

Edible Avalon – Youth Leadership Program Curriculum – Sustainability, Food Equity, Urban Farming

*Blue type like this indicates a separate document that has been embedded.

The Edible Avalon Youth Leadership Curriculum was tailored to meet the requirements of the Ann Arbor Public School's Community Resource High School Credit Program, as well as grant guidelines that helped fund the project. Despite this, we have written the curriculum in a class-by-class format that we hope is easy to replicate or amend for use in similar educational situations.

The lessons listed as part of the "Farmers' Market Series" were designed as part of a series of lessons developed around the students selling their produce at the local farmers' market. These lessons may be less relevant to a non-vending class, although some may be altered to be made useful.

Lesson 1 - Intro to the Farmers' Market

Learning Objectives:

- Prepare students for selling their own fruits and veggies at the local farmers' market.
- Acquaint students with the market, how it works, and have them begin to think about what it takes to be a vendor at the market.

Activities (1hr10) :

- **(10mins)** Prior to market, hold in-class time to go over market rules, what to expect at the market, and to remember to be courteous and respectful to vendors and patrons.
- **(1hr)** At the market, students fill out a vendor questionnaire (FarmersMkt_FarmerSurvey) to familiarize them with speaking to strangers, as well as get them thinking about local vendors, local economies, and how to be a successful market vendor.

Materials:

- Document: *Selling Strategies for Local Food Products (Missouri Extension)*- (<http://extension.missouri.edu/publications/DisplayPub.aspx?P=G6222>)
- Document: *Background of State of Michigan Cottage Food Law* – (http://www.michigan.gov/mdard/0,1607,7-125-50772_45851-240577--,00.html)
 - This law allows for the sale of value-added products such as baked goods, jams, jellies, honey, and the like to be sold at farmers' markets without use of a commercial kitchen in the production process. May be omitted/amended for use in other states.
- Document: *Washtenaw County (MI) Farmers' Markets Access Guide (pg.2)* - http://www.ewashtenaw.org/government/departments/public_health/health-promotion/prescription-for-health/2011-growing-hope-farmers-market-guide
 - This guide details the various social welfare programs that the State of Michigan has incorporated into farmers' markets throughout the state.

Lesson 2 - Learning About the U.S. Food System - Food Inc.

Learning Objectives:

- Help students grasp issues related to the United States food system, both in regards to the environment impacts, as well as social equity issues.

Activities (45mins - 2hrs30) :

- Screen segments of Food, Inc., or if time allows, the entire film. The focus of the movie is on industrial food production, human health, workers' rights, and animal welfare. The official discussion guide offers great tools for a high school level class to learn about these food system issues. Specific segments of the film and the corresponding learning activities may be selected from the discussion guide to fit the focus of your course, and the abilities of your students.

Materials:

- Film: *Food, Inc.*
- Food Inc. official discussion questions.
 - [-http://www.foodincmovie.com/img/downloads/foodinc_PDF_091008.pdf](http://www.foodincmovie.com/img/downloads/foodinc_PDF_091008.pdf)

Lesson 3 - Intro to Local Economies and Local Food

Learning Objectives:

- Introduce students to local vs. non-local consumption, and the effects of each on communities.

Activities (40-50mins):

- Local economy game - Players must shop for items needed for a spaghetti dinner. In doing so they must make choices between:
 - Organic vs. conventionally-produced vegetables
 - Locally grown vs. imported produce
 - Supporting more expensive local businesses vs. lower-priced chains
 - Convenience vs. quality.
- After completion of the first round of the game, players have a chance to discuss the true costs of choosing organic produce (economic, health, environmental), the changes that have occurred in the past century in regards to where our food comes from, and the impact of supporting or not supporting the local economy. After the discussion, players can have an opportunity to play again if time allows. (from TheFoodProject.org)

Materials:

