F R E S H

Families Reinforcing Environmentally Sustainable Habits

PENNSTATE

1855

Cooperative Extension
College of Agricultural Sciences

Penn State **Extension**

Curriculum Overview and Introduction

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CURRICULUM OVERVIEW

PROGRAM INTRODUCTION:
This program is designed to encourage families to collectively learn about, and hopefully adopt, sustainable practices. It is a six-week program, with each session about two hours long, each with a different theme. At the end of each session there will be a take home activity designed for families to do together. When the families return the following week, the activities they did will be shared and discussed.

PROGRAM OBJECTIVES:
The overall goal of this sustainable agriculture education program is to create awareness about the impacts of consumer food choices, increase knowledge of and positive attitudes towards sustainable agriculture, and promote the adoption of sustainable practices on the part of program participants. As it is a place-based program centered on a community garden, the participants will also learn to work collaboratively on maintaining the garden and growing their own food. To facilitate family communication and cooperation on matters related to food and nutrition, all members of each family are invited to participate in the program.

WHAT DOES SUSTAINABILITY MEAN?
While many people think of sustainability in terms of agriculture or the environment, sustainability has a much broader meaning that can be applied to all aspects of life. Sustainability, in simplest terms, means *lasting*. Rather than addressing problems with short-term results, sustainability looks to solve problems with long-lasting solutions. It can be applied to health, relationships, school, and more. This program is designed to use the community garden as a metaphor for how sustainability can be applied to our every day lives to improve ourselves, our families, our communities, and our planet.

WEEKLY AGENDA:
There is a consistent program format that will be used each week. Each session will begin with the facilitator asking participants to recall what was learned the week before. During this time participants will also discuss what they did during the week for the take home activity, and how, if at all, they applied the principles they learned from the week before.

After discussing the previous week and introducing this week's topic, participants will take part in 1-3 group activities, with the groups formed on the basis of family relationships, peer relationships, or community relationships (e.g., in large group format). Following these hands-on activities, the families will receive their take home activity for the week with verbal and written instructions.

On another day during the same week, the families will work on the garden - weeding, watering, mulching, harvesting, etc. (whatever needs to be done that week). During that time the program facilitators will discuss a few principles of gardening, as well as things that can be done during the week on their own. At the end of gardening, families will be brought into a group where the facilitator will lead a group discussion tying together what was learned from the activities in the previous session with the garden.

Session 1

Sustaining the Garden

Why grow your own food?

OBJECTIVES: This **Discussion Simulator** is to introduce the importance of growing your own, and to introduce the participants to gardening and a few basic principles.

TIME REQUIRED: 10 minutes

DIRECTIONS: Ask the participants if any of them have gardened before. If any of them have experience, have them share it with the rest of the group. Then discuss with the group how growing your own food can save you money – less money spent on produce, less trips to the supermarket – while providing healthy, nutritious meals for the family. When you grow your own food, you know exactly what has been put into the garden; therefore you know exactly what comes out. The garden is a great place for members of the community to come together, share experiences, and live healthy, sustainable lives.

Make sure to introduce the program to the participants. Inform them about the various kinds of activities (visual, hands on, take-home activities, etc.) and weekly agenda. Inform them of the gardening experience to follow later in the week. Finally, discuss the meaning of the term "sustainable" with the participants (see Curriculum Overview).

Where does this grow?

OBJECTIVES: To learn where, and on what types of plants, different fruits and vegetables grow (e.g. in a tree, bush, or underground).

Many people, children in particular, have never been to a farm or have seen where certain things grow. For example, if you ask a child "Where does this orange come from?" a common response is "The store." There are a variety of different ways fruits and vegetables are grown, and this activity is designed to visually show where and how different fruits and vegetables grow.

MATERIALS:

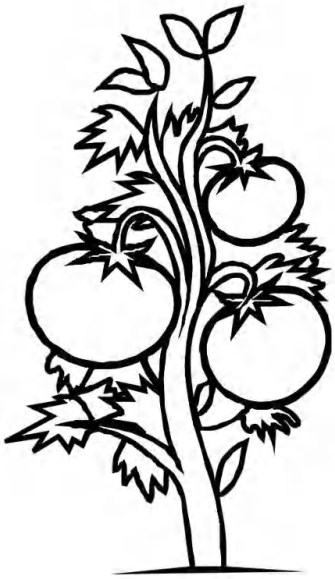
- produce cut-outs (**see Appendix, Session 1**)
- adhesive tape
- "Garden Cross-Section" (**see Appendix, Session 1**)
- Where does this grow? Answer Key (**see Appendix, Session 1)**

TIME REQUIRED: 15 minutes

DIRECTIONS:

- Split group into teams of 4-5.
- Give each team "Garden Cross-Section" page, produce cut-outs, and tape.
- Tell the teams to tape produce cut-outs (different vegetables and fruits) onto "Garden Cross-Section" where they think each type of produce grows.
- When the teams are finished, have them come back together as one group and discuss their answers.
- The team with the most correct placements wins! (See Answer Key)

Tomatoes grow above ground.



Carrots grow below ground.

Decorating "Recipes from the Garden" Books

OBJECTIVES: To create books for families in which to keep recipes they have collected throughout the summer.

This activity is specifically designed to promote intergenerational communication. Throughout the course of the program each family will receive recipes from other participating families. The children will make a decorate recipe books for their parents or grandparents in which they can collect recipes!

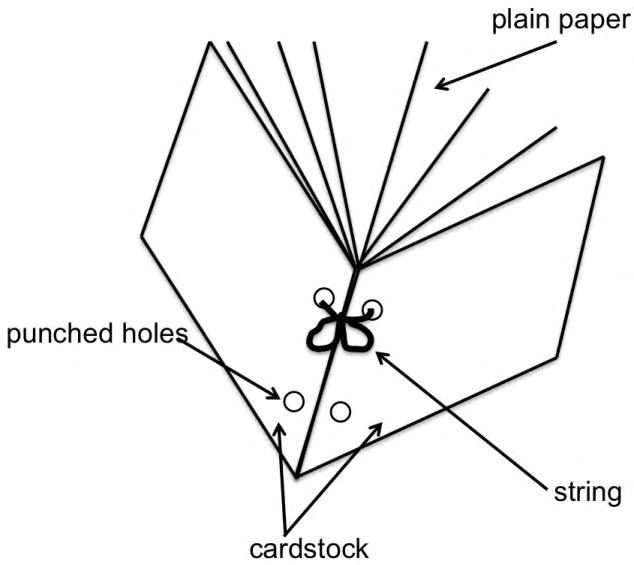
MATERIALS:

- cardstock
- plain paper
- string or yarn
- hole punch
- markers or crayons

TIME REQUIRED: 30 minutes

DIRECTIONS:

- Punch two holes along one side of each piece of cardstock and paper, 1/2 inch from corners and 1/4 inch from edge.
- Provide each child with 2 pieces of 4x6" cardstock, 10 pieces of 4x6" plain paper, 2 pieces of 6" string or yarn.
- Have the children decorate one side of each piece of cardstock with markers, crayons, stickers, etc.
- Attach the cardstock and plain sheets of paper using string, with decorated sides of cardstock facing outwards.



All About Compost

OBJECTIVES: To learn about compost and how to make it.

MATERIALS:

- What can be composted? (**see Appendix, Session 1**)
- chicken wire (or palettes)
- stakes (or string/rope/twine if using palettes)
- sledge hammer (if using stakes and chicken wire)
- rake (to gather brown material from around the garden)

Compost is an essential component of farming and gardening. It is full of nutrients and helps keep our soil healthy, which means healthy plants, and better tasting fruits and vegetables. But what exactly is compost? How is compost made?

TIME REQUIRED: 30 minutes

DIRECTIONS:

- First discuss what compost is:
  - What is compost?
    - Decomposed organic matter (anything that is or once was living from the earth) that can be used by plants. It can be used mixed with potting soil or put right into our garden.
  - Why compost?
    - Compost is a great way to add important nutrients to your garden. It will keep you plants healthy, which will keep you healthy!
    - It also prevents food scraps from ending up in our landfills. You know what happens when food goes there – it stays there forever!
  - Making compost:
    - There needs to be a balance of nitrogen and carbon. Layer your materials in the following order (refer to *What can be composted?* handout):
      - 6-inch layer of brown material
      - 6-inch layer of green material
      - 2-inch layer of moist soil, which contain decomposers and help prevent bad odors
      - Repeat!
    - The pile should be between 3 and 5 cubic feet.
    - Remember to keep the compost pile moist.
    - Mix the pile about once a week with a shovel or pitch fork to help oxygen flow through and decompose the fresh materials.
    - It takes about 3-4 months to complete the compost cycle. The color should be dark brown and smell like dirt. If it smells bad, it's not compost yet!

- Continue onto the next page for the rest of *All About Compost* -

(All About Compost continued)

DIRECTIONS (continued):

- Then make a compost bin so families can start composting!
  - Find a dry, shady spot near a water source to put the compost pile.
  - Work together to build a compost bin using the materials listed above (**see Appendix, Session 1 for composting information**)
  - The bin should be about 3x5 cubic feet. This will allow the core of the materials to reach a temperature where they can begin to break down.
  - See if there are any materials in or around the garden that can be raked up, such as twigs and leaves, and put them into the bin.
  - Remind families to compost any food scraps or yard waste from now on and put them into the compost bin they just made!
  - About once a week or once every other week, stir the compost materials using a pitchfork. This will help speed up the composting process.
  - In 3 – 4 months you should have rich compost that can be spread on the garden to help the plants grow.
  - (Optional: Laminate "What can be composted?" sheet (**see Appendix, Session 1**) and attach to compost bin to remind families of what materials can be put in the compost bin.)

- After building the compost bin, ask the participants: How does composting help sustain our garden?

The facilitator might try to encourage the participants in terms of the following:

- Recycling plant materials so they don't end up in landfills.
- Returning nutrients to the soil.
- Limits the need for chemical fertilizers by adding natural nutrients, making the garden healthy.

***This activity can be done with the lessons or during the gardening experience.**

Sharing Family Recipes

OBJECTIVES: This is a **Take Home Activity** aimed at having families talk about their favorite foods and recipes. Families will also feel more connected to the community after sharing their personal favorite recipes.

MATERIALS:

- Cooking with Kids handout (**see Appendix, Session1**)

DIRECTIONS:

- Give each family *Cooking with Kids* handout at the end of Session 1. During the week, have each family work together to decide on a favorite family meal or recipe that uses produce that grow (or could grow) in the community garden. Then have each family print, type, or hand-write the recipe to share with the rest of the group.
- The following week (Session 2) families will bring in their recipes to share with the group. Copies will be made of each recipe and given to each family to be placed into the "Recipes from the Garden" books.

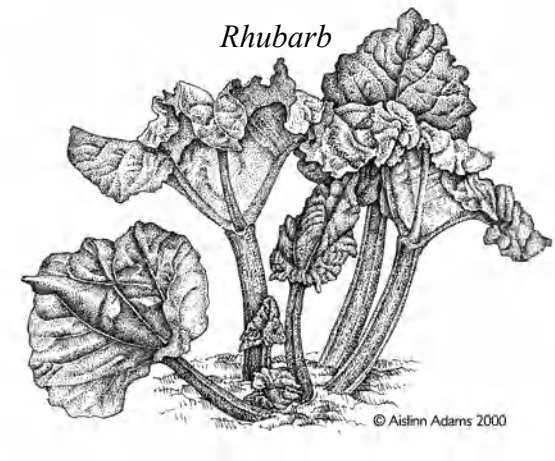
Gardening Experience

GROUP DISCUSSION: **Food from the Garden**

It is important that the families see this garden as a place to come together as a community, but also as a source of healthy food. Growing some of your own food means buying less from the store and keeping a little more money in your wallets.

Ask the participants: Why is gardening important? Why do you like having a garden here? What are some of your favorite foods that we can grow right here? Are there any favorite recipes or meals that you could make with food from the garden? How can we keep our garden healthy for the future?

Rhubarb



Session 2

Sustaining our Bodies

Name the Ingredients!

OBJECTIVES: To learn the ingredients hiding in processed and packaged foods.

