors perform specialized activities related to construction such as carpentry, painting, plumbing, and electrical work.

Trends

Employment of architects is expected to grow faster than the average for all occupations through 2016. Keen competition is expected for positions at the most prestigious firms, and opportunities will be best for those architects who are able to distinguish themselves with their creativity.

The number of wage and salary jobs in the construction industry is expected to grow 10 percent through the year 2016, compared with the 11 percent projected for all industries combined. Employment in this industry depends primarily on the level of construction and remodeling activity which is expected to increase over the coming decade. Employment is expected to grow faster in nonresidential construction over the decade. Employment in heavy and civil engineering construction is projected to increase due to growth in new highway, bridge, and street construction.

Although employment in construction trades as a whole is expected to grow about as fast as the industry average, the rate of growth will vary by trade. Employment of tile and marble setters; construction and building inspectors; and heating, air-conditioning, and refrigeration mechanics and installers is projected to grow faster than the industry average because their specialized services will be in greater demand. On the other hand, employment of carpet installers; construction laborers; floor sanders and finishers; insulation workers; paperhangers; plasters and stucco masons; and tapers are expected to grow more slowly than that of the construction industry as a whole because either their specialty is not in great demand or they are becoming more productive.

Pathways and Job Title Samples

Pathway: Construction

Bricklayer
Cabinetmaker
Carpenter
Civil Engineer
Code Official
Concrete Finisher
Construction Engineer
Construction Equipment Operator
Construction Foreman/Manager
Construction Inspector
Design Builder
Drywall Installer
Electrician
Electronic Systems Technician
Equipment and Materials Manager
Estimator
General Contractor/Builder
Heating, Ventilation, Air Conditioning
and Refrigeration Mechanic
Mason
Painter
Paperhanger
Plumber/Pipefitter
Project Estimator
Project Inspector
Project Manager
Roofer
Safety Director
Sheet Metal Worker
Specialty Contractor
Superintendent
Tile and Marble Setter

Pathway: Design/Pre-Construction

Architect
Architectural Drafter
Building Code Inspector
Building Designer
Civil Engineer
Cost Estimator
Electrical Engineer
Electronic Engineer
Environmental Designer
Environmental Engineer
Equipment Operator
Fire Prevention and Protection Engineer
Glazier
Industrial Engineer
Interior Designer
Landscape Architect
Materials Engineer
Mechanical Drafter
Mechanical Engineer
Painter & Wall Coverer
Regional and Urban Planner/Designer
Safety Director
Specification Writer
Structural Engineer
Surveying and Mapping Technician

Considerations

Workers in the architectural and construction industry may face the following considerations:

- Working to meet a deadline often involves long hours at the job.
- Because the construction trades are project oriented, workers sometimes suffer layoffs when work is slow.
- Construction work is labor intensive and involves exposure to the elements/weather. Great physical stamina and well-being are necessary to work at heights or in cramped quarters.
- The integrity of the worker to maintain high working standards is crucial. Deadlines, variable prices for materials, and overall costs can make it tempting to cut corners and sacrifice quality work.
- Safety issues, both to the worker on the job and to the inhabitants or users of the finished product, is always a significant concern.
- Architects try to solve problems before they happen. They have to know when to uphold their design features and yet remain willing to compromise their vision if the project demands it.
- Prospective architects who gain career-related experience in an architectural firm while they are still in school and who know CADD technology will have a distinct advantage.
- About 1 in 5 architects are self-employed—more than 2 times the proportion for all occupations.

Discussion Questions

Why do construction workers and architects bear such a great responsibility to the quality of their work?

How will an aging population affect the construction trade?

What are some of the most interesting architectural structures in this region?

If you could build any structure, large or small, what would it be?

Why are there layoffs in construction?

Why do you need leadership skills to be an effective architect?

Why is the construction industry one of the yardsticks of the economy?

What is the implication of LEED (Leadership in Environmental and Energy Design) for the architecture and construction industry?

What is the impact of environmentally-friendly, “green” construction?

What are the possibilities for up-and-coming architects and builders in “green” construction?

Arts, A/V Technology & Communications

Inside Track

The Arts, A/V Technology and Communications career cluster attracts people who are self-expressive and creative, use inductive reasoning to compare experience and bits of related information, and are good organizers. The chief concerns of this cluster are expression and interpretation. The services deal with designing, producing, exhibiting, performing, writing, broadcasting, and publishing multimedia content, which includes visual, performing arts and design, journalism, and entertainment services.

Trends

Without telecommunications and its high-powered infrastructure, there would be no Information Age. The effects of technology on business and industry have been remarkable, but who could have foreseen the enormous influence communications has had on our private lives and on the collective culture? Rapid growth in communications has been pushed forward by new technologies and changing government regulations and has created a truly worldwide marketplace. It has never been easier, quicker, or cheaper to communicate with others at vast distances.

Employment in the telecommunications industry is expected to increase by 5 percent over the 2006–2016 period, compared with 11 percent growth for all industries combined. In the marketplace, media ownership is consolidating. Corporate buy-outs and sell-offs make for a tumultuous career path for individual workers. It also means workers must be able to adapt to sudden changes in the industry and diversify their job skills.

As for the softer arts, there has always been a cultural need and demand for artwork to represent the world and our place within it. But is there a market? As information floods our senses at unprecedented rates, it has never been easier to bring self-expression to the masses. Because markets are becoming more image-driven and image-conscious, the need for messages to stand out and be noticed is more important than ever. Therefore, many of the same talents we formerly associated exclusively with the arts are in demand by organizations, government, and industries alike. While the demand for jobs in this cluster may be steady, competition is keen, and many individuals find it difficult to earn a living solely in these areas.

Employment of graphic designers is expected to grow by 10 percent, about as fast as average for all occupations from 2006 to 2016, as demand for graphic design continues to increase from advertisers, publishers, and computer design firms. Online publications and services are growing in number and sophistication, spurring the demand for writers and editors. Employment of artists and related workers is expected to grow 16 percent through 2016, faster than the average for all occupations. Demand for illustrators who work on a computer will increase as Web sites use more detailed images and backgrounds in their designs. Many cartoonists, in particular, opt to post their work on political Web sites and online publications. Demand for multimedia

Pathways and Job Title Samples

Pathway: Audio & Video Technology and Film

Audio Equipment Technician
Audio Systems Technician
Audio-Video Designer/Engineer
Computer Multimedia Technician
Electrical Engineer
Lighting Technician
Mechanical Engineer
Project Manager
Technical Computer Support Technician:
Film, Video, and DVD
Videographer: Special Effects and
Animation
Video Systems Technician

Pathway: Journalism and Broadcasting

Art Director
Audio-Video Operator
Broadcast Field Supervisor
Broadcast Technician
Camera Operator
Chief Engineer
Control Room Technician
Design Director
Editor
Journalist
Light Director
News Analyst
Producer
Publisher
Radio and Television Announcer
Radio and Television Reporter
Radio and Television Station Manager
Researcher
Transmission Engineer
Writer

Pathway: Performing Arts

Actor
Cinematographer
Composer
Conductor
Costume Designer
Dance Instructor
Dancer
Director and Coach
Film/Video Editor
Lighting Designer
Makeup Artist
Music Instructor
Musician
Performer
Performing Arts Educator
Playwright
Production Manager: Digital,
Video and Stage
Scenic Designer
Scenic Painter
Scriptwriter
Sound Designer

Pathways and Job Title Samples

Technical Director
Video/Film Director
Video/Film Editor
Voice Instructor

Pathway: Printing Technology

Computer Typography and Composition
Operator
Desktop Publishing Specialist
Graphics Equipment Operator
Lithographer
Paper Salesperson
Plate Maker
Pre-Production Technician
Press Operator
Printing Equipment Operator
Production Coordinator
Production Manager
Web Page Designer

Pathway: Telecommunications

Customer Service Representative
Network Designer
Network Technician
Sales Representative
Systems Designer
Telecommunication Computer
Programmer
Telecommunication Computer Systems
Analyst
Telecommunication Equipment: Cable,
Line Repairer and Installer
Telecommunication Technician
Telecommunications Specialist

Pathway: Visual Arts

Art Director
Art Teacher
Artist
Cartoonist
Commercial Artist
Commercial Photographer: Digital, Still,
Video, Film
Commercial/Residential and Home
Furnishing Coordinator
Computer Animator
Curator and Gallery Manager
Fashion Designer
Fashion Illustrator
Graphic Designer
Illustrator
Painter
Sculptor
Textile Designer

artists and animators will increase as consumers continue to demand more realistic video games, movie and television special effects, and 3D animated movies. Animators are also increasingly finding work in alternative areas such as scientific research or design services.

Considerations

- One of the biggest issues in the media is the rise in voyeuristic programming and reporting.
- Since information is more accessible and transmittable than ever, this raises important right-to-privacy issues.
- The media is heavily regulated by governing bodies, yet censorship issues still abound as the media consistently challenges legislation prohibiting free transmittal of content and messages.
- Artists who are dedicated and lucky enough to make a living from their expression also commonly generate alternate sources of income.

Discussion Questions

How connected is "too connected"? What is the downside to the Information Age?

Where do you seek local and national news? Why?

What categories of news most appeal to you? Why?

What forms of media-generated entertainment do you enjoy? Why?

What are some art issues recently in the news?

Business Management & Administration

Inside Track

The Business Management and Administration career cluster attracts those who are effective planners, communicators, leaders, task- and detail-oriented, well-organized, and efficient. Those involved in business and administration are concerned with the successful coordination and efficient management of resources and are often driven to enhance the profitability of their enterprise or organization. Administrators and managers deal with planning, managing, and providing administrative support, information processing, accounting and human resource management services, and related business management support services. Independent management and public relations firms also influence how businesses, governments, and institutions make decisions.

Trends

Employment of administrative services managers is projected to grow by 12 percent between 2006 and 2016, about as fast as the average for all occupations. Demand should be strong for facility managers because businesses increasingly realize the importance of maintaining, securing, and efficiently operating their facilities. As business becomes more complex, firms are continually faced with new challenges and increasingly rely on management analysts to help them remain competitive. Management analysts, often referred to as management consultants in private industry, analyze and propose ways to improve an organization's structure, efficiency, or profits. Employment of management analysts is expected to grow by 22 percent over the 2006–2016 decade, much faster than the average for all occupations.

Job growth is projected in very large consulting firms with international expertise and in smaller consulting firms that specialize in specific areas, such as biotechnology, health care, information technology, human resources, engineering, and marketing. Growth in the number of individual practitioners may be hindered by increasing use of consulting teams that are often more versatile.

Employment of advertising, marketing, promotions, public relations, and sales managers is expected to increase by 12 percent through 2016—about as fast as the average for all occupations. Job growth will be spurred by intense domestic and global competition in products and services offered to consumers and increasing activity in television, radio, and outdoor advertising. Marketing managers develop the firm's marketing strategy in detail, estimating the demand for products and services offered by the firm and its competitors. They also identify potential markets, develop pricing strategies, monitor trends that indicate the need for new products and services, oversee product development, and work with advertising and promotion managers.

