

# **Sustainable Agriculture Curriculum**

## **Liberty Prairie Conservancy**

**Underwritten through a grant from the Illinois Department of Agriculture**

**Where does my food come from?** This is the essential question that guided the development of this curriculum. The goal is for students to discover the answer to this question, and through the process of discovery understand how agriculture, in all of its varied methods and practices, effects the environment - primarily the air, water and soil, that all life depends on.

**Problem:** Remember the old adage, “you are what you eat.” That is why we think it is important for children to ask the very basic question, “Where does my food come from?” This may seem simple but it is increasingly difficult to answer, especially for young people.

- Most children in the U.S. do not have access to a farm that raises the food they eat
- Traditional family farms that sell locally grown food, a mix of fresh vegetables, eggs and milk or meat are now nearly non-existent
- Food in the United States now travels an average of 1,200 miles from farm to market shelf and is grown on large corporate farms
- Most farmers markets stock and sell food grown outside their region
- Most current farming practices are not environmentally sustainable

**Solution:** Introduce students to the process of food production and distribution through this social science and science integrated curriculum.

**Outcome:** Students will learn to grow produce using proven sustainable methods, while gaining an understanding of ecological, social and economic processes. They can use this knowledge in their adult lives to grow their own produce, to support farmers who use sustainable farming methods, and to guide communities to support municipal, state and federal policies that promote sustainable agriculture, and ultimately build sustainable communities.

### **Who are the target users?**

Separate comprehensive grade level programs have been developed:

- Lower elementary (grades K-2), My Own Food Chain
- Upper elementary (grades 3-5), Project Pumpkin
- Jr. High/Middle school (grades 6-8), Edible Garden Program

### **I’m a teacher, how do I use this curriculum?**

The best student learning will take place if:

- Teachers use this as a curriculum (a program) rather than choosing random, individual activities
- The majority of activities take place outdoors, in touch with the air, water and soil
- The students are able to plant, tend, harvest and eat the food they grow

Good student learning will take place if:

- Teachers choose a series of activities that take place consistently over time
- Some of the activities take place outdoors, in touch with the air, water and soil
- The students are able to plant, tend and observe plant growth over time

Some student learning will take place if:

- Teachers choose a few activities that take place over a short period of time
- At least one or two activities take place outdoors
- The students are able to plant seeds and observe plant growth

## **The Sustainable Agriculture Curriculum Model**

### **Curriculum Design Criteria:**

- A recognition that learning about agriculture is naturally integrated across the disciplines of science, social studies, history, economics and technology.
- Learning about sustainable farming is best accomplished when in touch with the earth, air, water, plants and animals by having an outdoor classroom in a garden, farm field or greenhouse. Dirty hands and knees means good learning.
- Students should feel ownership of their garden. Their successes and failures should be the direct result of what they've done, so that they will want to improve and be proud of what they've accomplished. More learning will result from the intrinsic motivation and responsibilities of ownership.
- Learning should include the study of the ecological principles (or precursors to) of energy flow, interrelationships, cycling of air, water and soil, diversity of life and adaptations.
- The curriculum was written to be implemented as a comprehensive grade level program for the maximum exposure to and knowledge gained about sustainable farming, however it is possible to selectively choose Activities to complement existing curriculum programs.
- The learning outcomes and activities are aligned to meet the Illinois State Learning Standards

**Definition for this Curriculum:** “Sustainable Agriculture is a system of food production, supported by consumers, where farming operations, practices and technologies *work in harmony* with the natural systems that sustain life on earth.”

### **Sustainable Agriculture Learning Outcomes that shaped this Curriculum**

(These outcomes will be covered when following the comprehensive grade level programs.)

1. Integrated Pest Management: The students will understand that pests damage field crops and that the pests can be managed through the knowledge of both pest and beneficial insect lifecycles, and by implementing physical, cultural and natural occurring chemical controls.
2. Soil Conservation: The students will understand that a healthy soil is key to successful crop growth and that this is accomplished by using compost, preventing erosion, and minimizing tillage.

3. Water Quality/Wetlands: The students will understand the water cycle and how water runoff from an agricultural field can affect the quality of bodies of water and wetlands. They will also understand that water runoff is the most common cause for soil erosion.
4. Crop/Landscape Diversity: The students will learn that growing a greater variety of crops and livestock on a farm can help reduce risks from extremes in weather and pests, and will help maintain a healthy soil and beneficial insects.
5. Nutrient Management: The students will learn that plants require nutrients from the soil and that these nutrients need to be replenished using amendments that improve the soil and are safe for the environment. They will learn that an important way this can be done is by using a rotation of leguminous cover crops.
6. Alternative Marketing: The students will learn that farmers and ranchers following sustainable agriculture practices can improve profits by direct sales, selling at farmer's markets, roadside stands, restaurants, small grocery stores and on the web.

### **Benefits of an Integrated Curriculum:**

The ecological, social and economic processes involved in food production are inter-related and therefore are best shared with students as a package. Through an integrated educational approach, students will learn that every action they take will affect the ecological, social and economical processes involved in sustainable farming.

### **The Outdoor Classroom:**

Learning about food production is authenticated when using an outdoor garden plot in a school year, at a local community garden facility or most ideally at a sustainable learning farm. However, this curriculum was written understanding that an outdoor classroom may not be possible for all schools. Therefore, Activities can be modified by using pots or potting beds, allowing students to touch soil, water and living plants. For some Activities alternatives have already been included.

### **Potential Logistical Problems and Barriers**

- Learning about soil, plant growth, plant care, harvesting and eating best takes place over a growing season (if you only have 6 weeks this curriculum may not be effective)
- Access to a garden plot, greenhouse or sustainable farm where the program can take place may be difficult or impossible in some cases.
- The growing season in Illinois happens primarily over the summer months when the students are out of school. Therefore a summer care garden program must be established for program success.
- When students return in the fall to tend the plants they planted in the spring, they will likely have a different teacher. Teacher coordination is imperative for program success.

Compare and Contrast Conventional and Organic farming methods

Still to come