MATERIALS:

- 4 packaged food items with nutrition and ingredients labels covered (make sure you can remove the cover and reveal the label)
- pencils or pens
- paper

TIME REQUIRED: 15 minutes

Many packaged and process foods claim they are healthy and good for you. But are they really? What actually goes into processed "food" items? The purpose of this game is to learn about what secret ingredients are hiding in our food. Many of these "food" items contain chemicals and harsh ingredients that we would never eat by themselves, so why would we eat them if they were put into a bottle or can?

DIRECTIONS:

- Split group into four age-integrated teams.
- Give each group a packaged food item (such as a bottle of soda, Doritos or a hot dog label), a pencil or pen, and a piece of paper.
- The group must collectively list all of the ingredients in the can or box and designate one person to write down their answers.
- After the groups think they have listed all of the ingredients, they will all come back together.
- Then the facilitator will remove the cover on the labels and reveal the actual ingredients in each of the food items to the participants.

Nutrition Facts

Serv. Size 6 2/25 oz (172g)
Serv. Per Cont. 3
Calories 370
Fat Cal. 160

*Percent Daily Values (DV) are based on a 2,000 calorie diet.

Amount/serving	%DV*	Amount/serving	%DV*
Total Fat 18g	**28%**	**Total Carb.** 31g	**10%**
Sat. Fat 8g	**40%**	Fiber 2g	**6%**
Trans Fat 0g		Sugars 4g	
Cholest. 40mg	**14%**	**Protein** 20g	
Sodium 1040mg	**43%**		

Vitamin A 10% • Vitamin C 6% • Calcium 35% • Iron 15%

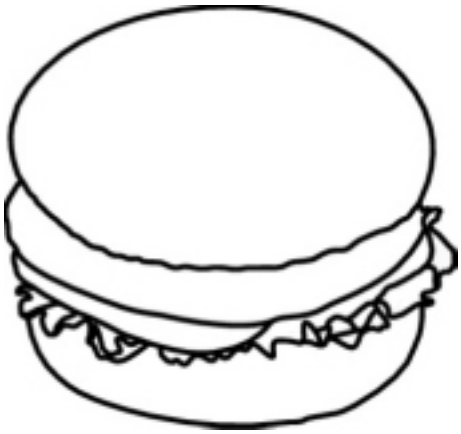
INGREDIENTS: Pizza Crust (Wheat Flour, Water, Soybean Oil, Yeast, Sugar, Salt, Calcium, Propionate, L-cysteine.), Low Moisture Part Skim Mozzarella Cheese (pasteurized part skim milk, cheese culture, salt, enzymes), powdered cellulose (to prevent caking) potassium sorbate and natamycin (preservatives)), Tomato Sauce (Tomato Concentrate Made From Red Ripe Tomatoes, Salt, Citric Acid, Red Bell Pepper Powder, Natural Flavoring, Spice.), Beef Sausage Crumbles (beef, water, salt, spice, sugar, monosodium glutamate, sodium phosphate, BHA, propyl gallate, citric acid), Water, Tomato Paste (tomatos, citric acid), Pork Pizza Topping (pork, water, textured vegetable protein (soy flour, isolated soy protein, caramel coloring) spices, salt, sodium phosphate, sugar, garlic powder, monosodium glutamate), Canadian Style Bacon water added (cured with water, salt, dextrose, corn syrup, sodium phosphate, sodium erythorbate, sodium nitrite), Pepperoni (pork, beef, salt, contains 2% or less of water, dextrose, natural flavorings, natural smoke flavoring, sodium ascorbate, garlic powder, oleoresin of paprika, lactic acid starter culture, sodium nitrite, citric acid, BHA, BHT.), Pizza Sauce Seasoning (salt, spices, onion, garlic, natural flavors, parsley)

CONTAINS: MILK, SOYBEANS, WHEAT

The facilitator will ask if anyone knows what certain ingredients are, such as "acesulfame potassium". Ask the participants if they can even pronounce it! Then ask if the participants if they think it sounds delicious, if they would eat it by itself, and if it is good for them or not. Finally, ask them ways in which we can control what we eat, for example, making food from scratch using our veggies from the garden!

Find the Fat

OBJECTIVES: To learn which foods are good for you and their benefits and which foods to avoid.



MATERIALS:

- pens or pencils
- Find the Fat handouts (one for each team) (**see Appendix, Session 2**)
- Find the Fat Answer Key (**see Appendix, Session 2**)

TIME REQUIRED: 15 minutes

DIRECTIONS:

- Split group into teams, each team is one family. If someone does not have a family member have them join another team.
- Give each team one *Find the Fat* handout and a pen or pencil.
- For each grouping of food items, have the teams pick which food item has the most fat.
- When everyone has completed the worksheet, bring the teams back into one group and reveal the correct answers.
-

Discuss why some foods have more fat than others (see Find the Fat Answer Key), for example foods that are fried in oil (which is fat) will absorb and have more fat than those baked, grilled, or steamed. Also discuss how certain foods, like mayonnaise and cheese, have lots of extra fat, and that there are low-fat alternatives. Tell them different ways in which they can reduce fat from their diets, like eating low-fat cheese or not using cheese at all, or simply filling up on more veggies and fruits.

The purpose of this game is to teach families about nutrition and fat content. Working together, the families must figure out which food item has the most fat in the group. Deciding between baked potatoes and French fries? Don't know if you should have chicken fingers or grilled chicken for dinner? This activity is designed to help families make the best decisions when planning meals together.

This game was adapted from Maretzki & Harmon, 1997, p. 32.

Sugar Game

OBJECTIVES: To learn how much sugar is actually in the foods we consume.

MATERIALS:

- different foods (such as a bottle of soda, an apple, slice of white bread, a cookie, bottle of ketchup, etc.)
- granulated sugar
- Ziploc bags or bowls

TIME REQUIRED: 15 minutes (not including prep-time)

Do you really know how much sugar is in a bottle of juice? How about a bottle of soda? This eye opening activity reveals how much sugar is actually hiding in some of the foods we eat – even the ones we thought were healthy.

DIRECTIONS:

To be done ahead of time:

Place equivalent amount of sugar into a plastic bag or bowl for each corresponding food item by dividing the number of grams by 4.2 to get the number of teaspoons. For example, if a bottle of juice has 30 grams of sugar, divide 30 by 4.2, which gives you a little more than 7 teaspoons of sugar. Then measure out the teaspoons and place into plastic bags or bowls. Code each bowl or bag (A, B, C… or 1, 2, 3…) to keep track of what food item it represents, then write down the letter or number and its corresponding food item on a piece of paper without letting the participants see you (this step can be done ahead of time). Also write down how many teaspoons of sugar are in each bag or bowl on your piece of paper. Make sure to remove or cover the ingredients and nutrition labels from the food items.

- Place the food items on one side of a table.
- On the other end of the table, put all of the corresponding labeled bags or bowls of sugar.
- Then have the participants come up to the table, look at the food items and containers of sugar.
- As a group, have them work together to match the food item to the corresponding container of sugar.
- When they think they have correctly matched the food items with the sugar, let them know how well they did by revealing the correct answers, and how many teaspoons of sugar are in each food item.

This game was adapted from "Balancing the Sugar" in FRIDGE, which was based upon the online resource: MyPyramid.gov, Education Framework, Key concepts for educators, Sugars and Sweets.

What Your Plate Should Look Like

OBJECTIVES: For this **Take Home Activity** families will create placemats at home to learn about servings sizes and balancing meat, grains, and vegetables.

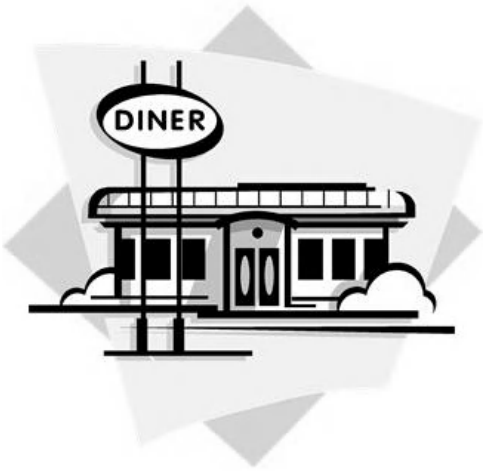
MATERIALS:

- What Your Plate Should Look Like handout (**see Appendix, Session 2**).

DIRECTIONS:

- Provide each family with one placemat handout. Directions are on handout.
- The following week (Session 3) have the families share with the group how they used their placemats to eat healthier.

Tips for Eating Out



OBJECTIVES: This is a second **Take Home Activity** that gives family easy solutions to eating healthier when on the go and at fast food restaurants.

MATERIALS:

- Tips for Eating Out handout (**see Appendix, Session 2**)

DIRECTIONS:

- Provide each family with one *Tips for Eating Out* handout. Discuss with the participants that it is ideal to make every meal at home, but it is unrealistic. Often people will find themselves on the road and hungry. What do you do?
- The following week (Session 3) ask if any of the families went out to eat and used the *Tips for Eating Out* handout. Did it help them make healthier food choices?

Gardening Experience

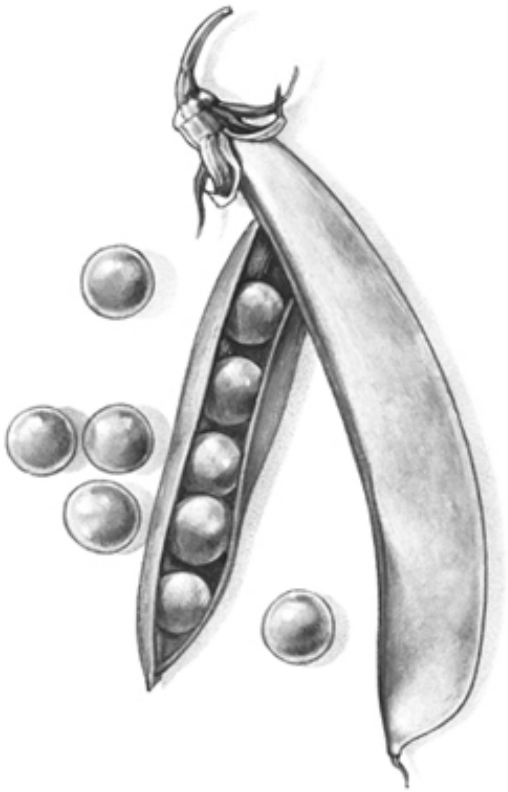
GROUP DISCUSSION: **What's hiding in our garden?**

As we saw last session when playing Name the Ingredients! and the Sugar Game, many packaged and processed foods have hidden ingredients that we don't know about, especially extra amounts of sugar.

Ask the participants: What are some of the hidden ingredients in the food we grow in our own garden? What pesticides and herbicides do we have to worry about? Do we have to worry about extra fat and sugar in the veggies that come from our garden?

We know *everything* that goes into this garden. There are no hidden ingredients, no extra sugar, and no chemicals that we can't even pronounce! The USDA recommends at least five fruits and vegetables a day. How many different kinds of produce do we have in our garden? Remember, "Strive for five"!

Peas



Session 3

Sustaining our Families

So you think you know me?

OBJECTIVES: To recall and learn about food preferences and habits of family members.

MATERIALS:
- paper
- 2 markers
- 2 clipboards
- set of questions (**see below**)

TIME REQUIRED: 30 minutes

This game is played like the well-known TV show, "The Newlywed Game", where the contestants are quizzed to see how well they know each other. In this version the questions are all about food. The purpose is to expose how little or how much families really know about each other, and to encourage more communication about food at home.

DIRECTIONS:
- Choose two people from each family, preferably one parent and one child.
- Each team plays one at a time while the rest of the group watches.
- Each person playing gets one clipboard, 5 pieces of paper, and a marker.
- The facilitator will ask one player to answer a question by writing it on a piece of paper attached to the clipboard (one answer per page, written big enough for the audience to see).
- Then the facilitator will ask the other player to write down what they think the first player wrote.
- After both players have written their answers, they will reveal what they wrote.
- Were the answers the same? Encourage discussion about the answers.
- Each correct answer receives one point.
- Once all 5 questions have been asked, tally the points and have the next paired team come up to play and answer the same 5 questions.
- The team with the most correct answers wins.

"So you think you know me?" QUESTIONS:
1. What is your favorite food?
2. How many servings of fruits and vegetables do you eat each day?
3. After eating a meal, who does most of the cleaning?
4. What is your favorite place to eat out?
5. What is your least favorite food?

Additional questions if time permits:
1. What is your favorite dessert?
2. How many times do you go to the grocery store each week?
3. What is your favorite drink?
4. How many times a day do you normally eat?
5. What is your favorite breakfast food?

