

SCIENCE DAY CAMPS



STUDENT WORKSHOP SERIES

Menu of Activities

Ten turn-key activities that introduce students to the science of food.

Great for Volunteers

Looking for a way to connect your organization with your community? Round up your volunteers and reach out!

Open the Gate!

These fun activities open the gate for young people to have a conversation about American agriculture.



American Farm Bureau Foundation for Agriculture
600 Maryland Ave SW , Suite 1000W
Washington, DC 20024
www.agfoundation.org
www.myamericanfarm.org
foundation@fb.org

GUIDE



New to My American Farm?

My American Farm is a free, online learning platform featuring more than 20 educational games and 150+ resources - all aligned to national learning standards. My American Farm is a special project of the American Farm Bureau Foundation for Agriculture, made possible by generous support from title sponsor DuPont Pioneer.



Here's what you'll find at myamericanfarm.org

20+ games

Lesson Plans

Activity Sheets

eComics

America's Heartland Videos

Strategies for Implementation

Guides for Families, Fairs, and Educators

National Learning Standards Alignment

Pillars Connection



We strive to connect people to the source of their food, fiber, and natural resources. We've developed a thought-provoking tool to help you do the same. Check out the Pillars of Agricultural Literacy - a guide for furthering the conversation about agriculture.

agfoundation.org/resources/ag-pillars

Looking for More?

Check out other great resources provided by the American Farm Bureau Foundation for Agriculture today!

agfoundation.org

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WE WANT YOU!



Check it out! There's something new cooking in the kitchen at My American Farm! "Food Science Fun" is a series of 10 hands-on activities designed for the K-5 learner to explore how food travels from the farm to the plate, inspiring healthy food choices, the vast array of food careers, and even fun kitchen experiments! These engaging activities will spark creativity and challenge students as they examine their daily connection with food and agriculture.

"Food Science Fun" is just one item on the menu of learning available at MyAmericanFarm.org, a special project of the American Farm Bureau Foundation for Agriculture, made possible by title sponsor DuPont Pioneer. My American Farm is a free, online learning resource for volunteers to help make agriculture exciting and engaging for students and connect them with the source of their food, fiber, and fuel. And don't forget that all games and hundreds of resource activities are fully aligned with national learning standards!

They say the way to the heart is through food – so let's inspire some food learning opportunities for students to take agriculture to heart! "Food Science Fun" activities are a great way to inspire more agriculture awareness in your community. One way to bring "Food Science Fun" onto the menu is through facilitation of science day camps or events - these can be in conjunction with existing fairs or events, or as community partnerships with local recreation departments or clubs. Check with your local sources such as fair associations, schools, YMCA's, after-school clubs, and other community activities to find out where "Food Science Fun" is the best fit in your community. The 10 learning activities are each between 5 and 30 minutes long and are designed to be completed in group fashion or self-paced with volunteer facilitation. All you need are some passionate volunteers and a few materials to bring these engaging food activities and agriculture to life!

Thank you for the work you do to bring agriculture to your community. We look forward to hearing how you have incorporated "Food Science Fun" into your local outreach activities for agriculture. Please do not hesitate to contact us if we can be of any assistance. Send us an email at foundation@fb.org!

MENU

Whether you splurge and give kids a taste of all 10 activities, or pick and choose those that meet your need, any opportunity you have to connect young people to the source of their food is a step in the right direction. Take a look at the menu, and start planning! Keep in mind, these activities are adaptable! See something you like, try it, tweak it, and make it your own!

Activity	Students Will	Page
A Career for Me	Learn about the variety of jobs that are available in agriculture and meet a real farmer!	1
Balloon Blow-Up	Make a balloon inflate using ordinary kitchen ingredients.	3
Crazy for Compost	Learn all about composting - how food scraps can turn from waste to wonderful soil!	4
Faced with a Healthy Snack	Make a fun (and friendly!) snack while learning about healthy food choices!	5
Fact or Fairytale?	Learn more about what is produced on farms and the value of farmers through a fun game!	6
Kick the Can Ice Cream	Participate in a fun game of kick/roll/throw the can to turn milk into a frozen treat!	8
Parts of the Plant	Match parts of the plant with common items that we eat!	9
Play 'n Learn	Learn more about agriculture through fun gaming experiences with My American Farm.	13
Portion Power	Learn healthy portion sizes by participating in the Portion Power Game.	14
Taste Bud Challenge	Challenge their taste buds without using their sense of sight or smell! Students will learn a variety of food science careers related to plant production.	16
ALLERGY NOTICE	List food items and display at any station where food is consumed.	17

Objective:

Students will...

learn about the variety of jobs that are available in agriculture and meet a real farmer!

Let's Help Them Learn

Being a farmer or rancher isn't the only career available in agriculture. There are a variety of jobs that support and assist the farmer in his/her daily operation. However, the farmer is the one on the front line!

Materials

My American Farm career cutouts

OR

Career props for students to use to take pictures

Dress up clothes/props representing agriculture professions

Accurate agriculture backdrop (e.g., tractor, hay bales, feed buckets, bushel baskets, etc.)

"I Met a Farmer Today" stickers (available at agfoundation.org)

Career Clusters mini-poster (attached)

Setup

Place career props and dress-up clothes in/around backdrop area. Use bushel baskets, milk jugs, etc. for attractive display and organization. Have farmer volunteer available to interact with the students.

A CAREER FOR ME

Suggested Props

Farmer	Veterinarian	Scientist
Career props could include pictures of: tablet, vise grips/tool, smart phone, baseball cap or cowboy hat, sign that says "Farmer"	Career props could include pictures of: stethoscope, otoscope, syringe, sign that says "Veterinarian"	Career props could include pictures of: chemistry tube, microscope, safety glasses, sign that says "Scientist"
Dress-up clothes/props could include: shovel, corn stalk, basket full of produce, etc.	Dress up clothes/props could include: lab/doctor coat, stethoscope, etc.	Dress up clothes/props could include: lab coat, safety glasses, etc.

Activity Steps

1. Invite students to take a picture as a farmer, veterinarian, or scientist! Give a brief explanation of each career and discuss how each career uses the specific props assigned to it. Pass out props and/or direct students to career props and dress-up items in front of the backdrop. Allow them to explore the items and encourage pictures from the adults that accompany the group. As the group is playing with the props and taking pictures, use the age appropriate "Unpack the Learning" questions below to encourage discussion.
2. After pictures with the props are complete, direct students toward the farmer.
3. *Today we have a real farmer with us to answer any questions you may have! Say hello to _____!* Facilitate questions between the students and the farmer as appropriate. Allow farmer to take the lead with the group.

