THE LABEL

DEBATE

A Document-based Case Study in Thinking Critically as a Consumer

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INTRODUCTION
You are about to begin an activity that is designed to measure your skills in critical thinking, reasoning, problem solving and written communications.

You will be preparing a persuasive audio report regarding a plausible scenario. To design your argument you will be limited to the provided set of documents. These documents represent a variety of relevant sources and all arguments should be based on the information provided therein.

Please do not write in this booklet.

SCENARIO
Due to grass roots activism your state is considering a vote to require special labeling on foods containing genetically modified products (Proposition 44). Large amounts of conflicting and misleading information has been spreading through local media sources. This information has resulted in a divisive public uproar on the fate of proposition 44.

As a trusted local news personality you have been closely following the issue but have yet to make comment on it. You are experiencing increasing public pressure to comment on the issue. You have been hesitant knowing your commentary will greatly influence public opinion.

You must weight both sides of the issue as to offer a reasonable stance on the legislation.

QUESTION-PRODUCT
Your task is to produce a 2 minute radio report expressing your position on Proposition 44.

Your report should include the appropriate or relevant evidence (drawn from the included sources of information that follow) necessary to support your position. Explain the reasons for your claims, and justify those claims by explicitly referring to the specific pieces of evidence, data, and statements on which your claim/decision is based.

Again, while your personal values and experiences are important you should base your response on the evidence provided in the documents.
PROPOSITION 44

This initiative measure is submitted to the people in accordance with the provisions of Article II, Section 8, of the Iowa Constitution. This initiative measure amends and adds sections to the Health and Safety Code; therefore, new provisions proposed to be added are printed in italic type to indicate that they are new.

PROPOSED LAW

The people of the State of Iowa do enact as follows:

The Iowa Right to Know Genetically-Engineered Food Act

SECTION 1. FINDINGS AND DECLARATIONS

(a) Iowa consumers have the right to know whether the foods they purchase were produced using genetic engineering. Genetic engineering of plants and animals often causes unintended consequences. Manipulating genes and inserting them into organisms is an imprecise process. The results are not always predictable or controllable, and they can lead to adverse health or environmental consequences.

(b) Government scientists have stated that the artificial insertion of DNA into plants, a technique unique to genetic engineering, can cause a variety of significant problems with plant foods. Such genetic engineering can increase the levels of known toxicants in foods and introduce new toxicants and health concerns.

(c) Mandatory identification of foods produced through genetic engineering can provide a critical method for tracking the potential health effects of eating genetically engineered foods.

(d) No federal or Iowa law requires that food producers identify whether foods were produced using genetic engineering. At the same time, the U.S. Food and Drug Administration does not require safety studies of such foods. Unless these foods contain a known allergen, the FDA does not even require developers of genetically engineered crops to consult with the agency.

(e) Polls consistently show that more than 90 percent of the public want to know if their food was produced using genetic engineering.

(f) Fifty countries—including the European Union member states, Japan and other key U.S. trading partners—have laws mandating disclosure of genetically engineered foods. No international agreements prohibit the mandatory identification of foods produced through genetic engineering.

(g) Without disclosure, consumers of genetically engineered food can unknowingly violate their own dietary and religious restrictions.

(h) The cultivation of genetically engineered crops can also cause serious impacts to the environment.

(i) Organic farming is a significant and increasingly important part of agriculture.

(j) Organic farmers are prohibited from using genetically engineered seeds. Nonetheless, these farmers’ crops are regularly threatened with accidental contamination from neighboring lands where genetically engineered crops abound. This risk of contamination can erode public confidence in Iowa’s organic products, significantly undermining this industry. Iowans should have the choice to avoid purchasing foods whose production could harm the state’s organic farmers and its organic foods industry.

(k) The labeling, advertising and marketing of genetically engineered foods using terms such as “natural,” “naturally made,” “naturally grown,” or “all natural” is misleading to Iowa consumers.

