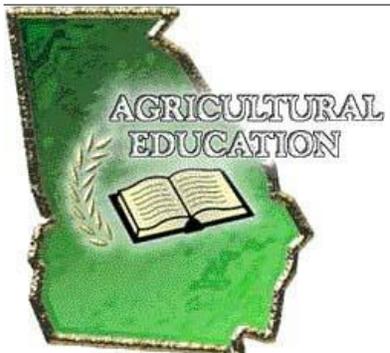


# Elementary Agriculture Awareness

High School Students mentoring Elementary Students

2nd grade—5th grade lessons



**Farming,  
Food  
&  
FUN!!**



The lessons have been structured to fit a five day schedule for each agricultural category. Lessons throughout the program will include a *Reading/Vocabulary Activity*, a *Hands-On Activity*, a *Science Activity*, and a *Math 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 Elementary Teacher and Agriculture Teacher to decide what is best for the students.

Our hope is that students who take part in the Ag Awareness High School Student to Elementary Student Program will learn about agriculture and the world around them while having fun too.

# 2<sup>nd</sup> Grade

# DAIRY

***Reading/Vocabulary***

*Clarabelle: Making Milk and So Much More*  
by Cris Peterson

**Hands-on Activity**

Moo Masks

**Math**

Dairy Reading Charts

**Science**

Better Butter



# Moo Masks

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**Grade Level:** 2

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

**Materials Needed:**

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

**Activity Outline:**

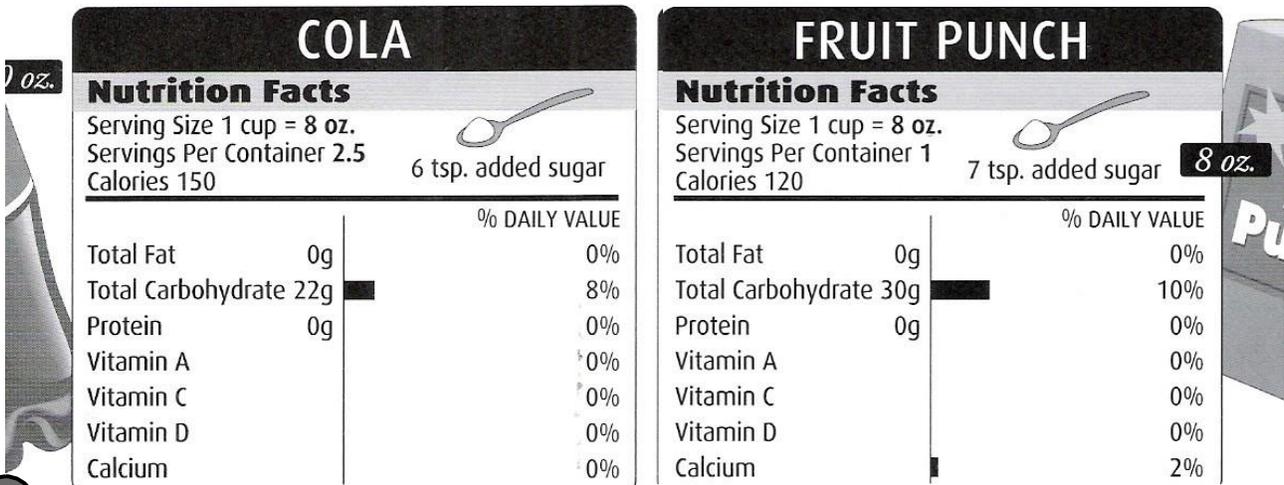
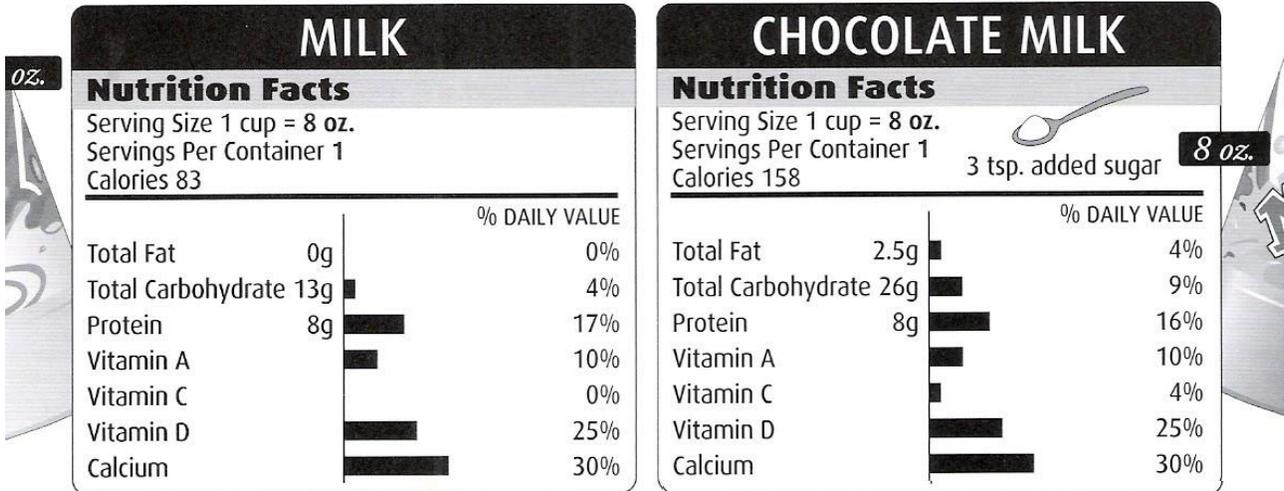
1. Have the students cut one dessert plate in half.
2. Have students staple or glue the other dessert plate behind the large dinner plate. They should draw eyes on the dessert plate and a mouth on the dinner plate.
3. Next use the dessert plate that was cut in half to make two ears that are glued or 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.