Pathways and Job Title Samples

Pathway: Administrative Support

Administrative Assistant
Communications Equipment Operator
Computer Operator
Customer Service Representative
Data Entry Specialist
Desktop Publisher
Dispatcher
Executive Assistant
Information Assistant
Legal Secretary
Medical Front Office Assistant
Medical Transcriptionist
Office Manager
Paralegal
Receptionist
Records Processing Assistant
Shipping and Receiving Clerk
Stenographer
Typist
Word Processor

Pathway: Business Information Management

Budget Analyst
Business Analyst
Business Consultant
E-Commerce Analyst
Financial Analyst
Marketing Analyst
Operations Research Analyst
Price Analyst
Project Manager
Requirements Specialist
Systems Analyst

Pathway: General Management

Accounting Manager
Accounts Payable Manager
Administrative Services Manager
Assistant Credit Manager
Association Manager
Billing Manager
Business Development Manager
Chief Executive
Compensation and Benefits Manager
Credit and Collections Manager
Entrepreneur
Facilities Manager
First Line Supervisor
Government Manager
Hospital Manager
Human Resource Manager
Management Analyst
Management Trainee
Manufacturing Manager
Meeting and Convention Planner
Office Manager
Operations Manager
Payroll Manager
Public Organization Manager
Public Relations Manager

Pathways and Job Title Samples

Purchasing Manager
Risk Manager
Sports and Entertainment Manager
Store Manager
Supervisor

Pathway: Human Resources Management

Affirmative Action Coordinator
Compensation and Benefits Manager/
Administrator
Conciliator/Mediator/ Arbitrator
Corporate Trainer
Employee Assistance Plan Manager
Employer Relations Representative
Employment and Placement Manager
Equal Employment Opportunity
Specialist
Human Resources Consultant
Human Resources Coordinator
Industrial Relations Director
International Human Resources
Manager
Labor and Personnel Relations Specialist
Organizational Behaviorist
Organizational Development Specialist
OSHA/ADA Compliance Officer
Pay Equity Officer
Payroll Professional
Personnel Recruiter
Training and Development Manager

Pathway: Operation Management

Customer Service Consultant
Department Manager
E-commerce Manager
Entrepreneur
Marketing Manager
Master Scheduler
Procurement Analyst
Purchasing Manager
Quality Manager
Sales Manager
Shipping/Receiving Clerk
Small Business Owner
Supply Chain Manager

Considerations

- Being an effective businessperson means looking out for yourself as well as the office, industry, or shareholders you represent. You must also be attentive to the bottom line on the balance sheet.
- Businesses are as diverse as people, so it pays to be aware of the type of business you want to work for before you become involved with it. While people may be working as a team, they are nonetheless often in direct competition with each other for advancement.
- Reputation carries weight in the business world, but so does success that can be assessed.
- Some additional pressing issues in the workplace are
 - the negative effects of competition
 - the welfare of the business/organization vs. the welfare of the individual
 - hiring and firing practices
 - effects of programs such as Affirmative Action
 - job-related stress
 - the reward for company loyalty.

Discussion Questions

What is bureaucracy, and how does the term apply to business/administration?

What are some possible reasons for layoffs?

What is the most difficult aspect about working with others?

The most enjoyable?

Can you name some businesses and institutions you think are poorly run and some that are well run?

What are your criteria for a well-run business?

What are the risks to the individual of focusing primarily on company loyalty?

Inside Track

Those interested in pursuing occupations in the Education and Training career cluster are commonly attracted to playing a role in the intellectual development of others and/or passing on the tools of a trade. Individuals in this cluster deal with planning, administering, managing, and providing education and training services. Related learning support services include library, information services, child care, and counseling services, and also preparatory medical training in educational settings.

Trends

Employment of preschool, kindergarten, elementary, middle, and secondary school teachers is projected to grow about as fast as average. However, postsecondary teachers are expected to grow by 23 percent between 2006 and 2016, much faster than the average for all occupations. Employment of adult literacy and remedial education teachers is expected to grow by 14 percent through 2016, faster than the average for all occupations. The number of special education teachers is expected to increase by 15 percent from 2006 to 2016, faster than the average for all occupations.

Instructional coordinators—also known as curriculum specialists, personnel development specialists, instructional coaches, or directors of instructional material—play a large role in improving the quality of education in the classroom. They develop curricula, select textbooks and other materials, train teachers, and assess educational programs for quality and adherence to regulations and standards. They also assist in implementing new technology in the classroom. The number of instructional coordinators is expected to grow by 22 percent over the 2006–2016 decade, much faster than the average for all occupations, as they will be instrumental in developing new curricula to meet the demands of a changing society and in training teachers.

Librarians use the latest information technology to perform research, classify materials, and help students and library patrons seek information. A master's degree in library science is the main qualification for most librarian positions, although school librarians often need experience as teachers to meet state licensing requirements. Despite slower-than-average projected employment growth, job opportunities are still expected to be favorable because a large number of librarians are expected to retire in the coming decade.

Considerations

- Including duties outside the classroom, most teachers work more than 40 hours a week.
- Coping with student behavior and violence in the schools is a central issue in most communities.
- The student population continues to diversify in learning styles, personal background, ethnicity, income level, and intellectual ability.

Pathways and Job Title Samples

Pathway: Administration and Administrative Support

Administrator
Assessment Specialist
CareerTech Administrator
College Dean
College President
Curriculum Developer
Educational Researcher
Instructional Coordinator
Instructional Media Designer
School Principal
School Superintendent
Supervisor and Instructional
Coordinator
Test and Measurement Specialist
Training Director

Pathway: Professional Support Services

Audiologist
Psychologist (Clinical, Developmental,
Social)
School Counselor
Social Worker
Speech Language Audiologist
Speech Language Pathologist
Testing Specialist

Pathway: Teaching/Training

Child Care Director
Child Care Worker
Coach
Elementary School Teacher
Kindergarten Teacher
Middle School Teacher
Nanny
Secondary School Teacher
Special Education Teacher
Teacher Aide
Training Specialist
University Professor

- Teachers have to follow strict state licensure requirements and maintain certification.
- Education is inexorably tied to its funding, and funding, for the most part, comes from government. Therefore, government decisions and legislation play a central role in determining the future of education.

Discussion Questions

The teacher can become the resource for this career cluster. Put your own decision to pursue a career in education at the center of your students' discussion. Talk about the following:

- *When did your interest in education begin to grow?*
- *How did you get started?*
- *What kind of training and schooling did you need?*
- *What are your biggest concerns with education?*

Inside Track

Occupations in the Finance career cluster are bound by the desire for wealth and asset management and are ultimately focused on providing security and financial growth for clients. Whether through banking, investing, financial planning, studying the economy, or providing a variety of insurance-related services to firms, businesses, and individuals, the finance cluster generally attracts workers who are interested in math and have strong deductive reasoning skills. Careers in this cluster demand that workers have personal integrity and self-reliance.

Trends

Employment of financial analysts and personal financial advisors is expected to grow much faster than the average for all occupations. Growth will be especially strong for personal financial advisors, which are projected to be among the 10 fastest growing occupations. In recent years, banks, insurance companies, and brokerage firms have been allowed to broaden their financial services.

Perhaps the largest determining factors in the banking, insurance, and securities and investment industries are the values and demographics of those who purchase these financial services, and the relative health and/or potential of financial institutions in the United States. Fluctuations in the stock market do not deter the need for financial services. On the contrary, investors increasingly diversify portfolios and investment strategies to protect what they have accumulated.

While some services have become increasingly automated (thereby eliminating jobs), services themselves have become increasingly complex (thereby creating demand). Wage and salary employment in banking is projected to increase by about 4 percent between 2006 and 2016, compared with the 11 percent growth projected for wage and salary employment across all industries.

Considerations

- Operating with impeccable ethics is essential in the Finance career cluster.
- Working in the financial field is dependent chiefly on one's ability to offer good, time-tested advice and to build and maintain relationships with clients. Handling someone else's money demands respect, honesty, empathy, precision, objectivity, and care. Failure to detect a client's expectations or neglecting a client's needs altogether is unprofessional behavior.
- One's ability to communicate clearly is paramount.
- Like many fields where workers are somewhat independent (with the exception of support staff), experience and reputation can build a career.
- Many in the financial services trades work longer than the 40-hour week and are exceptionally driven and competitive. They are often

Pathways and Job Title Samples

Pathway: Accounting

Accountant
Accounting Clerk
Auditor
Billing Supervisor
Bookkeeper
Budget Manager
Capital Budgeting Specialist
Capital Expenditure Manager
Cash Manager
Chief Revenue Agent
Collector
Controller
Cost Analyst
Foreign Exchange Manager
Management Accountant
Merger and Acquisitions Manager
Project Analyst
Revenue Agent
Tax Accountant
Tax Examiner
Tax Preparer
Treasurer

Pathway: Banking Services

Abstractor
Accountant
Acquisitions Specialist
Bank Manager
Bill and Account Collector
Compliance Officer
Credit Analyst
Credit Report Provider
Customer Service Representative
Data Processor
Debt Counselor
Financial Manager
Financial Planner
Internal Auditor
Loan Officer
Loan Processor
Mortgage Broker
Network Services Technician
Operations Manager
Relationship Manager
Repossession Agent
Teller
Title Researcher and Examiner
Trust Officer

Pathway: Business Finance

Credit Analyst
Economist
Financial Analyst
Foundation Manager
Fund Raiser
Non-Profit Manager
Project Analyst
Tax Preparer
Treasurer

Pathways and Job Title Samples

Pathway: Insurance

Actuary
Benefits Consultant
Branch Manager
Claims Adjuster
Claims Agent
Claims Clerk
Compliance Specialist
Customer Service Agent
Direct Marketing Representative
Examiner
Financial Planner
Insurance Agent
Insurance Appraiser
Insurance Broker
Investigator
Loss Control Manager
Processing Clerk
Producer
Product Manager
Sales Agent
Special Investigator
Underwriter

Pathway: Securities & Investments

Brokerage Clerk
Commodities Representative
Financial Planner
Investment Advisor
Investment Banker
Mutual Fund Manager
Personal Financial Advisor
Real Estate Developer
Sales Agent (Securities and
Commodities)

people who are attracted to the accumulation and development of wealth just like their clients.

- Bankers must build positive reputations in the community as well.
- Layoffs in the financial world directly correspond to the health and potential health of the economy. In fact, one of the telltale market indicators is the rate of employment in the financial sector, especially in brokerage houses.
- Members of the financial workforce are often forced to go through long periods of income boom and bust, especially those who work on commission.

Discussion Questions

Do you read the financial sections of the newspaper or listen to market reports on television or the radio? Why, or why not?

What are some strategies and resources to deal with the economic downturn of 2008?

Do you know what a ticker is? NASDAQ? Dow Jones?

What are the biggest financial markets in the United States?

What is the Federal Reserve Bank? What does it do that banks in the private sector do not do?

How do interest rates affect spending/saving?

Can you name some financial services you currently use?

Credit cards? Checking/savings accounts? Online investing? Car insurance?

Do you file a tax return?

Government & Public Administration

Inside Track

Those seeking occupations in the Government and Public Administration career cluster are effective at conceiving ideas, planning projects, and issuing and/or putting directives into action. They are especially adept at using inductive reasoning to handle problems on their way to finding appropriate solutions. Some of these workers are skilled bureaucrats who usually rely on their communication skills to foster dynamic interpersonal and professional relationships. Occupations in Government and Public Administration deal with planning, managing, and providing government, legislative, administrative, and regulatory services; these include government services at the federal, state, and local levels, such as public finance and planning. State government has a larger percentage of executive and professional specialty occupations, while local government employs a higher share of service and production workers.

Trends

State and local governments provide their constituents with vital services, such as transportation, public safety, health care, education, utilities, and courts. Local governments employ more than twice as many workers as state governments. State and local government employment is projected to increase about 8 percent during the 2006–2016 period. Employment growth will be somewhat dampened by budgetary constraints due to reductions in federal aid and to citizen resistance to tax increases. Rapid increases in demand for some services—such as those for the elderly, mentally impaired, and children—will grow faster than other private social and human services.

With more than 1.8 million civilian employees, the federal government, excluding the postal service, is the nation's largest employer. Wage and salary employment in the federal government is projected to decline by 4.6 percent over the 2006–2016 period. Some job growth will be generated by increased homeland security needs. There is projected slow growth or declines in other federal sectors due to governmental cost-cutting, the growing use of private contractors, and continuing devolution—the practice of turning over the development, implementation, and management of some programs of the federal government to state and local governments.

For the most part, areas of employment in the governmental sector offer lower pay than their counterparts in the private sector. However, benefits may be more dependable. Federal employment is affected by political agendas and national concerns (e.g., homeland security).

