After School Agriculture
Activities and Lessons to Enhance your After School Program
Grade Levels K-3

www.agintheclassroom.org
The activities in this IAITC booklet have been designed for After School Programs as a way to incorporate agriculture into their daily activities.

This booklet has been designed with the Kindergarten through 3rd grade student in mind. Lessons in this booklet focus on Dairy, Specialty Crops, Beef, Pork and Pizza. These Ag Mag topics can be obtained from your County Ag Literacy Coordinator, which can be found on our website: www.agintheclassroom.org.

The lessons have been structured to fit a five day schedule for each agricultural category. Lessons throughout the week will include a Reading/Vocabulary Activity, a Hands-On Activity, a Science Activity, a Math Activity, and a Nutrition Activity.

Our suggestion is to start with the Reading/Vocabulary Lesson which includes a book. Every lesson thereafter will relate to the book and the agricultural category. Beyond day 1, the lesson order is up to the After School Program Coordinator.

Our hope is that students who take part in the After School Program will learn about agriculture and the world around them while having fun too.
DAIRY

Reading/Vocabulary  Clarabelle: Making Milk and So Much More by Cris Peterson

Hands-on Activity  Moo Masks

Science  Milk and You Webquest

Math  ISAT Activity - Dairy 4th Grade

Nutrition  Better Butter
Moo Masks

Grade Level:  K-3

Objectives:  Students will demonstrate an ability to identify types of cattle based on markings.

Illinois Learning Standards:  4.A.1c, 4.B.1b, 13.B.1d, 12.B.1b
Assessment Framework:  1.3.13, 1.3.14, 1.3.19, 1.3.20, 1.3.27, 12.4.01

Materials Needed:
  IAITC Dairy Ag Mag
  1 Large dinner plate
  2 Small dessert plates
  String
  Glue or Staples
  Crayons, markers, or colored pencils
  IAITC Dairy Ag Mag

Activity Outline:
  1. Have the students cut one dessert plate in half.
  2. Have the students staple or glue the other dessert plate behind the large dinner plate. They should draw eyes on the dessert plate and a mouth on the dinner plate.
  3. Next use the dessert plate that was cut in half to make two ears that are glued or stapled to the top of the dessert plate with the eyes.
  4. Have the students use the writing utensils to color the cow with black and white spots.
  5. Have the students add an ear tag to their mask, using their birth date in numerals.
  6. Attach string to the side of the mask to allow it to wrap around their heads.
  7. Let the students wear their masks while they read the Dairy Ag Mag from your County Farm Bureau®.
Introduction

You probably drink milk everyday. Have you ever thought about where it comes from? We all know that milk comes from a cow, but how does the milk get into the carton you drink at home or at school?

Task

Your task is to investigate how milk travels from the cow to your home or your school. You will create a milk storyboard and a classroom survey of milk drinkers.

Process

Activity 1:

Milk Storyboard: From the Cow to the Carton

1. Read “The Story of Milk” as your teacher reads it aloud.

2. Visit the following websites to create a storyboard that shows how milk gets from the cow to the carton. Your storyboard should contain at least five events. Each box should contain both pictures and words.

   Storyboard Page

   How to Create a Storyboard

3. Visit this webpage. Move your mouse around the picture and you will see what it looks like in a barn where cows are being milked. How often are cows milked? How many days a year are cows milked? How many days are there in a year?

Activity 2:

Classroom Milk Survey

1. For four days (Monday-Thursday), keep track of how many cartons of milk the students in your class drink each day at school. Record how many cartons were white milk and how many were chocolate milk.

2. At the end of the week, put the results in a graph using this website.

3. Answer the following questions about your class: Classroom Survey Results
Conclusion

As you can see, the milk has to travel a long way from the cow to the carton that you drink at school or at home. Your classroom milk survey showed how many of your classmates enjoy milk every day. Can you imagine how many people in the United States drink milk everyday? Milk is a very important dairy product!

Evaluation

Milk Storyboard Evaluation

Teacher Page

Credits

This WebQuest was created by teachers participating in Missouri's Agriculture in the Classroom program at Missouri State University through a USDA grant. The template on this site was adapted from a template from The WebQuest Page and the original was designed by Dr. Lyndon Irwin. Assistance for this project was provided by Mrs. Barbara Irwin, M.S. and Mrs. Diane Olson, M.S.

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This page was developed by Samantha McMaster Warren, reviewed by Lyndon and Barbara Irwin and is maintained by Missouri Farm Bureau.

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Dairy Ag Mag - Math - Reading Charts/Graphs

THINK YOUR DRINK!

When it comes to nutrition, not all drinks are created equal.

### MILK

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<th>Nutrition Facts</th>
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<td>Servings Per Container 1</td>
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### FRUIT PUNCH

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<td>Vitamin D</td>
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<td>Calcium</td>
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1. Which beverage provides the highest percentage of Vitamin C?
   - A. Milk
   - B. Chocolate Milk
   - C. Cola
   - D. Fruit Punch

2. If you drank an entire bottle of milk, how many calories would you be drinking?
   - A. 83 calories
   - B. 166 calories
   - C. 158 calories
   - D. 120 calories
Dairy Ag Mag - Math - Reading Charts/Graphs

Directions: Choose the best answer.

3. How many grams of fat are in one serving of chocolate milk?
   A  0 grams
   B  26 grams
   C  8 grams
   D  2.5 grams

4. What drink contains the highest amount of carbohydrates?
   A  Milk
   B  Chocolate Milk
   C  Cola
   D  Fruit Punch

5. Which drink contains 6 teaspoons of added sugar?
   A  Milk
   B  Chocolate Milk
   C  Cola
   D  Fruit Punch

6. Which drink has the least calories per serving?
   A  Milk
   B  Chocolate Milk
   C  Cola
   D  Fruit Punch


**Better Butter**

**Grade Level:** K-3

**Objectives:** Students will observe the process of changing one food form to another, such as a liquid to a solid.

**Illinois Learning Standards:** 11.A.1a; 12.C.1b; 13.B.1c; 13.B.1d

**Assessment Framework:** 6.3.14; 11.4.01; 11.4.02; 11.4.03; 12.4.14; 12.7.33

**Introduction:**

With just about 1650 dairy farms in Illinois, 122,000 cows provide many dairy products for us to eat. Milk, cheese, yogurt, ice cream, and cottage cheese are items to choose from to get the two to three recommended daily serving of dairy products.