- Name signs and tables for three stores
- Play money
- Price lists for each store
- Icons to represent all items (tomatoes, onions, peppers, spaghetti sauce, pasta) with the label "Grown in....." or "Made in....." on each
- Situation cards
- A poster for each store explaining where their money goes. (www.thefoodproject.org)
- Complete directions, plus discussion questions can be found at: thefoodproject.org/sites/default/files/local_food_economy.pdf

Lesson 4 - Urban Revitalization through Urban Agriculture & Intro to Food Equity

Learning Objectives

- Expose students to the history of Detroit, and what has happened to lead to the current economic state of the city.
- (re)Introduce the term *food desert*, including its causes and effects.
- Have students understand the role of urban farming in revitalizing Detroit (and blighted inner-city areas in general).

Activities (50mins+)

- **(15mins+)** Watch part of *Urban Roots* (a film about Detroit's economic blight and the use of urban farming to help the cause) to detail food equity issues and to introduce students to the Detroit urban agriculture scene.
- **(35mins+)** To supplement video, use the following directions to stimulate further thought and discussion on food deserts and marginalized urban food systems such as in Detroit.

Directions

1. Divide the room/seating into two halves, facing one another. On one side of the room, place a sign that is labeled "TRUE" and on the other, a sign labeled "FALSE". Instructors may even use a piece of thick tape/duct tape to create a visual "line" down the middle of the room.
2. Provide students with accompanying worksheet of true/false statements and ask them to decide individually whether each statement is true or false, making notes as they like.
3. Introduce the first statement and ask those who found it to be "true" to stand on the side of the room labeled "true" and vice versa.
4. Students may then take turns defending their stance. During the process, should any one student become convinced that a point made by the other side is, in fact, the better point, they may move seats, or defect. Where students are positioned near or far from the line can indicate how strong their belief/conviction is concerning the statement. As students from "the other side" talk, those across the line may move closer or further away from the center line, denoting how their perspectives are shifting, if in fact they are.
5. Facilitate this discussion, using your time allowance for each question as appropriate.
6. After the debate, ask students to reflect (reflection worksheet provided) on the issue and their thoughts during the debate. Debrief with the group as a whole: What additional questions were raised? What issues were most important to you during this exercise? What issues need further consideration? What solutions, if any, can you see as a result of this discussion?

T/F Questions

1. Food Deserts are mainly a problem of urban, economically disadvantaged areas.
2. Those affected by food deserts should find a way, individually, to solve their problems concerning health and access to food.
3. Health and nutrition are the responsibility of the individual, and convenience stores/grocers are not responsible for the food choices of consumers.
4. Food Deserts are having an imprint on future generations in terms of education and health.
5. Food deserts are caused by poverty and high crime rates.
6. Education about food choices and nutrition is more important than increasing the supply of healthy food
7. Even if larger, mainstream grocers were to locate/relocate in an area deemed a food desert, residents will not make healthier food choices.
8. Solutions for access to healthier foods in communities considered food deserts must come from within those communities themselves.
9. The only way to eliminate food deserts is to design policy at the Federal level creating incentives for farmers/producers to grow and distribute healthy food.
10. A global food system is inherently flawed and will only perpetuate the problem of food deserts.
11. A global food system provides an abundance of food at prices that are affordable for poor families.

Materials

- Film: *Urban Roots* - <http://urbanrootsamerica.com/urbanrootsamerica.com/Home.html>
 - If your class does not have money to purchase film, or another way of accessing the

film, the trailer on the website is a decent alternative.

Lesson 5 - Intro to Business and Entrepreneurship - A Market Vendor's Perspective

Learning Objectives:

- Give students basic understanding of business and entrepreneurship.
- Help students understand the structure of their farm stand business using professional terms such as product, profit, point of origin, etc.
- Introduce students to important jobs that they must do to make the stand run, including product display, professionalism, and sales/marketing.