Telephone

OBJECTIVES: To improve communication and listening skills.

TIME REQUIRED: 15 minutes

DIRECTIONS:

- Everyone plays together, or if working with a large group (15 participants or more) split into 2 groups.
- The facilitator will write down a phrase on a piece of paper (**see Example Phrases below**) and give it to Player 1, without letting any other player see what it says. Player 1 will then whisper the phrase into the ear of the person to his or her left (Player 2). Player 1 must try to speak as clearly as possible without allowing any other player, other than Player 2, to hear what he or she has said. Player 1 cannot repeat the phrase, but only has one chance to tell the next player the phrase.
- Player 2 will then whisper to the next person to his or her left (Player 3) exactly what he or she heard from Player 1. This will continue until everyone has heard the phrase.
- The last person to hear the phrase will then say the phrase that he or she heard from the previous player aloud. Is it the same as what is written on the piece of paper?
- If time permits, play another one or two times, starting with a different player.
- After the activity is completed, the facilitator asks "How might we apply what we learned from this activity to our communication with family members at home?" "Why is it important to have good communication when making food choices?"

People often forget the importance of good communication and listening skills. When talking about food and healthy eating habits, it is just as important to listen to one another and have good communication. This game will show people just how important it is to express yourself clearly and listen to what others have to say.

Example Phrases:

My favorite vegetable is eggplant.

I enjoy cooking with my family.

My favorite fruit is a banana.

Soda has too much sugar in it.

I enjoy spending time in the garden.

What food am I?

OBJECTIVES: This is a **Take Home Activity** designed to get families to play a fun communication game together at home.

MATERIALS:

- *What food am I?* handout (**see Appendix, Session 3**)

DIRECTIONS:

- Give each family one copy of *What Food am I?* handout.
- The following week (Session 4) ask families to share their experience playing the *What food am I?* game with the rest of the group.

Gardening Experience

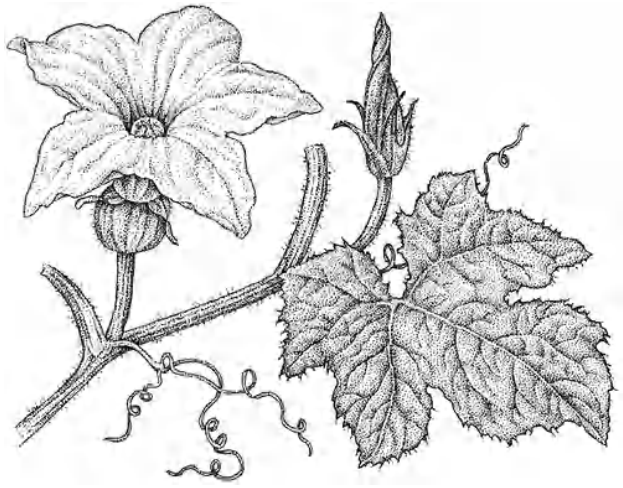
GROUP DISCUSSION: **Communication in the Garden**

Before gardening ask the participants to pay attention to how they communicate with others, including how they listen to, as well as share information and ideas. When you spoke did others listen? Did you listen to others as well as you should have? How do you think good communication can improve this garden? How might you apply what you learned from this activity to our communication with family members at home?

The facilitator might try to encourage the participants in terms of the following:

- It is important that families work together to make positive food choices at home
- Working as a group will help generate good ideas to improve the garden
- Listening to others will help you understand what others want from the garden

Squash



Session 4

Sustaining our Community

Introduction to Sustainable Agriculture, Local Food Systems, and the 3Ps

OBJECTIVES: The purpose of this **Discussion Stimulator** is to introduce the key principles of sustainable agriculture and local food systems to a consumer audience.

MATERIALS:

- 3Ps sheet (**see Appendix, Session 4**)

TIME REQUIRED: 5 - 10 minutes

DIRECTIONS:

- Show the 3Ps sheet to the whole group and explain main principles of sustainable agriculture using the 3Ps sheet.
- Briefly discuss the benefits of sustainable agriculture:
    - Unites the local community – building a bridge between consumers, retailers, and farmers
    - Seeks to improve environmental quality of the land, air, and water.
    - Improves the health of its consumers by providing better quality, safer foods that have higher vitamin content.
    - Improves the community by boosting the local economy, therefore helping out families and individual members of the community.
    - Uses fewer resources to grow and transport food, which results more money saved and less pollution in the air.
    - Uses limited amounts (or no amounts) of chemical pesticides and herbicides, and relies on natural predators and pollinators, improving and boosting the natural ecosystems
    - Better land management improves the soil for future generations
    - When there are disease, virus, pest, and fungus outbreaks, they can spread quicker and farther in conventional food systems. Local food systems can better contain and eliminate such spreads because of the greater variety of plants.
    - Community gardens bring people and families together!
    - Farmers who practice sustainable agriculture are helping the natural environment – the air, water, land, and biodiversity (or animals).
    - Helps save different varieties of vegetables. Most supermarkets only sell a few kinds of tomatoes, but there are over 7,000 varieties of tomato! Farmers preserve the seeds, therefore preserving a unique variety!

How far does your food travel?

OBJECTIVES: To learn how far food travels before it gets to your plate.

MATERIALS:

- map or globe
- 5 pieces of produce with stickers from where they came
- string (if using a globe)
- ruler

TIME REQUIRED: 10 minutes

Most of the produce that is found in grocery stores and supermarkets has traveled longer and farther than most people realize. The five-minute drive to the store makes it easy to ignore just how long ago that banana or broccoli was harvested, and just how far it traveled to get here.

DIRECTIONS:

- As a group, look at where each piece of produce came from.
- Take the sticker off of the first piece of produce and stick it to the map or globe on the country from where it came.
- After all of the stickers have been placed on the map, use a ruler (or string) to measure how far all of the produce traveled in miles.
- Then ask the participants: How long does it take to travel the number of miles these pieces of produce traveled? How much gas do you think it takes to get this produce here? Do you know the farmer that grew these and his or her farming practices, such as what chemicals they used on their farm?

Visualizing Commercial and Local Food Systems

OBJECTIVES: To understand the difference between commercial and local food systems.

Understanding the journey food takes to get to our plates is abstract and can be somewhat complex and confusing. This activity uses a visual "map" to help consumers and families understand the complexities of the commercial food system by comparing it to community and local food systems.

MATERIALS:

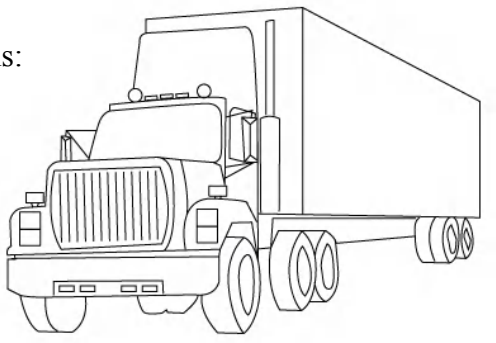
- Commercial Food Systems map (**see Appendix, Session 4**)
- Local Food Systems map (**see Appendix, Session 4**)

TIME REQUIRED: 10 minutes

DIRECTIONS:

- Ask two people to volunteer.
- Show the Commercial Food Systems map to the group.
- Ask the first volunteer to see if they can explain what is happening.
- Hold up the Local Food Systems map.
- Ask the second volunteer to explain what is happening in the map.

Which map is more complex? Obviously the Commercial Food Systems Map is more complicated. Then talk about how long and complex the process is to get food from farm to table in commercial food systems and how much time and energy (particularly gas and oil) is wasted. Is it necessary? What about local food systems? How does the food differ? Remember: less travel and processing time means fresher food.



Briefly discuss the pros and cons of commercial food systems:
PROS:
Cheaper food
Able to feed lots of people
Convenience (produce all year round)
Use of chemicals to minimize pests and diseases

CONS:
Environmental degradation
Damage to fisheries and water systems (from pesticides, herbicides, animal waste)
Health risks from chemical residue on produce
Obesity related illness from cheapness of corn and soy oil and high fructose corn syrup
Increased ozone pollution and green house gas emissions from heavy use of fossil fuels

Ask the participants: Is our garden part of a commercial or local food system?

Family Produce Travel Map

OBJECTIVES: This **Take Home Activity** help families learn from where and how far their food travels.

MATERIALS:
- Produce Travel Map (**see Appendix, Session 4**)

DIRECTIONS:
- Provide each family with a Produce Travel Map.
- Over the course of the week the family is to figure out where their produce comes from (by reading a sign at the supermarket or the sticker on the piece of fruit or vegetable) and mark it on the map (with a marker, pen, or stickers from the produce). [This is a good activity for reinforcing what participants learned from the "How far does your food travel?" activity.]

The following week (Session 5) the families will share their maps with the rest of the group to see how many miles our food traveled in only one week.

Gardening Experience

GROUP DISCUSSION: **The 3Ps of the Garden**

Ask the participants: Now that we know the basics of sustainable agriculture, how might our garden benefit the community?

The facilitator might try to encourage the participants in terms of the following:
- Bringing the community together to work towards a similar goal.
- Using local resources to maintain the garden.
- Using less chemicals and pesticides to limit pollution of local water systems (this will be discussed in greater detail in Session 5).

Kohlrabi

Session 5

Sustaining our Planet

Where does garbage go after we throw it away?

We drive to the supermarket. We buy food in plastic, cans and boxes. We go home and throw the wrappers and packaging in the garbage. We take bags of garbage to the dumpster or put them on the curbside for pickup. Then what? This discussion will explore the world of garbage and the impact we have on our precious planet.

OBJECTIVES: During this **Discussion Stimulator** participants will learn what exactly happens to garbage after it leaves our homes.

MATERIALS:

- picture of landfill (**see Appendix, Session 5**)
- map of ocean gyres (**see Appendix, Session 5**)

TIME REQUIRED: 10 minutes

DIRECTIONS:

- Ask participants if they know what happens to garbage after it is picked up. Where does it go after we throw it away?
- Briefly discuss some facts about garbage:
    - Plastic is forever! Once we create it, it stays around FOREVER.
    - Even if we throw away "biodegradable" and "compostable" materials, they may not degrade because they are layered between plastic in our landfills, which prevents them from breaking down. If you have something that is "compostable", make sure it gets composted and not thrown away with garbage!
    - Every single day in the U.S. over 2500 tons of non-biodegradable garbage is thrown away. Where does it go?
    - Sometimes plastic bags, balloons, and other pieces of garbage fly off of the dump truck or barge and end up in the ocean – where birds and other animals accidently eat them, leading to choking or starvation.
    - When plastic and other garbage ends up in the ocean, it follows gyres – or giant currents (see next page for map of ocean gyres) – and collects on our beaches, gets eaten by animals, and pollutes our water!
    - Plastic slowly releases toxic chemicals that harm marine life.
    - What is the Great Pacific Garbage Patch?
        - It is a giant patch of floating plastic and garbage in the northeast Pacific Ocean (see next page for map of ocean gyres). It is 537,640 square miles (2 times the size of Texas and 119,475.5 times the size of State College!)

- Then show pictures of landfill and the map of ocean gyres (currents) with the Great Pacific Garbage Patch.
- Ask the participants if they know a way to limit the amount of garbage we produce.

How much water does it take...?

OBJECTIVES: To learn how much water is needed to grow produce and raise animals.

MATERIALS:
- How much water does it take…? sheets (**see Appendix, Session 5**)
- 5-gallon bucket filled with water

TIME REQUIRED: 10 minutes

DIRECTIONS:
Discuss with the participants the amount of water it takes to raise animals and crops:
- Not only is more water used to raise animals than fruit and vegetable crops, but a lot more land is used! If water and land didn't have to be used for feed crops (corn and other produce that go to feeding animals), that land could be used to feed people!
- Food and agriculture are the largest consumers of water:
    - 1,000 times more than we need to drink
    - 100 times more than we need for personal use (bathing, washing clothes, homes, etc.)
- There are more than 10 billion animals raised every year for consumption

Make sure to stress the importance of water as a resource:
- Millions of people around the world don't have regular access to clean water and are undernourished. We have enough food to feed everyone in the world, but most of that food is going to feed animals instead of humans.