Butter is made from butterfat from the cream and milk of dairy cows. After cows are milked, the milk travels to a refrigerated tank through pipes. An insulated truck comes to the farm and hauls the milk to a dairy plant. After the milk is tested for safety, it is homogenized, pasteurized, and packaged. Milk can also be made into butter, cheese, yogurt, ice cream, or other dairy products. Milk products are stored in refrigerated rooms and are then taken to a grocery store for you! Some countries use the butterfat from goats, horses, reindeer, sheep, and other animals to make butter.

Butter used to be made by putting cream into a butter churn. Butter churns were big containers with a pole in the middle. People pulled the pole up and down to churn the cream into butter. Nowadays butter can be made by using various machines. First, cream is pasteurized to kill bacteria and prevent spoilage. Next, the cream is churned, or mixed. Finally, the butter is packaged. Butter is about 80 percent butterfat, 16 percent water, three percent salt, and one percent curd of milk. Products such as butter oil, whipped butter, and cooking oil can be made from butter.

Historians are not sure when butter was first made, but they do know that it was made from water buffalo milk as early as 2000 B.C. The first creamery to make high amounts of butter was in Orange County, New York, in 1856. The use of butter was at its highest during the 1920s and 1930s, before margarine became a popular substitute. The average American today consumes four pounds of butter each year.

**Materials Needed:**
- IAITC Dairy Ag Mag
- Liquid whipping cram
- Clean baby food jars (small plastic containers with tight lids also work well)
Activity Outline:
1. Talk about where milk comes from and how milk is made into many products, such as butter.
2. Go through the safety procedures and importance of cleanliness with students.
3. Group children into groups of two or four.
4. Discuss the whipping cream in its liquid form and let the children know that a change will be taking place with the whipping cream.
5. Pour whipping cream into baby food jars until half full.
6. Let the students screw on the lids. Before shaking, the teacher should check to make sure the lids are closed securely.
7. Have the children take turns shaking the jar to “churn” the cream. Have them shake the jars until they can no longer hear the liquid moving. The teacher should check the jars to see if the cream has separated into milky liquid and creamy solid butter.
8. Help the children carefully pour off the liquid. Serve their homemade butter on bread or crackers.

Discussion Questions:
1. Where does milk come from?
2. What other products can be made from the milk/or what other foods have milk in them?
3. Are there other ways of changing food into a different state of matter? Or another kind of food?

Related Activities:
1. Compare the taste and color of purchased butter, which has salt and sometimes food coloring added, to “better butter.”
2. Show pictures of old churns and new ones.
3. Create a hands-on unit based on dairy products.
4. Teach a lesson about cows and how they can turn grass into an edible product for humans. Cows have four stomachs to help them digest foods we cannot.
Specialty Crop

Reading/Vocabulary  The Very Hungry Caterpillar by Eric Carle

Hands-on Activity  Can You Find My Pumpkin?  The Very Hungry Illinois Caterpillar

Science  Plant Salad Bar Webquest

Math  ISAT Activity - Specialty Crop 4th Grade

Nutrition  Pumpkin Patch Pie
Can You Find My Pumpkin?

Grade Level: K-3

Objective: After completing this activity, students will be more familiar with reading and following directions.

Illinois Learning Standards: 1.B.1a; 4.A.1a; 4.A.1c; 11.A.1d
Assessment Framework: 1.3.14; 11.4.03

Suggested Reading Materials:
- Pumpkin Jack by Will Hubbell
  ISBN 13: 9780807566664
- Pumpkin Circle: The Story of a Garden by George Levenson
- Illinois AITC Specialty Crops Ag Mag

What You Will Need:
- Scissors
- Markers or Crayons

Activity Instructions:
1. Copy the blank pumpkin on orange construction paper. Each student should receive one pumpkin.
2. Have the students cut out the pumpkin and then follow the glyph instructions below.
3. Once all students have finished their pumpkin, hang them around the room.

Glyph Instructions:
1. Number of lines = Number of letters in my first name
2. Eyes = Same color as my eyes
3. Nose = Triangle for boy, Circle for girl
4. Teeth = The number of teeth I have lost
5. Stem = My favorite color

Lesson Extender:
1. Do a scavenger hunt to see if everyone can follow directions.
2. Pick a student and then see if everyone can find that student’s pumpkin by reading the glyph directions. (To make it easier, divide students up into pairs to see if they can find each others pumpkin by asking their partner questions pertaining to the glyph. For example: What color eyes do you have?)
The Very Hungry ILLINOIS Caterpillar

Grade Level:  K-3

Objective:  Students will learn about the specialty crops industry in Illinois, as well as the life cycle of a caterpillar and monarch butterfly, while making their own interactive book.


Assessment Framework:  1.3.12; 1.3.13; 1.3.14; 1.3.15; 12.4.04; 12.4.05; 12.4.07; 12.4.08

Materials Needed:
Cotton Balls  Green Marker
44 Green Label Dots (per student or book)  Yellow Marker
11 Red Label Dots (per student or book)  Popsicle Sticks
Black Marker  Green Plastic Wrap
Wheat Heads  Snack-size Ziploc Bags
½" Red Pom Pom Balls  Black Pipe Cleaners
Field Corn Kernels  Orange Tissue Paper
¼" Green and Purple Pom Pom Balls  Black Tissue Paper
Popcorn Kernels  White Tissue Paper
Green Pipe Cleaners  Gold Tissue Paper
Red Pipe Cleaners  Hot Glue Gun
Purple Pipe Cleaners  Jewelry-size baggies

Activity Instructions:
1.  Read “The Very Hungry Caterpillar” by Eric Carle.
2.  As you read to the students, have them share about their own experience with caterpillars or the things that the caterpillar eats in the book.  (ex:  How many of the kids like apples?)
3.  Talk about how living things need nourishment to grow.
4.  After reading Eric Carle’s version, have each student make their own “Very Hungry ILLINOIS Caterpillar” book.  Each page contains crops that are grown in Illinois.  Our version also talks about the Monarch butterfly because it is the Illinois State Insect.  Booklets can be printed from our website:  www.agintheclassroom.org under “Classroom Resources.”  Follow directions for each booklet page, which are listed on the next page.
The Very Hungry
ILLINOIS Caterpillar

- **Page 1:** Tear a cotton ball in half. Glue half of the cotton ball onto the leaf to represent the egg.

