The Real Cost of Cheap Food

A WebQuest for 6th-8th Grade Science Students

Introduction

Have you ever really thought about where your food comes from? Have you ever visited or lived on a family farm?

Have you ever visited factory farms, which are also called concentrated-animal feeding operations (CAFOs)?

Have you ever really thought about where we get the food we consume?

You will be using this WebQuest to educate yourself about factory farming vs. organic farming,

and you will determine what the “hidden” costs are for the way we Americans grow and raise our food.

Photos Comparing Organic Farming Methods to Factory Farming
Organic Chicken Farm

A typical factory farm. This photo shows the conditions that many animals have to endure at America’s factory farms.
http://www.treehugger.com/20090507-factory-farm-chickens.jpg

Green Acres The Serrano farm in Watsonville, California, which uses organic production methods.
To read more, click here.

A field saturated with animal waste due to overapplication of manure by a nearby hog factory farm.
http://www.flickr.com/photos/sraproject/3238858543/

Task
You are going to investigate information available on the Internet in order to educate yourself and form conclusions about the information you research. You will be viewing websites about aspects of organic farming and factory farming. You will be asked to collect information and answer questions in order to differentiate between the different types of farming. In the end, you should understand from where we Americans obtain our food and the “hidden” and the high costs of how many American farmers produce our food. You will also find information that will help you answer the question, “What can you do?” throughout this WebQuest in order for you to make smart, ethical, and healthy choices for your own life.

Process
1. You will visit and interact with the website below.
The Meatrix Interactive 360 feature is a great way to educate you, friends and family about factory farming. When you get to the website, roll over the objects on the farm and click them to get in depth information about each subject. Place your cursor on “go right” and “go left” to move around 360 degrees. Either click here or in your Internet browser, e.g. Internet Explorer or Firefox, type http://www.themeatrix.com/interactive/.

2. You will answer the questions below using the Internet links that are provided as a guide.

Learning about sustainable food and the problems with factory farming can be daunting, but with a little effort you can quickly learn enough to make the safest and wisest food choices for you and your family.

You are about to be introduced to the major issues surrounding organic farming, sustainable agriculture, and factory farming. Below you are provided basic overviews of the issues. Click on the terms below to find the information you need in order to answer the questions under each term or look up each term on websites of your choice. Record all of your answers on your handout. Not all of the terms have questions to answer, but you should click on each term below in order to get a better understanding of today’s farms and the food we Americans consume. (All terms below are linked to pages on the Internet; these are called hyperlinks. You can use the hyperlinks or find websites of your own to answer the questions related to each of the terms.)

Additives
- Are Food Additives Safe?
- What can you do to help with this issue?

Air Pollution
- What are the main sources of air pollution caused by factory farms?
- What can you do to help with this issue?

Animal Welfare
- Describe some aspects of life on a factory farm for the following animals:
  - Cows-
  - Pigs-
  - Chickens-
- What can you do to help with this issue?

Antibiotics
- Why do factory farmers give animals antibiotics?
- How do these antibiotics affect the animals?
- Do these antibiotics have any affect on the people who eat these animals as a source of food?

Biodiversity

Climate Change

Cloning

Communities

Dairy

Eat Local, Buy Local, Be Local

Economics

Environment

Factory Farming
- What is a factory farm?
- What can you do to help with this issue?
### Family Farms
- Why are family farms important?
- What can you do to help with this issue?

### Feed

#### Food Irradiation

#### Food Safety
- What are the major concerns dealing with the current safety of our nation’s food that comes from factory farms?
- What can you do to help with this issue?

### Fossil Fuel and Energy Use

### Genetic Engineering

### Health

#### Heritage and Heirloom Foods

### Hormones
- Why are factory farm animals given hormones?
- What can you do to help with this issue?

### Mad Cow Disease
- What is Mad Cow disease?
- Who can get it?
- How is it spread?

### Organic
- In October 2002, the production and marketing of organic food came under regulation by the US Department of Agriculture’s (USDA) National Organic Program. What are the 5 main regulations listed in order for foods to be labeled as organic?
- What can you do to help with this issue?
- For each of the categories in the chart below, distinguish between organic and sustainable:

<table>
<thead>
<tr>
<th>Certification</th>
<th>Organic Farms</th>
<th>Factory Farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certification</td>
<td>Must be independently certified every year and approved by the USDA</td>
<td>Do not require any official certification</td>
</tr>
<tr>
<td>Animal Welfare</td>
<td>Must be independently certified every year and approved by the USDA</td>
<td>Do not require any official certification</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Must be independently certified every year and approved by the USDA</td>
<td>Do not require any official certification</td>
</tr>
<tr>
<td>Artificial Hormones</td>
<td>Must be independently certified every year and approved by the USDA</td>
<td>Do not require any official certification</td>
</tr>
<tr>
<td>Corporate Involvement</td>
<td>Must be independently certified every year and approved by the USDA</td>
<td>Do not require any official certification</td>
</tr>
<tr>
<td>Size of the farm</td>
<td>Must be independently certified every year and approved by the USDA</td>
<td>Do not require any official certification</td>
</tr>
<tr>
<td>Food Miles</td>
<td>Must be independently certified every year and approved by the USDA</td>
<td>Do not require any official certification</td>
</tr>
</tbody>
</table>
Pasture Raised

Pesticides

- Pesticides are a public health concern and have been linked to a range of diseases and disorders. What are some of the major diseases and disorders linked to the overuse of chemical pesticides?
- What can you do to help with this issue?