SEC. 2. STATEMENT OF PURPOSE

The purpose of this measure is to create and enforce the fundamental right of the people of Iowa to be fully informed about whether the food they purchase and eat is genetically engineered and not misbranded as natural so that they can choose for themselves whether to purchase and eat such foods. It shall be liberally construed to fulfill this purpose.
The people have spoken. We demand the right to know if the food we're eating and feeding to our families contains genetically engineered ingredients. Prop 37 may not have passed in California, but this movement is going strong, and it will not be stopped.

23 States working on mandatory labeling
61 Countries already have mandatory labeling

92% of Americans want GMOs labeled
1.3M signatures so far on the FDA petition demanding mandatory labeling

Making History in California
In spite of a $46 million misinformation campaign by the chemical companies that make GMOs, in November 2012 nearly half of California voters still voted in favor of prop 37 for mandatory labeling.

4.2M+ Votes in favor of prop 37

$2.9B Non-GMO Product Sales

6,000+ Non-GMO Project Verified Products

TAKE ACTION! Visit www.nongmoproject.org to learn more about GMOs, the non-GMO movement, and what you can do to help protect the future of our food.

America wants GMOs labeled
91% of Americans want GMOs labeled

500+ organizations, including the Natural Resources Defense Council, are calling on the FDA to regulate GMOs

20,000 petitions sent to the FDA

1,000,000 signatures on the petition to require GMO labeling

MEPATES

100% of Americans oppose labeling GMOs

91% of Republicans say label

89% of Democrats say label

40 countries mandate labeling of GMOs

30 seconds for a cow

1 second for a GMO

MORE THAN ONE MILLION AMERICANS HAVE CALLED ON THE FDA TO LABEL GMOs. ISN'T IT TIME FOR THE FDA TO LISTEN?

MORE AT WWW.JUSTLABELIT.ORG

*GENETICALLY MODIFIED ORGANISMS OR GMOs, ACCORDING TO THE WORLD HEALTH ORGANIZATION, ARE ORGANISMS IN WHICH THE GENETIC MATERIAL (DNA) HAS BEEN ALTERED IN A WAY THAT DOES NOT OCCUR NATURALLY.
1. **The American Medical Association**  
   *(Chicago)*  
   "There is no scientific justification for special labeling of genetically modified foods. Bioengineered foods have been consumed for close to 20 years, and during that time, no overt consequences on human health have been reported and/or substantiated in the peer-reviewed literature."

2. **The American Association for the Advancement of Science**  
   *(Washington, D.C.)*  
   "The science is quite clear: crop improvement by the modern molecular techniques of biotechnology is safe."

3. **The National Academy of Sciences**  
   *(Washington, D.C.)*  
   "To date more than 98 million acres of genetically modified crops have been grown worldwide. No evidence of human health problems associated with the ingestion of these crops or resulting food products have been identified."

4. **Food Standards Australia New Zealand**  
   *(Australia & New Zealand)*  
   "Gene technology has not been shown to introduce any new or altered hazards into the food supply, therefore the potential for long term risks associated with GM foods is considered to be no different to that for conventional foods already in the food supply."

5. **The French Academy of Science**  
   *(France)*  
   "All criticisms against GMOs can be largely rejected on strictly scientific criteria."

6. **The Royal Society of Medicine**  
   *(United Kingdom)*  
   "Foods derived from GM crops have been consumed by hundreds of millions of people across the world for more than 15 years, with no reported ill effects (or legal cases related to human health), despite many of the consumers coming from that most litigious of countries, the USA."

7. **The European Commission**  
   *(Belgium)*  
   "The main conclusion to be drawn from the efforts of more than 130 research projects, covering a period of more than 25 years of research, and involving more than 500 independent research groups, is that biotechnology, and in particular GMOs, are no more risky than conventional plant breeding technologies."