Activities (30mins-1hr)

- **(20-30mins)** Guide students through *FarmersMarket Business Handout* (below).
- **(10-30mins)** Have students plan out the various aspects of their farm stand. Allow open discussion and idea sharing about the best ways to harvest, transport, and present the food. You can also talk about how the stand will run once it's set up, i.e. who will keep track of money, what type of accounting system, how many people will be at the stand at once? etc.

Materials:

- Document: *"FarmersMarket Business Handout"*. **pasted below:**

Farmers Market Business Handout

Logistics – Logistics is the management of the flow of goods and services between the point of origin and the point of consumption.

- Are we selling a good or a service? What are our goods?
- Where is the point of origin(s) for our goods?
- What is the point of consumption for our goods? (where do the customers receive the good?)
- What needs to happen to the goods between the point of origin and the point of consumption (when we harvest, and when we sell)?

Marketing – The strategy used to increase sales through communication with the customers.

- What is marketing?
- How can we reach potential customers with advertisements?
 - Then, what makes our product better than the other options?

Pricing – Pricing is the process of determining what we will charge for our products.

- What is profit?
- What will happen if we charge too much?
- What will happen if we charge too little?

Business Ethics – Moral standards and how they affect conduct in the business world.

- What does the term ethics mean?
- How do ethics relate to business, and making profits?
- Is it fair for the student run stand (trying to earn extra money for a field trip, etc.) to charge less for the same product than the farmers who are working for a living?

Public Relations – Maintaining a certain image with the general public.

- Be friendly
- Smile, look the person in the eye. Say "can I help you"
- Be happy to answer any questions about the program.

Lesson 6 - Healthy Ecosystems and the Negative Effects of Industrial Agriculture

Learning Objectives:

- Introduce students to ecosystems, with a focus on their holistic nature.
 - include how environmental degradation, while on the surface can seem like a single small issue, will lead to myriad problems throughout the ecosystem due to the interrelatedness of the living and non-living factors in the system.
- Tie-in the lessons learned from *Food Inc.* film regarding industrial agriculture practices, and their effects on the environment and ecosystems.

Activities: (40mins)

- (25mins) Guided Discussion on Ecosystems and Sustainable Agriculture
- (15mins) Post-discussion activity identifying components in the ecosystem, and their interrelatedness.

Materials:

- *YLP Ecosystem Discussion Guide (Pasted Below)*

YLP Ecosystem Discussion Guide

- What is an Ecosystem.
 - Any group of living and nonliving things interacting with each other can be considered as an ecosystem.
 - A puddle, a forest, an ocean, the world.
- *Population* – a group of the same species living together in the same place at the same time.
 - The world's population, Ann Arbor's population.
- *Habitat* – The place where a population lives.

The **community** of living things (all populations within an area are included in the community) interacts with the **non-living world** around it to form the ecosystem. The habitat must supply the needs of organisms, such as food, water, temperature, oxygen, and minerals. If the population's needs are not met, it will move to a better habitat, shrink, or die out. A niche refers to the consumption of an organism or population, regarding space, and resources. Two different populations cannot occupy the same **niche** at the same time.

- What are examples of the non-living world?
 - Oxygen, water, pollutants, temperature, minerals, space, food, etc.
- What is a niche?
 - The space and resources that a population uses. Cannot be shared.
- Competition, cooperation.
 - Q: If two organisms are thirsty, but there is only enough water for one of them to be satisfied, what will happen?
- Balance is key within an ecosystem. If an ecosystem is not balanced, something will give way to restore the balance.
 - How may the balance of an ecosystem be interrupted?
 - Natural factors
 - Human impacts

Post-discussion activity

- Take students outside, and have them each pick 2 different components of the ecosystem that they are present in (immediate area).
 - Bugs, birds, plants, water, minerals, weather, etc.
- Have them each present the relationship between their two "ecosystem players"
 - What do they rely upon each other for? Are the connections mentioned direct or indirect?
- Then, challenge them to realize the connections between each others' ecosystem components.
 - If one ecosystem component disappeared, what might happen?

*note: depending on class size, handout may be helpful to provide structure to this activity.