Considerations

- Almost half of federal workers hold managerial or professional jobs, a rate twice as high as the workforce as a whole. About 90 percent of federal employees work outside the Washington, D.C., metropolitan area.
- The executive branch is composed of the Executive Office of the

Pathways and Job Title Samples

Pathway: Foreign Service

Administrative Officer
Ambassador
Consular Officer
Development Assistance Officer
Diplomatic Courier
Economic Officer
Foreign Service Officer
Political Officer
Program Officer
Public Affairs Officer

Pathway: Governance

Assistant, Deputy, or Chief of Staff
Cabinet Level Secretary
Campaign Manager
Commissioner (County, Parish, City)
Commissioner (State Agency)
Congressional Aide
Governor
Legislative Aide
Legislative Assistant
Lieutenant Governor
Lobbyist
Mayor
Policy Advisor
President
Representative (Fed/State)
Senator (Fed/State)
Specialist
Vice President

Pathway: National Security

Agent/Specialist
Airborne Warning/Control Specialist
Combat Aircraft Pilot/Crew
Combat Control Officer
Combat Engineer
Cryptographer
Intelligence Analyst
Intelligence/Counter-Intelligence
National Security Advisor
Intelligence Officer/Specialist
Military Police Officer
Pilot

Pathway: Planning

Business/Enterprise Official
Census Clerk
Census Enumerator
Chief of Vital Statistics
Commissioner
County Director
Director (Various Agencies)
Economic Development Coordinator
Emergency Planner
Federal Aid Coordinator
Management Analyst
Program Associate
Urban/Regional Planner

Pathways and Job Title Samples

Pathway: Public Management and Administration

City Council Member
City Manager
Court Administrator
Court Clerk
Foundation Executive/Associate
General Service Officer
Management Analysis Officer
Municipal Clerk
Program Administration Officer
Purchasing Manager

Pathway: Regulation

Aviation Safety Officer
Bank Examiner
Border Inspector
Building Code Inspector
Business Regulation Investigator
Cargo Inspector
Chief Bank Examiner
Chief of Field Operations
Child Support Examiner
Code Inspector/Officer
Election Supervisor
Enforcement Specialist
Equal Opportunity Officer
Immigration Officer
Inspector Investigator/Examiner

Pathway: Revenue and Taxation

Assessor
Auditor (State, County, City)
Economist
Internal Revenue Investigator
Revenue Agent
Tax Attorney
Tax Auditor
Tax Collector
Tax Examiner
Tax Policy Analyst

President, 14 executive cabinet departments, and more than 90 independent agencies. Each of the 14 executive cabinet departments (e.g., Defense, Treasury, State, and Labor) administers programs that oversee an element of American life.

- Some smaller, but well-known “independent” agencies include the National Aeronautics and Space Administration (NASA), the Environmental Protection Agency (EPA), and the Peace Corps.

Discussion Questions

What are some well-known government agencies, independent or otherwise?

*What are some pros and cons of working for the government
(federal or state)?*

So many of these job titles in Government and Public Administration can be found in other career clusters. Why do you think government has its own career cluster?

With whom and for what do government programs compete?

How do you define administration?

How can new political administrations affect government workers?

How can individuals play a role in keeping ethics in local, state, and federal governments?

What are “watch dog” groups?

What is a “whistle blower”? What are some well known whistle-blower cases?

Could you see yourself as a whistle blower? Explain.

Inside Track

The Health Science career cluster is big and getting bigger. Still, everyone from the orderly to the neurosurgeon has at least one thing in common: they provide comfort, care, and repair to human beings.

Combining medical technology and the human touch, the health care industry administers care around the clock, responding to the needs of millions of people—from newborns to the critically ill. The skill to facilitate human relationships, a precise use of communication skills, and interpretive analysis are crucial tools in the practice of any health occupation. New advances in science are paving the way for medical breakthroughs and cures. Therefore, those involved in health services must keep abreast of improvements in their industry. Obviously, since health is perhaps one's most valued asset, one hopes to entrust it only to the most capable individuals.

Nearly half a million establishments make up the health services industry, and all vary greatly in terms of size, staffing, and organization. Two-thirds of all private health services establishments are offices of physicians or dentists. Health care is made up of medical hospitals, mental health facilities, home health care, private offices and clinics, health and allied services, medical and dental laboratories, online medical Web sites (both reputable and otherwise), and other segments, like alternative medicine practitioners.

Trends

Health care will generate 3 million new wage and salary jobs between 2006 and 2016, more than any other industry. Seven of the twenty fastest growing occupations are health care related. Job opportunities should be good in all employment settings.

Physician assistant programs usually last at least 2 years; admission requirements vary by program, but many require at least 2 years of college and some health care experience. All states require physician assistants to complete an accredited education program and to pass a national exam in order to obtain a license. Employment is projected to grow much faster than average as health care establishments increasingly use physician assistants to contain costs. Job opportunities should be good, particularly in rural and inner-city clinics.

Employment of registered nurses is expected to grow by 23 percent from 2006 to 2016, much faster than the average for all occupations. Growth will be driven by technological advances in patient care, which permit a greater number of health problems to be treated, and by an increasing emphasis on preventive care.

Employment of physical therapists is expected to grow much faster than average. Job opportunities will be good, especially in acute hospital, rehabilitation, and orthopedic settings.

Occupations with relatively few replacement openings are those with high pay and status, lengthy training requirements, and a high proportion of full-time workers, such as physicians. For some executive, administrative, and managerial occupations, rapid growth will be countered by restructuring to reduce administrative costs and

Pathways and Job Title Samples

Pathway: Biotechnology Research and Development

Animal Services Technician
Animal Services Technologist
Biochemist
Bioinformatics Associate
Bioinformatics Scientist
Biomedical Chemist
Biostatistician
Cell Biologist
Clinical Trials Research Associate
Clinical Trials Research Coordinator
Data Entry Clerk
Geneticist
Lab Assistant-Genetics
Lab Technician
Maintenance and Instrument Technician
Microbiologist
Molecular Biologist
Pharmaceutical Scientist
Process Technician
Quality Assurance Technician
Quality Control Technician
Regulatory Affairs Specialist
Research Associate
Research Scientist
Toxicologist

Pathway: Diagnostic Services

Cardiovascular Technologist
Central Supply Technician
Clinical Lab Technician
Computer Tomography (CT)
Technologist
Cytogenetic Technologist
Cytotechnologist
Diagnostic Medical Sonographer
Electrocardiographic (ECG) Technician
Exercise Physiologist
Geneticist
Histotechnician
Magnetic Resonance Imaging (MRI)
Technologist
Mammographer
Medical Technologist/Clinical
Laboratory Scientist
Nuclear Medicine Technologist
Nutritionist
Pathologist
Pathology Assistant
Phlebotomist
Psychologist
Positron Emission Tomography (PET)
Technologist
Radiologist
Toxicologist

Pathway: Health Informatics

Admitting Clerk
Community Services Specialist
Data Analyst
Data Information Manager

Pathways and Job Title Samples

Epidemiologist
Ethicist
Healthcare Administrator
Health Educator
Health Information Coder
Medical Assistant
Medical Biller
Medical Information Technologist
Medical Librarian
Patient Financial Services
Representative
Pharmacy Services Associate
Reimbursement Specialist
Risk Manager
Transcriptionist

Pathway: Support Services

Biomedical/Clinical Technician
Biomedical/Clinical Engineer
Central Services Manager
Dietary Technician
Environmental Health and Safety
Technician
Environmental Services Manager
Epidemiologist
Facilities Manager
Food Service Administrator
Hospital Maintenance Engineer
Industrial Hygienist
Transport Technician

Pathway: Therapeutic Services

Anesthesiologist Assistant
Athletic Trainer
Audiologist
Certified Nursing Assistant
Clinical Medical Assistant
Data Entry Coordinator
Dental Assistant/Hygienist
Dental Lab Technician
EMT/Paramedic
Exercise Physiologist
Home Health Aide
Licensed Practical Nurse
Massage Therapist
Medical Assistant
Occupational Therapist
Optician
Orthotist/Prosthetist
Pharmacist/Pharmacy Technician
Physical Therapist/Assistant
Physician
Radiologic Technician
Recreation Therapist
Registered Nurse
Respiratory Therapist
Surgical Technician
Veterinarian
Veterinary Assistant/Technician

streamline operations.

Rapid growth in other health services segments will mainly result from the aging population, new medical technologies, and the subsequent increase in demand for all types of health services. While new technologies are lowering the cost of treatment and diagnosis, they also enable identification and treatment of conditions not previously treatable. Although workers at all levels of education and training will continue to be in demand, job seekers with health-specific training will find it easier to obtain jobs and advance.

Considerations

- Health Science is strong among the career clusters that rely on developing client/worker relationships. Often practitioners must apply their perceptive abilities to translate what the consumer wants and needs.
- Health care workers involved in direct patient care must take precautions to guard against back strain from lifting patients and equipment, exposure to radiation and caustic chemicals, and infectious diseases such as AIDS, tuberculosis, and hepatitis.
- Health care is also extremely sensitive to money/funding issues as many of the services are paid for through reimbursement. Financial accountability is key when dealing with government and insurance agencies.

Discussion Questions

What is a national health care system, and how would it change the current health care system in the U.S.?

Why might it be an advantage to be bilingual in a health care profession?

What is malpractice? Health care insurance? Medicaid? An HMO?

How much education does one need to become a heart surgeon/cardiologist?

Why is there a rising need for home health care providers?

What is involved in becoming a midwife? What is their role in society today?

Inside Track

Chiefly a service-oriented career cluster, Hospitality and Tourism concerns itself with providing lodging, food, recreation, convention services, tourism, and travel, as well as related planning and support services. Those interested in pursuing such careers are often extremely intuitive if not empathic about the expectations of consumers. Workers in this cluster take distinct pleasure in providing unique, individualized service. Those who provide optimum service are seen as assets, because they can make or break the reputation of an entire establishment. Therefore, employees must have integrity, for they embody the vision of their employers and reflect the quality of their location. Even those who work behind the scenes are noticed, especially when service falls off and consumers become disappointed. Employees of large resorts and hotels must be able to work as an orchestrated team.

Trends

Rising incomes, leisure time, and awareness of the health benefits of physical fitness will increase the demand for arts, entertainment, and recreation services. Wage and salary jobs in arts, entertainment, and recreation are projected to grow about 31 percent over the 2006–2016 period, compared with 11 percent for all industries combined. Opportunities should be available for young, seasonal, part-time, and lesser skilled workers, but there will continue to be intense competition for jobs as performing artists and professional athletes. This industry is often considered attractive to individuals who want to own and run their own businesses.

Employment in museums, historical sites, and similar institutions is expected to grow rapidly, as these institutions increasingly create exhibits and provide services that appeal to the public. Bolstered by healthy public support and increasing funding in recent years, many museums have recently or are currently expanding their facilities.

Changing demographics of the nation increasingly target the growing elderly population. Therefore, employment opportunities associated with cruise ships and golf courses will increase. Continued growth of fitness centers for the older consumer as well as for the health-conscious younger consumer is expected. Growth in income is directly associated with spending for leisure activities.