Unpack the Learning

Processing Questions for K-5:

- *Who are you today/What are you dressed as?* Listen for: Appropriate occupation (farmer, veterinarian, and scientist). Explain as needed for the younger students.
- *What does someone in your job do?* Listen for: Appropriate occupational answer.
- *What do farmers do for us?* Listen for: Any appropriate answers that involve food, fiber, fuel, or natural resources.

Processing Questions for 6+:

- (If Veterinarian or Scientist) *How does your occupation help a farmer?* Listen for: Veterinarian: helps to keep the animals healthy; Scientist: creates the medicines/vaccines for the animals, helps develop biotech crops.
- *What education/training do you think is required for this career?* Listen for: Educational training and occupational experience specific to job.

A CAREER FOR ME

Vested Interests in Careers

Materials Needed: chalkboard or overhead projector, pencil-pens markers, crayons, brown grocery sacks (1 per student), old magazines, scissors, paper, scraps of colored paper and glue.

1. Have a brainstorming session about careers in agriculture. List these careers on the chalkboard or overhead projector.
2. Choose a career and research it to find out what someone in that career does for a living and what type of education is needed.
3. Create a vest from a paper bag to visually demonstrate what your chosen person does for his/her career. You could also include stuff on your vest that a person would need in that career.
4. Tell the class about the occupation you selected and why.
5. For the vests on display for others to see and learn about fruit and vegetables given to other classrooms.

Want to explore these careers?
Visit **My American Farms** and play **My Little Ag Me Game!**
Download the activities and watch the cool career videos.

Produce Buyer

With this job this person might work:

- With fruit and vegetable farmers

These type of tools would be used in this job:

- Calculator
- Computer

A person in this job would solve these kinds of problems:

- In an office studying the price of food around the world
- Making decisions on which produce are highest quality and cost the least
- Finding the farmers who have the best produce

A person in this job might be interested in:

- Money and economic trends
- Talking to others

Large Animal Vet

This person enjoys:

- Helping others
- Being around animals

To be successful this person will need to:

- Figure out how many vitamins and minerals an animal should get each day.
- Diagnose sick animals
- Syringe for giving medicine
- Stethoscope

This person would work in this type of environment:

- On a farm or ranch
- In a veterinary office

These tools might help them do their job:

- Syringe for giving medicine
- Stethoscope
- Diagnose sick animals

This person would be found in this type of workplace:

- In the forest
- At a lumber yard

This person would need these tools to do their job:

- Chainsaw
- Felling wedge

This person would need to solve these challenges:

- Studying forest habitats to protect animals
- Discover new ways to use new and recycled wood products

This person might be interested in:

- Climbing trees
- Hand physical work

Diesel Mechanic

- On a farm repairing a harrow truck
- On a corn farm, working on a combine harvester

These tools would help this person do their job:

- Tachometer to measure RPM
- Combination wrench set

This person will solve these kinds of problems:

- Discovering what parts of the engine need regular maintenance
- Finding out why an engine won't start

This person would likely enjoy:

- Working with their hands
- Figuring out how things work

Food Chemist

What this person might like to do:

- Science

Challenges this person could face in their job:

- Figuring out what types of food customers like to eat

Tools you would find in this person's lab:

- scale balance
- microscope

Where this person could get a job:

- At a cereal and snack food company
- At a sports drink manufacturing plant

Creating new things

- Discovering the nutrition content of different foods

Environmental Engineer

You would find this person working:

- At a water treatment facility

Things this person would like to study or do:

- Science
- Work outside
- Renewable fuels
- Research ways to help keep the air clean

This person might use these tools:

- Water testing kit
- Blueprint

This person will learn or discover this on their job:

- Discover how to keep water clean

Plant Scientists

On a workday this person could be found:

- In a laboratory for Pioneer

This person will be learning and discovering:

- Discovering how much water and fertilizer each plant needs
- Developing new varieties of plants
- Work outside

Items this person would find helpful in their job:

- Microscope
- Knowledge of seeds and plant growth cycles
- Care for plants

This person might like to:

- Work outside

Career Clusters

Objective:

Students will...

make a balloon inflate using ordinary kitchen ingredients.

Let's Help Them Learn

Food and other common items found in the kitchen have distinct chemical make ups. Food scientists use knowledge of the chemical make up of food to understand how food interacts with our body and to create new foods.

Materials

Large party balloons (1 per student)

Empty 16oz-20oz water bottle (1 per student)

White vinegar (1/2 cup per student)

Baking soda (1 TB per student)

Funnel (1 per student)

Multiple measuring cups (1/2 cup size)

Multiple measuring spoons (1 TB size)

Optional: bucket to dump vinegar and baking soda mixture into

Optional: water to rinse out water bottles if planning on reusing the bottles for back-to-back experiments

Optional: recipe card that states "1/2 cup vinegar and 1 TB baking soda" available on the tables as a visual reference for the students and adults participating

Setup

Set 1 balloon, 1 bottle, and 1 funnel at each student place. Arrange vinegar, baking soda, measuring cups, and measuring spoons in the center of the tables for common use.

BALLOON BLOW-UP

Activity Steps

1. *Did you know there are scientists who study our food every day? Today you get to be a food scientist. We'll see how combining two ingredients (that you probably have in your kitchen!) can make a chemical reaction and inflate a balloon!*
2. Ask students to follow your directions carefully, as this experiment can only be done with adult supervision. Encourage adults with the group to help the students with the experiment.
3. *First, we are going to put baking soda into the balloon.* Demonstrate how to put the end of the funnel into the balloon and add one tablespoon of baking soda.
4. *Next we are going to add a half a cup vinegar to the bottle.* Demonstrate how to use the funnel to put the vinegar into the bottle.
5. *Be very careful with the next step! Twist the balloon to keep the baking soda in place. Holding the twisted end, place the open end of the balloon on the mouth of the bottle.* Demonstrate how to attach the balloon onto the mouth of the bottle, leaving the balloon hanging over the side.
6. *On the count of three, we are going to untwist the balloon and let the baking soda fall into the vinegar. Be sure to hold the balloon where it connects to the bottle! One – two – three!* Watch for dangerous situations as the balloons inflate. Encourage conversations and utilize age appropriate "Unpack the Learning" questions.
7. Note for large groups: if you are planning to reuse the bottles for back-to-back balloon blow-up activities, dump out the vinegar/baking soda mixture into buckets and rinse out the bottle each time. Consider having balloons pre-filled with baking soda to save time.

