degrees that work.

Welding & Fabrication

Lesson Planning Guide:
Researching Welding Careers / Science

degrees that work. is a broadcast production of Pennsylvania College of Technology and WVIA public television.

More information is available at
www.pct.edu/degreesthatwork
or
www.wvia.org

This project is funded in part by the National Center for Welding Education and Training, a partnership of business and industry, community and technical colleges, universities, the American Welding Society and government that is doing business as Weld-Ed through funding support from the National Science Foundation under Grant No. 0703018.

More information is available at www.weld-ed.org.

Pennsylvania College of Technology

An affiliate of The Pennsylvania State University
Penn College operates on a nondiscriminatory basis.
Unit: High and Emerging Technology Careers

Competency: Research a high and emerging technology career based on your interests.

PA Academic Standards Included: 3.7.10D; 13.1.8A, B, E; 13.2.8B

Approximate Time: Seven to eight 45-minute periods.

Prerequisite Skills

Reading, Writing, Speaking and Listening*
1.2.8 Reading Critically in All Content Areas
A. Read and understand essential content of informational texts and documents in all academic areas.
1.4.8 Types of Writing
B. Write multi-paragraph informational pieces.
1.6.8 Speaking and Listening
E. Participate in small and large group discussions and presentations.
1.8.8 Research
B. Locate information using appropriate sources and strategies.
C. Organize, summarize and present the main ideas from research.

Mathematics*
None

Science and Technology*
3.7.10 Technological Devices
D. Utilize computer software to solve specific problems.

Career Education and Work*
13.1.8 Career Awareness and Preparation
A. Relate careers to individual interests, abilities, and aptitudes.
B. Relate careers to personal interests, abilities, and aptitudes.
E. Analyze the economic factors that impact employment opportunities.

* Academic Standards, Pennsylvania Department of Education
http://www.pde.state.pa.us
13.2.8 Career Acquisition*

B. Evaluate resources available in researching job opportunities.

Performance Standards

<table>
<thead>
<tr>
<th>Performance Standard</th>
<th>Suggested Evaluation Method</th>
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<tbody>
<tr>
<td>1. Develop a research paper about a high and emerging technology career of interest</td>
<td>Project evaluation – Rubric</td>
</tr>
<tr>
<td>to you with 85% accuracy on the rubric.</td>
<td></td>
</tr>
<tr>
<td>2. Make a presentation to your class about a high and emerging technology career</td>
<td>Project evaluation – Rubric</td>
</tr>
<tr>
<td>of interest to you with 85% accuracy on the rubric.</td>
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</tbody>
</table>

Suggested Projects

None

Multiple Intelligence Types

Verbal/Linguistic
Intrapersonal
Existentialist

Resources

1. PowerPoint presentation: High and Emerging Technology Careers
   Teacher developed
2. Websites: Career Guidance
   http://www.careerexplorer.net/descriptions.asp
   http://careerplanning.about.com/od/occupations/a/career_briefs.htm
   http://www.bls.gov/k12/
   http://www.pct.edu
3. Video: Degrees that work: Welding and Fabrication
   http://www.pct.edu/degreesthatwork/
4. Website: Online Career Test
   http://www.careertest.net/
5. Rubric: High and Emerging Technology Careers Research Paper
   See attached
6. Rubric: Presentation of High and Emerging Technology Careers Paper
   See attached

* Academic Standards, Pennsylvania Department of Education
  http://www.pde.state.pa.us
Equipment/Materials/Software

