

Renewable Fuels



Renewable Fuels Foundation



Renewable Fuels Association



Ethanol Careers

Unit 6 Lesson 1

Precepts

M. Communication

- M1. Demonstrate technical and business writing skills.
- M2. Demonstrate professional job seeking skills.
- M3. Makes effective business presentations.

National Standards

- NL-ENG.K-12.8. Developing Research Skills.
- NSS-EC.9-12.14. Entrepreneurs.
- NT.K-12.5. Technology Research Tools.

Student Learning Objectives

As a result of this lesson, the student will ...

- 1. Recognize the careers associated with the ethanol industry.
- 2. Identify the career path for individuals pursuing a career in the ethanol industry.

Time

Instruction time for this lesson: Thirty minutes of instruction, two hours of computer laboratory time, two hours of project development, and enough time for students to present if needed.

Resources

- www.ethanoljobs.com
- www.ethanoltraining.com
- www.careeronestop.com
- www.worldwidelearn.com

Tools, Equipment, Supplies

- Writing Surface
- Computer lab
- Projector
- TM.A
- TM.B
- AS.A – one per student
- AS.B – one per student
- AS.C – AS.E – as needed for assignments
- Assess.A – one per student

Key Terms

The following terms are presented in this lesson and appear in ***bold italics***:
Career pathway

INTEREST APPROACH

Use AS.A and a Me-You-Us Moment to begin the students thinking about jobs and careers related to Ethanol. AS.A will be used as a framework for the students as they brainstorm. Have students brainstorm a list of all the careers they can that are directly and indirectly related to the ethanol industry.



We have assembled a vast knowledge pertaining to the ethanol industry from our past lessons. Let's take two minutes using this sheet (*hold up AS.A*) to brainstorm all the careers we can think of that are associated with the Ethanol industry. On the sheet I am handing out there are six boxes to help organize the jobs and careers. What questions are there? When you receive your sheet you may begin. *Hand out AS.A.*

Continue the Me-You-Us Moment by having the students share with a neighbor and then share with the entire group. During the entire group share, write the jobs and careers on the board or overhead. Have students continue to add to their list so they end up with an extensive list.



This is a great list that we have put together. We will be working with these jobs and careers for the entire lesson and you will have the opportunity to learn more about a specific career that you are interested in.

OBJECTIVE 1. Recognize the careers associated with the ethanol industry.

Show students TM.A to provide more job and career opportunities that may not have been mentioned earlier. Have them continue to add to their list. Explain that careers fall into a variety of areas and they are not all directly related to the production of ethanol. Many jobs are created indirectly through the ethanol industry. When they have an extensive list assembled have each student pick the three jobs and careers that they are most interested in learning more about.

I. Careers associated with the ethanol industry can fall into six major areas.

- A. Production of Inputs
- B. Transportation of Materials
- C. Ethanol Processing
- D. Production of Ethanol Facilities
- E. Distribution of Ethanol
- F. Marketing/ Clerical/ Industry Support



Here is a list that I put together earlier (*post TM.A*). Look at the list and add any jobs or careers to your list that are missing. What jobs or careers do you have questions about? *Allow students to ask questions and explain the careers that are unfamiliar to the students.* Realize that jobs and careers in the ethanol industry do not have to be directly involved with the production of ethanol. Many other jobs and careers are created indirectly through the ethanol industry.

Using our futuristic brains, take a moment and read through our list. Circle three of the jobs and careers that you would like to learn more about. This may be an area you are interested in as a future career or it may be one that caught your interest and you want to know more about it.

OBJECTIVE 2. Identify the career path for individuals pursuing a career in the ethanol industry.

Explain what Career Pathways are and show students the example of a career pathway for ethanol found on TM.B. Highlight that as you gain experience and educational requirements you can move up the career path.

*II. **Career Pathways** are a workforce development strategy used in the U.S. to support workers' transitions from education into and through the workforce. This strategy has been adopted at the federal, state and local levels in order to increase education, training and learning opportunities for America's current and emerging workforce. A career pathway groups careers related together by related fields and similar characteristics. The employment requirements require common interests, strengths, and competencies.*



These jobs and careers are part of a **Career Pathway**. **Career Pathways** are a workforce development strategy used in the U.S. to support workers' transitions from education into and through the workforce. This strategy has been adopted at the federal, state and local levels in order to increase education, training and learning opportunities for America's current and emerging workforce. A career pathway groups careers related together by related fields and similar characteristics. The employment requirements require common interests, strengths, and competencies. This is an example of what a Career Pathway relating to the ethanol industry might look like. *Post TM.B.*

We have come up with a whole list of careers associated with the ethanol industry and can visualize how they fit into a Career Pathway. The next step is to learn more about specific jobs and careers. Go back to when we used your futuristic brains and circled three jobs or careers we wanted to learn more about for the future. It is time to make that happen.