Unpack the Learning

Processing Questions for K-2:

- *What happened?* Listen for: Correct retelling of the steps involved in the experiment.

Processing Questions for 3-5:

- *What happened when we combined the baking soda and vinegar?* Listen for: A chemical reaction, creation of a gas, the balloon blew up, etc.
- *Think of a food item you can make at home that uses baking soda.* Listen for: Cookies, biscuits, etc. Why do you think we add baking soda to foods? Listen for: Baking soda causes food to rise.

Processing Questions for 6+:

- *What do you think caused this reaction?* Listen for: This is called an acid-base reaction. Vinegar is an acid, and baking soda is a base. When the two combine, they create carbon dioxide.
- *Describe the states of matter in this experiment.* Listen for: The solid (baking soda) added to the liquid (vinegar) resulted in a chemical reaction to create a gas (carbon dioxide).

Objective:

Students will...

learn all about composting - how food scraps can turn from waste to wonderful soil!

Let's Help Them Learn

Compost is a way to return helpful nutrients back to the soil with our food scraps! Students will learn a successful compost recipe through a read-aloud and activity.

Materials

Read aloud book: "Compost Stew: An A to Z Recipe for the Earth" by Mary McKenna Siddals OR "Composting: Nature's Recyclers" by Robin Koontz

Disposable roasting pan (1 per five students)

Fishing worms (fake)

Leaves (real or fake)

Food scraps (real or fake)

Small bag of peat moss/soil

Optional items:

Small chocolate pudding cup (1 per student)

Cookies (1 per student)

Gummy worms (1 per student)

Spoons (1 per student)

Setup

Set items for each compost recipe in groups for five students. Each recipe should include: 1 roasting pan, fishing worms, leaves, and food scraps.

CRAZY FOR COMPOST

Activity Steps

1. *Welcome! Today we are going to learn about compost. What is compost?* Take answers from students/group. Explain that compost is made up of plant material and animal waste that breaks down over time and returns nutrients into the soil.
2. *To help us learn about compost, I have a book to read. After we listen to the book, we will make our own compost recipe!* Review good listening skills to the group quickly, and then read book to the group.
3. Review book as necessary. Emphasize microbes in the soil/recipe that "eat" the food and break it down.
4. *Let's make our own compost recipe!* Small groups of students will work together to make their own compost pile with all the right ingredients. *Remember to layer the food scraps and leaves (they are your carbon source!) – and don't forget the worms! Those microbes in the soil are going to love your recipe! Break students into smaller groups for the activity.*
5. Assist and comment as necessary, utilizing the "Unpack the Learning" questions below. Show small groups sample peat moss/soil as the finished produce.
6. **OPTIONAL:** Celebrate soil by making a yummy cup of soil-like goodness! Each student will get a cup of chocolate pudding, one chocolate Oreo-like cookie, and a gummy worm. Crumble the cookie on top of the pudding, and push the gummy worm down in. Enjoy!

Unpack the Learning

Processing Questions for K-2:

- *What is composting?* Listen for: breaking down plant/food waste, turning food scraps into soil, microbes eat the food and turn it into soil, recycling food, etc.
- *How does composting work?* Listen for: Microbes eat the food scraps and leaves and turn it back into soil that is full of nutrients.

Processing Questions for 3-5:

- *What is composting?* Listen for: Breaking down plant/food waste, turning food scraps into soil, microbes eat the food and turn it into soil, recycling food, etc.
- *Why do we compost?* Listen for: It takes our food waste and turns it back into a useable, nutrient-dense product. In essence, we're recycling!
- *What can you do to help the Earth?* Listen for: Recycle, compost, turn off lights to save electricity, turn off the water, save resources, bike or walk, etc.

Processing Questions for 6+:

- *What is composting?* Listen for: Breaking down plant/food waste, turning food scraps into soil, microbes eat the food and turn it into soil, recycling food, etc.
- *Why do we compost?* Listen for: It takes our food waste and turns it back into a useable, nutrient-dense product. In essence, we're recycling! It also keeps the food scraps out of the landfill, which saves space and labor.
- *What can you do to help the Earth?* Listen for: Be a good steward, recycle, compost, turn off lights to save electricity, turn off the water, save resources, bike or walk, etc.

Objective:

Students will...

make a fun (and friendly!) snack while learning about healthy food choices!

Let's Help Them Learn

Using USDA's My Plate, students will learn the basic food groups and how they can make healthy food choices.

Materials

My Plate graphic: paper handout, or sticker (1 per student)

My Plate poster graphic: large visual for group

Paper plate (1 per student)

Small tortilla (1 per student)

Various fruit: grapes, apples, bananas, etc. (sliced)

Various vegetables: cucumbers, carrots, etc. (sliced)

Cheese stick: individually wrapped string cheese is optimal (1 per student)

Setup

Print My Plate mini-poster graphic from http://www.choosemyplate.gov/downloads/mini_poster_English_final.pdf

Place a paper plate with the USDA My Plate graphic at each student space. Arrange the tortillas, fruit, and cheese sticks in the middle of the activity area.