If you are interested in becoming a chef, formal culinary training for chefs and cooks is available through a wide variety of sources—independent cooking schools or academies, community and junior colleges, trade and career schools, and 4-year colleges and universities. Many trade associations and unions also certify cooking programs conducted at selected schools or sponsor federally-approved apprenticeship programs that combine formal classroom instruction with on-the-job experience in a working kitchen. Many formal training programs offer job placement opportunities that help recent graduates

Pathways and Job Title Samples

Pathway: Lodging

Concierge
Director of Sales and Marketing
Executive Housekeeper
Front Desk Employee
Front Desk Manager/Supervisor
Front Office Manager
General Manager
Laundry Attendant
Laundry Supervisor
Lodging Manager
Maintenance Worker
Reservations Manager
Rooms Executive
Services Manager
Valet Attendant

Pathway: Recreation, Amusements & Attractions

Club Personnel
Family Center Equipment Operator
Family Center Maintenance Personnel
Facilities Manager
Event Planner
Event Manager
Gaming and Casino Supervisor
Gaming and Casino Security and Safety
Personnel
Museums/Zoos/Aquariums Personnel
Parks and Gardens Ranger
Resort Trainer and Instructor
Sports Promoter
Theme Parks/Amusement Parks
Personnel
Ticket Vendor

Pathway: Restaurants and Food/ Beverage Services

Baker
Banquet Manager
Banquet Server
Bartender
Bus Person
Caterer
Catering and Banquets Manager
Coctail Server
Convention Services Manager
Executive Chef
Facilities Manager
Food and Beverage Manager
Host
Kitchen Manager
Maitre d'
Pastry and Specialty Chefs
Restaurant Owner
Restaurant Server
Room Service Attendant
Services Manager
Wine Steward

Pathways and Job Title Samples

Pathway: Travel & Tourism

Convention Services Manager
Destination Manager
Director of Communication
Director of Convention and Visitors
Bureau
Director of Marketing and Advertising
Director of Meetings
Director of Membership Development
Director of Tourism Development
Director of Visitor Services
Director of Volunteer Services
Eco-System Tourism Coordinator
Events Manager/Planner
Interpreter
Meeting Planner/Director
Motor Coach Operator
Tour and Travel Coordinator/Guide
Tourism Marketing Specialist
Transportation Specialist
Travel Agent

find work in kitchens. Most culinary programs now offer more business courses and computer training to better prepare chefs to assume greater leadership and managerial roles in the industry and to manage large, complex food service operations. Culinary training also has adapted to reflect changing food trends and eating habits.

Considerations

- Amusement is steered by social trends, values, and the economy. Therefore, one must stay abreast of these trends in order to find a profitable niche. In the United States, travel is distinctly seasonal, and depending on the job in the hospitality and tourism cluster, the worker may experience seasonal drop-off as well as a demanding peak season.
- Job turnover is relatively high in this industry. To attract and retain workers, the lodging industry is placing more emphasis on hiring and training.
- In management positions in the lodging industry, relocation is part of the job.
- Workers must bear a genuine willingness to serve others and truly enjoy people. Without these traits, advancement will be extremely difficult.
- While customer satisfaction drives the economy in Hospitality and Tourism, success is often measured by the smiles on consumers' faces.

Discussion Questions

What are five hotel chains in your area?

Are there any private resorts or hotels in the area? Bed and breakfasts or inns?

What is the appeal of the bed and breakfast?

Do you and your family take vacations? If so, where?

Can you name a place in the United States that you would like to visit? Why?

How does one get training for entry-level jobs in the restaurant trades?

Inside Track

Those interested in pursuing occupations in the Human Services career cluster are usually nurturing, empathetic, and compassionate and are gratified by making a positive difference in the lives of others. Occupations are concerned with promoting and providing family and community relations and wellness, including family and work issues, religious services, care for the elderly, and social work. Job training and related service establishments train the unemployed, underemployed, disabled, and others with job market disadvantages. Many miscellaneous social services organizations are concerned with community improvement and social change.

Trends

Opportunities in Human Services are expected to be excellent. Employment of social and human service assistants is expected to grow by nearly 34 percent through 2016. Job prospects are expected to be excellent, particularly for applicants with appropriate postsecondary education. Much of this new growth will be spurred by the private sector where the number of wage/salary positions is expected to increase. Home health aides are in high demand for home services from an aging population and efforts to contain costs by moving patients out of hospitals and nursing care facilities as quickly as possible.

Overall employment of counselors is expected to increase by 21 percent between 2006 and 2016. However, growth is expected to vary by specialty.

Employment of substance abuse and behavioral disorder counselors is expected to grow 34 percent. As society becomes more knowledgeable about addiction, it is increasingly common for people to seek treatment. Furthermore, drug offenders are increasingly being sent to treatment programs rather than jail.

Other consumer groups with numbers on the rise are the mentally and physically disabled and families in crisis. Businesses are implementing more employee counseling programs to keep the workers they have and to make them more productive.

Some occupations, such as child protective services and social workers, continue to demand more workers.

Considerations

- Turnover rates in human services jobs are large because on-the-job stress leads to burnout.
- Entry-level workers with only a high school diploma often make low wages yet are asked to endure long hours, weekend and “on-call” hours, and to maintain their composure while interacting with difficult clients.
- It takes a strong, committed individual to be successful. Tolerance is crucial.
- Advancement through the ranks is often commensurate with experience, longevity, and level of service, but above all, with level

Pathways and Job Title Samples

Pathway: Consumer Services

Account Executive
Buyer
Consumer Advocate
Consumer Affairs Officer
Consumer Credit Counselor
Consumer Goods or Services Retail Representative
Consumer Research Department Representative
Employee Benefits Representative
Field Merchandising Representative
Financial Advisor
Hospital Patient Account Representative
Inside Sales Representative
Insurance Representative
Market Researcher
Small Business Owner

Pathway: Counseling & Mental Health Services

Career Counselor
Clinical and Counseling Psychologist
Employment Counselor
Industrial-Organizational Psychologist
Marriage, Child, and Family Counselor
Mental Health Counselor
Psychologist
Residential Advisor
School Counselor
Sociologist
Substance Abuse and Behavioral Disorder Counselor
Vocational Rehabilitation Counselor

Pathway: Early Childhood Development & Services

Childcare Center Director
Childcare Worker
Elementary School Counselor
Head Start Manager
Nanny
Parent Educator
Preschool Teacher
Teacher Assistant

Pathway: Family & Community Services

Adult Day Care Worker
Grief Counselor
Personal and Home Care Aide
Social Worker
Volunteer Coordinator

Pathways and Job Title Samples

Pathway: Personal Care Services

Barber
Companion
Cosmetologist, Hairdresser and
Hairstylist
Electrologist
Esthetician
Exercise Physiologist
Funeral Director
Home Care Aide
Massage Therapist
Mortician
Nail Technician, Manicurist and
Pedicurist
Personal Aide
Personal Fitness Trainer
Skin Care Specialist
Spa Attendant

of education and certification. This is an important and difficult hurdle to clear in the Human Services career cluster for those wanting to move into management and administrative positions.

- Some occupations in social services have very specific entrance requirements. These include most of the professional specialty occupations. Those requiring specific clinical training, such as clinical social workers and psychologists, also require appropriate state licensure or certification.

Discussion Questions

Why are social workers commonly overworked and underpaid?

If you had to perform a social service/human service, what would you do and why?

What are some private human service organizations?

What are some government-funded human service organizations?

Inside Track

Those well-suited for jobs in the Information Technology career cluster are normally independent, result-oriented, and achievement-driven. Information Technology (IT) positions deal with the design, development, management, maintenance, and operation of computer, information, communication, and technology networks, including related hardware and software. Advances in computer technology have had a significant effect on every segment of the labor market and labor pool. Computer applications continue to expand, along with our reliance upon them. The bubble of enthusiasm surrounding IT companies should continue to pull financial resources, research, and thereby, more workers into the field. Despite the recent economic downturn among technology firms, workers in the occupation should still enjoy favorable job prospects. The excitement of IT has become so accepted, that its presence in our lives is a bona fide cultural phenomenon. Job growth will not be as rapid as during the previous decade however, as the information technology sector begins to mature and as routine work is increasingly outsourced overseas.

Trends

All organizations today rely on computer and information technology to conduct business and operate more efficiently. Often, however, these institutions do not have the internal resources to effectively implement new technologies or satisfy their changing needs. When faced with such limitations, organizations turn to the computer systems design and related services industry to meet their specialized needs. Computer specialists accounted for 54 percent of all employees in this industry in 2006. Wage-and-salary employment is expected to grow 38 percent by the year 2016. Systems design services firms plan and design computer systems that integrate computer hardware, software, and communications technologies. The widespread use of the Internet and intranets also has resulted in an increased focus on security. The robust growth of e-commerce highlights this concern, as firms use the Internet to exchange sensitive information with an increasing number of clients. In order to mitigate this threat, many organizations are employing the services of security consulting firms, which specialize in all aspects of information technology (IT) security.

Rapid employment growth in the computer systems design and related services industry, which employs the greatest number of computer software engineers, should result in very good opportunities for those college graduates with at least a bachelor's degree in computer engineering or computer science and practical experience working with computers. Those who concentrate on specializing their computer skills should always be able to find work.

Pathways and Job Title Samples

Pathway: Information Support and Services

Applications Integrator
Computer Support Specialist
Computer Systems Analyst
Data Systems Designer
Database Administrator
E-Business Specialist
Help Desk Specialist
Information Systems Architect
Instructional Designer
PC Support Specialist
PC Systems Coordinator
Product Support Engineer
Support Engineer
Systems Analyst
Technical Support Representative
Technical Writer
Testing Engineer

Pathway: Network Systems

Communications Analyst
Computer Security Specialist
Data Communications Analyst
Information Systems Administrator
Information Systems Operator
Information Technology Engineer
Network Administrator
Network Architect
Network Engineer
Network Manager
Network Operations Analyst
Network Security Analyst
Network Specialist
Network Technician
Network Transport Administrator
PC Support Specialist
Systems Administrator
Systems Engineer
Systems Support Leader
Technical Support Specialist
Telecommunications Network Technician
User Support Specialist

Pathway: Program and Software Development

Applications Analyst
Applications Engineer
Business Analyst
Computer Programmer
Computer Software Engineer
Data Modeler
Game Developer
Operating System Designer/Engineer
Program Manager
Programmer
Programmer Analyst
Project Leader
Software Applications Specialist
Software Applications Tester
Software Design Engineer

Pathways and Job Title Samples

Systems Administrator
Systems Analyst
Test Engineer

Pathway: Web and Digital Communications

Animator
Digital Media Designer
Graphic Designer
Instructional Technologist
Media Specialist
Multimedia Author
Multimedia Developer
Multimedia Specialist
Producer
Production Assistant
Streaming Media Specialist
Virtual Reality Specialist
Web Administrator
Web Architect/Designer
Web Producer
Webmaster

Considerations

- Once workers are hired, they will need to keep retraining and re-tooling. The specialists today will be obsolete tomorrow unless they work to keep up.
- Technical or professional certification is a way to demonstrate a level of competency or quality in a particular field and may provide a job seeker with a competitive advantage.
- Relevant work experience and a bachelor's degree are prerequisites for many jobs; for more complex jobs, a graduate degree is preferred. Individuals with an advanced degree in computer science, computer engineering, or an MBA with a concentration in information systems should find very favorable employment prospects.
- Computer professionals who can combine strong technical skills with good interpersonal and business skills and graduates with non-computer science degrees who have had courses in computer science and other information technology areas should continue to find jobs as computer professionals.
- The potential for many workers to work from home is also attractive for those pursuing the IT field. Remote devices and telecommuting will enable more and more people to work at home.

Discussion Questions

What makes Northern Virginia an attractive location for the IT industry?

What is computer networking? Bandwidth? Script? Wireless? Fiber optics?

What is the impact of PDAs and "smart phones"?

What are some functions you can perform from a home computer that would not have been available 10 years ago?

What are several ways IT has revolutionized the workplace?

Law, Public Safety, Corrections & Security

Inside Track

Those pursuing occupations in the Law, Public Safety, Corrections and Security career cluster are normally good communicators and demonstrate keen inductive reasoning skills. Occupations within this cluster deal with police work, the law and legal services, the judicial system, the study and detention of criminals, and fire protection. Workers are often attracted to social structure and living within a moral/professional code. Lawyers and judges are often achievement-driven and value variety and social contact and recognition, while firefighters and police officers are often motivated by a sense of valor, responsibility, justice, and adventure. Competition for jobs in law and public safety is tremendous, even for lower paying jobs. The number of qualified candidates simply exceeds the number of job openings. Openings, however, have been recently on the rise in “specialized” areas of law practice and law enforcement.

Trends

Job opportunities in most local police departments will be excellent for qualified individuals, while competition is expected for jobs in state and federal agencies. Average employment growth is expected. Society seems to be more security-conscious, including a concern about drug-related crimes, thus increasing demand for police services.

