

# **How You Gonna Keep'em Down on the Farm**

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**Overview**

**Rationale**

**Strategies**

**Classroom Activities**

**Bibliography and Resources**

**Standards**

**Appendix**

## **Overview**

This curriculum will teach and promote agriculture, the growing of food, and its supporting sciences, as its primary goal. Philadelphia is one of the few urban municipalities with a high school. W. B. Saul, that is devoted to teaching agriculture as a career. With this curriculum, students will be exposed to agriculture as a viable career and occupation at the elementary school level. The importance of food and how it is grown will be explored. The sciences that support agriculture, i.e. biology (both botany and zoology), genetics, chemistry and ecological studies, will be introduced. Students will be encouraged to pursue careers in farming, veterinary sciences, horticulture and genetics.

## **Rationale**

Teachers everywhere, are appalled by the dietary practices maintained by their students at almost all levels of education. They perhaps forget their own past and present exploits with “junk” food and other unhealthy substances. Most people have indulged and most have survived. However, the United States is experiencing epidemic levels of nutrition-related disease such as diabetes, hypertension and obesity. To overcome this, we must stress to students, the importance of propagating “real food” that comes from the earth and not laboratories or factories.

The purpose of public education is to train for employment, professions and careers. Urban students are exposed to almost every profession, from factory worker to physician. Rarely are urban students exposed to people who own or maintain farms and the professions that support farming. In turn, students rarely identify food with farms and how it is made. Food is the one substance that all humans have in common. Even the “junkiest” of all foods has at least one ingredient that comes from a farm. As computers may overtake many occupations, it is inconceivable that agriculture will not always need that human element. Students, who learn to grow food, will always have a profession.

Encouragement and support of organic sustainable farming is essential. The appointment of Tom Vilsack as Secretary of the Department of Agriculture since 2009, has been sharply opposed by organic farming consumers groups. The former governor of Iowa is considered a “buddy” to Monsanto, a giant agribusiness, biotech corporation. Vilsack is a promoter of large industrial farming and genetically engineered crops (known as GMO’s). ([www.organicconsumers.org/articles/article\\_15573.cfm](http://www.organicconsumers.org/articles/article_15573.cfm)). This curriculum will encourage responsible ecologically balanced farming and students who pursue sciences to offset the ecological damages made by industrial farming.

### **Strategies**

This curriculum will encourage an exposure to W. B. Saul High School, which is the largest agricultural high school in the United States. It expands to 130 acres within Philadelphia’s Boxborough area, with an enrollment of 500 to 600 students. Saul maintains extensive curricula in both animal and plants sciences. ([www.phila.k12.pa.us/saul/](http://www.phila.k12.pa.us/saul/))

Besides visits to Saul, this curriculum will require periodic visits to both rural and urban sustainable farms. Philadelphia is within two hours traveling time to existing Amish farms in Lancaster County., as well as several other urban, suburban and rural farms and organizations. Philadelphia is, furthermore, home to Bartram’s Gardens, the oldest botanical garden in the United States. These resources allow for cultural, historical and scientific experiences in farming.

Students will experience growing vegetable and fruit plants from seeds as well as insect life cycles and their importance to crop production. This will be done within the classroom. Students will study food chains and the importance of maintaining an ecological system. Students will understand the importance of organic sustainable farming as a future that must be pursued.

### **Classroom activities**

The curriculum for How You Gonna Keep’em Down on the Farm will be divided into six units. Each unit will be divided into two to three lessons. These lessons are designed with activities to be done over the span of one week. Units two through five should be done simultaneously, since they will all span the entire academic year.

Each lesson will begin with a presentation of a seasonal raw fruit or vegetable. The students will explore and research that food to learn the region of origin and nutritional value (e.g. vitamin and mineral content).

Students will be encouraged to gather and find seeds, either from food they have eaten or from their surroundings. The teacher will keep common pots of soil, so that students will be able to plant the seeds they have found and examine what grows.

Unit One: What is food? This unit will explore the importance of food and nutrition and reasons to pursue professions in food. Students will be able to identify differences in food that is grown and food that is manufactured.

Unit Two: What are ecosystems and food chains? This unit will explore these concepts and compare and contrast these concepts based on the environment. This unit will study how changes in the environment, changes the ecosystem and its food chain.

Unit Three: What are Farms? This unit will explore the history of farming through visits to farms, both historical and modern. Students will be able to identify urban and rural agricultural practices that are ecologically responsible.

Unit Four: Where does food come from? This unit will explore the process of growing fruits and vegetables and the impact of insects, both harmful and beneficial. Students will be able to identify and explain plant germination and fertilization and the sciences involved.

Unit Five: Is this food or is this business? This unit will explore the finances of food manufacture and selling by creating snacks to sell for the purposes of fund raising.

Unit Six: Should I have a career related to food and farming? This unit will explore the various career options that impact successful agriculture. They will explore their own potential in those careers.

### Unit One: Food and Nutrition

The objective of this unit is to explore the importance of food as the only essential element that all living things need to survive. Food will be presented as the most essential constituent to immediate and long-term survival. Nutrition, or the chemistry that humans extract from food, is necessary throughout all stages of life. Students will understand this, in order to realize the importance and impact of food growth and production as vital to human survival in an ever-challenging world of food, clean air and clean water shortages.

#### *1) Lesson One*

Objective: Students will be able to identify the different categories of food necessary for complete daily nutrition in order to understand the application of food chemistry to the human body.

Materials necessary:

Smart board or visual aid for Internet interaction

[www.nourishmentinteractive.com/nutrition-education-printable](http://www.nourishmentinteractive.com/nutrition-education-printable)

[www.factupfront.org/nutrition101](http://www.factupfront.org/nutrition101)

[www.factsupfront.org/interactivelabel](http://www.factsupfront.org/interactivelabel)

[www.google.com/search=human+anatomy+for+kids](http://www.google.com/search=human+anatomy+for+kids)

copy paper for copies of “My Plate” and anatomical drawing

plain white paper plates

food item pictures

Step One: Teacher will introduce unit by explaining that food will be the focus of this curriculum. Each lesson will begin with a sample of a raw fruit or vegetable to be

distributed and eaten at the beginning of the lesson. Teacher will ask students to identify their favorite foods.

Step Two: Teacher will ask students to explain the reasons that humans eat. Teacher will note the difference that even though favorite foods give pleasure, humans must eat for nutrients. Teacher will explain nutrients as chemicals, substances that create change in our bodies.

Step Three: Teacher will distribute “My Plate” drawing while displaying on visual screen (from [nourishmentinteractive.com/nutrition-education-printable](http://nourishmentinteractive.com/nutrition-education-printable)). Teacher will distribute food picture items.