8. **The Union of German Academics of Sciences and Humanities**  
   *(Germany)*  
   "In consuming food derived from GM plants approved in the EU and in the USA, the risk is no way higher than in the consumption of food from conventionally grown plants. On the contrary, in some cases food from GM plants appears to be superior in respect to health."

9. **Seven of the World’s Academies of Sciences**  
   *(Brazil, China, India, Mexico, the Third World Academy of Sciences, the Royal Society, and the National Academy of Sciences of the U.S.)*  
   "Foods can be produced through the use of GM technology that are more nutritious, stable in storage and in principle, health promoting—brining benefits to consumers in both industrialized and developing nations."

10. **World Health Organization**  
    *(Switzerland)*  
    "No effects on human health have been shown as a result of the consumption of GM foods by the general population in the countries where they have been approved."
IS LABELING REALLY ABOUT OUR “RIGHT TO KNOW”?

“We are going to force them to label this food. If we have it labeled, then we can organize people not to buy it.”

—Andrew Kimbrell, Executive Director, Center for Food Safety

“Personally, I believe GM foods must be banned entirely, but labeling is the most efficient way to achieve this. Since 85% of the public will refuse to buy foods they know to be genetically modified, this will effectively eliminate them from the market just the way it was done in Europe.”

—Dr. Joseph Mercola, Mercola.com

“By avoiding GMOs, you contribute to the tipping point of consumer rejection, forcing them out of our food supply.”

—Jeffrey Smith, Founder, Institute for Responsible Technology

“With labeling it (GMOs) will become 0%... For you the label issues is vital, if you get labeling then GMOs are dead-end.”

—Vandana Shiva, environmental activist

“The burning question for us all then becomes how—and how quickly—can we move healthy, organic products from a 4.2% market niche, to the dominant force in American food and farming? The first step is to change our labeling laws.”

—Ronnie Cummins, Director, Organic Consumers Association

SOURCES:
http://www.responsibletechnology.org/10-Reasons-to-Avoid-GMOs
http://www.youtube.com/watch?v=HyFf39YWtnQ
https://www.commondreams.org/view/2012/08/02-0
http://www.activistcash.com/person/1562-andrew-kimbrell/
http://vtdigger.org/2012/04/17/wanzeck-genetically-modified-food-is-perfectly-healthy

www.geneticliteracyproject.org
Will Genetically Modified Foods Make You Sick?

Two new government studies, published within days of each other, point to disturbing health hazards of genetically modified (GM) foods.

On November 13th, a study by the Italian National Institute of Research on Food and Nutrition showed how GM corn caused significant immune system changes in mice, related to allergic and inflammatory responses. The corn, sold by Monsanto, contains a gene that produces the toxic "Bt" pesticide in every cell—and in every bite. The results raise the question whether this toxin (or some other unpredictable change in the GM corn) might be contributing to the rise in allergies or other immune disorders in North America.

The second study provokes the equally compelling question, are GM foods the missing link to decreasing fertility? The Austrian Agency for Health and Food Safety commissioned one of the very few long-term feeding studies on GM corn, released last week. The University of Veterinary Medicine in Vienna fed GM Monsanto's GM corn to mice, which were then mated. In the third and fourth litters, there was a reduction in the number of size of rat pups (statistically significant). Similarly, in mice fed GM corn for four successive generations (from original mice parents to their great grandchildren), the size and number of offspring was less than those compared to non-GM fed mice (trend only, not yet statistically significant).

These studies should strike a major blow to biotech advocates who claim that genetically modified organisms (GMOs) are safe. They should—but similar results in other studies and reports have so far been unable to dislodge the GMO safety myth and get them off our plates. Consider some of the evidence related to reproductive problems: Offspring of Russian rats fed GM soy showed a five-fold increase in mortality, lower birth weights, and the inability to reproduce. Italian male mice fed GM soy had damaged young sperm cells. The embryo offspring of GM soy-fed mice (also Italian) had altered DNA functioning. Several farmers reported sterility or fertility problems among American pigs and cows fed on GM corn varieties. Additionally, over the last two months, investigators have documented fertility problems among Indian buffaloes, cows, and goats fed GM cottonseed products, including abortions and premature births.