## Dairy Ag - Math - Reading Charts/Graphs

# THINK YOUR DRINK!

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



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 - 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 tea- spoons of added sugar?

- A Milk
- B Chocolate Milk
- C Cola
- D Fruit Punch

6

Which drink has the least calories per serving?

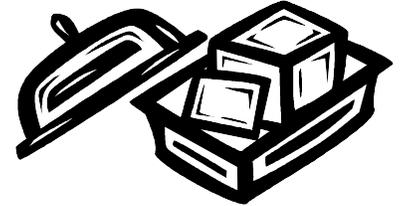
- A Milk
- B Chocolate Milk
- C Cola
- D Fruit Punch

# Better Butter

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**Grade Level:** 2

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



## **Introduction:**

Dairy 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 better each year.

## **Materials Needed:**

Liquid whipping cream

Clean baby food jars (small plastic containers with tight lids also work well)

# Better Butter

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## 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.

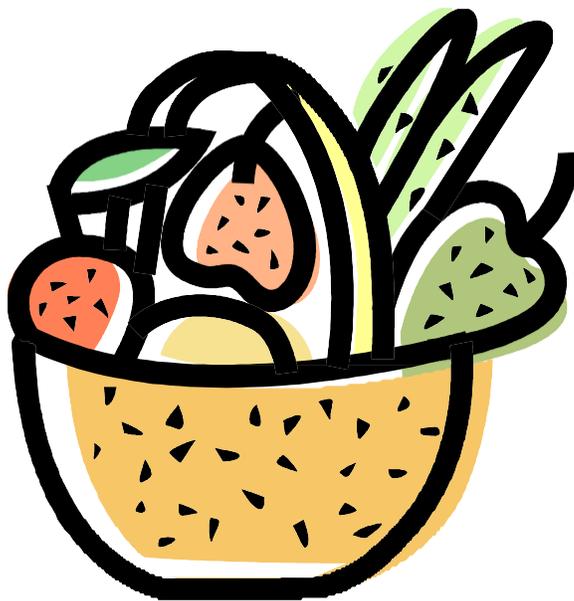
# 2<sup>nd</sup> Grade Specialty Crop

**Reading/Vocabulary**     *The Very Hungry Caterpillar*  
by Eric Carle

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

**Math**     Specialty Crop Finding Volume

**Science**     Pumpkin Patch Pie



# Can You Find My Pumpkin?

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**Grade Level:** 2

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

**Suggested Reading Materials:**

Pumpkin Jack by Will Hubbell

ISBN 13: 9780807566664

Pumpkin Circle: The Story of a Garden by George Levenson

ISBN-13: 9781582460789



**What You Will Need:**

Scissors

Markers or Crayons

**Activity Instructions:**

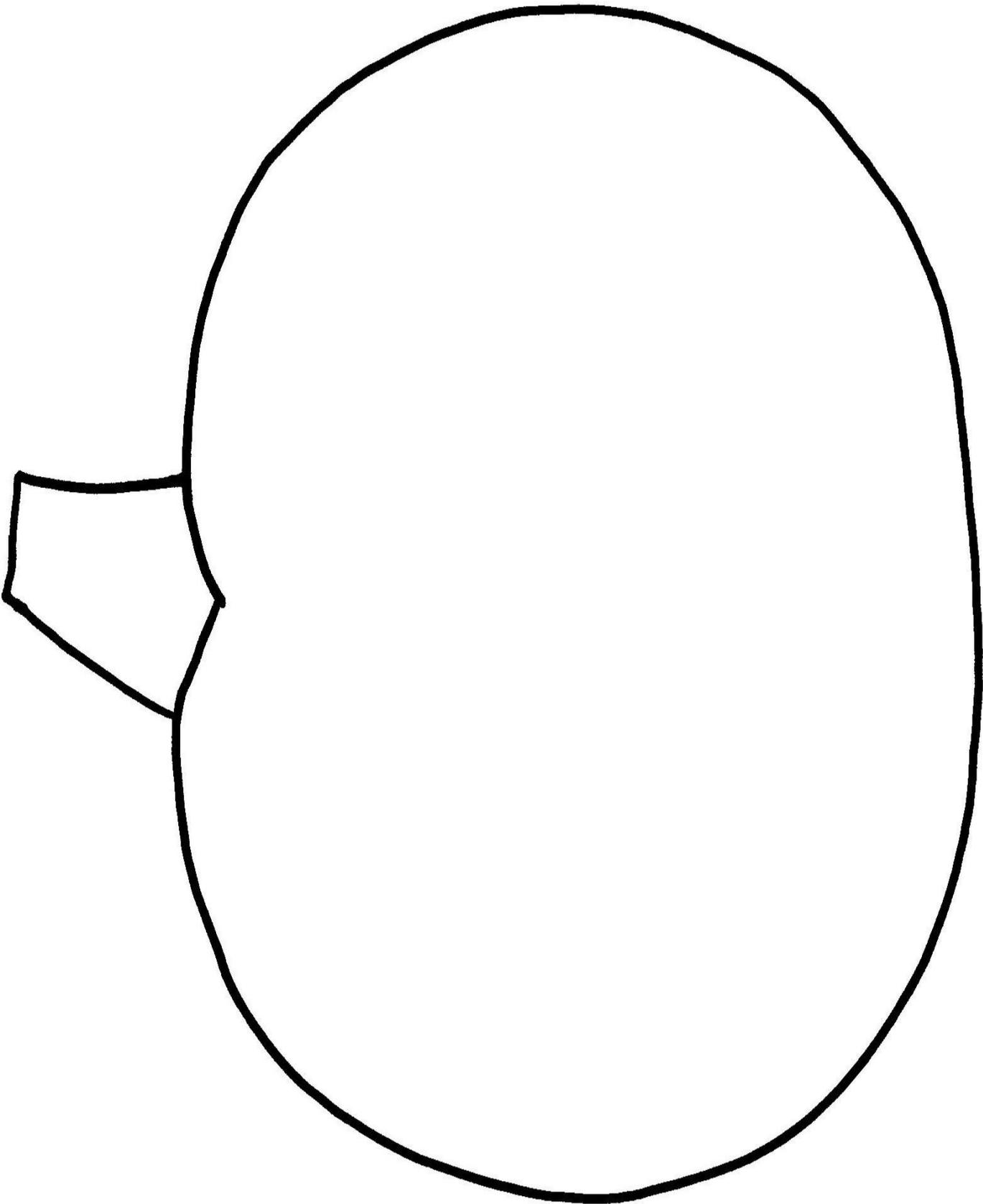
1. Copy the blank pumpkin on orange construction paper. Each student should receive one pumpkin.
2. Have the students cut out the pumpkin and then follow the glyph instructions below.
3. Once all students have finished their pumpkin, hang them around the room.