Policy and Legislation

Precautionary Principle

Poverty & Hunger

rBGH

Slaughterhouses and Processing

Waste

- What is “dry matter?”
- Does the law require that livestock waste be treated?
- What can you do to help with this issue?

Water

- According the webpage, should we be drinking bottled water or tap water? What are the reasons stated for this?
- What can you do to help with this issue?
- List 2 facts from the “Did You Know?” section.

Water Pollution

- How are our water sources getting polluted with antibiotics and hormones?
- How are heavy metals getting into and polluting our soil and water?
- What can you do?

Workers

- Read the section labeled Accidents, Injuries, and Health and describe the problems faced by people who work at factory farms.
- Read the section labeled Immigrant Workers’ Rights and describe the “hurdles” that immigrant workers on factory farms generally face.
- What can you do to help with this issue?

Egg laying hens are packed into 'battery cages' which are lined up in rows in huge factory warehouses. They are left in these cages for up to two years. Such inhumane treatment of other living beings is evil.

http://www.all-creatures.org/anex/chicken-egg-01.html

Piglets are thrown to the cement floor to instantly kill them, but often it did not. Piglets squealed and thrashed as they lay dying.

3. Click here → Web Link to Mindfully.org to read facts and data about antibiotics and factory farming.

Then, list 4 facts that you found interesting (or appalling!) for each of the topics below.

- Waste Pollution and the Environment
- Animal Welfare
- Antibiotics and Public Health
- Sustainability (The Good News!)

4. Write a well thought out conclusion about what you have learned from this article.

- Your conclusion should include facts you have learned and changes we Americans can make in order to improve our environmental conditions, treatment of farm workers, and treatment of animals being raised for food. Refer to information you read throughout the WebQuest to back up your conclusion.

- What are some things current and future generations can do to stop current practices or at least to avoid making these issues (i.e. pollution, mistreatment of farm workers and animals) worse?

- What are your feelings or thoughts about the food and water that you currently eat?

- What are your thoughts about the future of our planet if these practices are allowed to continue?

### Evaluation (Rubric)

**Are We What We Eat?**  
**The Real Cost of Cheap Food WebQuest Rubric**

<table>
<thead>
<tr>
<th>WebQuest Questions Correct</th>
<th>WebQuest Completion</th>
<th>Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>25% of questions correct</td>
<td>25% Complete</td>
<td></td>
</tr>
<tr>
<td>50% of questions correct</td>
<td>50% Complete</td>
<td></td>
</tr>
<tr>
<td>75% of questions correct</td>
<td>75% Complete</td>
<td></td>
</tr>
<tr>
<td>100% of questions correct</td>
<td>100% Complete</td>
<td></td>
</tr>
</tbody>
</table>

- Conclusion simply involved restating information.
- Conclusion could be supported by stronger evidence.
- Conclusion shows good effort was made.
- Student carefully analyzed the information collected and drew conclusions.
Conclusion

Conclusions were not supported by evidence.

Level of analysis could have been deeper.

made in analyzing the information collected.

appropriate and well though out conclusions supported by evidence.

Further Suggested Reading & Viewing

Getting Real About the High Price of Cheap Food
http://www.time.com/time/health/article/0,8599,1917458,00.html

Undercover Animal-Rights Investigator
http://www.time.com/time/nation/article/0,8599,1883742,00.html

Putting Animal Cruelty on the Ballot
http://www.time.com/time/nation/article/0,8599,1856019,00.html

Animal Abuse at Pig-Breeding Facilities

Fox News Features Graphic Pig-Farm Video

Conclusion

Congratulations!

You completed The Real Cost of Cheap Food WebQuest!

Not only did you educate yourself about the current problems with the way many Americans grow crops and raise animals for food, but also you were able to think critically and draw some conclusions from the information you researched.
**Teacher Page**

**The Real Cost of Cheap Food**

*WebQuest for 6th-8th Grade Science Students*

designed by

Mary Irvin

**Learners**

This WebQuest focuses on 6th-8th grade Science students. Students need to have very basic computer and Internet skills before beginning this WebQuest. It is helpful if students have some basic critical thinking skills also in order to be able to draw conclusions from information they will be collecting. This WebQuest will provide links to sources on the Internet to guide students through their research. Students will research, analyze, and draw conclusions based on the information they are asked to read or view about information related to organic farming and factory farming.

**MD Curriculum Standards**


**Grades 6-8**

This WebQuest requires students to think critically and be able to draw conclusions.

- **Standard 1.0 Skills and Processes**
  Students will demonstrate the thinking and acting inherent in the practice of science.

- **Standard 3.0 Life Science**
  The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interactions that occur over time.

- **Standard 4.0 Chemistry**
  Students will use scientific skills and processes to explain the composition, structure, and interactions of matter in order to support the predictability of structure and energy transformations.

- **Standard 6.0 Environmental Science**
  Students will use scientific skills and processes to explain the interactions of environmental factors (living and non-living) and analyze their impact from a local
Resources Needed

- Computer with Internet access
- Copy of *The Real Cost of Cheap Food* WebQuest with questions
- Thinking skills and something with which to write answers

Evaluation

WebQuest will be graded by the student’s Science teacher for the 2010-2011 school year using the rubric in the Evaluation section.

Conclusion

Students will work independently over the summer and will turn *this portion* of their interdisciplinary assignment into their Science teacher for the 2010-2011 school year.