Step Four: Students will place food items onto “My Plate”. Teacher will display correct distribution of food items onto visual display of “My Plate”.

Step Five: Students will draw a complete meal with food items from each section of “My Plate” onto paper plate. Different groups will choose, breakfast, lunch or dinner.

Step Six: Teacher will display definitions of item labels, i.e. nutrients, calories, fiber, protein, vitamins etc. Students will identify which foods have certain nutrients or chemicals.

Step Seven: Teacher will distribute a human anatomy drawing, which shows organs and bones. Teacher will explain that these parts of the body are not seen because they are covered by muscle and skin. Students are to then identify which food item pictures contribute to which parts of the body, including muscle and skin based on explanations of the nutrients. Teacher will simultaneously display on visual aid.

Conclusion: Students will explain how various foods and their nutrients contribute to the function of different body parts.

Homework: Students will eliminate one of the categories of “My Plate” and write a paragraph explaining how this will affect some function of the body. Also, students will bring in the empty container, box, or bag of a favorite food.

## *2) Lesson Two*

Objective: Students will be able to differentiate natural versus manufactured food ingredients in order to identify source of food items and their value.

Materials:

Smart board or visual aid to display food labels

Food labels from cereal boxes and containers of other processed food

[www.factsupfront.org/interactivelabel](http://www.factsupfront.org/interactivelabel)

Scissors

Highlighters of different colors

Chart paper

Step One: Teacher will distribute sample raw fruit or vegetable. Teacher will explain that this fruit or vegetable was grown on a farm. This is a food with only one ingredient. Foods with multiple ingredients are originally grown on a farm, but are processed in a factory. Many of the ingredients in processed foods are flavors and nutrients (i.e. chemicals) that are created in scientific laboratories. The less processed the food, the more natural the nutrients, and, the more the able the body is to absorb and digest.

Step Two: Students will cut out food labels, including ingredient lists that they brought in.

Step Three: Teacher will ask students to count all ingredients. Teacher will ask students to mark in a highlighter all of the ingredients that they think came from a farm, whole grain, vegetable, fruit or meat. They will not include sugar, salt or processed flours. Teacher will demonstrate to students how to do a ratio of farm ingredients to other processing ingredients (e.g. tomatoes, onions, peppers salt and MSG would be 3:2 ratio of farm to processing ingredients).

Step Four: Teacher will instruct students to use a different color highlighter to mark salt (sodium chloride, NaCl) and sugar (high fructose corn syrup, corn syrup or anything ending in "ose"). Teacher will explain that ingredients are listed from the most to the least. Explain to students that if salt and sugar occur in the first three ingredients, they are likely in high amounts.

Step Five: Teacher will instruct students to highlight in a third color, any ingredients that are difficult to pronounce (e.g. monosodium glutamate,) or "other spices" or "natural seasonings". Explain that these are chemical ingredients, used to enhance flavor, preserve the food or change the consistency. These ingredients are human created and not grown from the earth. Many scientist and nutritionists do not believe these ingredients are healthy and foods with these ingredients should not be eaten every day.

Step Six: Teacher will direct students to analysis portion of the label. Explain the amounts are in grams or milligrams (mg). Explain that the amounts are measured in percentages of daily intake, established by the United States Food and Drug Administration. Fat (especially, saturated and trans fat), cholesterol, sodium, and carbohydrate sugars are "maximal" percentages and considered unhealthy. Carbohydrate fiber, vitamins and minerals are "minimal" percentages and considered healthy. Ask students if the highest percentages fall in the healthy or unhealthy categories.

Step Seven: Teacher will hang a chart, with the categories of "Sometimes" and "All Times" foods. Students will place food labels with the lowest ratio of farm foods and highest unhealthy percentages in the "Sometimes" category and the highest ratio of farm foods and highest healthy percentages in the "All Times" category.

Conclusion: Students will note the ratio of healthy to unhealthy or "Sometimes" and "All Times" food on the chart. Students will create a wish list of healthy foods that can be

eaten all times. In the event there are no foods on the “All Times” chart, which is a possibility, students will create a wish list of farm foods.

Homework: Students will analyze two more food labels from canned or packaged food and determine if they are “Sometimes” or “All Times” foods.

## Unit Two: Earth Science and Ecology

Project Objective: Students will be able to evaluate the importance of a clean and healthy environment in order to identify the factors necessary for clean air and water.

### *1) Lesson One: Interdependence*

Objective: Students will be able to identify ways in which organisms depend upon each other, as well as, air, earth, water and sun energy, in order to discuss and explain how a clean and healthy environment should be maintained.

Materials:

Books:

The Lorax by Dr. Seuss  
The Great Kapok Tree, by Lynne Cherry  
A River Runs Wild, by Lynne Cherry  
Cactus Hotel by Brenda Z. Guiberson and Megan Lloyd  
A Bee See, by Kenneth Eade and Valentina Eade  
If the World Were a Village, by David J. Smith  
This is the Tree, by Miriam Moss  
The Water Hole, by Graeme Base  
The Sign of the Sea Horse, by Graeme Base  
And the Tide Comes In, by Merryl Alber and Joyce Mirran Turley  
Amazon Rain Forest, by William B. Rice  
Jungle, by Theresa Greenaway  
Keepers of the Animals by Michael J. Caduto, and Joseph Bruchac

Videos:

The Lorax, the Original by Dr. Seuss  
If I Ran the Rain Forest by Bonnie Worth  
The Rain Forest, Earth at Risk, by Laura Tangley  
Watership Down  
Nova: Bees, Tales from the Hive  
Magic School Bus: Episode 37, In the Rainforest  
Magic School Bus: Bugs, Bugs Bugs  
Magic School Bus Takes a Dive  
Magic School Bus: Field Trip Fun and Games  
Magic School Bus: Catches a Wave  
Saving the Rainforest Lesson by Laura Buckley  
Living Large in the Rainforest by Animal Atlas

Chart Paper  
Markers  
Water Cycle Chart  
Globe and map

Introduction of a raw fruit or vegetable will be an ongoing opening activity for each lesson.

Step One: Teacher will read aloud or class will view the video of Dr. Seuss' *The Lorax*

Step Two: The class will discuss the main idea of the story. Class discussion will center on how the land was destroyed and ways that the land could have been saved.

Step Three: Teacher will establish where students are located by writing the following categories on chart paper: Address of School, Neighborhood of School, City, Rivers in or surrounding city, State, Mountain Ranges within state, Country, Surrounding Countries, Bordering Oceans, Planet. While looking at a map or globe, have students answer and write locations on chart. Teacher will explain that the globe is a model of the Earth. Place a marker of the city location on the globe.