Employment of workers in fire fighting occupations is expected to grow by 12 percent over the 2006–2016 period, which is as fast as the average for all occupations. Most of this job growth will result from volunteer firefighting positions being converted to paid positions in growing suburban areas.

Employment of lawyers is expected to grow 11 percent by 2016, about as fast as the average for all occupations. The growth in the population and in the level of business activity is expected to create more legal transactions, civil disputes, and criminal cases. Job growth among lawyers also will result from increasing demand for legal services in such areas as health care, intellectual property, venture capital, energy, elder, antitrust, and environmental law. Employment of paralegals and legal assistants is projected to grow 22 percent between 2006 and 2016, much faster than the average for all occupations. Employers are trying to reduce costs and increase the availability and efficiency of legal services by hiring paralegals to perform tasks once done by lawyers.

Considerations

- The biggest concern to most considering a job in public safety is the personal safety factor. Police and fire protection work can be dangerous and extremely stressful. These workers are expected to exercise authority when necessary and to be alert at all times, whether on- or off-duty.
- In addition to the obvious dangers and the public profile officers

Pathways and Job Title Samples

Pathway: Correction Services

Case Manager
Community Correction Practitioner
Corrections Educator
Corrections Officer
Corrections Trainer
Detention Deputy
Facility Maintenance Worker
Jail Administrator
Probation/Parole Officer
Program Coordinator and Counselor
Public Information Officer
Substance Abuse/Behavior Disorder
Counselor Transport Officer
Warden
Youth Services Worker

Pathway: Emergency and Fire Management Services

Dispatcher
Emergency Management and Response
Coordinator
Emergency Planning Manager
Emergency Medical Technician (EMT)
Fire Fighter
Fire Investigator
Forest Fire Fighter
Forest Fire Inspector and Investigator
Hazardous Materials Responder
Manager/Supervisor of Fire Fighters or
Forest Fire Fighters
Paramedic
Rescue Worker
Training Officer

Pathway: Law Enforcement Services

Animal Control Officer
Bailiff
Bomb technician
Criminal Investigator and Special Agent
Customs Inspector
Detective
Forensic Science Technician
Game Enforcement Officer
Immigration Officer
Park Ranger
Police, Fire and Ambulance Dispatcher
Police/Patrol Officer
Sheriff and Deputy Sheriff
Training Officer
Unemployment Fraud Investigator
U.S. Marshal

Pathways and Job Title Samples

Pathway: Legal Services

Arbitrator
Attorney
Case Management Specialist
Court Reporter
File and Document Manager
Investigator
Judge
Law Clerk
Legal Assistant
Legal Secretary
Magistrate
Mediator/Arbitrator
Negotiator
Paralegal

Pathway: Security & Protective Services

Armored Car Guard
Computer Forensics Examiner
Computer Security Specialist
Corporate/Agency Security Director
Executive Protection Officer/Specialist
Gaming Surveillance Specialist
Industrial Espionage Security Officer/
Specialist
Information Security Assistant
Information System and Security
Specialist
Lifeguard
Loss Prevention Specialist
Physical Security Specialist/Consultant
Private Investigator
Security Director
Security Officer
Transportation Security Officer/
Specialist
Uniformed Security Officer

must maintain in their communities, many of these men and women regularly witness death and suffering resulting from accidents and criminal behavior.

- Fire protection professionals also have to maintain a necessary objectiveness for the same reasons. A career in law enforcement and fire protection may take a serious toll on officers' private lives.
- On the other hand, those involved in these fields enjoy a high level of job security once they are employed. Turnover in police/detective work and fire protection is among the lowest of all occupations. While layoffs happen, experience can usually lead to further employment within the career cluster.
- Another benefit is the pension, which allows officers to retire after 20–25 years of service.
- Acquiring a law degree and passing the bar requires a significant amount of time, money, and effort.
- Employers increasingly seek graduates who have advanced law degrees and experience in a specialty such as tax, patent, or admiralty law.
- Becoming a judge will still be difficult in the coming years; not only must judicial candidates compete with other qualified people, they often must also gain political support in order to be elected or appointed.

Discussion Questions

Why has America become more and more litigious?

Can you think of any solutions to the serious issue of overcrowded prisons?

What is your relationship to and perception of the local police?

What are some responsibilities of fire rescue personnel?

What is the Virginia Bar?

What are some famous law schools, lawyers, judges, or court cases?

Inside Track

Those who seek occupations in the Manufacturing career cluster are ordinarily hardworking producers and refiners of physical goods. Perhaps they are attracted to the precision, skill, repetition, and consistency of the tasks routinely involved. Perhaps they feel compelled by the amount of practical, hands-on, daily problem-solving situations they encounter. Or perhaps they are attracted to the sheer ingenuity and efficiency that is so much a part of these jobs. Whatever the case, occupations in manufacturing deal with the process of creating intermediate and finished products beginning with raw materials. Occupations include areas of managing, planning, and performing the production of various items by operating machinery, as well as industrial support activities such as production planning and control and maintenance.

Trends

Overall, employment in manufacturing is predicted to be slow. Despite the overall projected decrease in employment, the ever evolving areas in technology such as computers, semiconductors, and telecommunications should continue to provide employment opportunities, especially in research and development. Employment prospects are good for highly-skilled technical personnel, but employment of production workers will grow slowly. Assembly and packaging are becoming highly automated or have moved to other countries where the labor is cheap. However, the need for complex electronics manufacturing to be located near its research site may help to moderate the move abroad. One area that is expected to remain steady is food manufacturing, while pharmaceutical and medicine manufacturing will be one of the fastest growing manufacturing industries. Employment is expected to increase through 2016. An area of growth that is likely to breathe new air into the industry is the emerging “green” manufacturing, such as in energy: wind and solar; energy efficient vehicles; energy saving components and machinery; biomaterials; and recycled/reusable packaging.

Considerations

- Workers in the food manufacturing industry link farmers and other agricultural producers with consumers. They do this by processing raw fruits, vegetables, grains, meats, and dairy products into finished goods ready for the grocer or wholesaler to sell to households, restaurants, or institutional food services.
- Even during fluctuating economic conditions, there will be a market for over-the-counter and prescription drugs.
- American companies manufacture and assemble many products abroad because of lower production costs and new trade agreements.
- However, the growing complexity of some of the most highly technical production processes in semiconductor and electronic compo-

Pathways and Job Title Samples

Pathway: Health, Safety and Environmental Assurance

Environmental Engineer
Environmental Specialist
Occupational Health & Safety
Representative
Safety Coordinator
Safety Engineer
Safety Technician

Pathway: Logistics & Inventory Control

Communications, Transportation and
Utilities Manager
Dispatcher
Freight/Stock/Material Mover
Industrial Truck & Tractor Operator
Logistical Engineer
Materials Associate
Material Handler
Process Improvement Technician
Quality Control Technician
Traffic Manager
Traffic/Shipping/Receiving Clerk

Pathway: Maintenance, Installation & Repair

Biomedical Equipment Technician
Boilermaker
Computer Systems Installer/Repairer
Electrical Equipment Installer/Repairer
Industrial Facilities Manager
Industrial Machinery Mechanic
Instrument Calibration & Repairer
Laser Systems Technician
Millwright
Plumber/Pipe Fitter/Steam Fitter
Power Generating & Reactor Plant
Operator

Pathway: Manufacturing Production Process Development

Design Engineer
Electrical and Electronic Technician and
Technologist
Electronics Engineer
Engineering and Related Technician and
Technologist
Industrial Technology/Mechanic
Industrial Engineer
Labor Relations Manager
Mechanical Engineer
Power Generating and Reactor Plant
Operator
Precision Inspector/Tester/Grader
Production Manager
Purchasing Agent
Structural Engineer

Pathways and Job Title Samples

Pathway: Production

Assembler
Automated Manufacturing Technician
Bookbinder
Calibration Technician
Electrical Installer and Repairer
Electromechanical Equipment
Assembler
Extruding and Drawing Machine
Operator
Foundry Worker
Grinding, Lapping, and Buffing Machine
Operator
Hand Packer and Packager
Hoist and Winch Operator
Instrument Maker
Large Printing Press Machine Setter and
Set-Up Operator
Machine Operator
Machinist & Tool Maker
Medical Appliance Maker
Micro and Nano Fabrication Technicians
Milling Machine Setter and Set-Up
Operator
Millwright
Pattern and Model Maker
Pipefitter
Precision Layout Worker
Sheet Metal Worker
Solderer and Brazier
Tool and Die Maker
Welder

Pathway: Quality Assurance

Calibration Technician
Inspector
Lab Technician
Process Control Technician
Quality Control Technician
Quality Engineer

ment manufacturing in particular—is leading to increased demand for a more highly skilled workforce in the United States.

- Electronics manufacturing has become truly global, and it is difficult to characterize many companies and their products as American or foreign.
- Although some of the companies in this industry are large, most are small.
- Production workers need to be able to deal with producing accurately under deadlines and pressure. Research and development people must demonstrate innovative thinking.

Discussion Questions

What are some of the key factors in the emergence of a “green” revolution?

How would you like your life and that of future generations to improve as a result of “green” manufacturing?

How might the growing interest in alternative and more natural medicines affect the pharmaceutical and medicine industry?

How are food manufacturers responding to a population that is seeking more wholesome foods?

On an international level, which nations are the greatest competitors for the U.S. in electronics manufacturing?

Can you name some products you use that are, in part, the result of electronics manufacturing?

Why do electronics manufacturing companies spend so much of their resources on research and development?

Inside Track

Those well-suited to most positions in the Marketing career cluster are typically effective communicators, extremely observant, and skilled at both reading and persuading consumers. Advertising, marketing, promotions, public relations, and sales managers coordinate their companies' market research, marketing strategy, sales, advertising, promotion, pricing, product development, and public relations activities. In small firms, the owner or chief executive officer might assume all advertising, promotions, marketing, sales, and public relations responsibilities. In large firms, which may offer numerous products and services nationally or even worldwide, an executive vice president directs overall advertising, marketing, promotions, sales, and public relations policies.

Trends

Employment of advertising, marketing, promotions, public relations, and sales managers is expected to increase by 12 percent through 2016—about as fast as the average for all occupations. Job growth will be spurred by intense domestic and global competition in products and services offered to consumers and increasing activity in television, radio, and outdoor advertising. Projected employment growth varies by industry. For example, employment is projected to grow much faster than average in scientific, professional, and related services—such as computer systems design and related services, and advertising and related services—as businesses increasingly hire contractors for these services instead of additional full-time staff. As for job prospects, advertising, marketing, promotions, public relations, and sales manager jobs are highly coveted and will be sought by other managers or highly experienced professionals, resulting in keen competition.

Considerations

- College graduates with related experience, a high level of creativity, strong communication skills, and computer skills should have the best job opportunities.
- Keen competition is expected for these highly coveted jobs.
- Employers will seek those who have the computer skills to conduct advertising, marketing, promotions, public relations, and sales activities on the Internet.
- High earnings, substantial travel, and long hours, including evenings and weekends, are common.
- Because of the importance and high visibility of their jobs, these managers often are prime candidates for advancement to the highest ranks.
- Advertising, marketing, promotions, public relations, and sales managers direct the sale of products and services offered by their firms and the communication of information about their firms'

Pathways and Job Title Samples

Pathway: Marketing Communications

Account Executive
Account Supervisor
Advertising Manager
Analyst
Art/Graphics Director
Circulation Manager
Contract Administrator
Co-op Manager
Copywriter
Creative Director
Customer Service Representative
Interactive Media Specialist
Marketing Associate
Media Buyer/Planner
Promotions Manager
Public Information Director
Public Relations Manager
Sales Promotion Manager
Sales Representative
Trade Show Manager

Pathway: Marketing Management

Brand Manager
Customer Satisfaction Manager
Database Manager
Director of Market Development
Knowledge Management Specialist
Marketing Services Manager
Product Planner

Pathway: Marketing Research

Analyst
Database Analyst
Forecasting Manager
Interviewer
Planning Analyst
Research Associate
Research Project Manager
Research Specialist/Manager
Strategic Planner

Pathway: Merchandising

Customer Service Representative
Department Manager
Merchandise Buyer
Merchandising Manager
Operations Manager
Receiving Clerk
Retail Marketing Coordinator
Sales Associate
Sales Manager
Stock Clerk
Store Manager
Visual Merchandise Manager

Pathways and Job Title Samples

Pathway: Professional Sales

Account Executive
Administrative Support Representative
Agent
Broker
Business Development Manager
Channel Sales Manager
Client Relationship Manager
Customer Service Representative
Field Marketing Representative
Field Representative
Inbound Call Manager
Industrial Sales Representative
Key Account Manager
Manufacturer's Representative
National Account Manager
Outside Sales Representative
Regional Sales Manager
Retail Sales Specialist
Sales Engineer
Sales Executive
Sales Person
Sales/Marketing Associate
Solutions Advisor
Technical Sales Specialist
Telemarketer
Territory Representative/Manager

activities.

