



Lesson Number: MS.IAS.2.1

Where would we be without Agriculture?

Middle School Food and Agricultural Literacy Curriculum

Precept

- C. Vision
- C1. Contemplate the future

National Standards

- NL-ENG.K-12.12 - Applying Language Skills
- NS.5-8.6 - Science in Personal and Social Perspectives
- NSS-EC.5-8.1 - Productive Resources
- NSS-G.K-12.4 - Human Systems
- NT.K-12.2 - Social, Ethical, and Human Issues

Student Learning Objectives

- As a result of this unit the student will...
- Evaluate how agriculture supports all life
- As a result of this lesson, the student will ...
- Define the scope of agriculture's impact on daily life: local to global impact

Summary of Content and Teaching Strategies

Objective 1. Define the scope of agriculture's impact on daily life: local to global impact

I. Agriculture:

The production of many diverse types of food and fiber, utilizing a variety of methods based on geography, climate, tradition, and availability of resources. Agriculture is the leading industry around the world, and looks different around the world. Agriculture in the US looks different than agriculture in China, just as it is different in California vs. Kansas. But regardless of location or culture, the goal is the same, to feed and clothe all of the people of the world.

Time

Instruction time for this lesson: 45 minutes.

Resources

United States Census Bureau. World Population Clock. Retrieved July 15, 2009. Website: <http://www.census.gov/main/www/popclock.html> — National FFA Organization, LifeKnowledge® materials, 2009 — The American Heritage® Science Dictionary Copyright © 2005 Retrieved February 12, 2010 <http://www.thefreedictionary.com/natural+resource>

Tools, Equipment, and Supplies

Grocery sacks—one per student
Variety of food items (examples-bread, canned food, bottled water, etc.)
Variety of fiber items (examples-clothing, sleeping bags, etc.)
Variety of shelter items (examples-tents, camping equipment, etc.)
MS.IAS.2.1.AS.A—one per student
MS.IAS.2.1.AS.B-F—one copy each
Small dry erase boards with eraser and markers (can also use sheet of paper and markers)
MS.IAS.2.1.Assess.A- one per student

Key Terms

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

Agriculture

Food

Fiber

Natural Resources

World Population

Green Revolution

II. Food:

The diet of people around the world, both direct items like fruits and vegetables, to livestock feed which in turn provides meat for people. Food is similar and different based on region, for example the world's main crops are universal (wheat, oats, rice, and soybeans) but they are complimented by a variety of other local foods. Some countries like the US produce an abundance of food, and others import much of the food they need.



Where would we be without Agriculture?

III. Fiber:

The plant and animal material used to make fabric and clothing. The methods and types have varied through history and culture. Today cotton leads in plant based fiber production, but other plant items are gaining popularity such as soy and hemp. Animal fibers include wool (sheep) and other lesson common animals such as camels and alpacas. Cotton did not explode in popularity until the invention of the cotton gin, which made its processing affordable and efficient.

IV. Natural Resources:

The plant and animal material used to make fabric and clothing. The methods and types have varied through history and culture. Today cotton leads in plant based fiber production, but other plant items are gaining popularity such as soy and hemp. Animal fibers include wool (sheep) and other lesson common animals such as camels and alpacas. Cotton did not explode in popularity until the invention of the cotton gin, which made its processing affordable and efficient.

V. World Population:

The total number of human beings on our planet. This number is currently _____ (it goes up so fast we need to check it often for it to be accurate. The words population, though it has peaks and valleys due to good and bad times (disease, famine, etc) has generally increased slowly over time. It is not until the last 100 years, and more specifically through the green revolution, that the population has grown so dramatically (some would say at an alarming rate). Can our food production keep up with our population growth? The green revolution is the term used to describe the modernization of agriculture including equipment, fertilizers, pesticides, and modern irrigation...these all led to an exponential increase in production.

Interest Approach

The interest approach will involve some critical thinking skills. To set up, arrange the survival items you selected from the desert island evenly around the room. Try to locate it where students will see it but it will not be a distraction as they enter the room, you may wish to include a message on the board to leave the items as they are.

Thank you for being here today class! It is asked that you continue to embody the classroom traditions that we laid previous to today. This semester is going to be jam packed with tons of fun and interesting time spent together. In today's class we will be learning some root words that we will recall upon everyday through this course, so your participation is vital. Make sure that your thinking caps are on tight, because today's discoveries will blow you away!

Imagine the following scenario. You and you alone will be leaving for a three day stay at a deserted island. This island does not have any plant or animal life, or safe drinking water. For a few moments, think quietly to yourself about the things you will need to bring with you to survive.

Pause for student reflection.

When I say PACK each of you will grab a grocery bag from the front of the classroom, and take the next two minutes to collect the basic materials that will help you survive on the island. You may grab anything that will fit into your grocery bag, but may not leave the classroom on your search. I will countdown your time. When time is up, you are to quietly return to your seat. Let's review. Where are the grocery bags? What are you to collect? How long do you have? Can you leave the classroom? PACK.