Step Four: Teacher will note the fact that the marked spot is on a planet, which is on a sphere. Everything on Earth is surrounded and connected by something else. Students will discuss their urban environment and if that environment resembles what the *Onesler* created with his factory and business.

Step Five: Class will discuss how the situation could have been prevented, i.e. replacing all trees that were taken, not buying thneeds etc.

Step Five: Class will speculate on if a change in one part of the Earth can affect another part, since all parts are connected.

Step Six: The class will watch the video, [The Rain Forest, Earth at Risk](#) and read the *Great Kapok Tree*. Class will list what will be lost to the Earth if the rainforests continue to shrink. Class will list ways their environment will be directly effected, e.g. oxygen, medicine, cocoa.

Step Five: Students will break into small groups of five or six. They will read other books from the list or view the other videos. They will create lists of ways that all natural things on Earth depend on others to live.

Conclusion: Students will report lists back to the rest of the class.

Homework: Students will consider their own environment. Students will choose one thing from another environment (e.g. cocoa) and write a paragraph explaining how loss of that one thing would affect them personally (e.g. If I couldn't get cocoa, from the Ivory Coast, then ...).

## 2) Lesson Two: Eco System and the Food Chain

Objective: Students will be able to explain how the ecosystem of different environments function in order to relate ecosystems to food chains in various environments.

Materials:

Books:

Ecosystems by Pam Robson and Tom Kenyon

What's for Lunch by Cindy Rodriguez

Food Chains and Ecosystems: Ecology for Young Experimenters

By George Schwartz

Eco-fun: Great Projects by David Suzuki

Waiting for Owl's Call by Gloria Whelan

Wangari's Trees of Peace: A True Story from Africa by Jeanette Winter

Mama Miti: Wangari Maathai and the Trees of Kenya by Donna Jo Napoli and

Kadir Nelson

Manfish: A Story of Jacques Cousteau by Jennifer Berne and Eric Puybaret

Water Dance by Thomas Locker

Done in the Sun: Solar Projects for Children by Astride Hillerman, Anne

Hillerman and Mina Yamashita

Properties of Ecosystems by Deborah Lawrence and Richard Lawrence

Soil, Green Science Projects by Robert Gardner

Water: Green Science Projects by Robert Gardner

Good Food, Good for Earth by Darlene R. Stille

Oceans: A Foldout Book by Rand McNally for Kids

Rainforests: A Foldout Book by Rand McNally for Kids

Home for a Tiger, Home for a Bear by Brenda Williams

Videos:

Food Chains, Food Webs, Energy Pyramids in Ecosystems: Video for Kids

by MakeMeGenius

Food Chains by Burnette

The Lion King, Circle of Life by Popeye

3-2-1 Contact #15 – Eat and be Eaten – Food Chains, PBS

What is an Ecosystem for Kids by MakeMeGenius

Learning about Ecosystems by M. DeMaio

What is Pollution and its Types and Prevention (EVS Lesson for Kids)

By MakeMeGenius

Old MacDonald Had a Farm with Real Animals by WildCanadaKids

Experiment and project supplies

Displays boards, one per group

Step One: Explain that the food that we eat is closely associated with the connecting environments. Our environment is the ecosystem in which we live. Our ecosystem



determines the food chain. If the ecosystem is out of balance, the food chain is out of balance.

Step Two: Show the video, Learning about Ecosystems. Students will discuss the ecosystems in which they are closest.

Step Three: Show the video, Food Chains, Food Webs, Energy Pyramids in Ecosystems: Video for Kids or Eat and be Eaten. Students will discuss how different food chain fit into different ecosystem (e.g. what plants will be the producers in a desert ecosystem, which animals would be herbivores, which would be omnivores, which would be carnivores).

Step Four: Other videos are optional, but will probably enjoy, The Lion King, Circle of Life, which establishes the ultimate carnivore, the lion as king of the jungle.

Step Five: The class will be divided into small groups of five or six. Each group will be given a project book, such as Ecosystems by Roboson and Kenyan. They will choose and carry out an experiment or project and present in the Scientific Method on a display board.

Step Six: Students will display and explain projects and results.

Step Seven: Teacher will display the Rand McNally foldout books for the ocean and rainforest. Students will identify the food chain in those ecosystems.

Step Eight: Teacher will explain that if the ecosystem becomes unbalanced due to excessive use of resources or pollution, the food chain is threatened. Teacher will show, What is Pollution, Its Type and Prevention by MakeMeGenius.

Step Nine: teacher will do a read-aloud or teacher and students will do shared reading of Mama Miti and Manfish. These are books about Wangari Maathai, who led a movement to replace trees in Kenya and Jacques Cousteau who led many protests against ocean pollution and exploitation.

Conclusion: Students will explain how they could make positive changes in the ecosystem.

Homework: Books on the ecosystem will be distributed. Students will do a book report on the ecosystem and food chains.

### *3) Lesson Three: The Dust Bowl*

Objective: Students will be able to discuss and explain how an ecosystem can be devastated and affect other ecosystems, when one change is made, in order to understand the phenomenon known as “The Dustbowl”.

Materials:

Video: Surviving the Dustbowl by the History Documentary Channel

Books:

Children of the Dust Bowl by Jerry Stanley

Years of Dust by Albert Marrin

Dust Bowl Through the Lens: How Photography Helped Reveal and Remedy a National Disaster

Step One: Teacher will explain that if one thing in the ecosystem were changed, the entire ecosystem would change. This change would affect other surrounding ecosystems. The Dust Bowl was one of the worst ecosystem disasters in the United States.

Step Two: Students would watch Surviving the Dust Bowl by the History Documentary Channel. Teacher may want to censor some of the middle of this video, which focuses on the suffering. Students should understand that a lot of suffering took place, but watching rabbits being clubbed to death may be too upsetting.

Step Three: Students would discuss the start, middle and ending events of the dust bowl. They should understand, how the soil was damaged by over-plowing, thus breaking the grass root system that held the soil and water in place. They should understand that if there was no water in the soil from plants, there was no water to evaporate to create clouds for rain, thereby causing droughts. They should compare how the land and ecosystem was prior to tractors over plowing the land and that this was a disaster caused by humans changing the land with a new invention (i.e. gas run tractors), in order to make more money. Clearly farmers did not understand the consequences of such changes.

Step Four: Students will break into small groups and each group will read a book on the Dust Bowl. They will report out what they learned.

Conclusion: Students will speculate and list possible solutions that could have ended the dust bowl sooner. What did the land need and how could that happen.

Homework: Students will write a persuasive letter to their mayor or city council person to plant a tree at a location in their neighborhood.

### Unit Three: Farming

Objective: Students will be able to identify and explain the purposes of farming in order to evaluate the critical importance of food making in the twenty-first century.