Explain to students that they are going to complete an activity (see activity options below) based on one of the career options they chose earlier. During the activity they are going to be asked to research the following information pertaining to their chosen career:

- Job Description*
- Knowledge, Skills and Abilities*
- Average salary/ Compensation*
- Educational requirements*
- Working Conditions*
- Possible hazards on the job*
- Possible locations of work*
- Level of supervision or managerial level*
- Room for promotions or moving up*
- One interesting fact*

The list is on AS.B for the students to use while they research.

The following websites may help in locating some of the information:

www.ethanoljobs.com
www.ethanoltraining.com

www.careeronestop.com
www.worldwidelearn.com

The option that is chosen by the teacher or by the students will determine the amount of time that will need to be allotted.

ACTIVITY OPTIONS:

Determine ahead of time which option you are choosing or allow students to choose the option they would like to do. Below are suggested steps to follow to have students complete each of the options.

Poster Project

- *Using the information and pictures gathered, create a poster.*
- *Have students use AS.B to record their research.*
- *Allow adequate time in the computer lab to research the career.*
- *Provide students with poster board and creative materials.*
- *Grade with provided score sheet (AS.C).*
- *Extra credit opportunity for contacting an individual in the profession and a real picture or quote is used on the poster from the individual*
- *Display in classroom, hallway, or library*

Essay

- *Using the information gathered, write a summary of 500 words or more.*
- *Have students use AS.B to record their research.*
- *Allow adequate time in the computer lab to research the career.*
- *Ask students to write a rough draft (provide feedback on the draft)*
- *Final draft should be typed.*
- *Grade with provided score sheet (AS.D).*
- *Extra credit opportunity for contacting an individual in the profession and quoting them in the summary.*
- *Publish in school paper, local paper, or in an FFA newsletter*

Oral Presentation

- *Using the information gathered create a 3-5 minute presentation.*
- *Have students use AS.B to record their research.*
- *Allow adequate time in the computer lab to research the career.*
- *Ask students to prepare an outline for their presentation including an introduction, body of content, and a conclusion.*
- *Grade with provided score sheet (AS.E).*
- *Extra credit opportunity for contacting an individual in the profession and quoting them in the presentation.*
- *Ask individuals to present their presentation at the next chapter meeting or during National FFA Week*

REVIEW/SUMMARY

Thank and congratulate the students for their efforts and the products they produced pertaining to jobs and careers in the ethanol industry. Remind them of all the potential careers, what a career pathway looks like in the ethanol industry, and challenge them to continue to build upon their ethanol industry knowledge.

APPLICATION

Extended classroom activity: *Ask local professionals to be guest speakers and talk about ethanol careers. These may be people who directly work in the ethanol industry or indirectly work with the ethanol industry. Prepare questions and give the questions to the professionals ahead of time to help guide them in preparing their presentations for the class.*

FFA activity: *Depending upon which activity is selected the product that is developed could be used with local civic groups or further developed and presented during an FFA Career Development Event.*

SAE activity: *Shadow or interview a local person who works directly or indirectly with the ethanol industry. Ask questions related to the information found during the work done on this lesson. Use the additional information to evaluate whether this may be a career option in the future.*

EVALUATION

Assess.A

Answers to Assessment:

Matching:

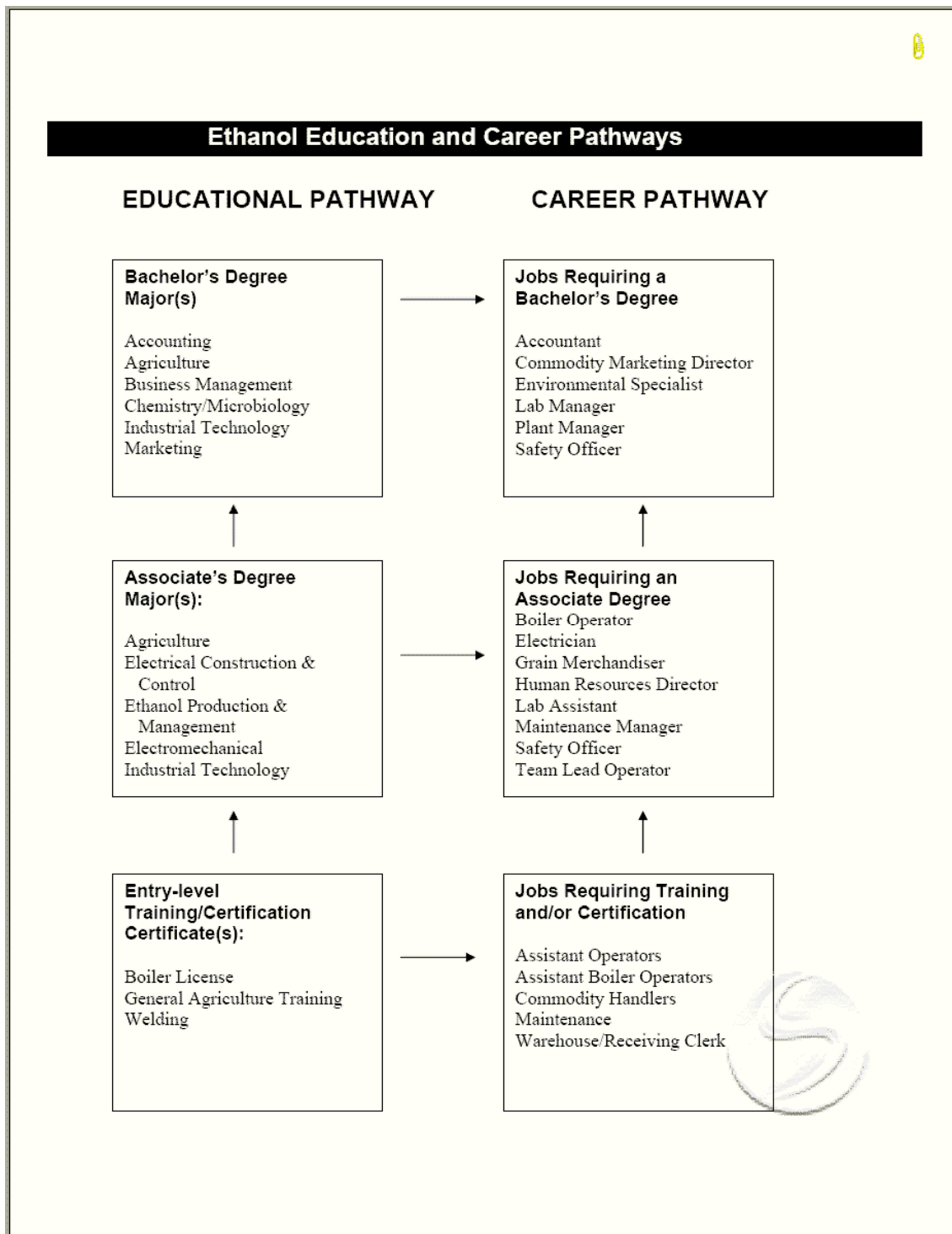
1. Career pathways
2. Knowledge
3. Abilities
4. Skills
5. Educational Requirements

Short Answer: Answers may vary

TM.A

Production of Inputs Grain Accountant Farmer Seed Dealer Equipment Dealer	Transportation of Materials Logistics Manager	Ethanol Processing General Manager Production Supervisor Lab Manager Materials Handler Production Operators Chemical Engineers Handler
Production and Maintenance of Ethanol Facilities Project Leader Electricians Mechanical Technicians Maintenance Technicians Mechanical Engineers Civil Engineers	Distribution of Ethanol Product loading Ethanol Stations	Marketing/Clerical/ Industry Support Environmental Health and Safety Coordinator Auto Dealerships Auto Technicians Equipment (mechanical) Engineer Secretary Accountants Lawyers Payroll Clerks Attorneys

TM.B



AS.A

Production of Inputs	Transportation of Materials	Ethanol Processing
Production of Ethanol Facilities	Distribution of Ethanol	Marketing/Clerical/ Industry Support