There is also evidence that Bt crops cause allergic and toxic reactions. The GM cotton engineered to produce the Bt toxin, for example, is linked to thousands of deaths among sheep, buffaloes, and other livestock, and to widespread allergic reactions by Indian farm workers handling the plants. Monsanto's own Bt corn study showed toxic reactions in rats, and their corn is linked to mysterious deaths of cows, and to disease among people breathing the corn's pollen.

Whenever these studies or reports surfaced, scientists should have charged in to conduct intense follow-up research. Instead, the funding—to find and expose the cause of the problem—often mysteriously dries up; scientists are transferred, threatened or fired, and the health risk link to GMOs is vehemently denied.

Take the Russian rat study above, conducted by Irina Ermakova, a senior scientist at the Russian National Academy of Sciences. After we presented GMO health risk info at the EU Parliament in June 2007, she told me about the backlash that occurred after doing her study. Samples were stolen from her lab, documents were burnt on her desk, and her boss, under pressure from his boss, ordered her to cease all future research on GMOs. One of her colleagues tried to comfort her by saying, "Maybe GM soy will solve the human overpopulation problem." She wasn't comforted.

Unless we want to wait until more studies are done, risking allergies and immune dysfunction, infertility, infant mortality, or poorer health inherited by the next generation, we will have to opt out of the GM food experiment. Without required labels, it isn't simple. But our Campaign for Healthier Eating in America offers Non-GMO Shopping Guides that make it much easier, go to www.HealthierEating.org

You might want to pass this on to planning to have children, or wanting to stay healthy.

For about 20 years, foods from genetically engineered organisms have been on our shelves and tables. So what exactly is genetic engineering? It is a method used to introduce new traits or characteristics to an organism, such as enhanced growth or increased nutritional value of a plant that is a food crop. Traditional plant breeding involves crossing two plants, a process which introduces many genes (including the genes that code for a desirable trait and genes that code for undesirable traits) into the new plant.

Genetic engineering allows the number of genes introduced to the new plant to be narrowed down so that only the genes coding for desirable traits are introduced (not the genes coding for undesired traits). Genetic engineering has the potential to decrease adverse environmental effects of conventional agriculture, increase yields for farmers (especially in developing countries), improve the nutritional quality and taste of crops, and contribute to sustainable agriculture.

Unfortunately, these accomplishments are not what come to mind for many Americans when they hear the term “genetically engineered” or GE. Rather, a negative connotation is often attached to the phrase. As college-educated, voting-aged citizens, I believe we should know the facts behind GE foods, especially now that there is currently an effort in Colorado to get an initiative on the 2014 ballot that would require the labeling of GE foods beginning January 2016.

Labeling doesn’t sound so bad, right? After all, consumers have a right to know what’s in their food. As a person with food allergies, I understand just how important it is to know whether or not your food contains allergens. Calorie counts and nutrition labels are a good thing – I think we can all agree on that. So why shouldn’t we pass legislation requiring that GE foods are labeled as such?

First off, GE labeling implies a false warning about health effects. There is no known scientific evidence indicating that GE food is harmful to human health. Let me repeat that: the genetically engineered food that is in grocery stores right now will not hurt you. Food and food ingredients derived from GE plants must adhere to the same safety requirements under the Federal Food, Drug, and Cosmetic Act that apply to food and food ingredients derived from traditionally bred plants.

All foods containing GE crops are regulated by the Environmental Protection Agency, the United States Department of Agriculture and the Food and Drug Administration. Also, consider this: the agriculturalists who are producing your food are producing the same food for themselves and for their families. The health and safety of the consumer is always a priority.