- Other workers involved with advertising, marketing, promotions, public relations, and sales include actors, producers, and directors; advertising sales agents; artists and related workers; demonstrators, product promoters, and models; market and survey researchers; public relations specialists; sales representatives, wholesale and manufacturing; and writers and editors.

Discussion Questions

What high school courses can you take to prepare you to follow a pathway in the marketing cluster?

What entry-level jobs in the marketing cluster can help you as you pursue your education?

How might experience in the entry-level jobs lead you to a career in the marketing cluster?

What are some of your favorite local retailers, and why do you like them?

How would you improve the marketing and advertising for some local and well known establishments?

What do you think of the service you receive in your average retail shopping experience? Would you render service differently? If so, how?

Science, Technology, Engineering & Mathematics

Inside Track

Those attracted to professions in the Science, Technology, Engineering and Mathematics career cluster are often extremely analytical and driven to structured and logical-thinking environments. They enjoy solving puzzles, finding solutions to problems, and overcoming obstacles. Educational programs and occupations in this career cluster deal with engineering, related technologies, scientific research, and application of scientific principles in all the natural sciences (e.g., biology, chemistry, earth science, physics) and social sciences (e.g., economics, sociology, geography, archeology, anthropology).

Note: If a student cannot locate a job title he or she is searching for in the sidebar to the right, that listing may be found in a related career cluster.

Trends

Employment of science technicians is projected to grow about as fast as the average, although employment change will vary by specialty. Job opportunities are expected to be best for graduates of applied science technology programs who are well trained on equipment used in laboratories or production facilities. Employment of environmental science and protection technicians is expected to grow much faster than the average; these workers will be needed to help regulate waste products; to collect air, water, and soil samples for measuring levels of pollutants; to monitor compliance with environmental regulations; and to clean up contaminated sites.

Overall job opportunities in engineering are expected to be good, but will vary by specialty. A bachelor's degree in engineering is required for most entry-level jobs. Starting salaries are among the highest of all college graduates. Continuing education is critical for engineers as technology evolves. Engineering technician jobs are expected to increase as fast as the average for all occupations through 2016.

Employment of environmental scientists is expected to increase by 25 percent between 2006 and 2016, much faster than the average for all occupations. Over the same period, employment of hydrologists should increase by 24 percent, also much faster than the average. Job growth for environmental scientists and hydrologists should be strongest in private-sector consulting firms. Growth in employment of environmental scientists and hydrologists will be spurred largely by the increasing demands placed on the environment and water resources by population growth. Further demand should result from the need to comply with complex environmental laws and regulations, particularly those regarding ground-water decontamination, clean air, and flood control. Job opportunities also will be spurred by a continued general awareness regarding the need to monitor the quality of the environment, to interpret the impact of human actions on terrestrial and aquatic ecosystems, and to develop strategies for restoring ecosystems.

Employment of mathematicians is expected to increase by 10

Pathways and Job Title Samples

Pathway: Engineering Technology

Aeronautical Engineer
Aerospace Engineer
Agricultural Engineer
Agricultural Technician
Architectural Engineer
Automotive Engineer
Biomedical Engineer
Biotechnology Engineer
CAD Technician
Chemical Engineer
Civil Engineer
Communications Engineer
Computer Engineer
Computer Programmer
Construction Engineer
Electrical Engineer
Electronics Technician
Geothermal Engineer
Industrial Engineer
Manufacturing Engineer
Manufacturing Technician
Marine Engineer
Mechanical Engineer
Metallurgist
Mining Engineer
Nuclear Engineer
Petroleum Engineer
Product/Process Engineer
Survey Technician
Systems Engineer
Transportation Engineer

Pathway: Science and Mathematics

Analytical Chemist
Anthropologist
Applied Mathematician
Archeologist
Astronomer
Astrophysicist
Atmospheric Scientist
Biologist
Botanist
Chemist
Ecologist
Economist
Environmental Scientist
Geneticist
Geologist
Geophysicist
Marine Scientist
Math Teacher
Mathematician
Meteorologist
Nanobiologist
Nuclear Chemist/Technician
Physicist

Pathways and Job Title Samples

Pathway: Science and Mathematics, continued

Programmer
Quality-Control Scientist
Research Technician
Science Teacher
Scientist
Statistician
Zoologist

percent during the 2006–2016 period, as fast as the average for all occupations. Advancements in technology usually lead to expanding applications of mathematics, and more workers with knowledge of mathematics will be required in the future. However, jobs in industry and government often require advanced knowledge of related scientific disciplines in addition to mathematics. The most common fields in which mathematicians study and find work are computer science and software development, physics, engineering, and operations research. More mathematicians also are becoming involved in financial analysis.

Considerations

- Science technicians help invent and improve products and processes, set up, operate, and maintain laboratory instruments, monitor experiments, make observations, calculate and record results, and often develop conclusions. These are the hands-on, practical workers of the science trades.
- Engineering technicians who work in research and development build or set up equipment; prepare and conduct experiments; collect data; calculate or record results; and help engineers or scientists in other ways, such as making prototype versions of newly designed equipment. They also assist in design work, often using computer-aided design and drafting (CADD) equipment.

Discussion Questions

What are the exciting new industries within scientific research and engineering?

Can you name some other career clusters in which you might find job titles that also fall under scientific research and engineering?

What is genome science?

What are some effects of scientific research and engineering in your daily life?

What are the names of some familiar companies or agencies that participate primarily in the scientific research and engineering field?

Transportation, Distribution & Logistics

Inside Track

Those interested in pursuing occupations in the Transportation, Distribution and Logistics career cluster are normally practical, hands-on, problem solvers. They tend to be independent and value their solitude. They deal with physical materials and are adept at physical labor. Occupations in the cluster are diverse and deal with planning and managing the movement of people, materials, and goods by road, pipeline, air, rail, and water. Services include related professional and technical support services such as transportation planning and management, logistics services, and mobile equipment and facility maintenance.

The rapid development of air transportation has increased the mobility of the population and created thousands of job opportunities. Air transportation includes taxi companies, commuter airlines, courier services, and big commercial airlines.

Truck drivers hold one-half of all trucking and warehousing jobs and provide the crucial link between manufacturers and consumers. The growth of logistics services has blurred the distinction between trucking and warehousing. Logistics services include the distribution of goods, such as inventory control and management, order entry and fulfillment, labeling, light assembly, packaging, and price marking. This industry includes two distinct segments: local and long-distance trucking and terminals, and public warehousing and storage. Some local truck transportation firms also take on sales and customer relations responsibilities, in addition to delivering the firm's products.

Trends

Wage and salary jobs in the air transportation industry are projected to increase by 7 percent over the 2006–2016 period, compared with 11 percent for all industries combined. However, the number of job openings may vary from year to year, because the demand for air travel—particularly pleasure travel, a discretionary expense—fluctuates with ups and downs in the economy. In the long run, passenger and cargo traffic is expected to continue expanding in response to increases in population, income, and business activity. Job prospects will continue to be better in regional and low-cost carriers than in major airlines, where competition for many jobs is keen.

One of the main factors influencing the growth of the truck transportation and warehousing industry is the state of the national economy. Growth in the industry reflects the ups and downs in the national economy. As the national economy grows and the production and sales of goods increases, there is an increase in the demand for transportation services to move goods from their producers to consumers. During economic downturns, the truck transportation and warehousing industry is one of the first to slow down as orders for goods and shipments decline.

Employment in most railroad transportation occupations is expected to change little through the year 2016. Demand for railroad freight service will grow as the economy and the intermodal

Pathways and Job Title Samples

Pathway: Facility and Mobile Equipment Maintenance

Aerospace Engineering and Operations Technician
Aircraft Mechanic and Service Technician
Automotive Service Technician
Avionics Technician
Bus and Truck Mechanic
Collision Repair Technician
Diesel Engine Specialist
Electrical/Electronic Technician
Facility Engineer
Facility Maintenance Manager and Engineer
Industrial Electrician
Industrial Equipment Mechanic
Motorboat Mechanic
Off-Road Equipment Technician
Rail Locomotive and Car Mechanic and Repairer
Service Manager
Service Writer
Ship Mechanic and Repairer

Pathway: Health, Safety and Environmental Management

Department of Transportation (DOT) Inspector
Environmental Compliance Inspector
Environmental Compliance Specialist
Environmental Engineer
Environmental Manager
Environmental Protection Specialist
Environmental Scientist
First Responder
Hazardous Materials Manager
Health and Safety Manager
Industrial Health and Safety Engineer
Industrial Hygienist
Risk Manager
Safety Analyst

Pathway: Logistics Planning and Management Services

International Logistics Specialist
Logistician
Logistics Analyst
Logistics Consultant
Logistics Engineer

Pathway: Sales and Service

Cargo and Freight Agent
Cashier, Counter and Rental Clerk
Customer Order and Billing Clerk
Customer Service Manager
Sales Representative for Transportation/Logistics Services

Pathways and Job Title Samples

Pathway: Transportation Operations

Air Traffic Controller
Airplane Pilot/Co-Pilot
Bus Driver
Dispatcher
Flight Attendant
Flight Engineer
Locomotive Engineer
Marine Captain
Sailor and Marine Oiler
Ship Engineer
Subway and Street Car Operator
Taxi Driver and Chauffeur
Traffic Manager
Transportation Manager
Truck Driver

Pathway: Transportation Systems/ Infrastructure Planning, Management and Regulations

Air Traffic Controller
Aviation Inspector
Civil Engineer
Freight Inspector
Marine Cargo Inspector
Public Transportation Inspector
Railroad Inspector
Surveying and Mapping Technician
Traffic Engineer
Urban Planner

Pathway: Warehousing and Distribution Center Operations

Car, Truck and Ship Loader
First-Line Supervisor/Manager of
Helpers
First-Line Supervisor/Manager of
Transportation and Material-Moving
Machine and Vehicle Operators
Industrial and Packaging Engineer
Laborer and Material Mover-Handler
Production, Planning, Expediting Clerk
Storage and Distribution Manager
Traffic, Shipping and Receiving Clerk
Warehouse Manager

transportation of goods continue to expand. Passenger rail service is anticipated to increase volume on pace with the growing population, as are public transit authorities. Employment of subway and streetcar operators will see average growth due to increased demand for light-rail transportation systems around the country.

Considerations

- Flight crews, especially those on international routes, often suffer jet lag—disorientation and fatigue caused by flying into different time zones. Some personnel may work under pressure to meet flight schedules. Still, the pay is relatively good throughout the industry, and the benefits of travel are enticing for many.
- Truck drivers must cope with a variety of working conditions including variable weather and traffic conditions, boredom, and fatigue. Drivers frequently travel at night, on holidays, and weekends to avoid traffic delays and to deliver cargo on time. Truck driving pays relatively well, but many persons leave the career because of the lengthy periods away from home and the long hours of driving.
- Stricter requirements for obtaining—and keeping—a commercial driver’s license also make truck driving more difficult as a career.
- Safety is a major concern of the trucking and warehousing industry. Efforts are underway to standardize the training programs to make the drivers more efficient and effective truck operators.