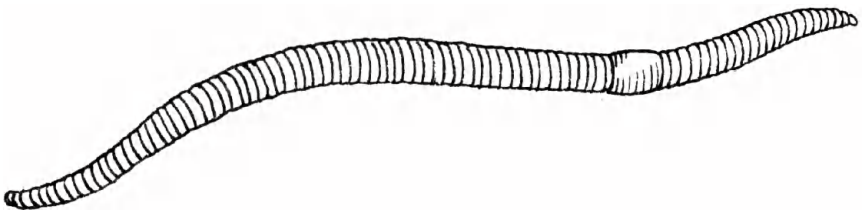
Tell the participants how many gallons of water it takes for each specific item (the number of bathtubs listed is for the matching game, so don't reveal those until later).
- **2.2lbs** of…
    - beef – uses over **3,962 gallons** of water (79 50-gallon bathtubs)
    - lamb – uses over **2,641 gallons** of water (53 50-gallon bathtubs)
    - poultry – uses over **1,585 gallons** of water (32 50-gallon bathtubs)
    - cereals (grains) – uses over **396 gallons** of water (8 50-gallon bathtubs)
    - citrus fruits – uses over **264 gallons** of water (5 50-gallon bathtubs)
- Then ask if they can guess how many baths or showers that would be and have them match the pictures of the food to the pictures of the bathtubs and buckets (*How much water does it take…? sheets,* **see Appendix, Session 5**).
- Once they have made their guesses, show them the correct answers and the amount of water needed for each food item.
- Take out the 5-gallon bucket filled with water. Is it heavy? Imagine carrying the amount of water needed for only 2.2 pounds of beef. Talk about exhausting!

Soil... It's Alive!

OBJECTIVES: To test for the presence of bacteria in sand, clay and soil without a microscope.

MATERIALS:

- sand
- clay
- soil
- hydrogen peroxide
- plastic cups



TIME REQUIRED: 10 minutes

DIRECTIONS:

- Discuss what happens when you pour Hydrogen Peroxide on a cut – it foams as bacteria are killed. Hydrogen peroxide foams whenever it comes into contact with bacteria and kills them. Bacteria live in soil and survive off of the organic matter.
- Split group into teams, each team is one family (there must be at least one adult in each group).
- Place a little sand in one cup, clay in a second, compost in a third, and soil in a fourth cup – three cups of each for each team.
- Have the adult in each group pour a little hydrogen peroxide in each cup and observe what happens.
- Ask the participants: Which material foams the most? What does this mean?

While many people think of soil as just dirt, soil is an ecological paradise for a multitude of living organisms, such as insects, fungi, and bacteria. Without these organisms plant matter would just collect on the surface of the earth, unable to decompose – all of the living critters in the ground help plants rot when they die. If they didn't, there wouldn't be any decomposed organic matter for other plants to live off of. The organisms in the soil are an essential part of keeping plants alive – which keep us alive!

This activity was derived from The Food Project.

Garbage Contest

OBJECTIVES: The purpose of this **Take Home Activity** is to see which family can produce the least amount of garbage in one week by reusing, recycling, and composting.

MATERIALS:

- Garbage Contest handout (**see Appendix Session 5**)
- What can be composted? handout (**see Appendix, Session 1**)
- Guide to Recycling (**see Appendix, Session 5**).

DIRECTIONS:

- Provide each family with a "Garbage Contest" handout, "What can be composted?" handout and a "What can be recycled?" handout.
- Announce to the whole group that every family is to compete to produce the least amount of garbage in one week by reusing materials that cannot be recycled, recycling those that can, and composting food waste.
- The following week (Session 6) all of the families will bring in their filled out *Garbage Contest* handouts and whoever threw away the least wins.

Gardening Experience

GROUP DISCUSSION: **Don't treat your soil like dirt!**

Ask participants: How long do you think it takes to make an inch of topsoil in this climate?
Answer: It takes 100-200 years to make just one inch of topsoil! When we fill our land with garbage, plastic, and toxic materials, it makes it almost impossible to grow anything in that land! We have to think about our day-to-day actions and how it affects others here in our own community and around the world. What if someone told you that they were turning this land into a landfill – how would that make you feel?

The facilitator might try to encourage the participants in terms of the following:

- The garden wouldn't be healthy because of all of the garbage and toxins
- Healthy gardens make the community beautiful – garbage doesn't!

Strawberry

Session 6

Sustaining our Hopes for the Future

Envisioning Your Future

OBJECTIVES: To encourage participants to think about their future and share their goals with their family members.

MATERIALS:
- paper
- crayons, markers, etc.

TIME REQUIRED: 15 minutes

When talking about sustainability it is important to think about the long-term, not just quick fixes for our problems. As families and a community we can work together to fulfill our shared goals for the future.

DIRECTIONS:
- Give each participant a piece of paper and some crayons, markers, etc.
- Say to participants: Remember way back in Session 1 when we defined sustainability as *lasting*? We could also look at this of *lasting* for each of our individual lives. Thinking about your own life;
    - How would you apply sustainability to your own lives in order to improve your future?
    - Where do you want to be in 1 year?
    - Where do you want to be in 5 years?
    - What do you want your community to look like?

- Tell them to draw or write down their ideal visions of the future and what they want their community to look like.
- Allow them to draw for about 10 minutes.
- When they are finished, have them share their futures with the group and talk about what is important to them.
- Ask the participants: What can they do to make their ideal futures a reality?

The facilitator might try to encourage the participants in terms of the following:
- Using Food Stamps at the supermarket. Many supermarkets are beginning to sell produce from local farms in support of sustainable agriculture and to help their communities thrive. Whether using cash or Food Stamps it is essential to know how to shop at local supermarkets and get delicious food that is healthy, too!
- Working with others to improve and beautify the community.
- Caring about the health of our planet and ourselves.

Time Capsule

OBJECTIVES: To leave behind words of wisdom, thoughts, and advice for future gardeners.

MATERIALS:

- shovel
- paper
- pens, pencils, markers, etc.
- water proof, air tight container
- stone or wood sign to mark the place of the time capsule.

TIME REQUIRED: 20 minutes

DIRECTIONS:

- Give each person a piece of paper and pens, crayons, markers, etc.
- Tell the participants to draw pictures or write any thoughts or advice for future gardeners. Participants can draw a picture of the garden, of themselves, or anything they would want people to know about in the future.
- After the participants are finished with their drawings or words of wisdom, place all of the pieces of paper in the time capsule (water proof, air tight container) and bury it near the garden.
- Place the stone or wood sign where the time capsule was buried so in the future, people can find and open the time capsule and add to it.

This is a great activity for people of all ages to come together and think about the future of the garden and its future caretakers. By creating a time capsule the current gardeners will be able to preserve a part of themselves and history for future generations of gardeners to dig up and learn about.

Going Back to School

OBJECTIVES: This is a **Take Home Activity** to provide information for the families on great ways to prepare for going back to school. This includes information on easily portable and healthy snacks, delicious lunches for the kids to bring to school, and environmentally and economically friendly ways to pack lunches.

MATERIALS:

- Going Back to School! handout (**see Appendix, Session 6**)

DIRECTIONS:
Provide each family with a Going Back to School handout.

Gardening Experience

GROUP DISCUSSION: **Keeping the Garden Alive**

Although this is the last session, there is plenty of work to do and fun to be had in the garden. Without the hard work and dedication from the participants – the garden cannot survive. Without the garden, there would be no homegrown produce for the families. It is important that the garden is cared for – the results will be delicious!

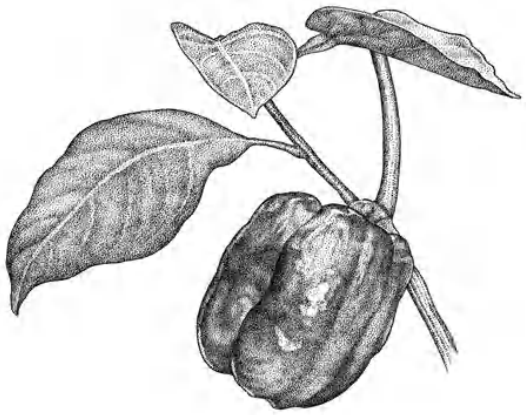
Ask the participants: What are your plans for the garden for the rest of this season? What are some changes you want to see in the garden for next year? How, if at all, would having a vibrant sustainable garden contribute to having vibrant sustainable lives?

The facilitator might try to encourage the participants in terms of the following:

- Community cohesion
- Spending more time with the family
- Improved health of the garden means improved health of participants

Ask the participants: Does anyone have any closing thoughts or insights about sustainable agriculture, the community garden, and our time together this summer?

Bell Pepper



Appendices

Appendix
Session 1

Produce Cut-outs









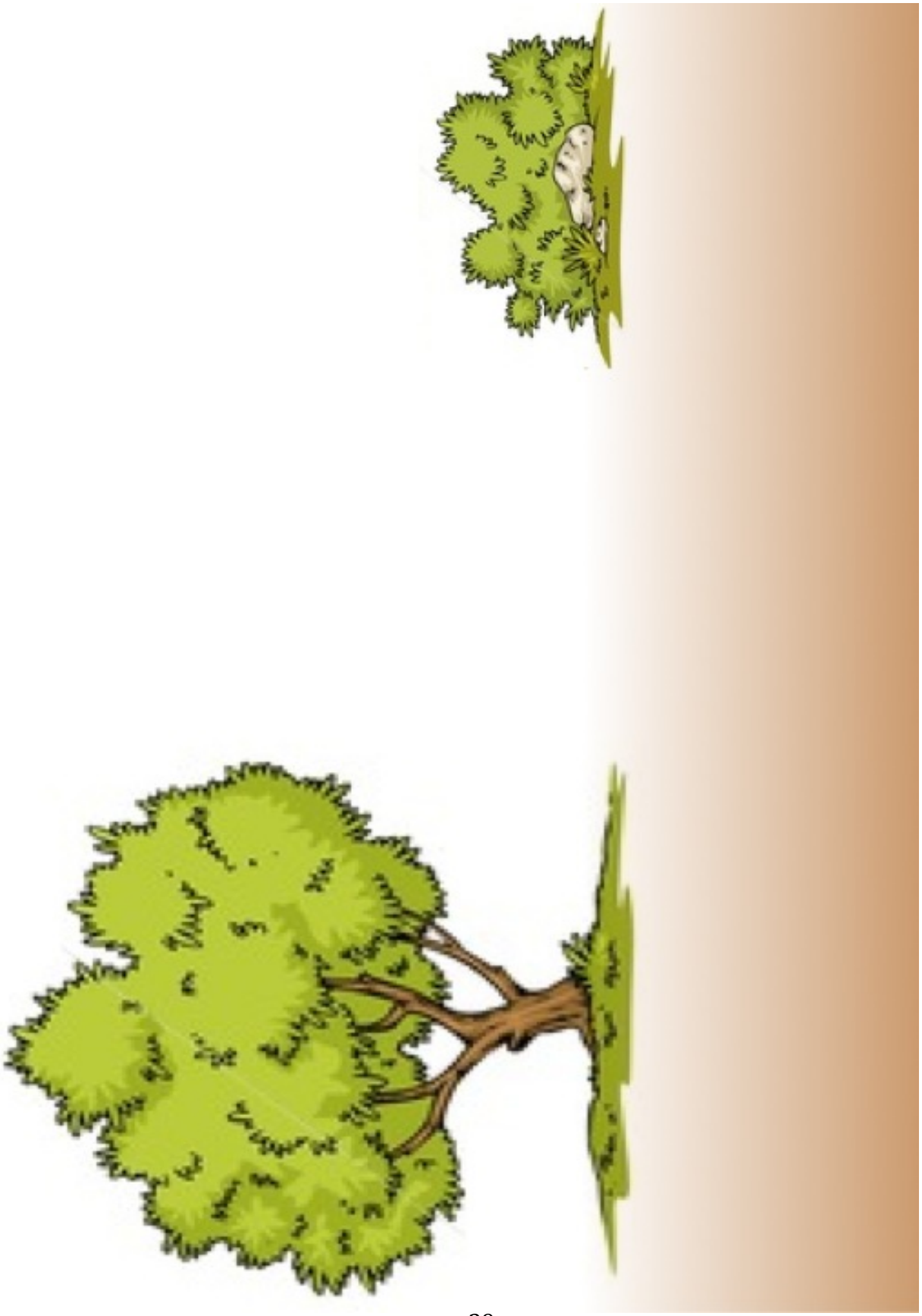








Garden Cross Section



Where does this grow? Answer Key

Grows in a TREE:






Grows on a bush:

Grows right above ground:





Grows underground:





What can be composted?