Industrial Ag and Ecosystems

- What are some practices of industrial agriculture that could affect the balance of the surrounding ecosystems?
 - Pollution to air from methane and exhaust. Pollution to water from animal feces, pesticides, herbicides, and erosion.
- Species extinction once pollutants are consumed. Pesticides kill good bugs too. Pesticide and Herbicide runoff into streams, rivers, and lakes, causing fish and animals to get sick.

Lesson 7 - Hands-on Soil Composition Test

Learning Objectives:

- Help students gain an understanding of the composition of soil (sand, silt, clay), and the behavior of various soil makeups when being gardened with.
- Teach students that soil is actually a tiny ecosystem, composed of living things such as insects and microbes, which is important to plant and ecosystem health.

Activities (45 mins-1 hr):

- **(10 mins)** Begin lesson by explaining, or reading as a class, the first few paragraphs of page 4 of the PDF listed in the materials section regarding soil compositions. Explain that sand (large particles) drains most easily but doesn't hold nutrients well. Clay (small particles) drains the slowest, but holds nutrients very well. Silt (medium particles) is in between the two. Mention again that soil is alive with microorganisms that are important to plant and ecosystem health.
- **(5 mins)** Break students up into groups of 3 or 4, assign each one to a table that has a bin with soil on it.
- **(10 mins)** Walk students through the directions on the *Soil Texture Decision Chart*. Have them consult their group members throughout the process and come to a consensus on what type of soil is in their bin.
- **(5 mins)** Once they come to a final decision on the type of soil, have them use the *Soil Texture Triangle* to match their soil properties to a soil type. Have them think about or write down what percentage of sand, silt, and clay their soil is.
- **(15-30 mins)** Rotate tables, and repeat 1-2 times as time permits.

Materials:

- 3 types of soil, ideally each soil type will be heavy on one of either silt, clay, or sand. You need enough soil for about 1/2 gallon or so of soil per bin.
- Bins to hold the soil (enough for 1 bin per 4 students)
- water containers. Droppers might be least messy. (one per bin)
- Worksheet (if desired) for students to write their final conclusions about what kind of soil each bin contains (not included).
- *Soil Texture Decision Chart*, and *Soil Texture Triangle* (found on link below, pgs. 2,3)
 - http://www.traces.org/green/Course-organic-farming/unit_2.1b_soil_physical.pdf

Lesson 8 - Food Equity and Food Security: Focus Detroit

Learning Objectives:

- Reexamine the term "food desert" and identify the positive and negative associations it may carry with it.
 - i.e. *crime area*, or *potential for improvement*
- Become aware of some current food-security related issues.

- Speak publically on a point related to food security

Activities (35 mins):

- **(15 mins)** Introduce the term “food desert”
 - Pass out and read “Fighting for Freshness in a Food Desert”
 - <http://www2.metrotimes.com/editorial/story.asp?id=12766>
 - Watch *Urban Deserts: Fresh Food Free Zones*
 - http://www.time.com/time/video/player/0,32068,24222955001_1900870,00.html
 - Brainstorm on white pad about students thoughts on food deserts. What does it mean, in general, for the people living in them? What are some problems associated with food deserts in the short, medium, and long terms?
 - Questions?
- **(20 mins)** Think about food equity/justice
 - What do we think this might mean? Freely discuss and help expand student’s ideas.
 - Handout part of the article “Color of Food” (intro, p. 2-3). Either have them read the whole thing, or portions of the intro depending on their learning level.
 - www.arc.org/downloads/food_justice_021611_F.pdf
 - Have the students explain to each other what they read, or discuss the main ideas of the reading.
 - Ask the question: *What does food equity have to do with sustainability, economically, socially, and environmentally?*

Materials:

- Large newsprint pad of paper, markers.
- Food desert articles: “Fighting for Freshness in a Food Desert”, “Color of Food”
- Computer access and/or projector to watch food desert clip.

