



Natural Resources in the Agricultural Industry

Middle School Food and Agricultural Literacy Curriculum

Precepts

- C. Vision
- C5. Persuade others to commit

National Standards

- NRS.01.01.01.a. Identify natural resources.
- NL-ENG.K-12.4 – Communication Skills
- NL-ENG.K-12.12 – Applying Language Skills
- NS.5-8.4 – Earth and Space Science

Student Learning Objectives

- As a result of this **unit**, the student will...
- Examine the components of the food and agricultural literacy: applying mathematics and science components
- As a result of this **lesson**, the student will...
- Evaluate the importance of the role of **natural resources** within the agricultural industry.

Content Outline

Objective 1. Defend the importance of the role of **natural resources** within the agricultural industry.

- I. **Natural resources in the agricultural industry**
 - A. What is a **natural resource**?
 - 1. **Natural resource:** naturally occurring material that is valuable to people, plants, and wildlife
 - a. Soil
 - b. Water
 - c. Air
 - B. **Natural resource** used in agriculture
 - 1. How are **natural resources** used in agriculture?
 - a. Power machinery and equipment
 - b. Provide essentials for plant growth
 - c. Provide essentials for animal production

Time

Instruction time for this lesson: 45 minutes.

Resources

Environmental Education for Kids. (2009). Glossary of recycling terms. Retrieved August 5, 2009, from Environmental Education for Kids Web site: <http://www.dnr.state.wi.us/org/caer/ce/eeek/earth/recycle/rgloss.htm>. National FFA Organization. (2003). LifeKnowledge Precepts and Signs of Success.— National FFA Organization. (2009). LifeKnowledge Online. Retrieved August 5, 2009, from <http://agedlearning.org>.

Tools, Equipment and Supplies

Writing surface
Transparency and projector or LCD projector
MS.IAS.8.4.TM.A – one per teacher
MS.IAS.8.4.ASSESS.A – one per student

Key Terms

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

Natural resource

Because agricultural practices will vary by geographical location, you should familiarize yourself with natural resources that are used in agriculture in your area prior to teaching this lesson. Throughout this lesson, you will instruct the students to talk with a friend; the method for accomplishing this task can be predetermined by you. It may be easiest to have students match up with someone sitting close by.

Interest Approach

In this interest approach, you will ask each student to surrender a very important item on their person (cell phone, hair brush, house key, etc.) into a bag. Students will not be allowed to look at other objects in the bag. After students surrender an item, you will explain that they cannot have the item back until the next day. Students will then be required to defend reasons for needing the item back before the next day.

Thank you for coming to class today. Each day, many things are brought into class such as backpacks, books, calculators, MP3 players, purses, wallets, cell phones, keys – the list goes on and on. I am holding a bag. Show bag to students.



Lesson Number: MS.IAS.8.4

Middle School Food and Agricultural Literacy Curriculum

Natural Resources in the Agricultural Industry

At the beginning of class today, each of us will bring forward the item that is important and place it in this bag. The item should be small enough to fit with multiple other items in the bag. As I come around, drop your item in this bag. You may not look in the bag to see what other students have placed in the bag. I will be coming around to collect your items in 30 seconds so make a decision now. Demonstrate what you want students to do by surrendering an item of your own. If students ask about getting the item back, tell them that they will get the item back, but do not give them a timeline for return of the item.

Pause for 30 seconds and then begin walking throughout the room and collecting items from students. Once you have collected an item from each student return to the front of the room and announce:

Thank you. There were many interesting things placed in this bag. I have an announcement to make. You will not have the items placed in this bag returned to you until tomorrow.

Pause and allow students to moan, groan, and argue that the items are needed back. Facilitate a few discussions about the importance of the items. After two or three students have made valid arguments continue.

Okay, okay, I give up. The items will be returned because you were able to defend the reason you needed them. What a persuasive group. We need these items in the future for one reason or another, don't we? Persuading people to do things can have a strong impact on the future. Think about a time when you persuaded someone to do something that would impact their future?

Pause for a few seconds.

When I say DISCUSS, turn to a friend and tell them about a time you persuaded someone to do something that would have an impact on their future. Take turns sharing stories with your partner. Thirty seconds will be allotted for this activity. What questions are there? DISCUSS!

Pause for 30 seconds while students have this conversation.

Time is up. Who will give an example of persuasion?

Allow students to share responses. After a few responses continue.

Persuasion of another person is not always for a good reason. However, if you have a strong belief about something, you may find yourself persuading others to agree with your thoughts. Persuasion is a powerful tool and should only be used when it will have a positive impact on the future.

It is understood that these items (*gesture to the bag*) are important to us. Just as these items are important to us, **natural resources** are important to the agricultural industry.

Pass items back to the students.

Thank you for surrendering an item. Today, we will discuss the importance of **natural resources** within the agricultural industry. **Natural resources** are vital to the agricultural industry because they provide materials necessary for plants and animals to grow and machinery to operate. As we begin and continue through a discussion about **natural resources**, we should be focused and prepared to discuss their importance within the agricultural industry.