*** Be aware that this activity may include allergens (milk, gluten) for some students. Modify as appropriate or use alternative activity ***

FACED WITH A HEALTHY SNACK

Activity Steps

1. *Welcome! I'm glad you're here today to learn about some healthy food choices. To start off, I need help remembering the five food groups that we are supposed to eat every day. Can you help me?* For younger students, assist as needed or reference the My Plate poster. For older students, hide the poster and get them to recall the five groups: Fruits, Vegetables, Dairy, Proteins, and Grains.
2. Reference the USDA My Plate graphic at each student's spot. *Today, we're going to make a healthy snack that includes all the food groups! But there's a twist! Can you show me your funniest face?* Have students show their funny face. *That's great! We're going to make our snack today just like a funny face. Look on the table in front of you. Do you see something that we could use for the head or face?* (tortilla) *Yes! We could use the round tortilla as the face! Have students each put a tortilla on their plate. What food group does the tortilla go with?* (grains)
3. *Next we are going to add some funny features! Grab a cheese stick. What food group does the cheese go in?* (dairy/protein) *Yes! Cheese is made from milk, which is a dairy product. Cheese also has protein in it to build strong muscles! What else do you see on the table?* (fruits/vegetables) *Yes! Fruits and vegetables are part of a healthy snack. Now, let's use the cheese, fruits, and vegetables to make a funny healthy face to eat! Take one to two pieces of each type of food at first to be sure that there is enough food for everyone!*
4. Assist as needed. Once completed, allow students to eat their funny (healthy) face!
5. Alternate Activity: Instead of using food, have students cut food items out of a newspaper advertisement representing each food group and glue onto a paper plate.

Unpack the Learning

Processing Questions for K-2:

- *What are the five food groups we need for a healthy meal or snack?* Listen for: Fruits, Vegetables, Dairy, Proteins, and Grains.
- *When should we eat healthy food?* Listen for: Every day!
- *Where can we make healthy food choices?* Listen for: At home, at school, at a restaurant/out to eat, etc.

Processing Questions for 3-5:

- *What are the five food groups we need for a healthy meal or snack?* Listen for: Fruits, Vegetables, Dairy, Proteins, and Grains.
- *How can you make healthy food choices every day?* Listen for: Eat within the five food groups, go to www.ChooseMyPlate.gov with the permission of an adult to identify recommended daily allowance, limit sugar, etc.

Processing Questions for 6+:

- *What are the five food groups we need for a healthy meal or snack?* Listen for: Fruits, Vegetables, Dairy, Proteins, and Grains.
- *How can you make healthy choices with each meal?* Listen for: Including fruits and vegetables, reducing fatty/fried foods, limiting sugar intake, choosing to drink water/milk, asking parents to buy healthy items at the grocery store, etc.

Objective:

Students will...

learn more about what is produced on farms and the value of farmers through a fun game!

Let's Help Them Learn

Farms supply food, fiber, and fuel for people all over the world. There are many different types of farms and farmers, each contributing to agriculture in their own way.

Materials



My American Farm game "Fact or Fairytale," available for group to see (ex: laptop or TV screen). Game available at <http://myamericanfarm.org/classroom/games>.

Large monitor or projector and screen.

Setup

Load the game screen available on My American Farm on a laptop/TV large enough for a group to see. When students arrive, have them sit in a semicircle with the game (and YOU!) as the center focus.

FACT OR FAIRYTALE?

Activity Steps

1. *Welcome! My name is _____, and I need your help. I have a friend named Jacob who is having a hard time understanding what happens on a farm. Can you help?* Allow time for students to respond, but transition quickly to the next direction.
2. *Jacob needs to know if something is a fact - that means it is true - or if it is a fairytale which means it is false. Let's help him by using our arms and hands as signals for fact (true) and fairytale (false). If something is a fact (true), give me a big thumbs up! If something is a fairytale (false), make a big "X" with your arms.* Demonstrate hand signs for the students. Have them demonstrate what to do when you call "fact" and "fairytale." Emphasize that for this game we will use our hands to tell the answer and not our mouths!
3. Click on the Fact or Fairytale game, and let the students listen to the narrator on the first screen. Click "Let's Play" to begin the game.
4. Use the first question screen as a learning screen. When the narrator asks "How many people does ONE American farmer feed?" Use this as an opportunity to say "Did you know that ONE American farmer feeds 154 other people?" Click the correct answer, and proceed to the first "fact or fairytale"
5. Play the game, using the students' hand signs to guide the flow of the game. If the students get the answer correct, congratulate them and reaffirm the question point after the narrator talks. For example: *Great job! White milk is the only color milk that comes out of a cow!* If the students' hand signs indicate the incorrect answer, allow the narrator to speak and then reemphasize the correct answer. For example: *Wool from sheep is used to make clothing! That's a fact! When you go home today, ask your mom or dad if they have anything made out of wool that they could show you.*
6. Proceed to play the game as time and attention allow.
7. As closing, and as time allows, you may sing this short song (to the tune of "The Farmer in the Dell")
 - » The farmer grows the food, the farmer grows the food. In cities, towns, and countrysides, the farmer grows the food.
 - » The farmer grows the fiber, the farmer grows the fiber. Cotton and wool make clothes so cool. The farmer grows the fiber.
 - » The farmer grows the fuel, the farmer grows the fuel. Soybeans and corn can make engines turn. The farmer grows the fuel.

Unpack the Learning

Processing Questions for K-2:

- » *What do farmers give us?* Listen for: Food, fiber for fabric and clothing, fuel for our vehicles, and shelter from harvested natural resources like trees
- » *How do we get food from the farm?* Listen for: Trucks, trains, boats, airplanes, etc.
- » *What color of milk comes from all cows?* Listen for: White milk!

Processing Questions for 3-5:

- » *What lives on farms?* Listen for: Animals: Farm-specific animals, wildlife, the farmer
- » *Where do farmers live?* Listen for: In rural areas, on farms, in cities, in the country, towns, etc.
- » *Where is corn grown in the U.S.?* Listen for: Every state across America!

FACT OR FAIRYTALE?

Processing Questions for 6+:

- » *What can plants like corn and soybeans be used for?* Listen for: Human food, animal food, biofuel, and other products
- » *What do farmers use to feed the soil?* Listen for: Fertilizer, compost, nutrients, minerals, etc.
- » *Name the different ingredients in pizza that come from farms.* Listen for: Everything on the pizza comes from a farm! Cheese comes from milk, dough is made from wheat, and toppings come from animal/vegetable farms.

Objective:

Students will...

participate in a fun game of kick/roll/throw the can to turn milk into a frozen treat!

Let's Help Them Learn

Milk can undergo a physical change to turn into a tasty treat with the help of a little motion and some super cold temperatures!