Green Materials

Fresh leaves, plant cuttings and weeds
Grass clippings
Fruit and vegetable peels and wastes
Breads and grains
Nut shells
Coffee grounds and tea bags
Egg shells




Brown Materials

Dead weeds and dry leaves
Clipped brush
Wood ash
Sawdust
Wood chips
Straw


What <u>doesn't</u> go in the compost pile?

Meat
Bones
Cheese
Salad dressing
Oils and other fats (such as butter)
Any plants that are diseased or infested with insects



Cooking With Kids

Safety Rules:

1. Make sure there is always an adult helping and/or supervising.
2. Tie long hair back.
3. Wash hands with soap and water. Dry hands thoroughly.
4. Wear an apron. This will keep your clothes clean and keep loose shirts from getting caught on equipment.
5. Use hot pads to handle pots and other hot items.
6. Clean up spills and messes as they happen.
7. Do not place hot items directly on tables or counters. Use a hot plate or pad.
8. When opening lids on hot pans, tip them away from you. This will prevent the escaping steam from hitting you in the face.
9. Keep handles of pans and pans pointed towards the center of the stove. If you are using a hot plate, keep handles pointed towards the middle of the table or counter. This will prevent you from bumping the handle and knocking the pot off the stove or table.
10. Make sure mixers and blenders are turned off and unplugged before putting any utensils inside.
11. Do not use electrical appliances near water.
12. When using a microwave, use only microwave-safe dishes, plates and bowls.
13. When you are using a knife or scissors, pick them up by their handles only. When cutting with a knife, hold the handle and keep the sharp edge pointed away from you.

Appendix
Session 2

Find the Fat

Directions: Circle the food in each group of foods that is highest in fat.

1.

baked potato

French fries

mashed potatoes

2.

bean burrito

cheeseburger

hamburger

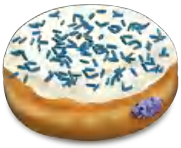
3.

chicken nuggets

turkey sandwich

tuna fish sandwich

4.



cream-filled doughnut

plain doughnut

plain bagel

5.

pretzels

nacho chips

potato chips

6.

mayonnaise

honey

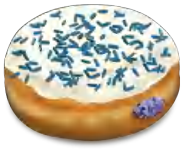
mustard

ketchup

Find the Fat Answer Key

The answers to the items in "Find the Fat" activity can be debatable. The fat content of each of the alternatives depends sometimes on how it was prepared (with whole or skim milk), or on the additional toppings that were added to sandwiches, for example. Also, many products that we find in the supermarket have a fat-free version, like sour cream, or even "butter". If participants have disagreements about which items are highest in fat, you may want to explore the assumptions that they were using when they made their decisions.

Answers to "Find the Fat" activity:

1. French Fries 
2. Cheeseburger 
3. Chicken Nuggets 
4. Cream-filled doughnut 
5. Potato Chips 
6. Mayonnaise 

What Your Plate Should Look Like

*When printing these, make sure to scale up the picture so the plate is 10”.

Tips for Eating Out

1. **Keep portion sizes small.** If the fast-food restaurant offers several sandwich sizes, pick the smallest or order half a sandwich, if available. Bypass hamburgers with two or three beef patties, which can pack more than 1,000 calories and 70 grams of fat. Instead, choose a regular- or children's-sized hamburger, which has about 250 to 300 calories. Also, skip the large serving of french fries or onion rings and ask for a small serving instead.

2. **Choose a healthier side dish.** Instead of french fries choose a side salad with low-fat dressing or a baked potato. Or add a fruit bowl or a fruit and yogurt option to your meal.

3. **Go for the greens.** Choose a large entree salad with grilled chicken, shrimp or garden vegetables with fat-free or low-fat dressing on the side, rather than regular salad dressing, which can have 100 to 200 calories per packet. Watch out for high-calorie salads, such as those with deep-fried shells or those topped with breaded chicken or other fried toppings. Also skip salad extras, such as cheese, bacon bits, croutons and fried chips.

4. **Pick grilled items.** Fried and breaded foods, such as crispy chicken sandwiches and breaded fish fillets, are high in fat and calories. Select grilled or roasted lean meats — such as turkey or chicken breast, lean ham, or lean roast beef.

5. **Have it your way.** Ask for healthier options and substitutions. For example, ask for reduced-fat mayonnaise or mustard on your sandwich. Or at a fast-food Mexican restaurant, request salsa with your meal instead of shredded cheese and nacho cheese sauce. Try to avoid special dressings, tartar sauce, sour cream and other high-calorie condiments.

6. **Watch what you drink.** Many beverages contain a large number of calories. For example, a large regular soda (32 ounces) has about 300 calories. Instead, order diet soda, water, unsweetened iced tea, sparkling water or mineral water. Also, skip the shakes and other ice-cream drinks. Large shakes can contain more than 800 calories and all of your saturated fat allotment for the day.

Adapted from Mayo Clinic's "Fast Food: 6 ways to eat healthier meals", http://www.mayoclinic.com/health/healthy-diet/HQ00599

Appendix
Session 3

What food am I?

When the whole family is together, perhaps after sharing a meal and sitting around the table, this is a great activity to get the family communicating and laughing!

- Each person writes down a food item, such as "carrot", "pepperoni pizza" or "candy bar", on a small piece of paper or an index card.
- Then pass your piece of paper to the right, with the words facing down so the person you pass it to can't see it.
- When you get your piece of paper with the type of food hidden, carefully tape (using adhesive tape, such as Scotch Tape) the paper or index card to your forehead with the words facing away from your, making sure not to reveal the food.
- Once everyone has taped the paper to his or her forehead, take turns asking "yes or no" questions – only one question can be asked each turn.

These questions can include:

Am I a healthy food?
Am I green?
Would you put dressing on me?
Am I sweet?
Can you buy me from a fast food restaurant?

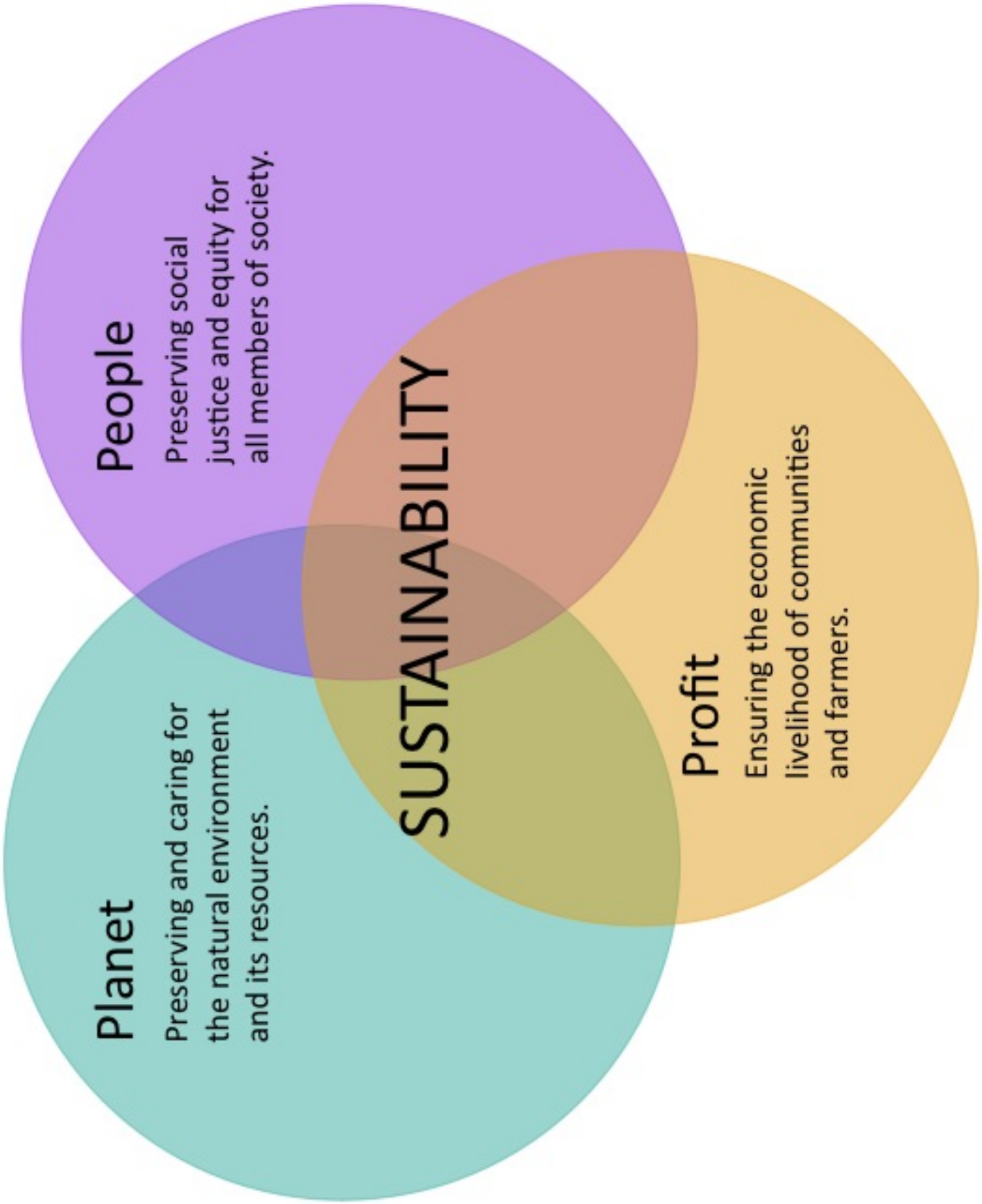
Here are some examples of questions that can't be asked because they cannot be answered by "yes" or "no":

What color am I?
What time of day would you normally eat me?
Where can you buy me?

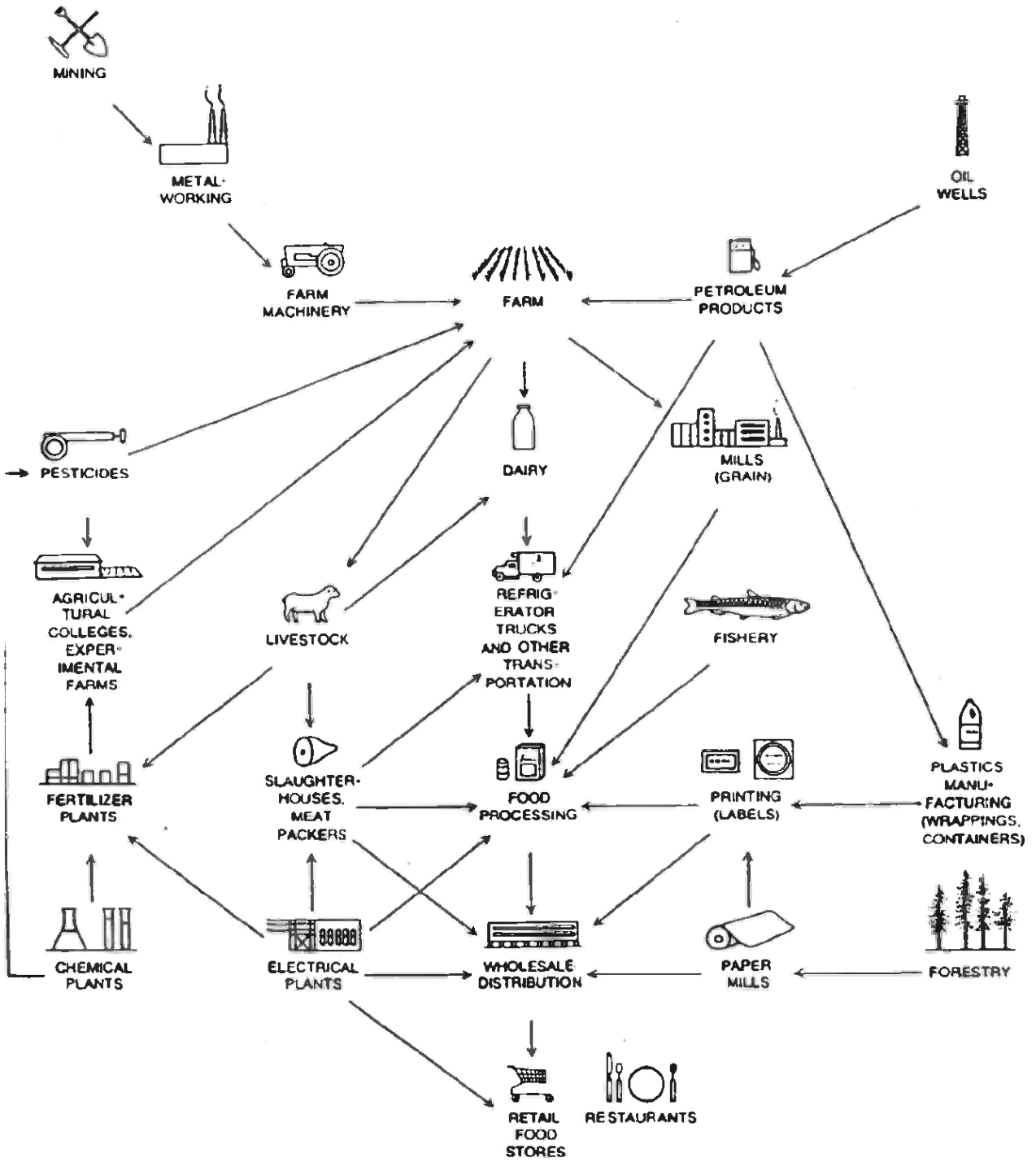
The other people playing will be able to see what is on your card, so they will be able to answer your "yes or no" questions. Once you have figured out what you are, you have to wait until your next turn to ask. For example, if you are a grilled cheese sandwich you would ask the group "Am I a grilled cheese?" If you are correct, and the first one to correctly guess – you win! If you guess the wrong food item, you have to wait until your next turn to ask another question.