Instructor monitors students, while counting down time. Time out! As you quietly return to your seat, think to yourself about the items that you collected and why you chose them..

Instructor waits for students to return to seats.

You just collected and reflected upon the items for your trip to the deserted island. Turn to your neighbor and share with them what you packed and why. Pause for student discussion.

Momentarily, some of us will be share what items we collected, however for us to precede the assistance of a student scribe is in order. Who will serve as our class scribe? Wait for volunteer to come forward to board. Who will share first what their neighbor collected? First student shares their neighbor's collected items and the scribe records items. Let's have two more volunteers to share their collected items.



Lesson Number: MS.IAS.2.1

Middle School Food and Agricultural Literacy Curriculum

Where would we be without Agriculture?

Pause as students share their neighbor's collected items and the scribe records items before returning to their seat.

Take a look at the items listed on the board. These items range from clothing, food, water and other basic survival needs. Additionally, all of these items are products of the land. Just like we need these items to survive on the deserted island, we all need these items in our everyday life to stay alive. What industry provides for us these items? Pause for student answers. The answer is the agricultural industry.

Objective 1. Define the scope of **agriculture's** impact on daily life: local to global impact.

When I say MOVE, we will trade your sacks of agricultural products for an activity sheet. At the front of the room is a box for you to place your products in. When you have done this, pick up an activity sheet from this table, and read the questions/terms as you return to your seats. Use activity sheet **MS.IAS.2.1.AS.A**. When you are done reading the directions, put your pencil in the air to signal you are ready to begin your next task. What questions are there? MOVE.

Monitor student movement and process in reading directions.

Utilize the Go Get It e-Moment® for students to define agriculture, food, fiber, natural resources and horticulture. Students will use activity sheet **MS.IAS.2.1.AS.1** as a method of recording information found on posters **MS.IAS.2.1.AS.2-5**. The posters are to be hung around the room. Students will walk around the room, recording information from each poster on their activity sheet before returning to their seats.

I observe that everyone has their pencils in the air; you may now put them down but hang onto them as you will need them momentarily. When I say GO GET IT, travel around the room and visit every poster. There is a poster for each of the terms on your worksheet. Read the poster and capture the key ideas. When you are finished with each poster, find an empty desk/table and answer the

question below the term based on what you know and what you learned at the station. Continue this until you have hit every station. You do not need to go in order, so please spread yourselves out evenly around the room. When you are done return to your seats for the next activity, while you are waiting, re-read through what you recorded. You will have approximately 10 minutes. What can I clarify? GO GET IT.

Monitor student movement throughout room and progress throughout activity. Take time to place white boards face down on student desks with a dry erase marker. If these are not available, a simple sheet of paper will work.

On your desks are some white boards and markers. When I say DRAW, take two minutes to draw a picture depicting the definition of the agricultural industry. DRAW. Pause for student work. Turn to your neighbor behind or in front of you to share your drawing. Pause for students to share.

I have seen most of your drawings and they all look exactly like agriculture! This reminds me of the important role that agriculture plays in world population. Think to yourself, how many people do you think there are in the world? Pause for student thoughts. Everybody stand up! Remain standing if your number was less than 7 billion. Remain standing if your number was more than 6.5 billion. Congratulations! Those remaining standing are extremely close to predicting the correct current world population, of ____ (Find current number at <http://www.census.gov/main/www/popclock.html>). That is a pretty big number! How do you think we got there? Pause for student reflection. Do you what I think happened?

Instructor draws an incorrect world population graph on their board and tells a story about how it occurred, explaining each incline and decline in population, as shown and illustrated below.

Long, long ago, the world started with just a few people. Overtime, the family structure comes into effect and the population just skyrocketed and by year 100 A.D. we had over 3 billion people. However, shortly afterwards people caught a disease called the yellow spotted donkey flu. This



Lesson Number: MS.IAS.2.1

Middle School Food and Agricultural Literacy Curriculum

Where would we be without Agriculture?

flu spread very fast, and without proper medicine, the population declined to only 500,000 million people by the 13th century. But, on the bright side, the population slowly climbed back up to 4 billion people by the 19th century. Afterwards, about 1 billion human looking aliens found refuge from their far away planet, Gonxi. They lived happily with humans, helping our population reach 6.7 billion people!

(Insert drawing of not correct world population here)

Now that I have shared my example, it is time to see yours. When I saw DRAW, sketch out your world population graph and produce a corresponding story. By the way, you have 2 minutes for this activity. What questions do you have? DRAW.

Monitor student work and gauge time for activity as needed.

Markers down in 3, 2, 1! Point to someone in the room! Pause for students to point. Whoever has the most fingers at them will select who will present their story. Student shares story.

Great job! Obviously our stories are pretty silly. Would you like to see what really happened? The instructor draws a graph on their white board similar to the corresponding picture below. Think of a rock, paper, scissors move and throw out your motion after I say scissors. ROCK, PAPER, SCISSORS. If you threw rock, answer question number one on your activity sheet. Paper takes question number two and scissors takes three. Be prepared to discuss your answers in a minute.