- **Page 3:** Glue the other half of the cotton ball onto the leaf. Below the leaf, stick 4 green stickers and a red sticker. This is your caterpillar. Using a black marker, draw the face of the caterpillar on the red sticker along with his antennae.

- **Page 5:** Stick 4 green stickers and a red sticker below the watermelon. This is your caterpillar. Using a black marker, draw the face of the caterpillar on the red sticker along with his antennae.

- **Page 7:** Using the stickers and marker, place a caterpillar on the page.

- **Page 9:** Using the stickers and marker, place a caterpillar on the page.

- **Page 11:** Using the stickers and marker, place a caterpillar on the page.

- **Page 13:** Using the stickers and marker, place a caterpillar on the page.

- **Page 15:** Using the stickers and marker, place a caterpillar on the page. In the box, glue heads of wheat. At the top of the barrel, glue red pom poms for the apples.

- **Page 17:** Using the stickers and marker, place a caterpillar on the page. In the box, glue kernels of field corn. On top of the barrel, glue green and purple pom-poms for grapes.

- **Page 19:** Using the stickers and marker, place a caterpillar on the page. Cut up a green pipe cleaner into 1-inch sections. Glue these on top of the barrel for green beans. Place kernels of popcorn into a jewelry-size baggie. Glue the baggie in the popcorn box.

- **Page 21:** Using the stickers and marker, place a caterpillar on the page.

- **Page 23:** Using the stickers and marker, place a caterpillar near the leaf on this page.

- **Page 24:** Using red, green and purple pipe cleaners, create a big caterpillar and glue to the page.

- **Page 25:** To make the chrysalis, wrap green plastic wrap around a popsicle stick and glue to the page.

- **Page 27:** Create a bag butterfly by cutting up pieces of orange, white, black and gold tissue paper and putting them in a snack-size baggie. Seal. Take a black pipe cleaner and wrap it around the center of the baggie and then form to look like antennae. Glue or tape to the page.
Plant Salad Bar Webquest

http://www.mofb.org/webquest/wq10a.htm

Introduction
Try our salad bar! We have the freshest of roots, stems, leaves, fruits, seeds, and flowers! Yuck, you say? On this quest you will find foods that really are roots, stems, leaves, fruits, seeds, and flowers. Try them, you may really like them!

Task
At the end of this quest you will be able to name the six main parts of plants, their jobs, and food samples of each part.
You will soon know what you are eating when you go to the salad bar!

Process
1. Read to learn about what plant parts look like and their jobs by clicking here.
2. After you read about plants, label the parts of a plant by clicking here.
3. Then print the page and give it to your teacher to check.
4. Next, read the list of parts to find some of your favorite foods in each part by clicking here.
5. Make a list of your favorites to give to the teacher.
6. Use all you have learned to make a book from paper plates.

   - Get 6 paper plates from your teacher.
   - Write one name on each plate, use the 6 different plant parts.
   - Write a sentence on each plate telling about that plant part.
   - Now draw 2 or more pictures of vegetables on each plate that are examples of that plant part.
   - Staple the plates together with the help of your teacher.

Conclusion
Plant parts from the salad bar are healthy and yummy part of our meals. Eat up!

Credits
Photographs from USDA On Line Photography Center.

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Specialty Crop Ag Mag - Math - Finding Volume

To find volume, use the following rule:

\[ \text{Volume} = \text{length} \times \text{width} \times \text{height} \]

1. A farmer builds a barn 15 feet tall, 30 feet wide, and 50 feet long. What is the volume of the barn?

   - A 95 feet$^3$
   - B 500 feet$^3$
   - C 22,500 feet$^3$
   - D 36,500 feet$^3$

2. A greenhouse that is 17 feet tall, 20 feet wide, and 20 feet long is built for a school ag program. What is the volume of the greenhouse?

   - A 57 feet$^3$
   - B 417 feet$^3$
   - C 21,300 feet$^3$
   - D 68,800 feet$^3$

3. If a machine shed has a volume of 24,000 feet$^3$ and the length is 30 ft and the height is 20 ft, what is the width of the machine shed?

   - A 40 feet
   - B 60 feet
   - C 100 feet
   - D 20 feet

4. In a lifetime, the average American will consume 2 football fields of wheat. If wheat grows 4 feet tall and a football field is 360 feet long and 160 feet wide, what is the volume of one field of wheat?

   - A 460,800 feet$^3$
   - B 230,400 feet$^3$
   - C 57,600 feet$^3$
   - D 128,400 feet$^3$
Specialty Crop Ag Mag - Math - Finding Volume

To find volume, use the following rule:
\[ \text{Volume} = \text{length} \times \text{width} \times \text{height} \]

5. Flats for drying herbs have a volume of 12960 inches\(^3\). If the flats are 36 inches wide and 60 inches long, how many inches tall are the flats?
   - A 3 inches
   - B 4 inches
   - C 5 inches
   - D 6 inches

6. A box in an apiary for the bees is 3 feet wide, 4 feet long, and 3 feet tall. What is the volume of the box?
   - A 12 feet\(^3\)
   - B 9 feet\(^3\)
   - C 36 feet\(^3\)
   - D 10 feet\(^3\)

7. A display stand at the Farmer’s Market is 4 feet wide, 8 feet long, and 4 feet tall. What is the volume of the display stand?
   - A 16 feet\(^3\)
   - B 128 feet\(^3\)
   - C 48 feet\(^3\)
   - D 216 feet\(^3\)