Materials

1 large metal or plastic coffee can (#10) with lid (1 for every 5 students)

1 small 16oz metal or plastic can/jar with tight sealing lid (1 for every 5 students)

Duct tape

Scissors

Stopwatch (1 for every 5 students)

Small cup and spoon (1 per student)

Milk (2% or whole works best; 2 cups for every 5 students)

Sugar (1/4 cup for every 5 students)

Vanilla (optional, 1 tsp)

Rock salt

Ice

Towel

Setup

Get large and small cans out according to group size (1 of each size can for every 5 students. Ex: a group of 25 students will need 5 large cans and 5 small cans). Set out milk, sugar, vanilla (optional), and have the ice and rock salt within easy reach in a cooler.

It is advised to do this activity in an outdoor area in case cans accidentally open.

Reference

Information adapted from *Ice Cream Nation* <http://www.icecreamnation.org/science-of-ice-cream/>

KICK THE CAN ICE CREAM

Activity Steps

1. *Today we're going to make ice cream in a can! All we will need is milk, a little sugar, and some ice and salt – all sealed in a can. Are you ready to see the recipe?* Post one can recipe in front of the whole group:
 - » Place the milk, sugar, and vanilla in the small can. Seal the small can and place it in the large can. Put ice and sprinkle rock salt to fill up the remaining area in the large can. Put on the lid and seal it with duct tape.
2. Once one recipe is put together, ask for/choose five students from the group to come up to the front. Give these directions: *I have a challenge for you! For the next 10-15 minutes, you have to keep this can in motion. You can roll it, kick it, shake it, throw it – do whatever you can to keep it moving! Your reward will be at the end!* Set a stopwatch for 10 minutes and hand it to one of the group members. When the stopwatch goes off, come find me and bring me your can!
3. Walk around and encourage the groups to keep the cans in motion – this is key to the ice cream formation!
4. As the groups finish their 10-minute challenge, check the consistency of the ice cream. Some groups may need a few more minutes for the ice cream to fully set. Re-set the stopwatch and encourage the groups again to keep the can in motion, if this is the case.
5. Once fully set, retrieve the small can out of the large can. Wipe off the outside of the small can with a towel, and unseal the lid. Dish out the ice cream into small cups for each group.
 - » Alternate Option: If cans are not available, use two sizes of locking plastic freezer bags instead. Place the ingredients in a quart-sized bag. Seal with duct tape. Place this in a gallon-sized bag and surround with ice and rock salt. Seal with duct tape. Instead of kicking, pass the bag quickly between students standing in a circle.

Unpack the Learning

Processing Questions for K-2:

- *What happened to the milk?* Listen for: Vocabulary regarding change: it froze, it got hard, it turned to ice, etc.
- *Where does milk come from?* Listen for: Cows, dairy, etc.
- *Where does a cow live, and who takes care of it?* Listen for: Lives: farm or ranch; Care: farmer or rancher

Processing Questions for 3-5:

- *How did the milk turn from a liquid to a yummy ice cream solid?* Listen for: The ice and salt made the milk mixture freeze.

Processing Questions for 6+:

- *Why did we add salt to the ice surrounding the small can?* Listen for: Adding salt to the ice lowers the freezing point. This allows it to freeze other liquids (the milk!).
- *How does milk go from a cow to your ice cream cone?* Listen for: Correct process: dairy cow being milked, milk transported via truck to the milk plant; milk going through pasteurization, etc; milk going through the ice cream making process at the plant, including packaging; ice cream being transported to the grocery store; etc.

Objective:

Students will...

match parts of the plant with common items that we eat!

Let's Help Them Learn

Food that we eat comes from different parts of the plant. We may eat seeds, flowers, stems, leaves, and roots, depending on the plant.

Materials

"Plant Parts Diagram"

Plant part labels (5 sets)

Sunflower seeds

Broccoli, cut into small pieces

Celery, cut into short sticks

Baby spinach

Baby carrots

Ballpoint pens (1 per student)

Silk flower (1 per student)

Flower-parts leaf, cut out (1 per student)

Floral tape (12" per student)

Setup

Create five learning areas with samples of each plant part identified in the materials section and labels set out randomly.

Set out Allergy Notice cards found at the end of this document.

Reference

Mrs. Jones. (2007). *The plant part song*. Retrieved from <http://www.mrsjones-room.com/songs/plantparts.html>

PARTS OF THE PLANT

Activity Steps

1. Show students the "Plant Parts Diagram." Guide students through parts of the plant, as age appropriate. *Many fruits and vegetables are grown on plants just like this one. What part of the plant do you think we eat?*
2. *Did you know that we eat different parts of different plants?* Give examples of foods without using the activity items (e.g., *Potatoes and peanuts are actually part of the roots! Lettuce is a leaf!*).
3. *I have some food items on the table. Each item is either a seed, flower, stem, leaf, or root – and we eat these things! Match up the items on the table with the part of the plant it represents by placing the correct label next to each part.* Guide and assist as necessary.
4. Once parts are labeled, students may eat their parts of the plant!
5. Help students build their flower pen.
 - » Each student should take one pen, one leaf, one flower, and approximately 12" of floral tape.
 - » Place the flower at the non-writing end of the pen. Align the flower wire with the length of the pen. Starting at the non-writing end, begin wrapping the floral tape around the pen and flower. Floral tape works by gently stretching the tape and tightly wrapping it over itself. It sticks together!
 - » Move down the pen approximately 1". Place the cut out leaf (attached) along the side of the pen. Continue taping the stem of the leaf to the pen.
 - » Continue wrapping floral tape down the pen toward the writing end.
 - » Note: For younger students, attaching the leaf AND flower to the pen using floral tape may be too difficult. Consider handing out the leaf as a bookmark and only attaching the flower to the pen using floral tape.