Summary of Content and Teaching Strategies

Objective 1. Defend the importance of the role of **natural resources** within the agricultural industry.

In this lesson, project **MS.IAS.8.4.TM.A** to highlight content outline of Objective 1. Keep the transparency master covered, and uncover as you discuss each component of the outline. Pose the question:

Take out a blank sheet of paper and something to write with, and place the items on the desk.

Observe that all students have done this.

In the middle of the sheet of paper, write these two words: **nature resource**.

Observe for completion of this.

What is a **natural resource**?

Pause for a few seconds.



Lesson Number: MS.IAS.8.4

Middle School Food and Agricultural Literacy Curriculum

Natural Resources in the Agricultural Industry

We have these two words written on your paper, but what do they mean?

Pause for a few seconds.

Under these words, draw a picture of something you think might represent the term. Make this happen in 30 seconds.

Pause for 30 seconds.

Good work. Now, let's consider the definition of **natural resource**.

Share the definition below.

I. **Natural resources in the agricultural industry**

A. What is a **natural resource**?

1. **Natural resource**: naturally occurring material that is valuable to people, plants, and wildlife

Write that definition on your paper.

Pause while students write.

As we continue through this discussion, we will discuss many examples of **natural resources**. Add pictures of various **natural resources** to your paper as this occurs. Now, think about that definition.

Pause for a few seconds.

We use **natural resources** every day. For example, when we brush our teeth, we use a **natural resource**. When we take a breath, we use a **natural resource**. When we ride in a car or on a bus, we are taking advantage of **natural resources**. When I say BRAINSTORM, write down all of the things you can think of that might qualify as a **natural resource**. By the way, you will work on this with a friend and your answers will be written on scrap paper. Thirty seconds will be allotted for this activity. What questions are there? BRAINSTORM

Pause for 30 seconds and then continue.

Time is up. I heard good conversations, saw pencils writing quickly, and am anxious to hear what you wrote.

Select a student to write down the responses on a writing surface.

Who will share examples of **natural resources**?

Allow students to share responses and have the selected student write down each response. If students are slow to respond, use examples from the list below to prompt them. Correct students if they give examples of items that are not **natural resources** but are man-made resources (such as plastic). After all examples have been written, provide the items below that were not mentioned as additional examples of **natural resources**.

- a. Soil
- b. Water
- c. Air

Let's identify the **natural resources** found in our area.

Have a selected student circle or star the **natural resources** found in your geographical area.

Excellent work! Before we continue, let's ensure that we are all on the same page. If you are confident that you could explain to someone else what **natural resources** are, close both of your eyes. If you think you might be able to teach someone else what **natural resources** are, close one eye. If you know that you could not teach **natural resources** to someone else, leave both eyes open.

Observe student responses, gauge comprehension, and re-teach if necessary.

Thank you. There are many different **natural resources** that we use every day and rarely think about. Now, if we use **natural resources** every day, how do you think that farmers also use **natural resources** on a daily basis?

Pause for a few seconds while students consider this question.

Natural resources are very important to the agricultural industry. Think about how plants are grown.

Pause for a few seconds.

Think about what animals need to survive.



Lesson Number: MS.IAS.8.4

Middle School Food and Agricultural Literacy Curriculum

Natural Resources in the Agricultural Industry

Pause for a few seconds.

Consider how different crops are harvested.

Pause for a few seconds.

Now, here is a question for you: How are **natural resources** used in agriculture?

Pause for five seconds.

Who will give an example of how **natural resources** might be used in agriculture?

Allow students to share responses. If students are slow to respond, use examples from the list below to prompt them. Correct students if they give incorrect examples. After all answers have been given, provide the items below that were not mentioned as additional examples and explain the connection. Power machinery uses fossil fuels; plants need water, soil, and sunlight to grow. Animals also require **natural resources** such as water, and they benefit from the same **natural resources** as plants (since many animals eat plants).

B. **Natural resource** used in agriculture

1. How are **natural resources** used in agriculture?
 - a. Power machinery and equipment
 - b. Provide essentials for plant growth
 - c. Provide essentials for animal production

Select one of these examples and draw a representation of it on your paper. Pause while students draw.

Some critics might suggest that farms destroy **natural resources**. Understanding that **natural resources** are required for food and fiber production is important to the future of the agriculture industry. We all have to eat, and the food that we eat comes from plants or animals that are raised by farmers. We all have to wear clothing, and the clothing that we wear comes from plants or animals that are raised by farmers. Without the use of **natural resources**, plant and animal production would not be possible. Without the use of **natural resources**, we would all be hungry and naked. How does that sound?

Pause for a few seconds.

How would it be to live in a world where there was no food for people to eat and no clothes for people to wear?

Pause for a few seconds.

It is also important to keep in mind that while farmers do use **natural resources**, they also help protect and conserve **natural resources** for the future.