8. The volume of a wagon at the pumpkin patch is 4800 in\(^3\). If the wagon is 5 inches tall and 48 inches long, how wide is the wagon?
   - A 20 inches
   - B 53 inches
   - C 100 inches
   - D 40 inches
Pumpkin Patch Pie

Grade Level: K-3

Illinois Learning Standards: 1.B.1d; 1.C.1f; 7.A.1a; 7.B.1a; 7.B.1b; 11.A.1a; 12.C.1b

Assessment Framework: 11.4.01; 11.4.02; 11.4.03; 12.4.14; 12..7.33

Materials Needed:
1 gallon Ziploc® freezer bag
2 2/3 cups cold milk
2 packages (4 serving size) instant vanilla pudding mix.
1 can (15 ounces) solid-pack pumpkin
1 teaspoon ground cinnamon
½ teaspoon ground ginger
Graham cracker crumbs
25 small cups
scissors
1 can whipped topping
25 spoons

Activity Outline:
1. Combine the milk and instant pudding in the Ziploc bag.
2. Remove the air and Ziploc shut.
3. Squeeze and kneed with hands until blended for 1 minute.
4. Add the pumpkin, cinnamon, and ginger.
5. Remove the air and Ziploc shut.
6. Squeeze and kneed with hands until blended for 2 minutes.
7. Place 1/2 Tablespoon of graham cracker crumbs in the bottom of small cups.
8. Cut corner of gallon freezer bag and squeeze pie filling into cups.
9. Garnish with 1 container(8ounces) whipped topping.
10. Add a spoon. Serve and enjoy.
11. Discuss pumpkin production while students are eating.

Yield - 25 students and 1 teacher.

Ingredients can be divided by 4 or 5 for students to work in small groups.

Thanks to:
Susan Miller, Williamson Ag Literacy Coordinator
Beef

Reading/Vocabulary  Life on a Cattle Farm  
by Judy Wolfman

Hands-on Activity  Beautiful Bovine

Science  Beefo Bingo

Math  ISAT Activity - Beef 4th Grade

Nutrition  R. B. V. Wrap
Beautiful Bovine

Grade Level: K - 3

Objectives: Students will be able demonstrate some of the body parts of a cow to show how a cow is different from a human.


Assessment Framework: 1.3.04, 1.3.05, 1.3.06, .13.14, 1.3.19, 1.3.20, 1.3.27, 3.306, 3.3.08, 12.4.01

Materials Needed:
- Surgical glove
- Yarn
- Fly swatter
- Cardboard
- Sand paper
- Large bag
- Yarn
- Vest - leather/fur
- Chewing gum
- Plastic headband
- Four socks
- Four balloons
- Elastic

Activity Outline:
1. Assemble the pretend parts of a cow as follows:
   - Udder - Stuff the surgical glove with tissue. Attach yarn to tie around student's waist.
   - Horns and ears - cut cardboard in the shape of a cow's ears and horns, and attach them to a plastic headband.
   - Hooves - cut four cardboard hoof prints and attach them to the bottoms of the four socks.
   - Tongue - cut sand paper to hang around student's head. Attach yarn to tongue to hang around student's head.
   - Stomachs - Blow up four balloons and tie them together with yarn.
   - Tail - Tie fly swatter to a piece of yarn to tie around the student's waist.
   - Gum - give student a piece of chewing gum to chew as "cud".
   - Hide - place the vest on students to represent the hide of a cow.
   - Place items in your bag once assembled.

2. Ask one of your students to volunteer to be dressed up to look like a cow. To avoid embarrassing any of your students, ask your principal or another adult to be the volunteer.

3. Ask students to imagine what a cow looks like and what special parts it has that are different from a human. What makes a cow a cow?

4. Ask students to suggest ways to make the volunteer look like a cow. As they come up with ideas, dress the volunteer with the props in your bag. Share background information regarding each body part as you dress up your volunteer.
Grade Level: K-3

Objectives: Students will learn beef by-products while playing Bingo.
Students will show an understanding of “vertical”, “horizontal”, and “diagonal” while playing Bingo.
Students will learn about the nutritional value of beef.

Illinois Learning Standards: 12.A.1a; 22.A.1b; 23.A.1; 23.B.1

Assessment Framework: 1.3.26; 1.4.01; 6.3.09; 12.4.05; 12.4.08; 12.4.13

Introduction:
Almost the entire beef animal can be used to benefit man in some way. From a typical 1,000 pound steer, 400 pounds is used for beef that we eat and the remaining 600 pounds are used as by-products.

These are some common types of beef: Pot Roast, Sirloin Steak, Ground Beef, Rib Eye Steak, and Tenderloin Steak. Beef is a good source of protein (which builds, maintains, and repairs body tissues), iron (which helps the red blood cells carry oxygen to body cells and tissues), zinc (which is a mineral used for growth and maintaining the immune system), and B-vitamins (which promote healthy skin, keep the nervous system healthy, and are important for digestion and metabolism).

Beef by-products are anything made from a beef animal other than beef. You probably use more beef by-products than you think! Here are some examples:

**Bone, Horn, Hooves, & Gelatin**
Combs, gelatin candy (Gummy Bears), marshmallows, mayonnaise, gelatin, photographic film, steel ball bearings, fine bone china, pet food, and vitamin capsules/gel coatings.

**Hide & Hair**
Insulation, paint brushes, glue for bookmaking and band-aids, clothes, shoes, luggage, saddles, furniture, automobiles, volleyballs, basketballs, and baseball gloves.

**Fats & Fatty Acids**
Shampoo, soaps, shaving creams, cosmetics, deodorants, candles, crayons, floor wax, detergents, hydraulic brake fluid, plastics, insecticides, paints, perfumes, and synthetic rubber.
Beefo Bingo

Materials Needed:

―Beefo Bingo‖ game boards
―Byproducts Board Pieces‖ sheet
Container (large cardboard or storage box, etc.)