#### *1) Lesson One: What is Farming?*

Objective: Students will be able to define concepts of farming in order to identify and explain the purpose of farming.

Materials:

Books:

Farming by Bobbie D. Kalman

George Washington Carver by Matt Doeden  
Dust Bowl: An Interactive History Adventure by Allison Lassier  
Old Fashioned Farm Life Coloring Book: Nineteenth-Century Activities on the Firestone Farm at Greenfield Village by Albert Gary Smith and Peter H. Cousins  
Voices from the Dust Bowl by Sherry Garland and Judith Hierstein  
Farm through the Ages by Phillip Steele, Andrew Howett and Gordon Davidson  
Cesar Chavez, Leader for Migrant Farm Workers by Doreen Gonzales  
The Flower Hunter, William Bartram, America's First Naturalist  
Organic Farming: How to Raise, Certify, and Market Organic Crops and Livestock  
Growing and Eating Green by Ruth Owen  
Cycle of Rice, Cycle of Life: A Story of Sustainable Farming Food and Farming by Rob Bowden  
Organic Gardening for Kids by Elizabeth Scholl  
Organic Gardens by Lori Pupeza  
Natural Foods and Products by Gary Chandler

Videos:

Learn Grade 3 – History – Farming and Domesticating Animals by Kids Classroom  
Honey Bees – Natural History 1 & 2 by Ilse Knatz Ortobasi  
Urban Farming in Baltimore Grows Food Year Round to Teach Kids Where Real Food Comes From by Learn Organic Farming at Growing Your Greens  
12 Facts Every Gardener Should Know about their Vegetable Garden by Learn Organic Farming at Growing Your Greens  
Starting a New Bee Hive – Which Hive is Best? Where Do I Get my Bees by Learn Organic Farming at Growing Your Greens  
NEW DOCUMENTARY: What's on Your Plate (child nutrition farming organic kids new york city) by Paul Chek  
What is Organic by PureandGreenOrganics

Websites:

Sustainable Agriculture Research and Education, [www.sare.org](http://www.sare.org)  
Rodale Institute, [rodaleinstitute.org](http://rodaleinstitute.org)  
Food Trust, Co., [foodtrust.org](http://foodtrust.org)

Step One: Teacher will introduce the concept of farming by explaining that once we have learned about nutrition, ecosystems and food chains, we will learn about where healthy, natural food for human and from where it comes. Basic and natural food starts at a farm. Food is purposely grown on a farm, so that it is not hunted or found. There are many different types of farms. Some are healthy for the ecosystem. Some are not. Farms that we know to be healthy for ecosystems are sustainable organic farms. These are the farms we will learn about.

Step Two: Teacher will show the video, Learn Grade 3 – History – Farming and Domesticating Animals by Kids Classroom.

Step Three: Teacher will explain that farming is the planned growing of food and it can happen almost anywhere in the world, as long as the correct environment is in place or created. Students should understand that any creation in the environment, changes the whole environment,. This change can be positive or negative. Teacher will show video, Urban Farming in Baltimore and What is Organic. Ask if the changes created in these environments were positive or negative and why.

Step Four: Students will break into small groups of five or six. Each group will read a book on the history of farming and organic farming. They will create a chart of interesting facts to report back to class.

Step Five: Students will report back to the class, what they learned about the history of farming and organic farming.

Step Six: While still in small groups, teacher will pass out copies of Old Fashioned Farm Coloring Book. Each child will have a different chore. They will explain how and why these churns are important in making a farm work. They will color the pictures.

Conclusion: Teacher will ask for definitions for the words: farm, organic, sustainable, crops, produce, and any other words relevant to farming. Teacher will write student responses on chart paper.

Homework: Students will write a story about working on a farm and what three foods they would grow.

## 2) *Lesson Two: Farm Visits*

Objective: Students will be able to analyze and evaluate the purpose of farms that are visited in order to understand the importance of farming to the future of survival in the twenty-first century.

Materials:

Farms (see appendix for Philadelphia)

Farm Questionnaire

Step One: Farm visits are essential to the curriculum and should be done to as many available farms and as often as possible. Class field trips can be costly and fund raising through food preparation (in a subsequent project) may be used. Teacher should arrange farm field trips to at least two three types of farms. One type of farm should be an available rural farm, another can be a suburban farm and the third, and most important to urban students, should be to an urban farm. Philadelphia has the largest high school for agriculture in the country, Saul High School. A visit to this school is highly recommended in Philadelphia. In other municipalities, teachers should research nearby colleges and universities with

agriculture programs. It is important that students associate education with farming. See appendix for suggestions of Philadelphia area farms.

**Step Two:** The same farms should be visited at least twice but preferably three times. The first time will be in the fall, during harvest time. The second visit should be early spring, during ground preparation for planting and seed germination in greenhouses. The third should be in the early summer when the first fruits would be available. If possible, choose farms where students will be able to pick their own products.

**Step Three:** All farm visits should include an extensive questionnaire to be completed by students. The questionnaire will include time of year, location and products of the farm. Please see the appendix for questionnaire. Students should also be encouraged to add a list of their own questions. A KWL chart can be used for each visit.

**Conclusion:** Students will complete journal entries with a section for each farm, with drawings, insights and questions they may have.

**Homework:** Students will create a non-heat recipe for the product they either learned about or brought back.

#### Unit Four: Growing

**Objective:** Students will be able to identify essential components of organic farming in order to duplicate seed germination and insect production activities.

##### *1) Lesson One: Plants and Seed Germination*

**Objective:** Students will be able to identify essential components of organic farming in order to duplicate seed germination activities.

**Materials:**

**Books:**

Organic Gardening for Kids by Elizabeth Scholl  
Container Gardening for Kids by Ellen Talmage  
A Kids Guide to Making a Terrarium by Stephanie Bearce

**Terrarium Supplies:**

Large glass container with glass lid, loose enough for air to enter  
Gravel or small stones  
Small grade charcoal  
Potting soil for cactus  
Several small tropical plants of varying colors or seeds of small trunk or bush plants (e.g. coleus)

Water cycle poster  
Water

Germination Supplies:

Tomato seed (patio or bush variety)  
Marigold seeds (miniature)  
Potting soil for seedlings  
Peat pots for each student to have at least two  
Craft sticks  
Permanent markers  
Newspaper  
Water  
Large plant trays with plastic lids  
Plant growth lights

Step One: This should be done during or shortly after ecosystem lesson. Explain to class that they will create their own small ecosystem in which plants will thrive without out intervention after it is setup. Review the water cycle poster.