(Insert drawing of not correct world population here)

Instructor pauses for students to answer assigned questions.

So, rocks, what made the world population spike so rapidly?

Pause for student response.

Papers, what will the world need to do to respond to a continuous increase in the world population?

Pause for student response.

Scissors, how does the agricultural industry play an important role in providing food, fiber and natural resources for the population? Pause for student response.

Agriculture as an industry has had to prepare for the world population change in advance. Think to yourself for the new few moments, when have you had to look into the future to prepare for an upcoming deadline or event? Pause for student reflection. What examples do you have? Pause for student answers. In those examples, why was it important to look forward into the future? Share your thoughts with your neighbor for the next 30 seconds. Pause for peer reflection. With that same neighbor, how does that similar or different from agriculture's forecasting of the world population?

Review/Summary.

Let's review. At the beginning of today's lesson, we learned that without agriculture we would not have the food, clothing, shelter or quality of living we have today. The world population spiked because of the green revolution in which our agricultural industry grew and was able to support an environment in which more people could survive upon. With that said, it's extremely important to develop the young minds of today's youth into wise consumers and agriculturalists that will help us prepare the world for our always increasing population.

By the way, the world population increased _____ during our class period today! Use <http://www.census.gov/main/www/popclock.html> for answer. If internet service is unavailable, use an estimated amount by looking at the website previous to lesson.

Thank you for your participation today! Keep those thinking caps on, you'll need them again tomorrow.



Lesson Number: MS.IAS.2.1

Middle School Food and Agricultural Literacy Curriculum

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Agriculture?**

Application

Extended classroom activity:

Ask students to survey five other people (friends, family, etc.) and ask them to define the five definitions discussed in class in their own words. Have students report out the following day about others' general knowledge of agriculture.

FFA activity:

As a group, students create posters or display boards defining agriculture to display in the school or community building.

SAE activity:

Give students a city map of your local business district for students to categorize your local businesses into categories of food industry, fiber industry or natural resources industry. Information could be presented in a blog or a poster with a pie chart.

Evaluation

MS.IAS.2.1.Assess.A

Answers to Evaluation

1. E
2. C
3. A
4. D
5. B



The Global and Local Impact of Agriculture

1. Agriculture:

How does agriculture impact me on a daily basis, from the time I wake up to the time I go to sleep?

2. Food

How does food impact me on a daily basis, from the time I wake up to the time I go to sleep?

3. Fiber

How does fiber impact me on a daily basis, from the time I wake up to the time I go to sleep?

Name _____

4. Natural Resources

How does natural resources impact me on a daily basis, from the time I wake up to the time I go to sleep?

5. World Population

How does the changing world population impact me on a daily basis, from the time I wake up to the time I go to sleep? How will it impact me in the future? What was the green revolution?



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Food:

The diet of people around the world, both direct items like fruits and vegetables, to livestock feed which in turn provides meat for people. Food is similar and different based on region, for example the world's main crops are universal (wheat, oats, rice, and soybeans) but they are complimented by a variety of other local foods. Some countries like the US produce an abundance of food, and others import much of the food they need.



Fiber:

The plant and animal material used to make fabric and clothing. The methods and types have varied through history and culture. Today cotton leads in plant based fiber production, but other plant items are gaining popularity such as soy and hemp. Animal fibers include wool (sheep) and other less common animals such as camels and alpacas. Cotton did not explode in popularity until the invention of the cotton gin, which made its processing affordable and efficient.



Natural Resources:

Something, such as a forest, a mineral deposit, or fresh water, that is found in nature and is necessary or useful to humans. Think about the lumber (from trees) your home is built out of, or the paper you're writing on. Generally, these items exist in limited supply, and should be conserved. Sometimes you will hear the word "renewable" referring to using the natural resource in a sustainable way (only taking what can naturally be replaced. Using the tree/forest example, we generally replant the trees we harvest from the forest so that there will be more for us to use in the future. The US has been blessed with numerous natural resources.



World Population:

The total number of human beings on our planet. This number is currently _____ (it goes up so fast we need to check it often for it to be accurate. The words population, though it has peaks and valleys due to good and bad times (disease, famine, etc) has generally increased slowly over time. It is not until the last 100 years, and more specifically through the green revolution, that the population has grown so dramatically (some would say at an alarming rate). Can our food production keep up with our population growth? The green revolution is the term used to describe the modernization of agriculture including equipment, fertilizers, pesticides, and modern irrigation...these all led to an exponential increase in production.



NAME _____

Match the definition to the correct term.

1) _____ **Agriculture**

2) _____ **Food**

3) _____ **Fiber**

4) _____ **Natural Resources**

5) _____ **World Population**

- A. Material used either from plants or animals to make fabric and clothing
- B. Total number of humans living on the planet
- C. Diet of humans
- D. The natural existing source of raw materials for life and beauty in the environment
- E. Production of food and fiber.