Activity Outline:
1. Discuss the introduction information with your students.
2. Make enough copies of the game board and the game board pieces so each student has one. Give each student one cow game board and one byproducts sheet.
3. Have the students cut out the byproducts pieces. Then they should select 24 of them and glue them to the game board. The center square is a free spot so nothing should be glued there. You may want to laminate boards after they are put together. (Or you could put the boards together before-hand instead of having the students do it.)
4. The teacher should laminate one byproducts sheet to keep track of what byproducts have been called. Another byproducts sheet can be cut up and put into a container to “call” the products.
5. Give the students “markers” for their game boards. Markers could be miniature marshmallows, peanuts, grain kernels, buttons, etc.
6. The teacher or caller reaches into the container and draws out a byproduct piece. They call this out to the group.
7. The students look at their board to see if they have that byproduct. If they do, then they cover it up with a marker.
8. The first students to have five squares in a row covered, either vertically, horizontally, or diagonally wins. (Make sure the students understand the meaning of vertically, horizontally, and diagonally before beginning.)

Discussion Questions:
1. Name five beef byproducts.
2. What parts of a beef animal are used for byproducts?
3. Name some common types of beef that is eaten.

Related Activities:
2. Compare the nutritional value of beef to other types of food.
To be used with:
Beefo Bingo

Beefo Bingo

Game Board
To be used with: 

**Beefo Bingo**

---

**By-Products Board Pieces**

- Insecticides
- Paints
- Brake Fluid
- Machine Oil
- Tires
- Car Polish
- Feed
- Steel ball bearings
- Cake Mix
- Marshmallows
- Pasta
- Floor Wax
- Soap
- Gelatin
- Leather Chairs
- Candy
- Candles
- Crayons
- Glue
- Leather Shoes
- Baseballs
- Footballs
- Basketballs
- Cosmetics
- Deodorant
- Shoe Cream
- Shaving Cream
- Iron Pills
- Insulin
- Emery board
- Bandages
- Luggage
- Cellophane
- Ceramics
- Detergent
- Textiles for car upholstery
- Car Wax
- Piano Keys
- Paint brushes
- Perfume
- Vitamin B12
- Bone China
- Pet food
- Chewing Gum
- Photo Film
- Margarine
- Linoleum
Directions: The following products are all products of beef. Give the product from the word list that is found at each coordinate.

<table>
<thead>
<tr>
<th>Word List</th>
<th>1. ____________ (3, 3)</th>
<th>2. ____________ (1, 7)</th>
<th>3. ____________ (5, 4)</th>
<th>4. ____________ (4, 6)</th>
<th>5. ____________ (6, 1)</th>
<th>6. ____________ (2, 5)</th>
<th>7. ____________ (0, 4)</th>
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<th>9. ____________ (4, 1)</th>
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<td>Piano keys</td>
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R. B. V. Wrap  
(Roast Beef and Veggie Wrap)

Grade Level: K-3

Illinois Learning Standards: 1.B.1a; 1.B.1c; 1.B.1d; 4.A.1a; 4.A.1b; 4.A.1c; 5.A.1a; 6.c.1b; 7.A.1a

Assessment Frameworks: 1.3.12; 1.3.13; 1.3.27

Materials Needed:
set of measuring cups  small bowl  rubber spatula
measuring spoons  wire whisk  spoon
medium bowl  cutting board  small knife
2 forks  small metal spatula/spreader

16 thin slices deli roast beef (about 12 ounces)
2 cups shredded broccoli slaw
1/4 cup prepared ranch dressing
1 container (8 ounces) whipped cream cheese
2 tablespoons prepared ranch dressing
4 flour tortillas (10-inch diameter)

Total preparation time: 25 minutes

Activity Outline:
1. PLACE the broccoli slaw and 1/4 cup ranch dressing in a medium bowl. TOSS with 2 forks to coat evenly.
2. PLACE the cream cheese and 2 tablespoons ranch dressing in a small bowl. STIR with a wire whisk to mix well.
3. PLACE 1 tortilla on a cutting board or other flat surface. SPREAD about 1/4 cup of the cream cheese mixture on the tortilla using a metal spatula.
4. PLACE 4 roast beef slices in an even layer on top of the cream cheese.
5. PLACE 1/3 cup of the broccoli mixture on top of the roast beef. SPREAD the broccoli mixture out in an even layer, using the back of a spoon.
6. Starting at the bottom edge, ROLL tortilla up tightly to enclose filling.
7. REPEAT steps 3 through 6 to make a total of 4 wraps.
8. Adult help needed: Using a knife, CUT wraps crosswise into 1-1/2-inch wide pieces or CUT them diagonally in half.

Makes 4 servings.

Helpful Hint: If making wraps ahead of time, tightly wrap them individually in plastic wrap and refrigerate until serving time.

Nutrition information per serving: 698 calories; 34 g protein; 39 g carbohydrate; 44 g fat; 771 mg sodium; 135 mg cholesterol; 5.3 mg niacin; 0.4 mg vitamin B6; 2.5 mcg vitamin B12; 4.7 mg iron; 6.5 mg zinc.

This recipe is an excellent source of protein, niacin, vitamin B6, vitamin B12, iron and zinc.

© 2002, Cattlemen's Beef Board
Pork

Reading/Vocabulary  Welcome To Our Farm  
by National Pork Producers Council

Hands-on Activity  Pig Paper Plates  
Pig Paper Bags

Science  Pork4kids.com

Math  ISAT Activity - Pork 4th Grade

Nutrition  Pig Cookies
Paper Plate Pig

Grade Level: K-3


Assessment Frameworks: 1.3.12; 1.3.13; 1.3.14; 1.3.27

Materials Needed:
1 extra large pink dinner size paper plate
1 dessert size pink paper plate
Pink Construction paper
Markers
Stapler and staples
1 small paper drink cup
Pork Ag Mags

Activity Outline:
1. Have the students turn the dessert plate inside out. This is the pig’s head.
2. Have the students color the outside of the small paper drink cup pink.
3. Then they should cut ½ inch slits around the top of the cup. This will create flaps for the cup. This will be the pig’s nose.
4. Have the students turn the cup upside down and staple it to the pig’s head by folding the flaps out and stapling on the flaps.
5. Have the students staple the pig’s head to the lower middle of the extra large plate. The extra large plate will be the pig’s body.
6. Have the students cut a tail, two ears, and two feet out of pink construction paper and staple them to the pig. The feet should be stapled to the bottom of the pig’s body. The ears should be stapled to the pig’s head. The tail can be curled by sliding it along a scissor blade. Then the tail should be stapled to the back of the pig’s body.
7. Have the students use the markers to draw eyes and a mouth on their pig.
8. Discuss what pigs eat. You may want to get copies of the Pork Ag Mag from your County Farm Bureau®.