Step Two: With teacher guidance, students will take turns adding the layers to the terrarium. First, pebbles go at the bottom, next is a layer of charcoal for water purification. Third is a thick layer of potting soil. Cactus soil is used because the sand content has the drainage. If using plants, create holes for plants and put place plants into terrarium. If seeds are being used, create holes and plant seeds. The advantage of using plants is that they are established and will adapt to their new ecosystem. Seeds will germinate, but new seedlings may rot or dry out, if moisture levels are not exactly as should be. Students will have other exposure to seed germination as well. Do not place the terrarium in direct sunlight, as the glass and beads of water will act like a prism, magnifying the light rays and potentially burn the leaves. The terrarium will need diffuse light and usually, the fluorescent light of the classroom will suffice. Wait several hours and have students make observations of the clouds that will form at the top on the glass lid or sides.

Step Three: Students will make journal entries for the terrarium with the date, activities and a picture of the height of the plants. They might also record the measurements and cloud formation.

Step Four: Seed germination activities can start as early as February, for plants to be ready to be replanted outside, into a garden or a pot by May. Students will break into small groups of five or six. Teacher will place newspaper in the middle of the group and a pile of seedling potting soil. Each student will be given two peat pots and two or three tomato and marigold seeds, each.

Step Five: Teacher will demonstrate how to immerse seeds about  $\frac{1}{4}$  to  $\frac{1}{2}$  inch into the soil. Students will plant two or three tomato and two or three marigold seed into each pot. Students will write their names or initials on the two craft sticks, and place craft sticks into the peat pots along the sides. Teacher will explain that if two

or more seeds germinate, the plants will be thinned to one plant per pot, but using two or more seeds will insure that each pot will have a plant.

Step Six: The peat pots will be placed into trays. Teacher will pour water from a spout into the bottom of the trays slowly. Wait several minutes for the water to soak up. Once the soil is moist, spray water on the top and cover pots with a clear plastic lid.

Step Seven: Teacher will explain that tomato plants are often grown with marigolds. Marigolds help to repel damaging insects such as aphids. Marigolds also attract honeybees with their bright colors and smell. Once the honeybees are near the tomato flowers, which are more difficult to spot, they will pollinate the tomatoes as well.

Step Eight: Students will make journal entries of date and germination activities in the seed germination section.

Step Nine: Wait several hours and have students make observations of the clouds that will form at the top of the plastic lid.

Step Ten: When the seedlings are completely straight and the primary leaves are fully open, the plastic lid should be removed. Seedlings should be placed under plant growth lights for at least six hours per day. The teacher might change the position of the light so that students can watch how plants lean toward the light.

Conclusion: Students will continue to make daily observations of their seedlings and record growth and drawings on a regular basis.

Homework: Throughout the year, students should be encouraged to search and gather various seeds. These seeds can come from fruits they eat or have found on the ground from nearby trees or bushes. Students may choose to plant seeds in a pot at home or bring seeds to class and plant in a common pot.

## 2) *Lesson Two: Butterflies*

Objective: Students will be able to identify essential components of organic farming in order to duplicate insect production activities. Students will be monitoring the development of butterflies. This activity should start mid to late April, after Spring break and three to four weeks prior to releasing

Materials:

Butterfly kits:

Butterfly larvae in a container with leaf paste

Butterfly habitat

Butterfly feeder

Straight pins

Organic sugar

Filtered water

Organic oranges  
Journals  
Paper  
Butterfly tracers  
Colored markers

**Step One:** Teacher will explain that some of the most important animals to farming are insects. Insects can be good or bad to farming. Many insects are harmful because they eat or destroy plants, like aphids or beetles. Some insects are helpful because they either eat or destroy harmful insects, like ladybugs and praying mantises, or they help pollinate the plants like honeybees or butterflies.

**Step Two:** Teacher will display butterfly larvae to students. Students will make observations and record and draw their observations in the insect section of their journals

**Step Three:** Teacher will continue to follow package directions and students will make and record observations. Butterfly larvae will grow and eat the leaf paste. They will start to crawl to the top of the cup, which has paper with the texture of a leaf. The larvae will attach to this paper at the top and form chrysalis. Once the chrysalis have become well established, about three days, the teacher should erect the habitat, open the cups, take the paper, with the chrysalis out of the cup and carefully, pin the paper to the side of the habitat net.

**Step Four:** When the chrysalis start to shake, the butterflies will soon come out. Make a nectar of three teaspoons of organic sugar to one cup of filtered water. Place the nectar in the butterfly feeder and put that in the habitat. After the butterflies have emerged, place to halves of an organic orange, cut or split jagged, in the bottom of the habitat. Butterflies seem to prefer oranges to the nectar in the feeder, but will sip on both.

**Step Five:** To coincide with math symmetry lessons, students will trace and cut out butterflies. Using colored markers, they will create symmetrical designs on the butterflies. Emphasize that butterflies are one of nature's most perfectly symmetrical creations and that must be careful to have mirror images of the wings. These butterflies can be laminated.

**Step Six:** Arrange for the butterfly release. Butterflies may only live two weeks. Try to arrange for their release within several days of their emergence. There are some butterfly gardens in cities (e.g. at Bartram's Gardens in Philadelphia). Their release should be as close to meadows, fields of flowers, trees, as possible. If released at a farm, secure permission. Some non-sustainable farms view butterfly caterpillars as pests. Also, if the farm is non-organic, the pesticides used at that farm will be harmful to the butterflies. Usually butterflies have to be lifted, by hand out of their habitat. Hopefully your students can participate in the send-off.

**Conclusion:** Ask students to articulate what they learned throughout the process of watching butterflies develop.



### 3) Lesson Three: Honeybees

Objective: Students will be able to identify essential components of organic farming in order to duplicate insect production activities. Students will be monitoring the development of butterflies. This activity should take place mid to late May.

Materials:

Books:

Honey Bees by Joyce Milton

Honey Bees by Martha E. H. Rustard

The Honey Bee Mystery (Boxcar Children Special Series #15) by Gertrude Chandler Warner

The Buzz on Honeybees by Cathy Kaemamerien and Kathy Coates

Honeybees: Jump into Science by Deborah Helligman and Carla Golembe

Tommy Honeybee and Wully Wasp (NOOK Book) by Jef Urquhart

Chart paper

Markers

Apiary (see appendix)

Step One: Teacher will explain that one of the most important animals to farmer is the honeybee. Honeybees are the biggest pollinators of fruits and vegetables. Without honeybees, farmers would have to hire workers to pollinate large fields of flowering plants. Honeybees have been in danger of disappearing lately.

Step Two: Students will break into small groups of five or six. Each group will take a book. Students in the group will take turns reading the books. Students will create a honeybee fact sheets on chart paper.