Appendix
Session 4

The 3Ps


People
Preserving social justice and equity for all members of society.
Planet
Preserving and caring for the natural environment and its resources.
Profit
Ensuring the economic livelihood of communities and farmers.
SUSTAINABILITY

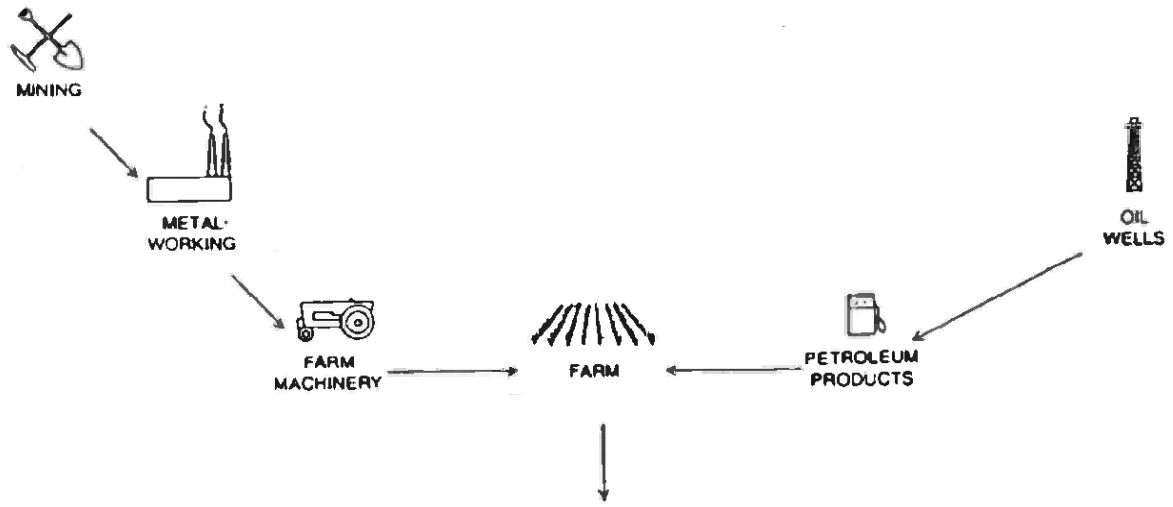
Commercial Food Systems Map



THE "AGRIBUSINESS," or entire food industry of the U.S., is intricately interwoven with many sectors of the economy and encompasses far more than farming. The flow chart gives a visual impression of the interaction of farming and other activities. On the input side of the farm are industries that supply such items as farm machinery and fertilizer; on the output side of the farm is the food-processing industry.

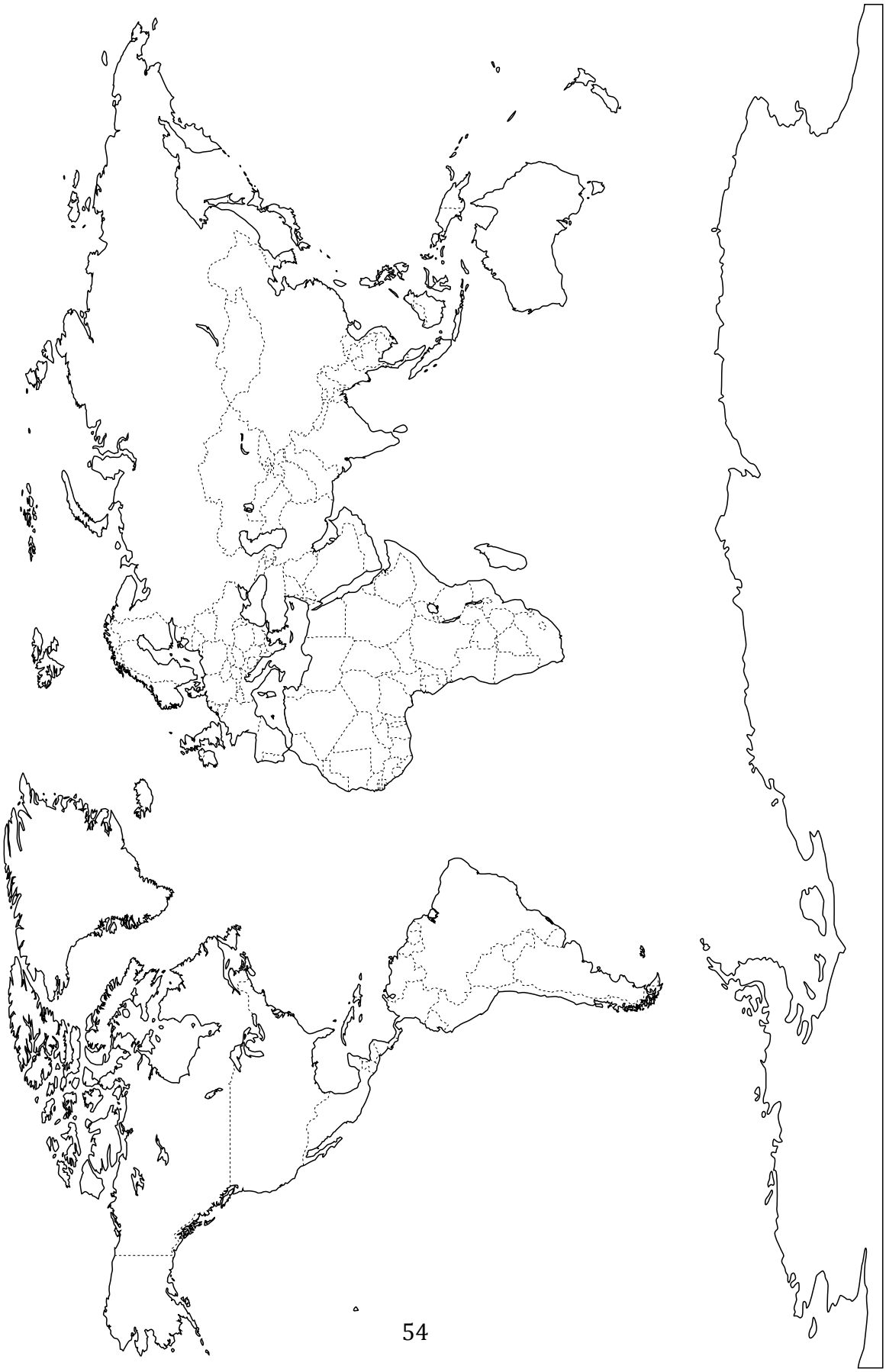
*This map was taken from Maretzki & Harmon, 1997.

Local Food Systems Map



Local food systems encourage direct relationships between the consumer and the farmers. Often small-scale farmers in a local food system will sell their produce at farmers markets, farm stands, or right at the farm, directly to the consumer, thereby cutting out all of the "middle-men", such as the processors, distributors, and transportation companies, eliminating the need for unnecessary resources shown in the Commercial Food Systems Map.

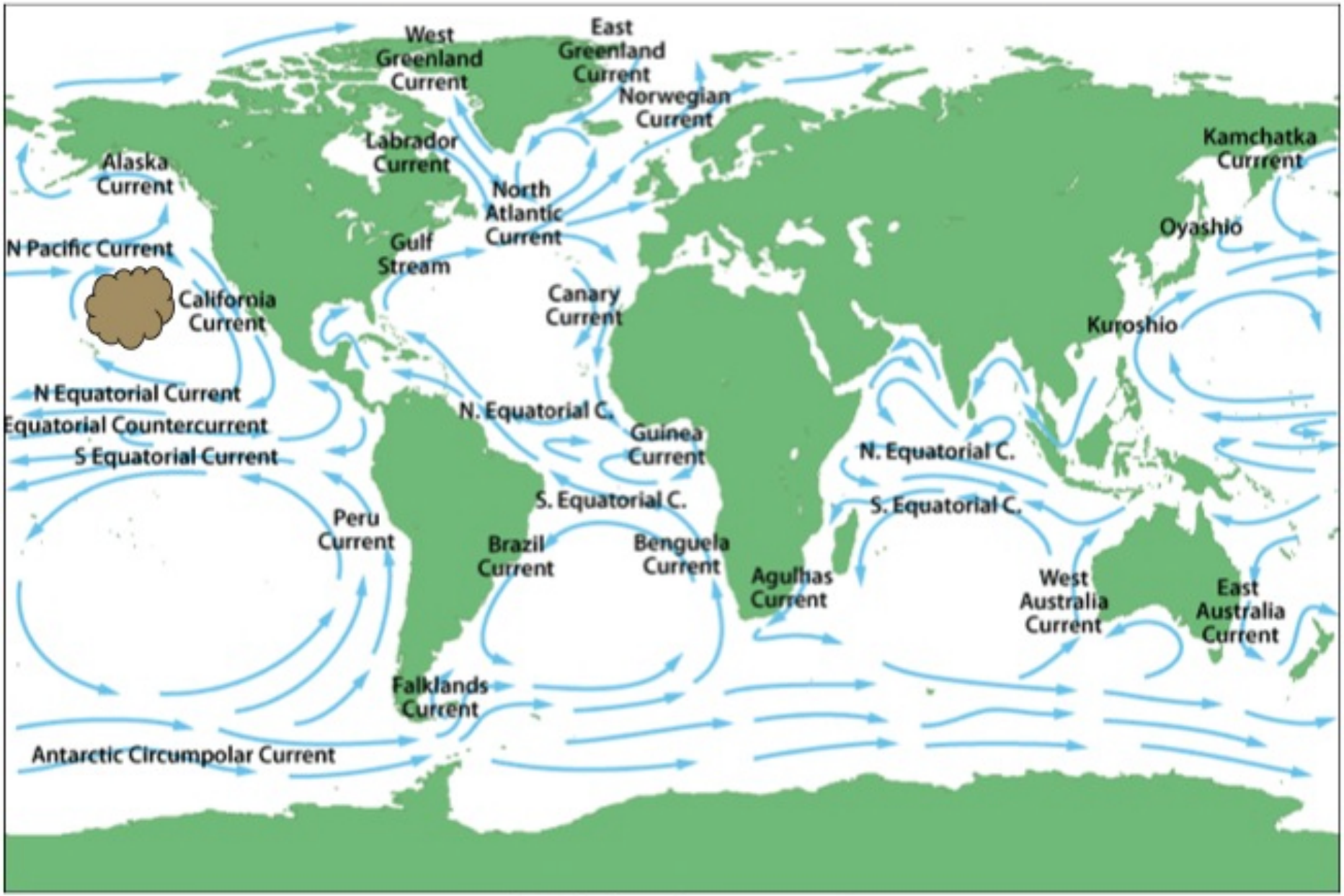
Family Produce Travel Map



Appendix
Session 5

Landfill

Map of Ocean Gyres

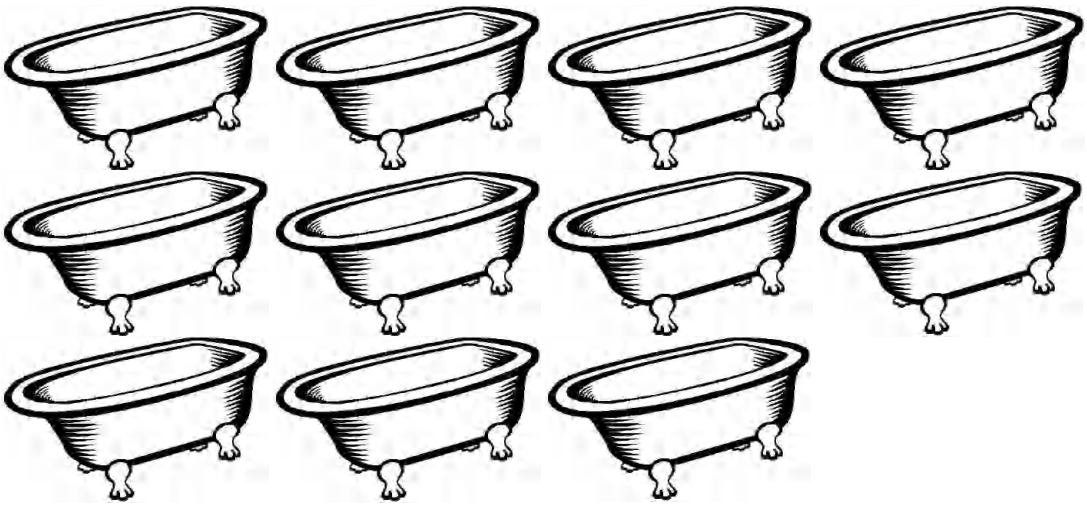


What's that brown spot?