Discussion Questions

How has technology affected this career cluster?

Can you name some pros and cons of becoming a flight attendant or a member of a flight crew?

Why has passenger train travel increased?

Striking Out on the Trail

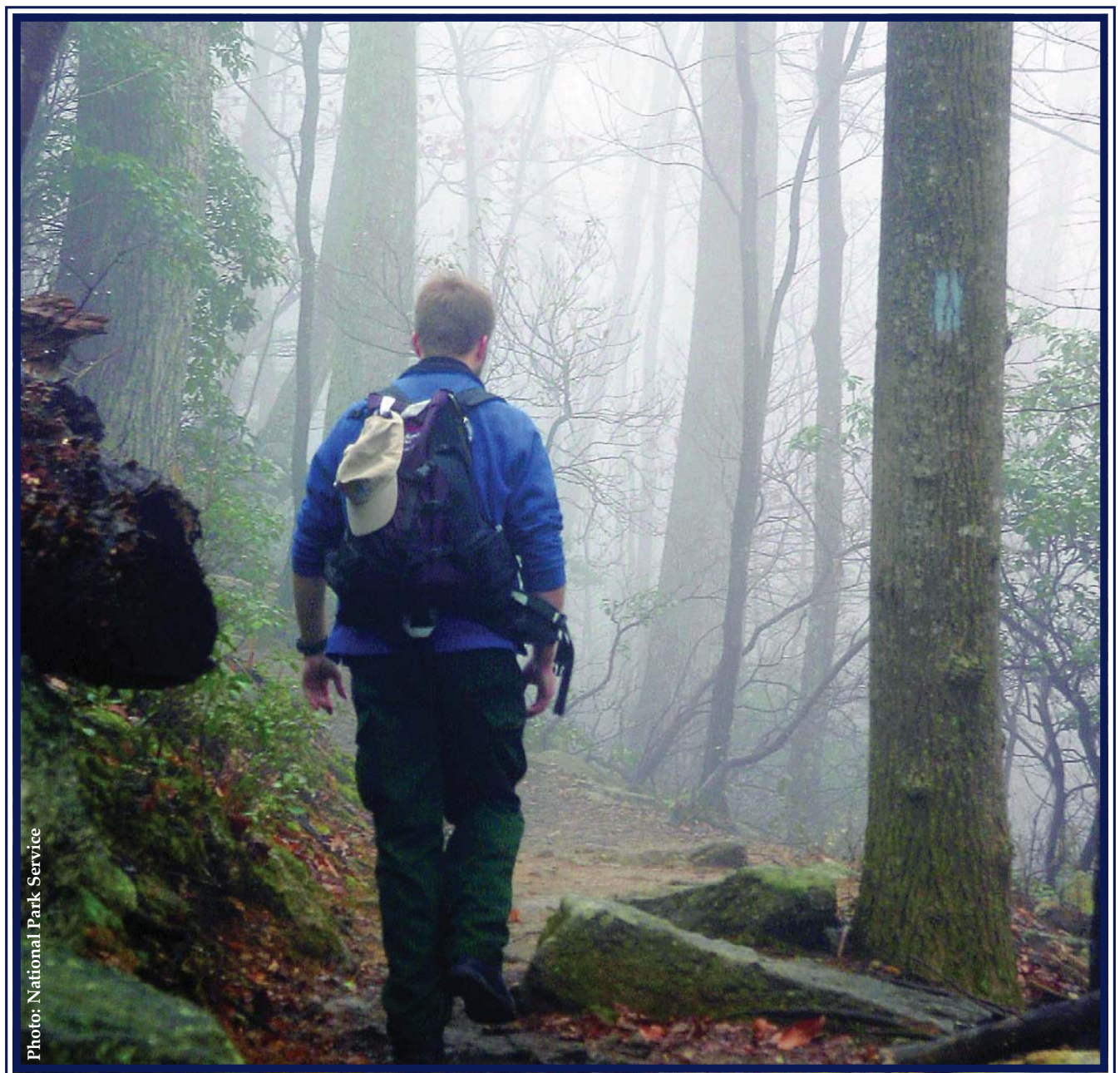


Photo: National Park Service

Investigating the Career Cluster

Based on what the students learned about themselves through this unit, they are probably finding themselves gravitating to one or more of the 16 career clusters. The next step is to synthesize their personal information with career discovery.

The **first activity** highlights an important factor for students to consider: a strong personal characteristic, such as attentiveness or endurance, can lead to dissimilar careers in different clusters. The **second activity** asks the students general career cluster questions that can be applied regardless of their choice. **Career Exploration** is based on Web site research. The duration for student research is flexible. These summarize the unit and lead to the last item, a student checklist: **The Next Step**.

Activity: Similar Characteristics Occupations

Have students visit One-Stop Career System Multimedia Career Video List at http://web1.dol.state.nj.us/coei/CareerVideos/careervideos_list.html. Have them scroll to the last section: "Similar Characteristics Occupations," and view several videos. This activity illustrates that skill sets can cross a wide variety of careers. For example, if a person has strong attentiveness skills, they have a good chance of success in careers as varied as crime investigator, pharmacist, nurse, musician, manufacturing, or referee. All of these require attentiveness.

Activity: Career Cluster

Divide students into groups corresponding to their career cluster of choice. Students should have their job titles in mind but remain focused on studying the career cluster to make a group presentation.

Students should choose at least three different pathways within the cluster and use that information when analyzing the following:

1. *Define the essence of the career cluster. What is the essential connection that links every job title in the cluster?*
2. *Name some traditional pathways within the cluster.*
3. *Name some new, contemporary, or recently revitalized industry groups within the cluster.*
4. *List some job titles in the cluster that interest you.*
5. *List some job titles that might be listed in another cluster as well as the one under examination.*
6. *List some exciting new job titles within the cluster.*
7. *Predict the future for the cluster. Is it gaining or losing importance? Justify your answer.*

8. *Select four job titles within the cluster. List some industry trends both on a national and state level. Make projections based on history and/or other reliable sources. Address the following issues:*

- *salary*
- *openings/closings*
- *job security*
- *job longevity*

9. *List any environmental concerns, such as*

- *weather issues*
- *political climate*
- *economy*
- *consumer trends.*

Career Exploration

1. Explore the following Web sites. You may decide that you are partial to one Web site, or you may want to combine elements of different ones. Take a self-assessment survey, investigate various career clusters, areas, and roles, and examine the related education and training. Take good notes of your exploration to use for your essay and for “The Next Step” activity. It would be a good idea to read “The Next Step” activity before beginning your search, so you will know some of the questions you will need to answer.

KnowHowVirginia

www.knowhowvirginia.org

Kuder: Virginia Career Planning System

www.va.kuder.com

Occupational Outlook Handbook, 2008–2009 Edition

www.bls.gov/oco

Virginia Career VIEW

www.vacareerview.org

VTECS and Career Clusters

www.v-tecs.org/careerclusters.htm

2. Narrow your research to one job title.
3. Based on your research, write an essay regarding your job title search. Use the first-person point of view. In your essay, address the following in the order below:
 - a. Introduce the career cluster and your job title.
 - b. Describe your search. How did it go?
 - c. Describe the education requirements and how you think you will meet them.
 - d. Do the same for job-skills training.
 - e. Describe your strengths—things that would make you a “good fit” for the job you want.
 - f. Describe your weaknesses—things that would make both getting and keeping the job difficult.
 - g. Did you learn anything new about your potential career? If so, what? If not, why not?
 - h. Overall, consider the positive and negative aspects of your potential career choice. Do you think you are well suited for this job? Why, or why not?

The Next Step

To be completed by student....

Based on your research and what you know about your future, make some immediate plans that could help you jump into a career and land the job you want. Check all that apply.

EDUCATION

1. What career path do you plan to pursue?
 - high school only/GED
 - high school/CTE program in your field of study
 - community college
 - traditional 4-year university
 - master's degree
 - higher
 - other (please list) _____

JOB TRAINING

2. How will you learn job skills?
 - friends/family members
 - current/future co-workers
 - internship/mentorship/apprenticeship
 - co-op education
 - Career and Technical Education (CTE)
 - entry-level job in the field
 - military
 - Peace Corps
 - other (please list) _____

CAREER EDUCATION

3. From which source(s) will you seek help with career planning?
 - friends/family members
 - teachers
 - r u ready?*
 - counselors
 - employment agency, professional
 - employment agency, government
 - other community institution (please name) _____
 - self-directed online search
 - other research methods (please name) _____
 - do not plan to investigate career options (please give reason) _____
 - need no further guidance (please give reason) _____
4. List some entry-level job titles that might help you get closer to the job you are seeking.
5. Name some industry trends (e.g., salary, openings/closings, job security, job longevity) in the career cluster that interests you.

National-level

Virginia

6. List any environmental concerns, as in relating to surroundings (e.g., weather, political climate, economy, consumer trends) that may affect your potential job.

7. What do you feel is the largest obstacle that may prevent you from getting the career you seek?

8. What are your biggest misgivings about the career field/job you wish to enter?

9. Which personality trait(s) will help you make the transition into your career role?

10. Would you like to set an appointment to speak with a school counselor regarding your career plans?
 Yes
 No

11. Contact Information (all answers optional)

Name:

Grade level:

Phone number:

E-mail:

Student identification number:

Related Academic Standards of Learning

Academic Standards of Learning are an essential component of career and technical education and are required to be successful in an occupational field. The identification of related academic Standards of Learning that are reinforced through application in career and technical courses supports and enhances academic instruction.

Instruction in Career Connections programs and courses incorporates and reinforces Virginia Standards of Learning as stated in Standards of Learning for Virginia Public Schools. Identified on the following pages are specific Standards of Learning that are reinforced through discussions and activities in ready or not. Local school divisions may wish to identify additional Standards of Learning as reflected in instructional activities and cooperative efforts with other disciplines.

English

Oral Language

11.1 The student will make informative and persuasive presentations.

- Gather and organize evidence to support a position.
- Present evidence clearly and convincingly.
- Support and defend ideas in public forums.
- Use grammatically correct language, including vocabulary appropriate to the topic, audience, and purpose.

11.2 The student will analyze and evaluate informative and persuasive presentations.

- Critique the accuracy, relevance, and organization of evidence.
- Critique the clarity and effectiveness of delivery.

Reading Analysis

11.4 The student will read and analyze a variety of informational materials.

- Use information from texts to clarify or refine understanding of academic concepts.
- Read and follow directions to complete an application for college admission, for a scholarship, or for employment.
- Apply concepts and use vocabulary in informational and technical materials to complete a task.
- Generalize ideas from selections to make predictions about other texts.
- Analyze information from a text to draw conclusions.

Writing

11.7 The student will write in a variety of forms, with an emphasis on persuasion.

- Generate, gather, plan, and organize ideas for writing.
- Develop a focus for writing.

- Evaluate and cite applicable information.
- Organize ideas in a logical manner.
- Elaborate ideas clearly and accurately.
- Adapt content, vocabulary, voice, and tone to audience, purpose, and situation.
- Revise writing for accuracy and depth of information.
- Proofread final copy and prepare document for intended audience and purpose.

Research

11.10 The student will analyze, evaluate, synthesize, and organize information from a variety of sources to produce a research product.

- Narrow a topic.
- Develop a plan for research.
- Collect information to support a thesis.
- Evaluate quality and accuracy of information.
- Synthesize information in a logical sequence.
- Document sources of information, using a style sheet, such as that of the Modern Language Association (MLA) or the American Psychological Association (APA).
- Edit writing for clarity of content and effect.
- Edit copy for grammatically correct use of language, spelling, punctuation, and capitalization.
- Proofread final copy and prepare document for publication or submission.
- Use technology to access information, organize ideas, and develop writing.

Oral Language

12.1 The student will make a 5 to 10 minute formal oral presentation.

- Choose the purpose of the presentation: to defend a position, to entertain an audience, or to explain information.
- Use a well-structured narrative or logical argument.
- Use details, illustrations, statistics, comparisons, and analogies to support purposes.