Secondly, nothing is preventing those who sell GE-free food from labeling it as such. The Food and Drug Administration actually issued draft guidance on this labeling to the food manufacturing industry. As it were, a label for GE-free food already exists. It’s called Certified Organic. If a product is certified as “organic” under federal standards, then the crops used in that product cannot be genetically engineered. Organic food is a niche market I would encourage you to support, if you can. However, if you, like me, are a poor college student you probably know that organic foods are generally more expensive than their nonorganic counterparts. Organic, guaranteed GE-free food is already available, but it may just be out of your price range, bringing me to my last point.

Most importantly, a mandate requiring the labeling of GE foods would cause food prices to go up. The changes that would need to be made to our country’s food system in order to segregate GE and non-GE food products would be substantial, and would undoubtedly result in raised food prices. This is understandable when you consider all the steps that go into getting your food from farm to table: growing, harvesting, processing, packaging, transporting, marketing and, finally, consumption.

Our current food system infrastructure could not handle this if GE food labeling was required. If mandatory labeling was to be implemented, several issues would need to be worked out beforehand, and I encourage the creators of GE-labeling legislation to take this into consideration when drafting their proposals.

My fellow students, we are lucky to live in a place where food safety is something we take for granted. I know that this is partly because of how powerful the consumer voice is in America. Our health and the health of our environment is something we cherish and demand, and because of that, producers respond. Let’s continued to be concerned about issues that matter and knowledgeable of the facts behind them.

Lyndee Charles is majoring in International Soil and Crop Science and an avid food-lover.
Genetically modified sugar beets, corn,
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The Label Debate

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<td>180-240 minutes of class time including extra time for classroom work time on final product and discussion time for debriefing each document.</td>
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**Introduction/Background**
Where in the semester is this case best suited, and what type of background do the students have when they encounter the case?

This case study is intended to be used in a unit called “Global Issues”. It falls near the end of the sequence and occurs after study of Earth Systems. No background in the science of GMO’s is required. Rather students will be applying their abilities to weight the options of a controversial issue while recognizing bias and sensationalism within sources.

**Objectives of the Case**
List exactly what the students should know and be able to do after they have finished the case that they didn’t know and couldn’t do before they went through the case.

- By adulthood students will critically examine controversial scientific issues.
- By the end of the course students will evaluate claims regarding genetically modified foodstuffs.

**Major Issues**
Identify the major issues in the case that the students should analyze. Indicate which issues you think will (should) come up and what information you expect students to extract from each document.

The major issue found in this case is the conflict surrounding the labeling of GM foods. Students are asked build a defense for labeling foods derived from GMO’s or letting them go un-marked. They are given a set of documents from which to build their argument. Neither side of the debate is favored by the materials set forth. The quality of the students argument will be measured by their ability to formulate an argument from the documents they have been given.

- Excerpt from Proposition 44: This document is provided to offer clarity as to what exactly is being proposed. The document will inform the students the purpose and background for Proposition 44. It offers insight into pro-labeling justification of the proposed law.
- GMO Labeling Info-Graph/Propoganda: A group of infographics reporting statistics about labeling GMO’s and their safety. Students will see the propaganda released by organization with a monetary investment in the labeling/non-labeling agenda.
- Blog Posts: Two blog posts, the first outlining the inherent risks of GMO foods based on studies citing GMO’s as a possible cause of cancers, infertility, and other adverse health effects. The second post is an attempt to convince readers that adding labels to GM foods unfoundedly implies a risk when consuming those foods. These two articles present opposing viewpoints on the issue each with their own inherent bias. Student must identify the bias within and decide what, if any, information is still relevant within that bias.
- Label examples: Multiple food labels are provided. Versions of the proposed GMO food label and the others Certified Organic label as outlined by the FDA recommendations. Students will see what proposed labels would look like and how they would be integrated into the packaging.
- How are GMO’s Created? Youtube video: This video outlines the process in which GMO are created. The video follows the science behind the genetic modification of the papaya plant to build immunity to a specific pathogen. Students are offered a look at the science of building a GMO as well as the levels of testing and regulatory bodies involved before the GMO see store shelves.
Classroom Management
Tells the reader just how the case should be used in a classroom situation. The explanation must be presented in detail. What to do first, second, and last? How long do certain activities take? Indicate any pre-class assignments and follow-up assignments that might be used after a discussion of the case is finished. Include study questions and questions you will be asking in the classroom throughout the case. Provide closure for students – how do you wrap up this activity up?