Unpack the Learning

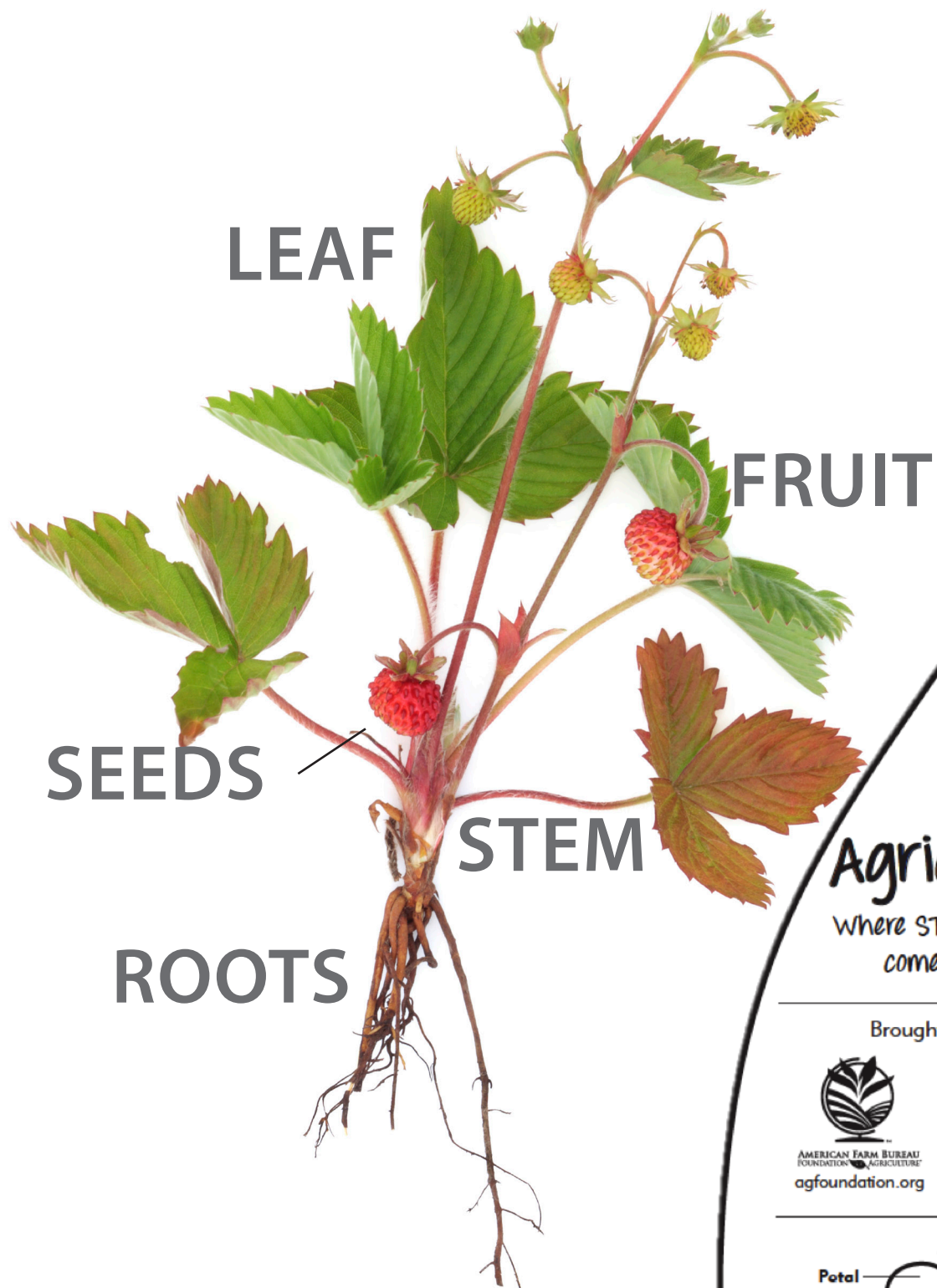
Processing Questions for K-5:

- *Which of these foods do you eat at home? What part of the plant are they?* Listen for: Appropriate answers and correct matching.
- *What are the five parts of a plant?* (May need to use visual as reference) Listen for: Flower, stem, leaf, seed, and roots
- *What are some other examples of foods that grow under the ground/are roots?* Listen for: Potatoes, peanuts, radishes, beets, etc.

Processing Questions for 6+:

- *Let's think about some other fruits and vegetables that we could name in each category.* Listen for: Correct identification of fruits and vegetables and their edible parts in relation to parts of a plant.
- *What are some differences between the parts of the plants that we eat? For example, let's compare roots to leaves.* Listen for: Comparison language, accurate descriptions (e.g., *Roots vegetables are hard compared to soft, flimsy leaves.*)

PARTS OF THE PLANT - DIAGRAM



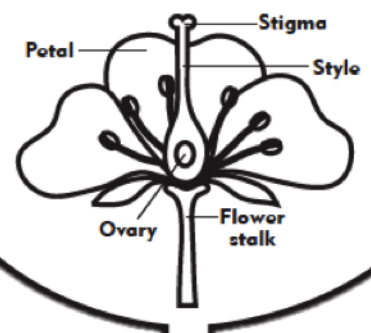
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PARTS OF THE PLANT - LABELS