- d) Use visual aids or technology to support presentation.
- e) Use grammatically correct language, including vocabulary appropriate to the topic, audience, and purpose.

12.2 The student will evaluate formal presentations.

- a) Critique relationships among purpose, audience, and content of presentations.
- b) Critique effectiveness of presentations.

Reading Analysis

12.4 The student will read and analyze a variety of informational materials, including electronic resources.

- a) Identify formats common to new publications and information resources.
- b) Recognize and apply specialized informational vocabulary.
- c) Evaluate a product based on analysis of the accompanying warranty and instruction manual.
- d) Evaluate the quality of informational and technical materials.

Writing

12.7 The student will develop expository and informational writings.

- a) Generate, gather, and organize ideas for writing.
- b) Consider audience and purpose when planning for writing.
- c) Write analytically about literary, informational, and visual materials.
- d) Elaborate ideas clearly and accurately.
- e) Revise writing for depth of information and technique of presentation.
- f) Apply grammatical conventions to edit writing for correct use of language, spelling, punctuation, and capitalization.
- g) Proofread final copy and prepare document for publication or submission.

History and Social Science

Skills

VS.1 The student will develop skills for historical and geographical analysis including the ability to

- a) identify and interpret primary and secondary source documents to understand events in history;
- b) determine cause and effect relationships;
- c) compare and contrast historical events;
- d) draw conclusions and make generalizations;
- e) make connections between past and present;
- f) sequence events in Virginia history;

- g) interpret ideas and events from different historical perspectives;
- h) evaluate and discuss issues orally and in writing;
- i) analyze and interpret maps to explain relationships among landforms, water features, climatic characteristics, and historical events.

Virginia: 1900 to the Present

VS.10 The student will demonstrate knowledge of government, geography, and economics by

- a) identifying the three branches of Virginia government and the function of each;
- b) describing the major products and industries of Virginia's five geographic regions;
- c) explaining how advances in transportation, communications, and technology have contributed to Virginia's prosperity and role in the global economy.

The United States since World War II

USII.7 The student will demonstrate knowledge of the economic, social, and political transformation of the United States and the world between the end of World War II and the present by

- a) describing the rebuilding of Europe and Japan after World War II, the emergence of the United States as a superpower, and the establishment of the United Nations;
- b) describing the conversion from a wartime to a peacetime economy;
- c) identifying the role of America's military and veterans in defending freedom during the Cold War, including the wars in Korea and Vietnam, the Cuban missile crisis, the collapse of communism in Europe, and the rise of new challenges;
- d) describing the changing patterns of society, including expanded educational and economic opportunities for military veterans, women, and minorities

Civics and Economics

CE.4 The student will demonstrate knowledge of personal character traits that facilitate thoughtful and effective participation in civic life by

- a) practicing trustworthiness and honesty;
- b) practicing courtesy and respect for the rights of others;
- c) practicing responsibility, accountability, and self-reliance;
- d) practicing respect for the law;
- e) practicing patriotism.

CE.9 The student will demonstrate knowledge of how economic decisions are made in the marketplace by

- a) applying the concepts of scarcity, resources, choice, opportunity cost, price, incentives, supply and demand, production, and consumption;
- b) comparing the differences among free market, command, and mixed economies;
- c) describing the characteristics of the United States economy, including free markets, private property, profit, and competition.

CE.10 The student will demonstrate knowledge of the structure and operation of the United States economy by

- a) describing the types of business organizations and the role of entrepreneurship;
- b) explaining the circular flow that shows how consumers (households), businesses (producers), and markets interact;
- c) explaining how financial institutions encourage saving and investing;
- d) examining the relationship of Virginia and the United States to the global economy, with emphasis on the impact of technological innovations.

CE.11 The student will demonstrate knowledge of the role of government in the United States economy by

- a) examining competition in the marketplace;
- b) explaining the creation of public goods and services;
- c) describing the impact of taxation, including an understanding of the reasons for the 16th amendment, spending, and borrowing;
- d) explaining how the Federal Reserve System regulates the money supply;
- e) describing the protection of consumer rights and property rights.

CE.12 The student will demonstrate knowledge of career opportunities by

- a) identifying talents, interests, and aspirations that influence career choice;
- b) identifying attitudes and behaviors that strengthen the individual work ethic and promote career success;
- c) identifying skills and education that careers require;
- d) examining the impact of technological change on career opportunities.

Era VIII: The Post War Period, 1945 to the Present

WHII.12 The student will demonstrate knowledge of major events and outcomes of the Cold War by

- a) explaining key events of the Cold War, including the competition between the American and Soviet economic and political systems and the causes of the collapse of Communism in the Soviet Union and Eastern Europe;
- b) assessing the impact of nuclear weaponry on patterns of conflict and cooperation since 1945;
- c) describing conflicts and revolutionary movements in eastern Asia, including those in China and Vietnam, and their major leaders, i.e., Mao Tse-tung (Zedong), Chiang Kai-shek, and Ho Chi Minh.

WHII.15 The student will demonstrate knowledge of cultural, economic, and social conditions in developed and developing nations of the contemporary world by

- a) identifying contemporary political issues, with emphasis on migrations of refugees and others, ethnic/religious conflicts, and the impact of technology, including chemical and biological technologies;
- b) assessing the impact of economic development and global population growth on the environment and society, including an understanding of the links between economic and political freedom;
- c) describing economic interdependence, including the rise of multinational corporations, international organizations, and trade agreements.

World Geography

WG.7 The student will identify natural, human, and capital resources and explain their significance by

- a) showing patterns of economic activity and land use;
- b) evaluating perspectives and consequences regarding the use of resources.

WG.9 The student will analyze the global patterns and networks of economic interdependence by

- a) identifying criteria that influence economic activities;
- b) explaining comparative advantage and its relationship to international trade;
- c) describing ways that economic and social interactions have changed over time;
- d) describing and evaluating the formation of economic unions.

The United States since World War II

VUS.14 The student will demonstrate knowledge of economic, social, cultural, and political developments in the contemporary United States by

- a) analyzing the effects of increased participation of women in the labor force;
- b) analyzing how changing patterns of immigration affect the diversity of the United States population, the reasons new immigrants choose to come to this country, and their contributions to contemporary America;
- c) explaining the media influence on contemporary American culture and how scientific and technological advances affect the workplace, health care, and education.

Virginia and United States Government

GOVT.12 The student will demonstrate knowledge of the role of the United States in a changing world by

- a) describing the responsibilities of the national government for foreign policy and national security;
- b) assessing the role played by national interest in shaping foreign policy and promoting world peace;
- c) examining the relationship of Virginia and the United States to the global economy;
- d) examining recent foreign policy and international trade initiatives since 1980.

GOVT.15 The student will demonstrate knowledge of the United States market economy by

- a) assessing the importance of entrepreneurship, the profit motive, and economic independence to the promotion of economic growth;
- b) comparing types of business organizations;
- c) describing the factors of production;
- d) explaining the interaction of supply and demand;
- e) illustrating the circular flow of economic activity;
- f) analyzing global economic trends, with emphasis on the impact of technological innovations.

GOVT.16 The student will demonstrate knowledge of the role of government in the Virginia and United States economies by

- a) analyzing the impact of fiscal and monetary policies on the economy;
- b) describing the creation of public goods and services;
- c) examining environmental issues, property rights, contracts, consumer rights, labor-management relations, and competition in the marketplace.

GOVT.17 The student will demonstrate knowledge of personal character traits that facilitate thoughtful and effective participation in civic life by

- a) practicing trustworthiness and honesty;
- b) practicing courtesy and respect for the rights of others;
- c) practicing responsibility, accountability, and self-reliance;
- d) practicing respect for the law;
- e) practicing patriotism.

Additional Resources

Offices, Virginia

Agriculture Education

www.doe.virginia.gov/VDOE/Instruction/CTE/ag

Business and Information Technology

www.doe.virginia.gov/VDOE/Instruction/CTE/be

Career Connections

www.doe.virginia.gov/VDOE/Instruction/CTE/cc

Family and Consumer Sciences

www.doe.virginia.gov/VDOE/Instruction/CTE/facs

Gender Equity

www.doe.virginia.gov/VDOE/Instruction/CTE/gender.html

Health and Medical Sciences

www.doe.virginia.gov/VDOE/Instruction/CTE/ho

High Schools That Work

www.doe.virginia.gov/VDOE/Instruction/CTE/hstw

Marketing

www.doe.virginia.gov/VDOE/Instruction/CTE/me

Office of Career and Technical Education Services

www.doe.virginia.gov/VDOE/Instruction/CTE

State-Recommended Equipment Lists

www.doe.virginia.gov/VDOE/Instruction/CTE/regulations/equipment.html

Technology Education

www.doe.virginia.gov/VDOE/Instruction/CTE/te

Trade and Industrial Education

www.doe.virginia.gov/VDOE/Instruction/CTE/ti

Virginia Department of Education

www.doe.virginia.gov

Offices, United States

U.S. Department of Education

www.ed.gov

U.S. Department of Labor

www.dol.gov

Bureau of Labor Statistics

www.bls.gov

U.S. Office of Vocational and Adult Education

www.ed.gov/about/offices/list/ovae

CTE Resource Center

Career Investigation: Phase I

Career Interpretation: Phase II

Career Application: Phase III

www.cteresource.org/verso2/results?program_area=career_connections&document_type=all&course_codes=&text=

Career Planning Guide (CPG)

www.cteresource.org/cpg

Education for Employment Cooperative

Education I, II

Education for Employment Introduction

Education for Employment Level I, Level II

Entrepreneurship Education Curriculum Guide Leadership Development Curriculum Guide

www.cteresource.org/verso2/results?program_area=career_connections&document_type=all&course_codes=&text=

Enhancing Workplace Readiness Skills

Teaching Virginia's All Aspects of Industry

www.cteresource.org/verso2/results?program_area=across_the_board&document_type=all&course_codes=&text=

CTE Resource Center Library

Visit the CTE Resource Center library Web site and search "careers": www.cteresource.org/library/index.html

Career-Focused Web Sites

America's Job Bank

www.jobbankinfo.org

bestjobsusa

www.bestjobsusa.com/index.php

Blue Collar and Proud of It

www.bluecollarandproudoft.com

Center for Economic and Policy Studies: VaStat (a variety of online Virginia statistics)

www.coopercenter.org/econ/VASTAT

Careerbuilder.com

www.careerbuilder.com

CareerConnect (Virginia's One-Stop Workforce System)

www.careerconnect.state.va.us

Career Guide to Industries

www.bls.gov/oco/cg

Careers in Government

www.CareersInGovernment.com

CTE Resource Center

www.cteresource.org

Employment and Training Administration

www.doleta.gov

KnowHow Virginia

www.knowhowvirginia.org

Kuder: Virginia Career Planning System

<http://va.kuder.com>

Monster Jobs

www.monster.com

Occupational Outlook Handbook

www.bls.gov/oco

O*NET (The Occupational Information Network)

online.onetcenter.org

r u ready?

www.readyva.com

Saludos.com (Bilingual Hispanic Jobseekers)

www.saludos.com

State Council of Higher Education for Virginia

www.schev.edu

States' Career Clusters

www.careerclusters.org

Trailblazers

www.ctetrailblazers.org

Virginia Community College System

www.vccs.edu

Virginia Career VIEW

www.vacareerview.org

Virginia Employment Commission

www.vec.state.va.us

Virginia Workforce Connection

www.vawc.virginia.gov

VTECS and Career Clusters

www.v-tecs.org/careerclusters.htm

Working925.com

www.working925.com

**Virginia CTE Student
Organizations**

Virginia DECA

www.vadeca.org

Virginia FBLA/PBL

www.vafbla-pbl.org

Virginia FCCLA

www.virginiafccla.org

Virginia FFA

www.vaffa.org

Virginia HOSA

www.vahosa.org

Virginia TSA

www.vatsa.org

Virginia SkillsUSA

www.vaskillsusa.org

Virginia's
CTE
Resource Center