Step Three: Students will attend a field trip to an apiary. Apiary should be able to deliver a full lesson on honeybees, their importance and threats for survival. Students should be able to sample honey.

Conclusion: Students will confirm what they learned about honeybees with the fact sheets they created.

Homework: Students will write a sequential story entitled, "A Day in the Life of a Honeybee"

### Unit Five: Fund Raising and Food Preparation

Objective: Students will be able to make a connection between food that is created on a farm and edible products in order to make practical applications of what they have learned about farming. Students will also be able to establish a financial productivity relationship between food and consumption in order to create a basis for funding this curriculum.

### *1) Lesson One: Funding Field Trips*

Objective: Students will be able to create a funding base to support the costs of field trips in order to make the frequency of field trips possible.

Step One: Teacher will plan field trips in early September, for farm and apiary visits, as well as transportation. Teacher will calculate the costs.

Step Two: Teacher will contact the various organizations and request any if any funding is available through these organizations. For example, in the past, Bartram's Gardens of Philadelphia has had funding for both the lesson and buses available to schools in their surrounding Southwest Philadelphia area. This past year, Food Trust of Philadelphia has funded the lesson cost of field trips to Solly Brothers Farm, leaving only the transportation costs. Field trips to all Philadelphia museums, such as the Franklin Institute and Zoo are usually funded from October through April, leaving only the expense of transportation. Science and zoological museums may be an important source of information on the sciences necessary for farming. Nutrition programs, such as Food Trust of Philadelphia, may also be a source of funding food products as well. In the past, I have also secured field trip funding from corporations such as Target and US Airlines. Sometimes corporate funding is specific, e.g. US Airlines was interested in field trips regarding aviation; and sometimes the funding is remains at teacher discretion. All of this funding should be sought very early in the school year, if not the summer.

Step Three: Teacher should calculate the costs of field trips as closely as possible, in order to establish how much will be needed per child.

Step Four: Teacher will send a letter to parents explaining the curriculum, which will be used throughout the year, timeline and the anticipated expenses. In this letter, teacher will explain that efforts will be made to offset costs by fund raising through the sale of food products throughout the year.

Step Five: Teacher and students will decide on food products to be sold throughout the year and estimate the costs of products establish a selling price that will yield at least a 100% profit (i.e. the return will be twice as much as the cost to make, e.g. \$.50 cost will sell for \$1.00). Solicit suggestions from students. Involve students in listing all food products and supplies, such as plastic cups and sanitation supplies, advertising, etc. Itemize total cost and divide by expected number of your finished product (e.g. how many fruit smoothies can be made from x amount of foods and supplies). After costs per product have been established, establish selling price and profit, to go toward funding.

Step Six: Teacher will establish a schedule of sales, (i.e., when products will be sold, e.g. three weeks before each trip). Teacher will establish a place to sell food products at a convenient area close to lunchtime activities.

Step Seven: If teacher is unable to afford, upfront expenses, donations from parents might be requested.. Sometimes, nutrition programs, for example, Food Trust of

Philadelphia, may assist in funding. Teacher will make a list and buy all food and supplies as needed, according to your schedule.

Conclusion: Students will receive information of what, when and where for funding projects.

Homework: Students will create a poster, using information of what, when and where and price list. Best poster will be used.

## *2) Lesson Two: Food Preparation and Sales*

Objective: Students will be able to identify and prepare food to be used for nutritious snacks in order to prepare and sell healthy snacks to raise funds.

Materials:

Recipes for healthy snacks (see appendix for suggestions)

Food ingredients for recipes

Supplies and equipment for recipes

Step One: Teacher and students should distribute flyers or advertisements for food sells about one week prior to sales and post flyers.

Step Two: Teacher and students should calculate amount of time need for preparation and begin preparations.

Step Three: Prior to sales, prepare a list of ingredients for each item and post at place of sale.

Step Four: Teacher will assign specific jobs to students. The same student should not handle money and food at the same time.

Conclusion: Teacher and students will evaluate the success the project.

Homework: Students will bring in a healthy family recipe. Teacher will put together recipes for a classroom cookbook.

## Unit Six: Careers that Support Agriculture

Objective: Students will be able to identify various aspects of agriculture and professions that support them in order to speculate their own potential for careers in agriculture.

### *1) Lesson One:*

Objective: Students will be able to review curriculum topics in order to identify professions that make agriculture possible.

Materials:

Book: Forty-Acre Swindle by Dave Jackson

Websites:

[www.tuskegee.edu](http://www.tuskegee.edu)

[www.rodaleinstitute.org](http://www.rodaleinstitute.org)

Smart board

Computer

Step One: Teacher will list the topics: nutrition, ecology, farming, growing, business on the smart board.

Step Two: Students will review what they learned regarding each topic.

Step Three: Using smart board and computer, teacher will guide students through definitions of each of the term and identify and define the sciences that are applicable to the topics. For example, growing might be defined as fertilization and breeding and would be applicable to life science, genetics ,botany or biology. Ecology would be defined as the study of the living and non-living environments, and would be applicable to both life and physical sciences. Nutrition would be the chemical breakdown of food and related to biochemistry.

Step Four: Teacher will guide students in researching what kinds of scientists support farmers. For example, which scientist would a farmer consult to understand weather patterns? The answer might be a meteorologist or geographer. Who might a farmer consult regarding animal health? The answer would be a veterinarian or animal nutritionist.

Step Five: Students will read the Forty Acre Swindle. This story tells the story of how the farm of a poor African American family was save by the farming methods invented or utilized by George Washington Carver. Even though this is historical fiction, the information of how Carver taught sustainable organic farming through Tuskegee Institute is factual.

Step Six: Teacher will display the website of Tuskegee University. Visit the history of the University. Teacher will note that Booker T. Washington founded Tuskegee, as an institute of technology. It was created to teach practical and viable occupations to poor African Americans, recently freed from slavery. It taught such occupations as sewing and boot making. George Washington Carver felt the most viable and essential occupation to poor African Americans was farming. When Carver joined the faculty at Tuskegee, he would travel to farmers to help them. He started the Farmers Institute to help save farms where soil was being depleted from growing cotton. He taught such things as crop rotation and composting so that farms could sustain themselves. Eventually Tuskegee Institute grew into a university as it pursued and taught the sciences that supported agriculture. Go to the Centers of Excellence, which list the various schools of science for which Tuskegee is now known. One of its most well known schools is veterinary medicine. Go to that site Tuskegee was one of the first university to make farming and supporting occupation scientific professions for highly educated people and to give poor people the opportunities to this education.