LEAF

FRUIT

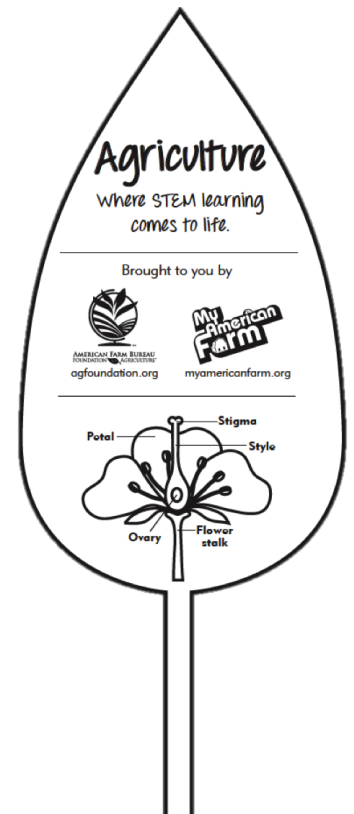
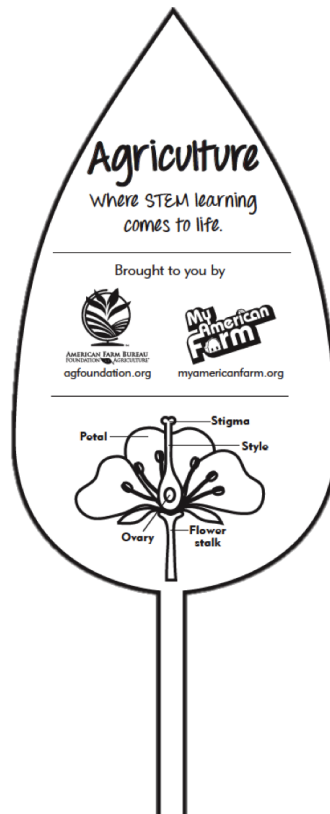
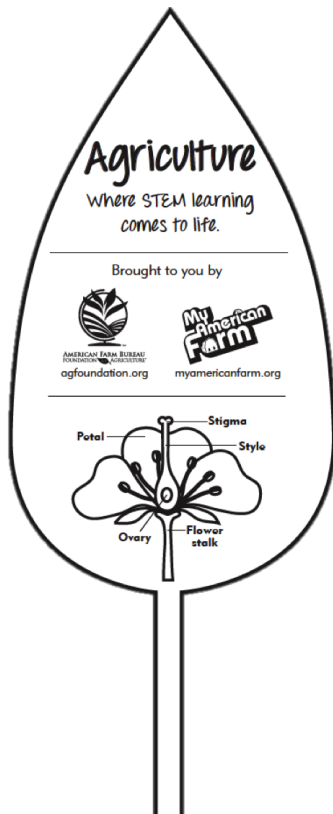
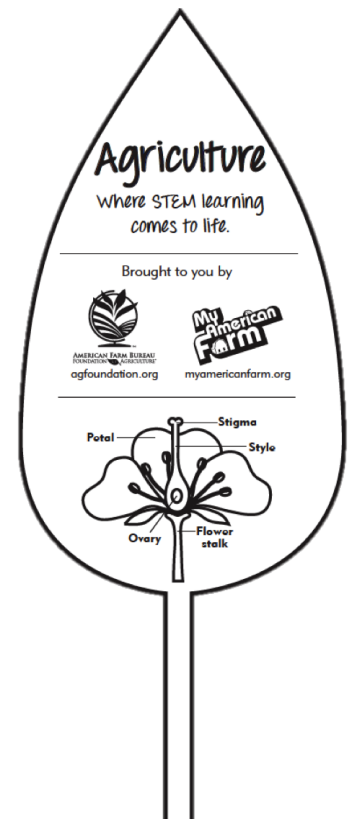
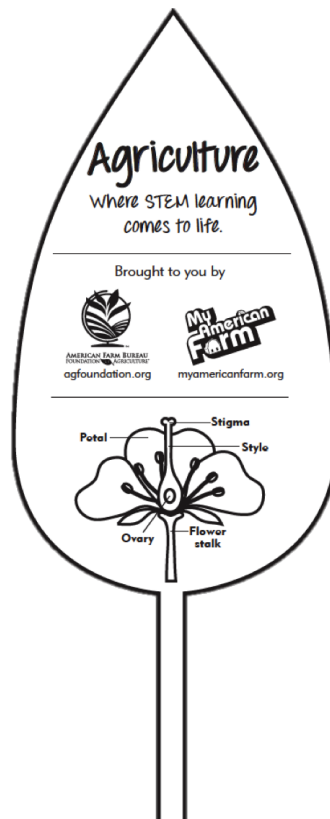
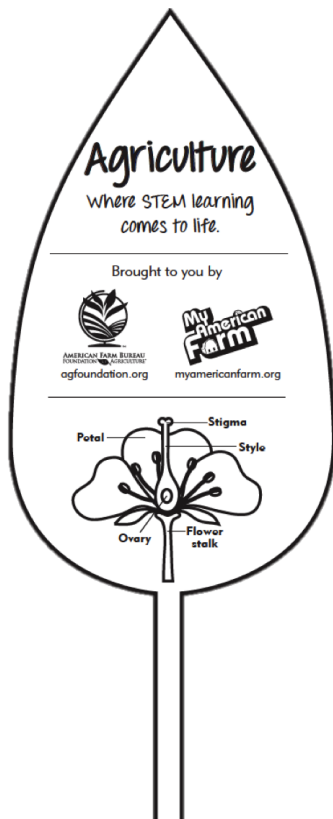
SEEDS

STEM

ROOTS

PARTS OF THE PLANT - LEAVES

*For bulk ordering options, email foundation@fb.org.



Objective:

Students will...

learn more about agriculture through fun gaming experiences with My American Farm.

Let's Help Them Learn

Many people, careers, and industries depend on agriculture multiple times a day.

Farmers care for animals.

Farmers steward the land.

Farmers feed the world.

Agriculture is everywhere.

There are many careers in agriculture.

Materials

Kiosk(s) or desktop unit(s) with My American Farm app or website loaded (1 per student is optimal, but students may also share)

Pop-up My American Farm banner (optional)

Setup

Make sure tablet(s) or desktop unit(s) are loaded with the My American Farm app or the website (<http://www.my-americanfarm.com/classroom/games>). If available, set up the My American Farm pop-up banner to draw attention to the gaming area. Review the recommended ages for the games so that you can recommend age appropriate games when students come through.

PLAY 'N LEARN

Activity Steps

1. *Welcome! Do you want to check out some cool games to play on the tablet/ computer about food and farming? Let me show you which games would be best for you!* Guide student to the age appropriate games on the device. Allow them to play as time and attention permits.

Unpack the Learning

Processing Questions for K-2:

- *What was your game about?* Listen for: Appropriate recap of the game. Emphasize learning points within specific game.
- *What did the farmer do in your game?* Listen for: Appropriate recap of farmer/agriculture within the game. Emphasize or highlight appropriate agriculture facts.

Processing Questions for 3-5:

- *What was your game about?* Listen for: Appropriate recap of the game. Emphasize learning points within specific game.
- Ask question relevant to agriculture specific game. Listen for: Student understanding of agriculture within the specific game.
- *After playing this game, tell me what you learned about agriculture!* Listen for: Student understanding and newly acquired agriculture fact.

Processing Questions for 6+:

- *After playing the game, what is one thing you learned about agriculture?* Listen for: Student understanding of game and related agriculture concept. Encourage discussion with older students regarding concept.

Objective:

Students will...

learn healthy portion sizes by participating in the Portion Power Game.

Let's Help Them Learn

Healthy food is best when it's your perfect size! Students will learn common size comparisons for their favorite foods and food groups in a game show setting.