Adapted from www.daniellesplace.com
Paper Bag Pigs

Grade Level: K-3

Objectives: Students will demonstrate their knowledge of the parts of a pig and how pigs differ from humans.

Illinois Learning Standards: 4.A.1c, 4.B.1b, 12.B.1b, 13.B.1d

Assessment Framework: 1.3.13, 1.3.14, 1.3.19, 1.3.20, 1.3.27, 12.4.01

Materials Needed:
- Template (Could copy on pink paper)
- Pink paint or construction paper
- Paper bag
- Glue
- Markers, colored pencils, crayons
- Scissors

Activity Outline:
1. Print out the template (You can print the template on pink paper if you choose!)
2. If you do not print them on colored paper, color the pieces and cut them out.

Get familiar with your paper bag!
1. Look at your paper bag. It should be closed and flat like a piece of paper. Just like when they are brand new.
2. On one side, it's all smooth. This will be the BACK of your puppet. (It's important that all the kids get the back and front straight at the beginning!)
3. On the other side there's a flippy tab (which is typically the bottom of the bag when you're carrying your lunch around...) This flippy tab will be the HEAD.
4. Look at the rest of the front of the bag. (The 3/4 or so of the bag below the part with the flippy tab) This will be the BODY.
5. OK, now that we're comfy with our bags, let's craft!

Putting your puppet together:
1. Print the template of choice and color in the pieces, as necessary.
2. If desired, take a piece of pink construction paper and cut it out to be the size of the body and glue it onto the paper bag.
3. Cut another piece the size of the head and glue it onto the bag.
4. You can also cut a third piece the size of the back and glue it onto the bag.
5. Alternatively, you can paint your whole bag pink
6. Glue the eyes, snout, ears onto the head.
7. Lift the side tab and put on a spot of glue. Attach the arm. (Or you can attach it to the front of the body if you prefer.) Do the same with the other arm.
8. Cut the tail out in a spiral (follow the template dotted lines).
9. Turn the bag over and glue the center of the spiral to the bag.
Paper Bag Pigs

Cut along dotted line to make a spiral tail.
This website provides various opportunities for students to explore the topic of pork. Through computer-based educational tools, students have a chance to experience agriculture in a fun and engaging format.
Pork Ag Mag - Math - Converting Metric Measurements

Directions: Use the conversion chart below to help you answer the questions.

Length:
1 centimeter (cm) = 10 millimeters (mm)
1 meter (m) = 100 centimeters (cm)
1 kilometer (km) = 1,000 meters (m)

1. A farrowing house has stalls that are 4 meters wide. How many centimeters is 4 meters?
   A 4 cm
   B 40 cm
   C 400 cm
   D 4000 cm

2. When pigs reach market weight, a truck must drive them 6000 meters to market. How many kilometers does the truck drive?
   A 60,000 km
   B 600 km
   C 60 km
   D 6 km

3. When a piglet is born it measures 22 centimeters long. How many millimeters long is the piglet?
   A 2.2 mm
   B 220 mm
   C 2200 mm
   D 22 mm

4. A finishing house measures .5 km long. What is the measurement of the length of the finishing house in meters?
   A 5 m
   B 50 m
   C 500 m
   D 5000 m
Pork Ag Mag - Math - Converting Metric Measurements

Directions: Use the conversion chart below to help you answer the questions.

Weight:
1 pound (lb) = 16 ounces (oz)
1 ton (t) = 2,000 pounds (lbs)

5. Illinois hogs eat 1 billion pounds of soybean meal each year. How many tons does 1,000,000,000 pounds equal?
   A) 50 t
   B) 500 t
   C) 5000 t
   D) 500,000 t

6. A piglet stays in the farrowing house until it weighs at least 10 pounds. How many ounces does 10 pounds equal?
   A) 16 oz
   B) 160 oz
   C) 1600 oz
   D) 16,000 oz

7. A pig must reach 250 pounds to make market weight. How many ounces does 250 pounds equal?
   A) 250 oz
   B) 16 oz
   C) 450 oz
   D) 4,000 oz

8. A semi truck and trailer used to transport pigs to market weighs 31,960 pounds. How many tons does the truck and trailer weigh?
   A) 15.98 t
   B) 159.8 t
   C) 1.598 t
   D) 63,920 t
Pig Cookies

Grade Level:  K-3


Assessment Frameworks:  6.3.14; 11.4.01; 11.4.02; 11.4.03; 12.4.14; 12.7.33

Materials Needed:
- 2 Large mixing bowls
- Hand mixer
- Spoon
- Baking Sheet
- Toothpicks

<table>
<thead>
<tr>
<th>Cookies</th>
<th>Frosting/Decorating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup butter</td>
<td>4 cups confectioners’ sugar</td>
</tr>
<tr>
<td>1 1/2 cups sugar</td>
<td>1/2 cup butter, melted</td>
</tr>
<tr>
<td>2 eggs</td>
<td>6 tablespoons vanilla extract</td>
</tr>
<tr>
<td>1 cup (8 ounces) sour cream</td>
<td>3 to 4 drops red food coloring</td>
</tr>
<tr>
<td>1 teaspoon vanilla extract</td>
<td>Pink sugar wafer cookies</td>
</tr>
<tr>
<td>3 cups all-purpose flour</td>
<td>36 large marshmallows</td>
</tr>
<tr>
<td>1 teaspoon baking powder</td>
<td>Butterscotch chips</td>
</tr>
<tr>
<td>1 teaspoon salt</td>
<td>Miniature semisweet chocolate chips</td>
</tr>
</tbody>
</table>

Yield:  6 dozen

Activity Outline:

1. In a large bowl, cream butter and sugar until light and fluffy. Beat in the eggs, sour cream and vanilla. Combine dry ingredients; gradually add to cream mixture and mix well.
2. Drop by tablespoonfuls onto ungreased baking sheets. Bake at 375 degrees for 10-12 minutes or until edges are lightly browned. Remove from pans to wire racks to cool completely.
3. For frosting, in a large bowl, combine the confectioners’ sugar, butter, milk, vanilla and food coloring. Frost cookies.
4. Cut sugar wafers into triangles; place 2 on each cookie for ears. With a toothpick, poke 2 holes in each marshmallow half for nostrils; press butterscotch chips into holes. Place noses on cookies; add chocolate chip eyes.