As part of a unit on global issues student investigate how science meets our daily life and how governments, corporations, activist groups, and the media affect the advancement of science. Hand out DBCS materials and go through the Scenario, Process, and Product page. The DBCS begins with a look at Proposition 44 and the exact thoughts and opinions that have brought this legislation about.

The document is an excerpt from proposition 44 it is introduced as a role play.

Teacher Role:
Legislation Recorder hears and records the declarations make by the citizens. Asks for clarification of language as it is presented. See attached for suggested questions. **

Student roles:
Declarer (a-k): reads and explains one of the 9 declarations outlined in Prop 44. Students must prepare for their role by making sure they understand the language used in their declaration. (Students receive a slip of paper with their reading portion on it.)

The role play should take around 20-25 minutes of class time including handing out and preparing statements. The object of the role play is to avoid assigning a straight read through of the document. Questions from the recorder serve as a way of clarifying some of the language use in the document. Finally we fill out the document notes as a large group.

Documents B-D consist of a series of info graphics. Students work in groups of 4 to “unpack” the info in the graphics. Groups are to develop a white board for each document (section of a larger board). Their board should contain one to two sentences describing the main message of each info-graphic. These thoughts are shared by displaying the boards and doing some teacher led comparisons. Students should record the whiteboards by snapping a picture of them. Students fill out the document notes in their groups. (30-40 minutes)

Documents E and F are a pair of blog posts. Students will work in pairs to read through the blog posts searching for valid information. Again whiteboards will be used to record the student’s thoughts. Each white board should have four columns; two for each document. A “Factual” column and “Opinion” column. Students should record statements from the blogs in the correct column. Students will walk about the room to see other student’s boards (taking pics). Each pair of students completes the documents notes (35-45 minutes)

Document G - students are asked to submit their own version of a GM food or Certified organic package label (assigned by teacher). Individual students design a potential logo. Student’s share their ideas of the logo should look like. The document contains various other sample packaging labels. Students fill out the document notes page individually. (20 min)

Document H is assigned as homework. Students are instructed to watch the video labeled as document e. Students should also complete the document notes in preparation for a discussion of the notes to be had the following class day. (15min)

Finally students are given time to formulate their argument in the form a two minute radio broadcast. Instruct the students to prepare a written document that can be read/recorded then submitted to the teacher. (40-50min)

References & Resources
Include a list of references to follow up particular lines

Document a:
http://vig.cdn.sos.ca.gov/2012/general/pdf/text-proposed-laws-v2.pdf#nameddest=prop37 (adapted)
Organic farmers are prohibited from using genetically engineered seeds. Nonetheless, these farmers’ crops are regularly threatened with accidental contamination from neighboring lands where genetically engineered crops abound. This risk of contamination can erode public confidence in Iowa’s organic products, significantly undermining this industry. Iowans should have the choice to avoid purchasing foods whose production could harm the state’s organic farmers and its organic foods. No international agreements prohibit the mandatory identification of foods produced through genetic engineering. Fifty countries— including the European Union member states, Japan and other key U.S. trading partners— have laws mandating disclosure of genetically engineered foods. No international agreements prohibit the mandatory identification of foods produced through genetic engineering. The labeling, advertising and marketing of genetically engineered foods using terms such as “natural,” “naturally made,” “naturally grown,” or “all natural” is misleading to Iowa consumers.