That brown spot is the Great Pacific Garbage Patch!

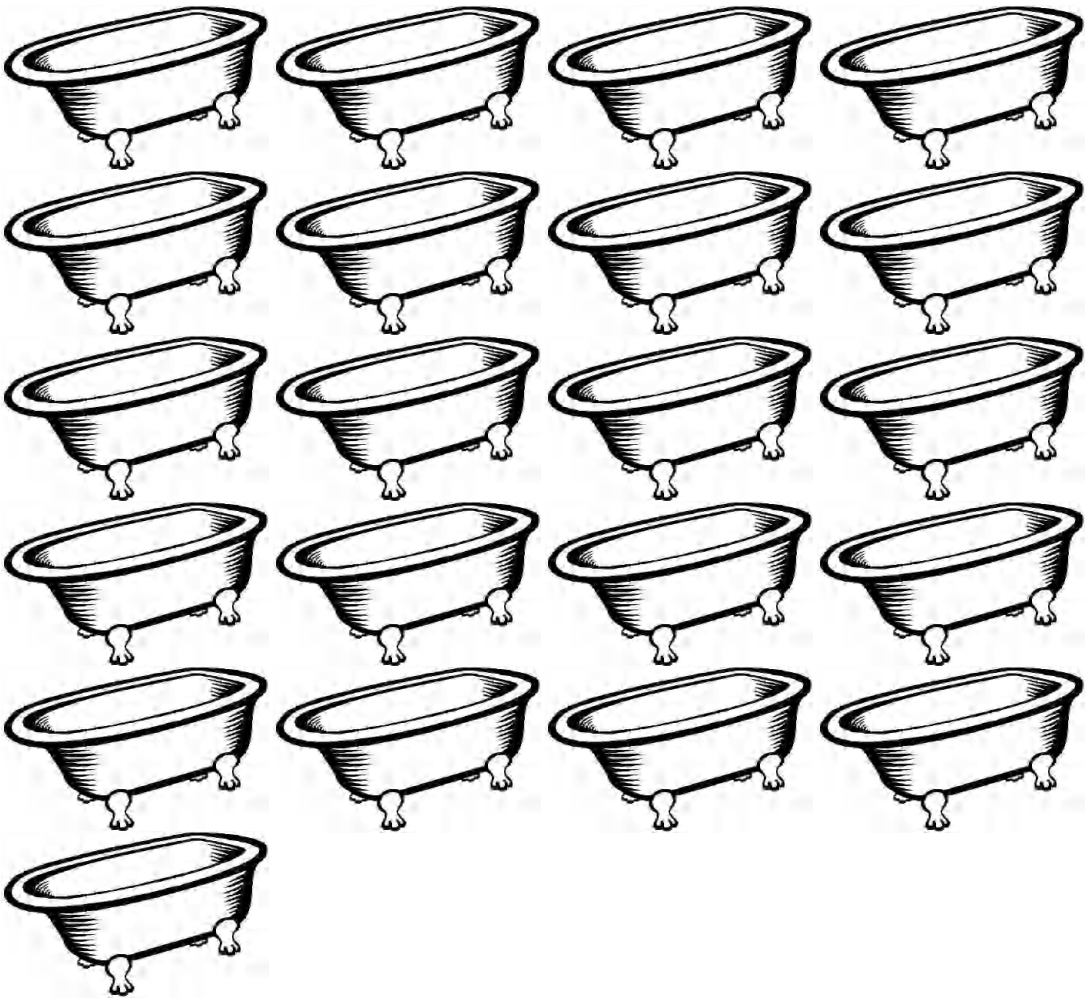
How much water does it take...?

79 50-gallon bathtubs of water!



Or 792 5-gallon buckets of water!

53 50-gallon bathtubs of water!

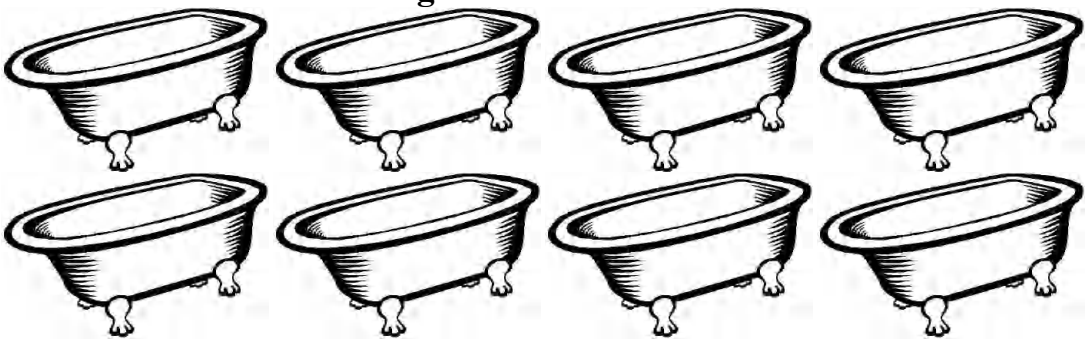


Or 528 5-gallon buckets of water!

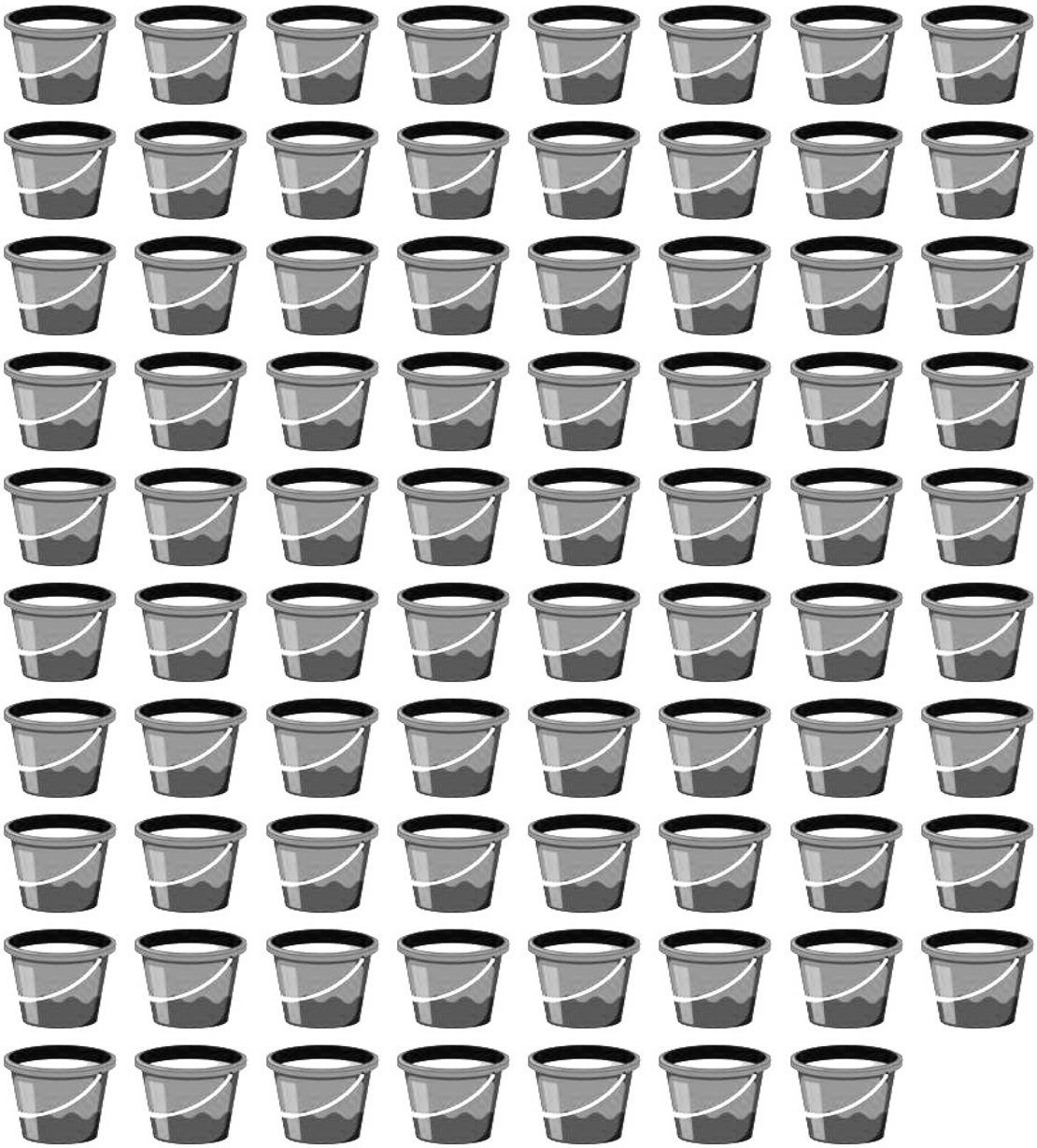
32 50-gallon bathtubs of water!

Or 317 5-gallon buckets of water!

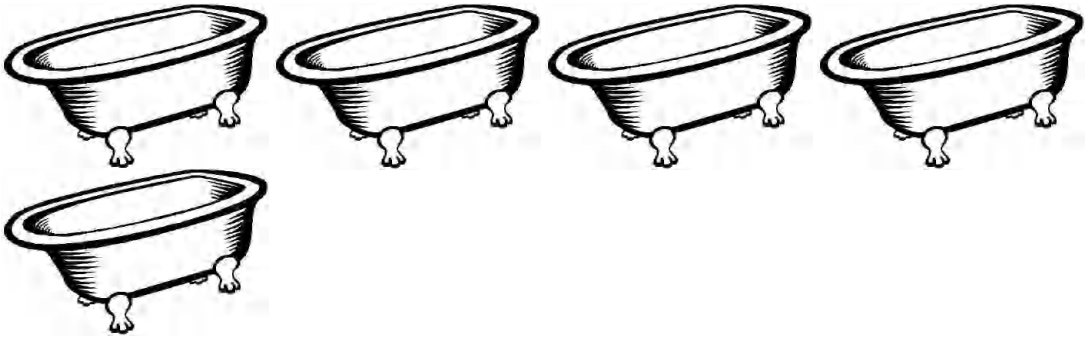
8 50-gallon bathtubs of water



Or 79 5-gallon buckets of water!



5 50-gallon bathtubs of water!