Step Seven: Teacher will guide students in researching schools and universities that specialize in agriculture and the supporting sciences. Philadelphia has one of the few agricultural high schools, W. B. Saul High School, (see appendix for farm visits in Philadelphia). If a farm visit was not made to that Saul, go to that website. Two major universities in Pennsylvania, Penn State and Purdue, offer agriculture as a major course of study. While not an academic institution, Rodale Institute is a formidable center for sustainable organic farming. If a visit was not made, go to that website, as well.

Conclusion: Students will ponder what type of science they like most and what type of education they would need.

Homework: Students will write a one persuasive paragraph for admission to a school. This paragraph should convince a school of this student's potential. For example, a student who was most interested in the insect development might want to attend a school for entomology.

## 2) Lesson Two: When I grow up I want to be an expert ....

Objective: Students will be able to simulate a sustainable organic farm and speculate on the type of expertise they will need in order to foresee possible career options.

Materials:

Book: Growing and Eating Green, by Ruth Owen

Computers

Website:

[www.kids.nationalgeographic.com](http://www.kids.nationalgeographic.com)

[www.agcareers.com](http://www.agcareers.com)

Step One: Students will be divided into small groups of five or six

Step Two: Teacher will give each group a different type of farm. One farm will be sub-tropical, such as Florida or California. One will be in the mid-Atlantic state. One will be in the north, such as Maine or Canada. One will be mid-western

Step Three: Students will go to regional area of National Geographic website. They will research food products grown in those areas.

Step Four: Students will read Growing and Eating Green. This books explores various careers necessary for organic sustainable farming.

Step Five: students will imagine and take on the roles of experts for the type of farm they have. Will this farm have more animal or plant products. Is an expert on plants on animals more important?. Is an insect expert more important in a subtropical or northern environment?

Step Six: Students will decide which expert they would want to be on their farm. They may consult AG careers website.

Conclusion: Students will identify what type of expertise they would like to have if they wanted to support agriculture. Students will review and critique if the curriculum on farming gave them an interest in farming and supporting careers as a way of life.

Homework: Students will create a poster, selling their favorite farm, of the farms that were visited during the curriculum.

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## **Standards**

Pennsylvania Common Core Standards Met:

English Language Arts

C.C.1.2. Reading Informational Text: Students read, understand and respond to informational text-with an emphasis on comprehension, vocabulary acquisition and making connections among ideas and between texts on a focus of textual evidence.

C.C.1.3 Reading Literature: Students read and respond to works of literature-with emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts, with a focus on textual evidence.

C.C.1.4 Writing: Students write for different purposes and audiences. Students write clear and focused texts to convey a well defined perspective and appropriate content.

C.C.1.5 Speaking and Listening: Students present appropriately in formal speaking situations, listen critically and respond intelligently as individuals, or in group discussions.

Math

C.C.2.3 Geometry: Students make sense of problem and persistence in solving them, construct viable arguments and critique the reasoning of others, look for and make use of structure, read abstractly and quantitatively, model with mathematics, attend to precision, look for and express regularity in repeated reasoning.

C.C.2.4 Measurement Data and Probability: Students make sense of problem and persistence in solving them, construct viable arguments and critique the reasoning of others, look for and make use of structure, read abstractly and quantitatively, model with mathematics, attend to precision, look for and express regularity in repeated reasoning to solve problems to measure and estimate length in standard units using appropriate tools. Students will also solve problems involving measurement and estimation of temperature, liquid volume, mass and length.

### Reading in Science and Technology

The Pennsylvania Department of Education has not adopted or established Common Core Standards in this field for grades below six; however, the following standards were met in this curriculum:

C.C.3.5 Students read, understand and respond to informational text-with an emphasis on comprehension and making connections among ideas and between texts on a focus of textual evidence. Students will site textual evidence to support analysis of science and technical texts. Students will integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g. in a flow chart, diagram, model, graph or table)

### Writing in Science and Technology

The Pennsylvania Department of Education has not adopted or established Common Core Standards in this field for grades below six; however, the following standards were met in this curriculum:

C.C.8.6 Students write for different purposes and audiences. Students write clear and focused texts to convey a well-defined perspective and appropriate content. Students write informative/explanatory texts including the narration of historical events, scientific procedure/experiments or technical process.

### Reading for History and Social Studies

The Pennsylvania Department of Education has not adopted or established Common Core Standards in this field for grades below six; however, the following standards were met in this curriculum:

C.C.8.5 Students read, understand and respond to informational text-with an emphasis on comprehension and making connections among ideas and between texts on a focus of textual evidence. Students will site textual evidence to support analysis of science and technical texts. Students cite specific evidence to support analysis of primary and secondary sources.

### Writing for History and Social Studies

The Pennsylvania Department of Education has not adopted or established Common Core Standards in this field for grades below six; however, the following standards were met in this curriculum:

C.C.8.6 Students write for different purposes and audiences. Students write clear and focused texts to convey a well-defined perspective and appropriate content.

## Appendix

### Philadelphia Area Farms

W.B. Saul High School, [webgui.phila.k12.pa.us/schools/s/saul/](http://webgui.phila.k12.pa.us/schools/s/saul/)

7100 Henry Avenue, Philadelphia, PA 19128

Saul is the largest high school of agriculture in the United States. It gives students experience in academics while maintaining a “deep-rooted” commitment to agriculture. It offers students “outstanding academic and vocational opportunities.

Rodale Institute, [rodaleinstitute.org/](http://rodaleinstitute.org/)

611 Siegfriedale Road, Kutztown, PA 19530-9320

Rodale Institute is a pioneer organization for the advocacy of sustainable organic farming, both as publishers and demonstrative farmers. Kutztown is about a two-hour drive from Philadelphia. Rodale offers a two-hour lesson on their demonstration farm. They maintain a functioning apiary or honeybee conservatory.

Bartram’s Garden, [www.bartramsgarden.org](http://www.bartramsgarden.org)

5400 Lindberg Avenue, Philadelphia, PA 19143

This is the eighteenth century home of John Bartram. A once forty-acre property is now about five acres with the original house from 1728. This is the oldest botanical garden in the United States. Different lessons on the history of farming are given throughout the year, such as apple pressing, churning butter, ice cream making, tree identification and honeybees. A functioning apiary is maintained. There is a recently planted fruit orchard and students will be able to see a working urban community garden. There is a butterfly garden ideal for a ceremonial release of butterflies.

Solly Brothers Farm, [www.sollyfarm.com](http://www.sollyfarm.com)

707 Almshouse Road, Warminster, PA 18974

This is a functioning farm with a variety of fruit crops throughout the year. Students are offered a hayride and lessons on most aspects of farming, including, cow milking, chickens and eggs, honeybees (no apiary, however), seed germination etc. Students are allowed to pick their own fruits and given a vegetable plant to take. They consider butterflies as pests, probably because there are very few trees on this property and butterfly caterpillars eat the leaves of their crops. This is not a sustainable farm and butterfly releases would not be welcome.