*From Taste of Home Fun Food*
Pizza

Reading/Vocabulary  Hold the Anchovies!
by Shelley Rotner & Julia Pemberton Hellums

Hands-on Activity  Grow Your Own Pizza Garden

Science  Pizza Anyone?

Math  ISAT Activity - Pizza 4th Grade

Nutrition  Pizza Burgers
Grow Your Own Pizza Garden

Grade Level: K-3

Objective: Students will learn about plant growth and nutrition while creating their own garden of pizza ingredients.


Assessment Framework: 12.4.08; 13.4.02

Materials Needed:
- Pizza Box
- Plastic cups – 6 ounce
- Soil/Jiffy Pellets
- Seeds: Tomato, Wheat/Grass, Onion, Peppers, Herbs, etc…

Activity Instructions:
1. Cut holes on the top of the pizza box. Label what will be planted in each.
2. Place a cup in each hole.
3. Plant seeds in each cup using the soil/jiffy pellets and the selected seeds for that hole/cup.

Ideas for use:
1. Plant ahead of time and present to a class.
2. Have class plant the seeds and watch them grow.
3. Use as a gift to a teacher and include a gift card for local pizza place.
4. Use as a teaching tool to match what the seeds grow up to be, what foods come from these seeds, how vegetables are processed into foods we enjoy, etc.
5. Have Fun and Happy Planting!

From Indiana Farm Bureau
* Adapted from an idea found in Family Fun Magazine.
Pizza Anyone?

Grade Level: K-3

Objectives: Students will be able to take information and develop a graph to show results. Students will be able to identify the ingredients of a pizza and tell where the ingredients come from.


Assessment Framework: 1.3.12; 1.3.14; 1.3.16; 1.3.26; 1.3.27; 3.3.01; 3.3.03; 3.3.09; 6.3.14

Introduction:
Farming and agriculture are part of everyone’s life in one way or another. From the job you might have someday to the lunch you eat today—each of these things relate to agriculture in some way. Agriculture is the industry that give many people jobs. One out of every five students will someday work in jobs related to agriculture. Just imagine...five or six of your classmates will work in a job related to agriculture when they grow up!

How are farming and agriculture related to you? Take a look at a typical school cafeteria lunch of ham, corn, tater tots, chocolate pudding, and a bread roll. Each part of the meal is somehow related directly to agriculture. Milk come from cows on a dairy farm. After the cows are milked on the farm, the milk must go to a dairy plant to be heated, cooled, and then bottled. The cartons are then delivered to stores—and to your school. Some of the milk will even be made into cheese and other dairy products!

Ham is a port product that comes from pigs. And the bread is made from flour, a product of wheat. Wheat is grown and harvested on a farm, and then ground to make flour at a mill. The flour is mixed with other ingredients—like yeast—and then baked in an oven at a large bakery. The loaf of bread is taken out of the bakery’s oven, sliced, and packaged for delivery to the store or the school’s cafeteria.

Corn is grown on a farm, as are the potatoes that were shredded for the tater tots. Both corn and potatoes are harvested and used for many things. The corn on your tray was probably canned in a factory, but the potatoes are delivered whole to a processing plant. The plant is like a big kitchen. Potatoes are peeled, shredded, cooked, and frozen in a package before they are delivered to your cafeteria. Then the cook prepares them for you to eat!

Are you ready for dessert? Even the chocolate pudding is make of milk, soybeans, and corn from Illinois farms.

Agriculture is as close to you everyday as your cafeteria—and so are the jobs needed to bring your lunch from the farm, processor, and grocery store. This lesson focuses on pizza ingredients and their origins. Students will learn how the ingredients get from the farm to their plate while working on their math skills.

Materials Needed:
IAITC Pizza Ag Mag
“Who Makes the Best Pizza?” worksheet
“My Favorite Pizza” worksheet
“Ingredients in a Pizza—Where Do They Come From?” (background information)
Supplies to make a pizza or pre-made pizza (optional)
Oven (optional)
Knife (optional)
Napkins (optional)
Actual products (tomato, pictures of animals, wheat, corn, potato)
Activity Outline:
1. Display the pizza items and discuss the items on display.
2. As a class, gather data for “Who Makes the Best Pizza?” worksheet. Make tallies on the chalkboard.
3. Have the students graph the information on their worksheets.
5. Have the students graph the information on their worksheets.
6. Have the students answer the questions on each worksheet.
7. Using information from “Ingredients in a Pizza—Where Do They Come From?”, create a chart on the chalkboard (as a class) representing the journey from farm to the end ingredient.
8. Make a pizza. (optional)

Discussion Questions:
1. Who made the best pizza? By looking at your graph, how can you tell who made the best pizza? What is a favorite type of pizza?
2. What are some other ingredients we could put on a pizza? Where do they come from?
3. What would happen if the electricity went off? Could we make our pizza? Would some of our ingredients spoil?

Related Activities:
1. Contact Illinois Farm Bureau to receive information about the video “Exploring Planet Pizza!” Call (309) 557-3334.
2. Visit a local pizza restaurant.
3. Compare ingredients in other Italian dishes.
4. Survey the school for favorite pizza toppings. Graph the results.
5. Design other types of graphs to show results.
Ingredients in a Pizza - Where Do They Come From?