1. Computer with internet access and PowerPoint software
   Any supplier
2. Data Projector
   Any supplier

Suggested Learning Sequence

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<tr>
<th>Strategy</th>
<th>Outline</th>
<th>Resources/Equipment</th>
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<tbody>
<tr>
<td>Performance Standard 1</td>
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</tbody>
</table>
| Introduction    | Start the lesson with a PowerPoint presentation/discussion on high and emerging technology careers and why these types of careers are beneficial to pursue. Use the websites suggested to help develop the presentation. Discuss what makes a career one that can be classified as “high and emerging technology” including the aspects of: competition, geographic location, global influences, job growth, job openings, potential advancement, potential earnings, salaries/benefits, unemployment. Show the video and ask the students what qualifies careers in welding and fabrication quality as high and emerging technology. Based on your definition, ask students to give other examples of this type of career. **Related Academic Skills:** 13.1.8E | Resource #1
|                 |                                                                        | Resource #2          |
|                 |                                                                        | Resource #3          |
|                 |                                                                        | Equipment #1         |
|                 |                                                                        | Equipment #2         |
| Activity        | The students will use an online career test to see what kind of careers fit their strengths and personalities. **Related Academic Skills:** 13.1.8A, B: 13.2.8B | Resource #4          |
|                 |                                                                        | Equipment #1         |
| Discussion      | Using results from the career test have the select several students share what they found out about themselves based on the online career test. They should also discuss what types of high and emerging technology careers fit their strengths and personality. |                     |
| Activity        | Based on the results of the careers test have students select a high and emerging technology career that they might like to pursue. Have them research their chosen career and create a research paper. | Resource #2          |
|                 |                                                                        | Resource #5          |
|                 |                                                                        | Equipment #1         |
Distribute copies of the guidelines with the rubric criteria and discuss with them how the report will be graded. You may assign your own point values to each the rubric criteria to fit your grading system.  

**Related Academic Skills:** 1.2.8A, 1.4.8B, 1.8.8B, C; 13.1.8A, B  
**Related SCAN/Soft Skills:** Information A-C

<table>
<thead>
<tr>
<th>Performance Standard 2</th>
<th></th>
<th>Resource #4</th>
<th>Equipment #1</th>
<th>Equipment #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Presentation</td>
<td>Using a PowerPoint presentation, have the students present the information they found about their chosen high and emerging technology career to the class. Distribute copies of the guidelines and rubric and review it as a class. Make sure students know how the presentation will be graded. You may assign your own point values to each part of the rubric criteria to fit your grading system. <strong>Related Academic Skills:</strong> 1.6.8E; 1.8.8C; 3.7.10D <strong>Related SCAN/Soft Skills:</strong> Information C, D; Technology B</td>
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<tr>
<td>Wrap Up</td>
<td>As a class review the many benefits of a high and emerging technology career and why they should consider one that falls within its definition.</td>
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**Related SCANS/Soft Skills**

**Resources**
None

**Interpersonal**
None

**Information**
A. Acquires and Evaluates Information  
B. Organizes and Maintains Information  
C. Interprets and Communicates Information  
D. Uses Computer to Process Information

**Systems**
None

**Technology**
B. Applies Technology to Task

**Thinking Skills**
None

**Personal Qualities**
None
Related Worksite/Work Based Activities

None

Additional Resources

None

This planning guide was written by Eric Broughton, Physics/General Science Teacher, Liberty Jr. /Sr. High School, Liberty, PA.
High and Emerging Technology Careers Research Paper

Name: _________________________________ Date________________________

Instructions: You are to write a research paper about the career that interests you and fits your strengths based off your online career test. Follow the guidelines below when writing your paper. You are to follow your format used in English/Communications class. (Introduction, body of paper, Conclusion)

Guidelines

1. Why is the selected career considered “high and emerging technology”?
2. What are your personal interests that attracted you to this career?
3. Education or training need for your profession. Is a degree or certificate required?
4. Name at least two (2) schools offering the training in your field.
5. What is the cost of education for your career?
   a. Tuition
   b. Books
   c. Room and Board
   d. Certification test fees
6. List at least eight (8) courses/classes required in your major or for your career.
7. Time frame needed to complete schooling or training.
8. Must your education be updated (continuing Ed)?
9. Availability of Jobs
10. Starting Salary
11. Describe the geographic region in which you will have to live to obtain a job in your field.
12. Explain your personality, qualities, and skills that you discovered in your online career test that lead you to choose this career.
13. Bibliography – at least 5 sources. They may be listed in APL or MLA styles depending on what you have learned in your English class.

Helpful Websites

1. www.educationplanner.org
2. www.college.gov
3. www.paworkstats.state.pa.us/gsipub/index.asp?docid=405
4. www.bls.gov/oco
5. www.pacareerzone.org/home.jsf
6. www.salary.com
7. www.jobprofiles.org
8. www.careertoolkits.com
Presentation of High and Emerging Technology Careers Paper

Name: ________________________________ Date:_____________________

Instructions: You are to create a PowerPoint Presentation to show the class what your career is. You are to use the following rubric to create the slide show. Each part of the rubric should be represented with at least one slide.

Guidelines

1. Why is the selected career considered “high and emerging technology”?
2. What are your personal interests that attracted you to this career?
3. Education or training need for your profession. Is a degree or certificate required?
4. Name at least two (2) schools offering the training in your field.
5. What is the cost of education for your career?
   a. Tuition
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