Linvilla Orchards, [www.linvilla.com](http://www.linvilla.com)

137 West Knowlton Road, Media, PA 19063

This is a farm most known for its apples though a large variety of fruits and vegetables are grown every year. There is no longer an apiary. Students are offered a hayride,

lessons and samples on the featured crop and the opportunity to pick their own, for additional fees. They claim to be a local and sustainable farm.

Greensgrow Farms, [www.greengrow.org/](http://www.greengrow.org/)

2501 East Cumberland Street, Philadelphia, PA 19125

Greensgrow is a sustainable urban farm in the Kensington section of Philadelphia. The originators turned a vacant city block into a farm. They grow and sell fruits and vegetables. They have several animals, chickens, a pig, a duck and a cat as pets. No animal products are raised or sold. This is an official field trip site, so special permission is sought. They do give workshops to those interested in urban farming, but not school tours as yet.

The Amish Village, [theamishvillage.net](http://theamishvillage.net)

199 Hartman Bridge Road, Ronks, PA 17572

In the Amish village, students will learn the history of farming through the cultural traditions of the Amish. Tours will include visits to the blacksmith shop, windmill, and one room schoolhouse. Students will understand how the 300-year way of life and belief has maintained one of the strongest systems of agriculture in the United States.

# FARM QUESTIONNAIRE

NAME \_\_\_\_\_ DATE \_\_\_\_\_

Name of Farm: \_\_\_\_\_

Location: \_\_\_\_\_

Is location \_\_\_\_\_ Urban, \_\_\_\_\_ Suburban, or  
\_\_\_\_\_ Rural?

Season: \_\_\_\_\_ Fall, \_\_\_\_\_ Winter, \_\_\_\_\_ Spring, \_\_\_\_\_ Summer

Foods grown:

Vegetables: \_\_\_\_\_

\_\_\_\_\_

Animals and Animal Products:

\_\_\_\_\_

\_\_\_\_\_

I tasted: \_\_\_\_\_

How does this farm control pests?

\_\_\_\_\_

How does this farm provide nutrients to plants?

\_\_\_\_\_



## Suggested Recipes for Fundraising

### (1.) Yogurt Fruit Shake

#### Ingredients:

1-quart plain yogurt with active cultures

1 16 oz package of frozen berries, peaches or other fruit

four bananas, peeled and sliced (optional)

½ cup of orange juice or juice of a Valencia orange

½ pint honey

#### Procedure:

Halve all ingredients and mix them in a blender. Pour into 8 oz cups .

Repeat with the other halves of ingredients.

Place lids on cups and serve with a straw

\*This should yield about two quarts or 8 cups

### (2.) Fruit Yogurt and Granola Parfaits

#### Ingredients:

1 quart of vanilla Greek yogurt

1 16 oz package of frozen berries, peaches or other fruit

frozen fruit is less expensive and add an icy texture

1 16 oz package of granola, without nuts (recipe available)

#### Procedure:

Set of eight cups in an assembly line

Put 2 tablespoons of yogurt at bottom.

Place 2 tablespoons of frozen fruit on top of yogurt

Place 2 tablespoons of granola on top of fruit

Repeat same procedure

Place lids on cup and serve with a spoon.

\*This should yield about 8 cups

### (3.) Granola

Ingredients:

4 cups of rolled oats

½ honey or brown rice syrup

¼ cup sunflower oil

8 oz package raw sunflower seeds (substitute for nuts)

dried fruit such as raisins, cranberries, apricots, etc.

Procedure:

Place rolled oats in a bowl and add honey or brown rice syrup and sunflower oil.

Spread mixture onto a 9X12 pan.

Bake in 350-degree oven for 20 minutes

Allow to cool and return to bowl.

Break mixture into small pieces

\*Avoid all nuts, peanuts and coconut that cause an allergic reaction

\*This should yield about five cups.

### (4.) Granola Bars

Place granola mixture in a bowl. Add ½ cup of brown rice syrup or honey.

Rubs hands with oil and form granola mixture into bars.

Place bars on an oiled cookie sheet

Bake in 350-degree oven for 20 minutes.

Allow to cool and wrap in plastic wrap.

\*This should yield about 2 to 4 dozen bars depending on size.

(5.) Fruit Salad Cups

Ingredients:

3 to 4 varieties of seasonal fruit

Valencia oranges for juice

Procedure:

Cut fruit into bite size piece. Only peel fruit when the peeling is

Inedible (e.g. bananas)

Place fruit in a large bowl.

Add the juice of Valencia oranges to prevent oxidation

Spoon fruit into 8 oz cups

(6.) Asteroids

Ingredients:

1 cup of semi-sweet dark chocolate chips

1 cup of sunflower seed butter (in place of nut butter)

½ cup of brown rice syrup

½ cup of maple syrup

3 cups of Crispy Brown Rice Cereal

Procedure:

Place chocolate, sunflower seed butter, brown rice and maple syrups

In a sauce pan

Cook stirring constantly until mixture is completely smooth.

Remove from heat and gently stir in crispy brown rice.

While warm, with wet hands, form mixture into small balls and place

On waxed paper.

Let cool completely and wrap in plastic wrap.

\*This yields about 24-30 asteroids.

\*This recipe come from vegan chef Christina Pirello, of the PBS show, Christina Cooks. This recipe can be found on [www.christinacooks/recipes](http://www.christinacooks/recipes) or [www.youtube.com/christinamakesasteroids](http://www.youtube.com/christinamakesasteroids)

### (7.) Spring Salad

Ingredients:

Baby spinach or spring mix

Cherry or grape tomatoes

Pickle or Persian cucumbers

Corn kernels, raw, cut from the cob

Dried cranberries

Raw sunflower seeds, shelled

Balsamic vinegar

Honey

Olive oil or sunflower oil

Procedure:

Combine spinach or spring mix, tomatoes, cucumbers, corn, cranberries and sunflower seeds. Combine balsamic vinegar, honey and olive oil. Shake well and pour over the vegetables. Serve in small bowls with forks.

### (8.) Russian Salad

Ingredients:

Heads of iceberg lettuce cut into 1/8 wedges

2 cups vegan mayonnaise (no eggs)

1-cup sweet chili sauce or ketchup

½ cup sweet pickle relish

Procedure:

Cut heads of lettuce into 1/8/ pieces, remove core.

Combine mayonnaise, chili sauce or ketchup and relish.

Pour about 2 tablespoons over the lettuce. Serve in small paper bowls with plastic fork and knife.

\*The easier and most economic sell is to purchase the soft Philly pretzels, but they are a mostly processed food. They are great for fund raising, however.