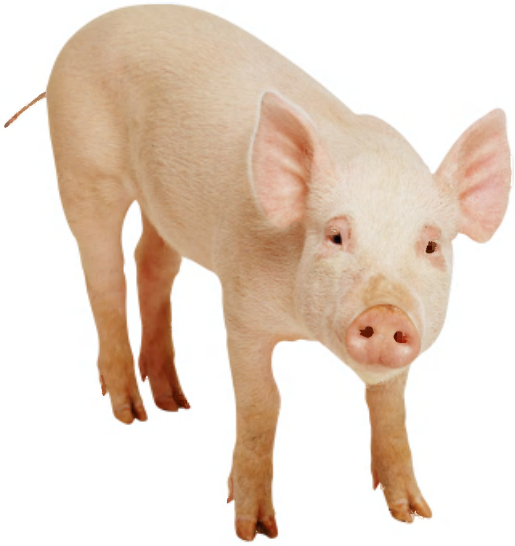


Or 53 buckets of water!

2.2 lbs (1 kg) citrus fruits

2.2 lbs (1 kg) grains

2.2 lbs pork



2.2 lbs of beef

2.2 lbs (1kg) poultry

Garbage Contest

Each day record how much you throw out. In each box place a scratch mark for each item thrown in the trash. Example: 𝍸 is equal to 5 items. If you recycle an item, place an "**R**" in the box. If you compost an item, place a "**C**" in the box. Then place the number of total items thrown out, recycled, and composted for the week in the column labeled "**Total**".

	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**	**Total**
Aluminum Cans								
Steel Cans								
Glass								
HDPE (plastic)								
LDPE (plastic)								
PET (plastic)								
Mixed Plastics								
White (printer) Paper								
Textbooks								
Magazines								
Newspaper								
Food Scraps								
Grass								
Leaves								
Yard Trimmings								

Guide to Recycling

Keep this handy guide near your recycling bin or on the refrigerator

Mixed Office Paper, Junk Mail, Paperboard, Magazines & Catalogs

Curbside customers should tie with string or place in paper or plastic bags. Cereal boxes, six-pack holders, etc. go here.

- **No** hardback books (unless covers are removed)
- **No** blueprints
- **No** plastic bags in drop-off bins or commercial carts
- Recycle plastic bags at the market

Newspapers, Inserts & Phone Books

Curbside customer should tie with string or place in paper or plastic bags. Keep dry.

- Inserts may remain
- **No** wet or yellowed newspaper
- **No** plastic bags in drop-off bins or commercial carts
- Recycle plastic bags at the market
- **Do not** mix paperboard with news

Plastic Bottles, Jugs & Jars

We accept narrow neck plastic bottles, jugs and jars only. Please rinse and remove lids.

- **No** tubs or trays
- **No** margarine or yogurt containers
- **No** buckets
- **No** plastic cups
- Prescription bottles accepted

Aerosol, Steel & Aluminum Cans/Aluminum Foil

Non-aerosol cans may be smashed to save space. No need to remove labels. Please rinse out food and drink. We accept **empty** aerosol and paint cans.

- **No** bulky scrap metal (scrap metal may be dropped off at Transfer Station free of charge)
- **No** liquid paint left in paint cans

Glass Bottles & Jars

Clear, green and brown bottles and jars. Please rinse and remove lids. Blue glass may be placed with green.

- **No** light bulbs
- **No** window glass
- **No** ceramic containers
- **No** drinking glasses

Corrugated Cardboard

Dry, corrugated cardboard only. Flatten boxes.

- Corrugated cardboard only
- **No** paperboard (place with mixed paper)
- **No** waxed, oily or wet cardboard
- **No** plastic inserts or packaging peanuts

Pictures courtesy of the Professional Recyclers of Pennsylvania

Appendix
Session 6

Going Back to School!

- **Remember to plan ahead**! That is the key to giving your kids (and yourself) healthy and delicious lunches. Make sure you know ahead of time what your kids will and won't eat.

- **Trying to get those five fruits and veggies a day?** Pack a piece of fruit or a whole vegetable like a carrot – it's quick and easy! If you cut the apple into slices ahead of time, squeeze some lemon juice on them to prevent them from turning brown.

- M**ake packing lunches a fun event for the whole family!** Over the weekend plan out lunches for the whole week as a family. What are your favorite school lunches? What unhealthy foods are you willing to give up?

- **No more soggy sandwiches!** If you are packing sandwiches with mayo, jelly, or any other condiment, toast the bread. This prevents sandwiches from getting soggy.

- **Don't throw it out!** Don't use brown paper bags (but if you do, they can be composted!) or plastic sandwich baggies. They may be cheaper than Tupperware up front, but you have to keep buying them and it can really add up. Instead buy reusable containers. Over the long run they are much cheaper and better for the environment!

- **Be creative!** You don't have to pack the same old boring peanut butter and jelly every day. With reusable containers you can pack soups and leftovers. Sandwiches are always more exciting when you use cookie cutters to turn them into fun shapes!

- **Hydrate, hydrate, hydrate!** Even kids need plenty of water. Rather than buying disposable plastic bottles (that over time can cost an arm and a leg!) buy a reusable water bottle and fill it with tap or filtered water. That way your kids will stay hydrated, you'll save money, and you'll be helping out the environment by keeping plastic out of landfills and putting less pollution in the air!

Evaluation Instrumentation

Adult Post-then-Pre Survey

Purpose: The purpose of this survey is to measure knowledge, attitude, and behavior associated with sustainable agriculture practices among adult participants.

Time to Complete the Survey: The time needed to complete this survey is approximately 10 minutes. Most answers have been designed for quick answering by circling the selected answer.

Instructions: An adult who attended some or the entire 6-week FRESH program should fill out the questionnaire. Some questions ask about your opinions about certain topics related to food and agriculture. In these cases, there is no one "correct" answer, so please just provide your best judgment. A program facilitator will collect the completed questionnaire from you.

KNOWLEDGE

Please circle your answer to the statements listed below.

[Your answers under the "Before FRESH" column are about your thinking or understanding before you participated in the FRESH program. Answers under the "End of FRESH" program are about your thinking or understanding right now.]

		Before FRESH		End of FRESH	
1.	Plastic decomposes in the ground in fifty to sixty years.	TRUE	FALSE	TRUE	FALSE
2.	Organic vegetables are grown without the use of herbicides and pesticides.	TRUE	FALSE	TRUE	FALSE
3.	The Great Pacific Garbage Patch is a giant floating island of plastic.	TRUE	FALSE	TRUE	FALSE
4.	Bacteria in the soil help break down organic matter.	TRUE	FALSE	TRUE	FALSE
5.	It is OK to put meat in a compost pile.	TRUE	FALSE	TRUE	FALSE

Please complete the following statements (circle one):

	Before FRESH	**End of FRESH**
6. Almonds grow:		
	a. in a bush	a. in a bush
	b. underground	b. underground
	c. in a tree	c. in a tree
7. Which of the following takes the most water to produce?		
	a. one pound of beef	a. one pound of beef
	b. one pound of poultry	b. one pound of poultry
	c. one pound of citrus	c. one pound of citrus
	d. one pound of grains	d. one pound of grains
8. When planning a meal, potatoes are considered a:		
	a. vegetable	a. vegetable
	b. starch	b. starch
	c. protein source	c. protein source
	d. fat/oil	d. fat/oil
9. Which of the following has the highest fat content per serving?		
	a. chicken nuggets	a. chicken nuggets
	b. turkey sandwich	b. turkey sandwich
	c. tuna fish sandwich	c. tuna fish sandwich
10. Every day the United States throws away how many tons of non-biodegradable garbage?		
	a. 10 tons	a. 10 tons
	b. 150 tons	b. 150 tons
	c. 2,500 tons	c. 2,500 tons
	d. 8,000 tons	d. 8,000 tons

ATTITUDE

1 = strongly disagree

2= disagree

3 = agree

4 = strongly agree

Please circle the number that best represents how much you agree or disagree with each of the following statements:

		Before FRESH DID I?	**End of FRESH DO I?**
1.	I think it is important to feed my children healthy foods	1 2 3 4	1 2 3 4
2.	I think it is important to know where my food comes from	1 2 3 4	1 2 3 4
3.	I like to eat fresh fruits and vegetables whenever possible	1 2 3 4	1 2 3 4
4.	I enjoy growing my own food	1 2 3 4	1 2 3 4
5.	I think it is important to communicate with my family about food	1 2 3 4	1 2 3 4
6.	I enjoy cooking meals using fresh produce	1 2 3 4	1 2 3 4
7.	I care about the natural environment	1 2 3 4	1 2 3 4
8.	I enjoy spending time cooking with my family	1 2 3 4	1 2 3 4
9.	I think it is important to support local farmers	1 2 3 4	1 2 3 4
10.	I prefer to eat organic produce	1 2 3 4	1 2 3 4

BEHAVIOR

1 = almost never

2 = rarely

3 = about half the time

4 = often

5 = almost always

Please circle the number that best represents how often you do each of the following behaviors:

	Before FRESH DID I?	**End of FRESH DO I?**
1. I compost all of my food scraps/waste.	1 2 3 4 5	1 2 3 4 5
2. I buy as many foods grown as close to home as possible.	1 2 3 4 5	1 2 3 4 5
3. I go to fast food restaurants.	1 2 3 4 5	1 2 3 4 5
4. I recycle all of my recyclable materials (bottles, cans, etc.).	1 2 3 4 5	1 2 3 4 5
5. I always read the nutrition and ingredients labels on food items.	1 2 3 4 5	1 2 3 4 5
6. I make all of the food decisions for the family.	1 2 3 4 5	1 2 3 4 5
7. I grow my own vegetables whenever possible.	1 2 3 4 5	1 2 3 4 5
8. I spend time outdoors as much as possible.	1 2 3 4 5	1 2 3 4 5
9. I cook most meals from scratch.	1 2 3 4 5	1 2 3 4 5
10. When shopping, I bring reusable bags.	1 2 3 4 5	1 2 3 4 5

OTHER QUESTIONS

1. How many weeks did you participate in the 6-week summer program? (Circle one)

   0 1 2 3 4 5 6

2. How many children in your family participated in the program? _____

3. Are you male / female? (Circle One)

4. Are you: single _____ married _____ divorced _____ widowed_____

5. How many adults (18 years and older) live in your household? _____

6. How many children (17 years and younger) live in your household? _____

7. Are you employed? (Circle one) Y / N

   If you answered **YES** to **question 7**, what is your occupation? _____

8. Which activities were the most fun for you and your family? Please explain your answer.

   _____

   _____

   _____

9. In which activities did you learn the most? Please explain your answer.

   _____

   _____

   _____

10. Any additional comments on the program content, instruction or anything else?

    _____

    _____

    _____

Thank you for taking the time to complete this survey!

Youth Pre- and Post-Quiz

Purpose: This survey is used to measure change in knowledge and attitudes among children in regards to sustainable agriculture. An identical quiz should be used at the completion of the program. This quiz is intended for younger children, approximately ages 5-8. Additional surveys should be used to measure change in knowledge and attitudes for older youth.

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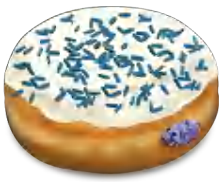
1. Circle all of the healthy foods below:












Place an **X** next to your answer.

2. It is good to eat at least 5 different fruits and vegetables a day:

_____ YES
_____ NO

3. Earthworms are good for the soil:

_____ YES
_____ NO

4. Soda has lots of sugar in it:

_____ YES
_____ NO

5. White bread is healthier than whole wheat bread:

_____ YES
_____ NO

6. Oranges can grow in Pennsylvania:

_____ YES
_____ NO

7. It takes a lot of water to raise a cow:

_____ YES
_____ NO

8. Garbage can end up in the ocean, even if I throw it away:

_____ YES
_____ NO

9. Circle all of the foods that grow in trees:









Place an **X** next to your answer.

10. I think it is important to compost:
    _____ YES
    _____ NO

11. I like spending time outside:
    _____ YES
    _____ NO

12. I enjoy eating vegetables:
    _____ YES
    _____ NO

13. I like to spend time with my family:
    _____ YES
    _____ NO

14. I think it is important to use less water:
    _____ YES
    _____ NO

15. I think it is important to recycle:
    _____ YES
    _____ NO

16. I think it is important to know what is in my food:
    _____ YES
    _____ NO

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F R E S H

Families Reinforcing Environmentally Sustainable Habits

VISIT Penn State's College of Agricultural Sciences on the **Web:** www.cas.psu.edu. Also, visit the Penn State Intergenerational Program on the **Web:** http://intergenerational.cas.psu.edu.