Lesson 9 - A Sustainable Society - Economically, Socially, and Environmentally

Learning Objectives:

- Introduce teens to sustainability in terms of the economy, social equity, and the environment.
- Examine the questions “What does sustainability mean? And how does it apply to human activity?”

Activities (1 hr):

- *Is it Sustainable?* (Free lesson plan from *FacingtheFuture.org*)

Materials:

- *Is it Sustainable?* lesson plan
 - <http://www.dreamhistory.org/sitebuildercontent/sitebuilderfiles/6.is.it.sustainable.pdf>
 - Specific materials listed within document

Lesson 10 - Sustainability of Your life - Lesson & Debate

***note, this lesson was developed for a small group that could easily be supervised and led in a debate. For larger groups, this format may need to be changed.**

Learning Objectives:

- Ask the question *How are our lives and actions related to the environmental sustainability of the*

world? Guide students in thinking critically about what could be done.

- Have students recognize the effect that people in developed countries have on our environment (which is shared with undeveloped nations), and if it is equitable and/or sustainable.
- Through a formal debate, students will practice speaking in front of a group and arguing a point using evidence.

Activities (45 mins):

- **(15 mins)** Everyone will take myfootprint.org quiz. (It entails questions about the individual's way of life. the average American who takes the quiz is told that at the Earth's current population, if everyone sustained their way of life, would need to have 4-8 Earth's worth of natural resources to be sustainable.) (survey could be assigned prior to class as a homework assignment)
- **Debate (30 mins)** - American's footprint: Is it fair to be using 3-7 Earth's worth of resources?
 - Using both sides of sustainability argument (i.e. NO, it doesn't matter that we use more than our fair share of resources (because US citizens are the richest, deserve this type of life, etc) OR YES, it does matter, and is a problem that we use more than our fair share of resources (because it is unsustainable, will cause a decrease in standard of living for future generations, has negative effects on third party individuals (such as those in developing countries)).
 - Students will break up into groups and be assigned one viewpoint or the other, which they have to argue no matter their personal views.
 - Students can share argument points within their group, and assign themselves a point(s) to make during the debate, so all can get practice in public speaking.
 - The debate can be structured in either a point, point, rebuttle, rebuttle, format, or a point, rebuttal, point, rebuttal format.
 - Allow for open discussion and sharing of personal thoughts afterward.

Materials:

- Computers for myfootprint.org quiz.
 - Notecards for debate.
 - Timer or watch for debate.
-

Class Field Trips

- Ann Arbor Farmers' Market - Students visited and completed a vendor questionnaire (Lesson 1)
- Ann Arbor Farmers' Market - Visited as vendors (4 times)
- Selma Cafe Hoophouse Build (Ann Arbor, MI) - went to local, small scale organic farm to install a hoophouse which was funded by Selma Cafe's weekly breakfasts, which feature local chefs as volunteers, and locally produced foods.
- Growing Hope of Ypsilanti's Tour de Fresh - A guided bike tour of everything local food in Ypsilanti, MI. Concluded with a dinner at the Growing Hope Center, the organization's urban farm.
- Detroit Agriculture Network Tour - A guided bus tour showcasing the urban agriculture scene in Detroit, MI.

- Georgia St. Community Gardens (Detroit, MI) - Trip to Detroit, MI to visit the Georgie St. Community Garden, which is partially run by youth. Included a lesson with a bee keeper and his bees.
- Detroit Eastern Market - A large farmers' market which has been around since 1841 and attracts over 45,000 customers each week.
- The Family Farm (Belleville, MI) - A local organic CSA farm. The students were able to help out with the farm tasks, feed the chickens, and talk to Farmer Stephanie about why she chose her profession.
- Tilian Farmer Development Center (Ann Arbor, MI)- Also supported by Selma Cafe, the Tilian Farm offers low-cost, short-term land leases for organic farmers who are just getting on their feet.
- Tantre Farm (Chelsea, MI) - One of the first CSA farms in the nation!