Materials

Game show spinner with 10 categories/labels that reference the following: Grains, Proteins, Dairy, Vegetables, Fruits (**see sample game wheel with correct labels below **)

Multiple grains equivalents: a CD case, computer mouse

Multiple proteins equivalents: deck of cards, egg (hardboiled or fake!), ping pong ball, and a lightbulb

Multiple dairy equivalents: an 8 oz container, 3 dominos

Multiple vegetables & fruits equivalents: a baseball, picture of an adult fist

Buzzers or table bells for game show contestants (3)

Paper plates (3)

Answer key (**see below **)

Stopwatch or timer

Setup

Have game show spinner set up in front of the group area with a table to the side. On the back side of the table (set so they are facing the audience/group), set three paper plates and three table bells for the contestants. On the front side of the table (closest to the audience/group), lay out the all food group equivalent props.

Reference

Portion comparisons adapted from: Nickelodeon. (n.d.) *2 to 6 year olds' food portion charts*. Retrieved September 23, 20015 from <http://www.nickjr.com/printables/kids-2-6-food-portion-charts.html>

PORTION POWER

Activity Steps

1. *Let the Portion Power Game begin! I need three volunteers from the audience to play the Portion Power Game! How well do you know what size portions of food you should be eating? Choose three volunteers from the audience.*
2. *To keep this game rolling, we'll need to follow these directions. Listen carefully!*
 - » *Once the wheel stops spinning, I will read the category. If you know the correct portion size for the item, buzz in and state the answer.*
 - » *If correct, you take the item and put it on your plate. If incorrect, the other contestants may buzz in!*
 - » *Audience, I'll need your help to determine who buzzed in first. Stay tuned!*
3. *The game stops at five minutes! Ready – set – GO! Spin the wheel for the first time. Read the category, and proceed to play the game.*
4. *Stop when timer ends at five minutes. Congratulate volunteers and have a round of applause. If time and attention allow, bring up another round of volunteers and play again.*

Unpack the Learning

Processing Questions for K-2:

- *What can we remember from this game?* Listen for: We have to pay attention to how much we eat; we can't just eat what we want, etc.
- *What does a ½ cup look like?* Listen for: A computer mouse, a lightbulb, an adults fist, half of a baseball

Processing Questions for 3-5:

- *What does a ½ cup look like?* Listen for: A computer mouse, a lightbulb, an adults fist, half of a baseball
- *What are the five food groups we should eat daily?* Listen for: Grains, Proteins, Dairy, Vegetables, Fruits

Processing Questions for 6+:

- *Can you assemble a healthy meal with our food equivalents? How?* Listen for: Watch and assist to make a "meal" out of the equivalents (Ex: a CD case, a deck of cards, a baseball, 3 dominos, and an adult fist = a slice of bread, meat, 1 cup of leafy vegetables, a serving of cheese, and ½ cup of fruit.)
- *What can you do to make healthy choices?* Listen for: Watch what you eat, control portion sizes, etc.

PORTION POWER

Sample Spinning Wheel



Answer Key

Grains: 1 slice of bread = a CD case

Grains: ½ cup cooked pasta = a computer mouse

Protein: 2-3 oz cooked meat = a deck of cards

Protein: 1 egg = 1 plastic egg

Protein: 2 Tablespoon peanut butter = a ping pong ball

Protein: ½ cup cooked beans = a lightbulb

Dairy: 1 cup skim milk = an 8oz container

Dairy: 1 ½ oz cheese = 3 dominos

Vegetables: 1 cup leafy vegetables = a baseball

Fruits: ½ cup chopped fruit = an adult fist

Objective:

Students will...

challenge their taste buds without using their sight or smell! Students will learn a variety of food science careers related to plant production. Let's Help Them Learn

Let's Help them Learn

The activity will encourage focus on the sense of taste to determine the correct outcome. Students will also learn about careers in food science related to plant and fruit tree production.

Materials

Apples: washed and sliced thin (1 slice per student)

Potatoes: washed and sliced thin (1 slice per student)

2 different small cups (one for apple slices and one for potato slices) (1 of each cup per student)

Multiple bandanas/scarves

Answer key: _____ color cup has apples, _____ color cup has potatoes

Picture of apples on a tree and potatoes growing underground

Large poster or white board with the title: "I took the Taste Bud Challenge and WON!"

Setup

Pre-slice the apples and potatoes. Put one slice each in a cup. Make sure the different color cups match with the answer key. Hide the answer key until after activity.

TASTE BUD CHALLENGE

Activity Steps

1. *Come try the taste bud challenge! Can you do it?* Encourage students to engage in the activity. Once they commit, relay the directions.
2. *Your taste buds have a challenge. I have an apple and a potato in a cup, and you need to figure out which is which. BUT, you will only be able to use one of your senses – taste!* Blindfold the student and hand them the cup with the slices. Have students hold their nose to prevent smelling.
3. Allow student to guess which is which. Remove the blindfold and display the answer key. Use some of the age appropriate "Unpack the Learning" questions below as needed.
4. If student was successful at guessing the correct item, allow them to sign under "I Took the Taste Bud Challenge and WON!".
5. *Did you know that there are careers directly related to your taste buds?* Explain to students that there are many jobs that relate directly to your food! Explain and engage as needed and as time permits.
 - » Farmers grow the food.
 - » Chefs prepare food.
 - » Horticulturalists and plant breeders work to make the plant the best it can be – that includes taste!
 - » Scientists can examine the food at the molecular level to make improvements with the DNA!
 - » Nutritionists check to make sure that you are getting a healthy diet for your lifestyle.

Unpack the Learning

Processing Questions for K-2:

- *How did you know that was an apple/potato?* Listen for: Descriptive words for apple or potato
- *Where does an apple grow?* Listen for: On a tree, in an orchard, on a farm, etc.
- *Where does a potato grow?* Listen for: On a farm, in the garden, under the ground, etc.

Processing Questions for 3-5:

- *How did you know that was an apple/potato?* Listen for: Descriptive words for apple or potato
- *What was your favorite food career? Why?* Listen for: Career-appropriate terminology
- *If you didn't have taste, how else could figure out which was the potato and which was the apple?* Listen for: Using other senses to determine item

Processing Questions for 6+:

- *If you didn't have taste, how else could figure out which was the potato and which was the apple?* Listen for: Using other senses to determine item; density; texture; skin color; cooking results, etc.

ALLERGY NOTICE

List food items and display at any station that involves food for consumption.

ALLERGY NOTICE

The following food items are available at this station:

ALLERGY NOTICE

The following food items are available at this station:

My American Farm is a special project of the American Farm Bureau Foundation for Agriculture made possible by generous support from title sponsor DuPont Pioneer.

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