Wheat - A Grain

Pizza crust is made from wheat. When wheat is ready to harvest, the farmer combines the wheat, unloads it into trucks or wagons, and takes it to the country elevator. The country elevator then ships the wheat by truck, rail, or barge to a terminal. At the terminal, the wheat is sold to the various industries which make food and feed, or is shipped overseas. The place where wheat is shipped to make food is called the mill. The mill breaks the wheat kernels into pieces and sifts the pieces to get the bran and germ (parts of the wheat kernels) out. This is repeated many times to make the substance we know as flour. The miller then adds B-vitamins and iron for nutrients. The flour is shipped in bags to the bakery or grocery store. Bakers use wheat flour because it contains a magical protein called gluten. To make crust, active yeast, warm water, and oil are added to the flour. The gluten traps the air bubbles the yeast releases and causes the crust to rise.

Tomato Sauce - A Vegetable

Tomato seeds require 75-85 days to develop into mature plants with ripe fruits. When the tomatoes are ripe enough to ship, they are carefully packed into boxes for shipping. The boxes are then laded into semi-trailers for transporting to grocery stores. Some tomatoes are sent to a can- nery where they are processed (cooked, squashed, preservatives added) to make sauces or ketchup.

Cheese - A Dairy Product

Cheese is a healthy, tasty food that is made from milk. The cows on the farm are milked by using suction cups to pump the milk from the cow into huge storage tanks. These storage tanks cool the milk until refrigerated tank trucks come to pick it up. The milk is then made into cheese. First, the milk is heated and quickly cooled. This is called pasteurizing. Pasteurizing is a process that kills any harmful bacteria. The processed milk is then treated to form a soft, custard-like substance called curd. The curd contains a liquid called whey, which must be taken out through a special process before cheese can be made. Special knives cut the curd into thousand of small cubes, and the whey oozes from them. Heating a motion force more whey from the curd, and the curd “ball” is then lifted from the vat. The “ball” is broken up into small pieces and put into presses that keep the cheese under great pressure for a few hours to a few days. During pressing more whey drains out, and the curd is shaped into blocks or wheels. After it is pressed, it is immediately wrapped in plastic. The cheese is then aged in cooled storage rooms or warehouses. The aging times vary for different cheeses. Brick cheese and others need two months to age while Parmesan requires about a year. After being aged, the cheese is packaged in a wide variety of shapes and sizes.

Pepperoni & Sausage - A Pork Product

Pigs go to market in only five to six months at the weight of 240-260 pounds. Pigs may be sold at an auction market or sale barn, or may be bought directly by an order buyer who buys for a packer. Meat inspectors employed by the United States Department of Agriculture inspect live hogs, hog carcasses, and the entire packing plant to make sure that pork is safe to eat. The pork is ground up, and special seasonings are added to make sausage, salami, hot dogs, and pepperoni. About half of the pork produced in the United States is sold in supermarkets. The other half is eaten at restaurants, hospitals, schools, and business cafeterias. Yet, we get a lot more from pigs than pork—we also get insulin to treat human diabetes, and the skin from hogs is used to treat victims of severe burns. Other byproducts are glue, glass, rubber, plastics, and heart valves.
Who Makes the Best Pizza?

Survey each class member about his/her pizza preference. Total the number for each category on this page and then record the totals by completing the graph below.

1. Who made the best pizza? ______________________________________________________

2. What was the least favorite pizza? ______________________________________________

3. How many people said that homemade pizza was the best pizza? _______________________

4. How many thought Pizza Hut was the best pizza? ____________________________________

5. How many thought Domino’s was the best pizza? ________________________________

PIZZA

1. Who made the best pizza? ______________________________________________________

2. What was the least favorite pizza? ______________________________________________

3. How many people said that homemade pizza was the best pizza? _______________________

4. How many thought Pizza Hut was the best pizza? ____________________________________

5. How many thought Domino’s was the best pizza? ________________________________
My Favorite Pizza?

Survey each class member about his/her pizza preference. Total the number for each category on this page and then record the totals by completing the graph below.

1. What is your favorite type of pizza? _______________________________________________

2. What type of pizza do most students like?__________________________________________

3. What pizza is the least favorite? _________________________________________________

4. How many people like pepperoni? ________________________________________________

5. Do more people like pepperoni than cheese? ________________________________________
Pizza Ag Mag - Math

Directions: Use the above graph to answer the following questions.

The pizza above has mushrooms (M), pepperoni (P), and sausage (S) on it. Identify as certain, likely, unlikely, or impossible that the arrow will land on the following:

1. A mushroom ____________________
2. A fruit ____________________
3. A pepperoni ____________________
4. A meat ____________________

5. Using the pizza above, what is the probability that you will choose a slice with mushrooms? _________________

6. Using the pizza above, what is the probability that you will choose a slice with a meat? _________________

7. If three mushroom pieces have been eaten, what is the probability of choosing a slice of sausage? _________________

8. Most of the pizza has been eaten by the time Myrna gets to eat. If there is one piece of each kind of topping left, what is the probability she will choose a piece with mushroom on it? _________________
Pizza Burgers

Grade Level:  K-3


Assessment Frameworks:  1.3.12; 1.3.13; 1.3.27

Materials Needed:

1 package hamburger buns, split
1 jar (14 ounces) pizza sauce
1 pound ground beef, cooked and drained
2 cups (8 ounces) shredded part-skim mozzarella cheese
Baking Sheet

Yield:  16 servings

Activity Outline:

1. Place bun halves on an ungreased baking sheet.
2. Spread with pizza sauce.
3. Sprinkle with beef and cheese.
4. Bake at 425 degrees for 5 minutes or until cheese is melted.

**Any of your favorite pizza ingredients can be added to these pizza burgers.

**Because the meat is cooked, kids may microwave these until the cheese is melted.
# ISAT Answers! K-3

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<th>DAIRY Math</th>
<th>SPECIALTY CROP Math</th>
<th>BEEF Math</th>
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<tr>
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Illinois Agriculture in the Classroom