Review/Summary

Utilize the Eye Witness News e-Moment® to review the importance of **natural resource** usage in the agricultural industry. Students will need to be paired off with a classmate. Also, before you start the activity, you should write the following five questions on a writing surface:

1. What is a **natural resource**?
2. What are some examples of **natural resources**?
3. How important are **natural resources** to farming?
4. Why do farmers really need to use **natural resources** to raise plants or animals?
5. Why are **natural resources** important to the agriculture industry?

You have all been helpful in today's discussion about **natural resources** and the agriculture industry. Your participation has made today's class a successful one. To review the material we talked about today, we are going to report the news related to our learning. To do this successfully, we will have to work with our classmates and answer questions about **natural resource** usage in the agricultural industry.

In this activity, we will assume one of two roles: each of us will either be an expert or an interviewer. If you are the expert, stand tall and act confident that you know all there is to know about the topic. If you are the interviewer, speak to an imaginary camera and talk into a "microphone" – an ink pen or a pencil. The interviewer will pose questions to the expert about material covered in class today. Here is an example of what this might sound like:

You will need to act out the part of an interviewer. Use a reporter's voice when doing this and ask for a student to volunteer.

Today, we are interviewing (*insert volunteer's name*) who is a world-renowned expert in **natural resource** usage in the agricultural industry. Turn to random student. Please tell us (*insert volunteer's name*), what is a natural resource?



Lesson Number: MS.IAS.8.4

Middle School Food and Agricultural Literacy Curriculum

Natural Resources in the Agricultural Industry

Point the "microphone" in the direction of the volunteer.

You can be creative when playing the different roles. Have fun with this activity. Work with a classmate on this activity. After establishing who will be the interviewer and who will be the expert, take two minutes to ask or respond to three questions. When the questions are completed, switch roles. The person who was the interviewer will then be the expert and the person who was the expert will then be the interviewer. Next, take two minutes to ask or respond to three additional questions. After switching roles and completing the process a second time, we will then randomly select groups to act out the Eye Witness News for the class. To help aid in question creation, I have some examples written on the board. Feel free to use these or make up your own.

Instruct students to pair up with a partner.

When I say EYE WITNESS NEWS, assume the role of an interviewer or an expert. Work with your partner to determine who will play which role first. Midway through the activity, switch roles. We will have four minutes to complete this activity. What questions are there? EYE WITNESS NEWS.

After two minutes, tell the students to switch roles. After four minutes, stop the activity and randomly call on groups to share the Eye Witness News Moment with the class.

Great work, news broadcasters and experts! Today we have talked about the importance of the role of **natural resources** in the agricultural industry. As we progress throughout this class, we will discuss various aspects of the agricultural industry. When discussing new areas of the agriculture industry, we should consider how **natural resources** are used. It is important that we value **natural resource** usage in the agricultural industry in order to secure a strong and prosperous future for agriculture.

Application

Extended classroom activity:

Students can perform an Internet search to find **natural resources** that are located in their county, state, country, and continent. Students can further identify **natural resource** conservation issues that are specific to their geographical location and **natural resource** conservation programs and agencies applicable to their location.

FFA activity:

After this lesson, the Chapter Reporter can interview different FFA members about the importance of **natural resources** in the agricultural industry. The Chapter Reporter should write an article for the chapter newsletter, school newspaper, or local newspaper about the importance of **natural resource** usage in the agriculture industry including thoughts from fellow FFA members.

SAE activity:

Students can interview a local farmer or agribusiness worker about **natural resources** that are used in their respective occupation. Students can further interview workers about **natural resource** conservation practices in their respective occupations.

Evaluation

For the evaluation, make the appropriate number of copies of **MS.IAS.8.4.ASSESS.A**.

Answers to Evaluation

1. b
2. b
3. d
4. c
5. c



Natural resources in the agricultural industry

What is a *natural resource*?

***Natural resource*:** naturally occurring material that is valuable to people, plants, and wildlife

- Soil
- Water
- Air

***Natural resource* uses in agriculture**

How are *natural resources* used in agriculture?

- Power machinery and equipment
- Provide essentials for plant growth
- Provide essentials for animal production



Name _____

Directions: Read each statement and decide whether it is true or false.

1. ____ **A natural resource is not naturally occurring.**

- a. True
- b. False

2. ____ **Natural resources are important to people and animals but not plants.**

- a. True
- b. False

Directions: Read each question and circle the response that best answers the question.

3. ____ **Which of the following is an example of a natural resource?**

- a. Soil
- b. Water
- c. Air
- d. All of the above answers

4. ____ **Which of the following is an example of how *natural resources* are important in the agricultural industry?**

- a. Using plastic milk jugs to store milk
- b. Keeping hay in a barn so it does not get wet
- c. Using a river as the source of water for crops
- d. Hauling livestock in a trailer

5. ____ **Which of the following is not an example of a natural resource?**

- a. Plastic
- b. Pavement
- c. Both a. and b.
- d. Neither a. nor b.