AS.B

My Job position is _____

Job description

Knowledge

Skills

Abilities

Average salary/compensation

Educational requirements

Working conditions

Possible hazards on the job

Possible locations of work

Level of supervision or managerial level

Room for promotions or moving up

One interesting fact

AS.C

Poster Presentation Rubric

Content	Outstanding	Acceptable	Unacceptable	Points Awarded
Pre-Project Worksheet	<i>5 points</i> 1. Completed the worksheet	<i>3 points</i> 1. Completed half the assignment	<i>0 points</i> 1. Did not complete the assignment	
Clarity of Communication	<i>5 points</i> 1. Informational 2. Displays the message you are trying to portray	<i>3 points</i> 1. Somewhat informational 2. Lacks some advocacy	<i>1 point</i> 1. Lacks information 2. No advocacy is present	
Organization, Concise & Brevity	<i>10 points</i> 1. Well organized 2. Very Concise 3. To the point	<i>5 points</i> 1. Partially organized 2. Lacks clarity and conciseness	<i>1 point</i> 1. Unorganized 2. Lacks clarity 3. Redundant	
Accuracy of Information	<i>10 points</i> 1. Accurate information 2. Provides supporting details	<i>5 points</i> 1. Mostly accurate information 2. Lacks supporting details	<i>1 point</i> 1. Inaccurate information 2. Uses false supporting details	

Total: _____

Additional Comments:

AS.D

Essay Presentation Rubric

Content	Outstanding	Acceptable	Unacceptable	Points Awarded
Pre-Project Worksheet	<i>5 points</i> 1. Completed the worksheet	<i>3 points</i> 1. Completed half the assignment	<i>0 points</i> 1. Did not complete the assignment	
Intro Paragraph	<i>5 points</i> 1. Grabs the reader's attention 2. Is a true statement	<i>3 points</i> 1. Uninteresting 2. Is vague as to the definition of a true statement	<i>1 point</i> 1. Misleading 2. Is a false statement	
Organization, Clarity, and Conciseness	<i>10 points</i> 1. Well organized 2. Clear and very concise	<i>5 points</i> 1. Somewhat well organized 2. Possesses some clarity and conciseness	<i>1 point</i> 1. Unorganized 2. Lacks clarity and conciseness	
Accuracy of Information	<i>10 points</i> 1. Accurate information 2. Provides supporting details	<i>5 points</i> 1. Mostly accurate information 2. Lacks supporting details	<i>1 point</i> 1. Inaccurate information 2. Uses false supporting details	

Total: _____

Additional Comments:

AS.E

Oral Presentation Rubric

Content	Outstanding	Acceptable	Unacceptable	Points Awarded
Pre-Project Worksheet	<i>5 points</i> 1. Completed the Worksheet	<i>3 points</i> 1. Completed half the assignment	<i>0 points</i> 1. Did not complete the assignment	
Professionalism	<i>5 points</i> 1. Professional appearance 2. Poised and confident	<i>3 points</i> 1. Somewhat professional appearance 2. Lacks some poise and confidence	<i>1 point</i> 1. Lacks professional appearance 2. No poise or confidence	
Organization & Accuracy of Information	<i>10 points</i> 1. Well organized 2. Accurate 3. Uses supporting details	<i>5 points</i> 1. Somewhat organized 2. Mostly accurate 3. Lacks supporting details	<i>1 point</i> 1. Unorganized 2. Inaccurate 3. Uses false details	
Voice Quality, Power of Expression & Verbal Skills	<i>10 points</i> 1. Strong voice and power of expression 2. Sincere	<i>5 points</i> 1. Average voice and power of expression 2. Somewhat sincere	<i>1 point</i> 1. Voice quality and power of expression are weak 2. Lacks sincerity	

Total: _____

Additional Comments:

Assess.A

Match the following terms with the correct phrase:

Career pathways
Knowledge

Skills
Abilities

Competencies
Educational Requirements

- ____ 1. A grouping of careers related together by related fields with similar characteristics.
- ____ 2. A body of information applied directly to the performance of a function.
- ____ 3. A competence to perform an observable behavior or a behavior that results in an observable product.
- ____ 4. an observable competence to perform a learned psychomotor act.
- ____ 5. The level of education required for a job position.

Short Answer: Choose one career in the ethanol industry that appeals to you and explain why?