**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?)

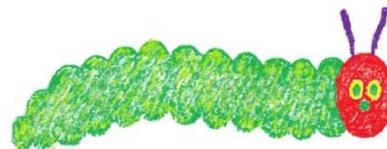


# The Very Hungry Georgia Caterpillar

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**Grade Level:** 2

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



**Materials Needed:**

Cotton Balls

44 Green Label Dots (per student or book)

11 Red Label Dots (per student or book)

Black Marker

Wheat Heads

½" Red Pom Pom Balls

Field Corn Kernels

¼" Green and Purple Pom Pom Balls

Popcorn Kernels

Green Pipe Cleaners

Red Pipe Cleaners

Purple Pipe Cleaners

Green Marker

Yellow Marker

Popsicle Sticks

Green Plastic Wrap

Snack-size Ziploc Bags

Black Pipe Cleaners

Orange Tissue Paper

Black Tissue Paper

White Tissue Paper

Gold Tissue Paper

Hot Glue Gun

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 GEORGIA Caterpillar book. Follow directions for each booklet page, which are listed on the next page.

# The Very Hungry Georgia Caterpillar

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- 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.

## Specialty Crop Ag - Math - Finding Volume

To find volume, use the following rule:  
**Volume = length x width x 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<sup>3</sup>
- B 500 feet<sup>3</sup>
- C 22,500 feet<sup>3</sup>
- D 36,500 feet<sup>3</sup>

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<sup>3</sup>
- B 417 feet<sup>3</sup>
- C 21,300 feet<sup>3</sup>
- D 68,800 feet<sup>3</sup>

3

If a machine shed has a volume of 24,000 feet<sup>3</sup> 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<sup>3</sup>
- B 230,400 feet<sup>3</sup>
- C 57,600 feet<sup>3</sup>
- D 128,400 feet<sup>3</sup>

## Specialty Crop Ag - Math - Finding Volume

To find volume, use the following rule:  
**Volume = length x width x height**

5

Flats for drying herbs have a volume of 12960 inches<sup>3</sup>. 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<sup>3</sup>
- B 9 feet<sup>3</sup>
- C 36 feet<sup>3</sup>
- D 10 feet<sup>3</sup>

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<sup>3</sup>
- B 128 feet<sup>3</sup>
- C 48 feet<sup>3</sup>
- D 216 feet<sup>3</sup>

8

The volume of a wagon at the pumpkin patch is 4800 in<sup>3</sup>. 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

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**Grade Level:** 2

**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 knead with hands until blended for 1 minute.
4. Add the pumpkin, cinnamon, and ginger.
5. Remove the air and Ziploc shut.
6. Squeeze and knead 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.

# 3<sup>rd</sup> Grade Beef

***Reading/Vocabulary***

*Life on a Cattle Farm*  
by Judy Wolfman

**Hands-on Activity**

Beautiful Bovine

**Science**

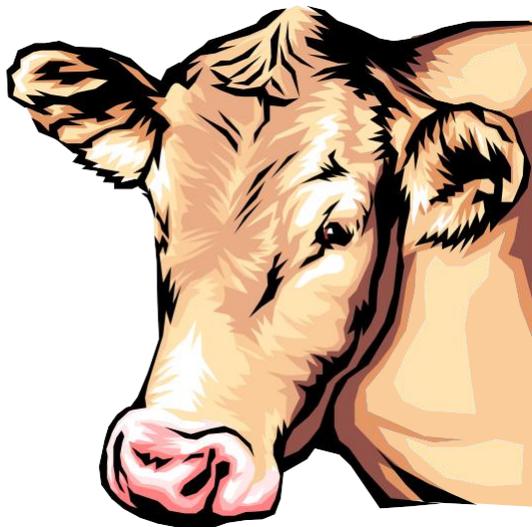
Beefo Bingo

**Math**

Beef Coordinates

**Science**

R. B. V. Wrap



# Beautiful Bovine

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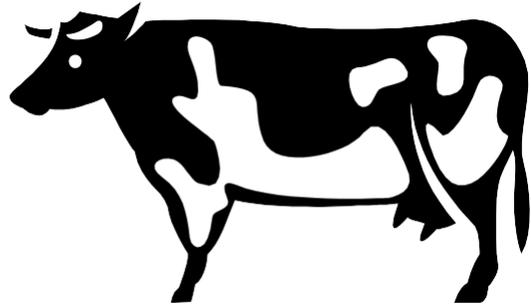
**Grade Level:** 3

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

**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.

# Beefo Bingo

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**Grade Level:** 3

**Objectives:** Students will learn beef by-products while playing Bingo.  
Students will show an understanding of —verticalll, —horizontalll, and —diagonalll while playing Bingo.  
Students will learn about the nutritional value of beef.

## **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.)

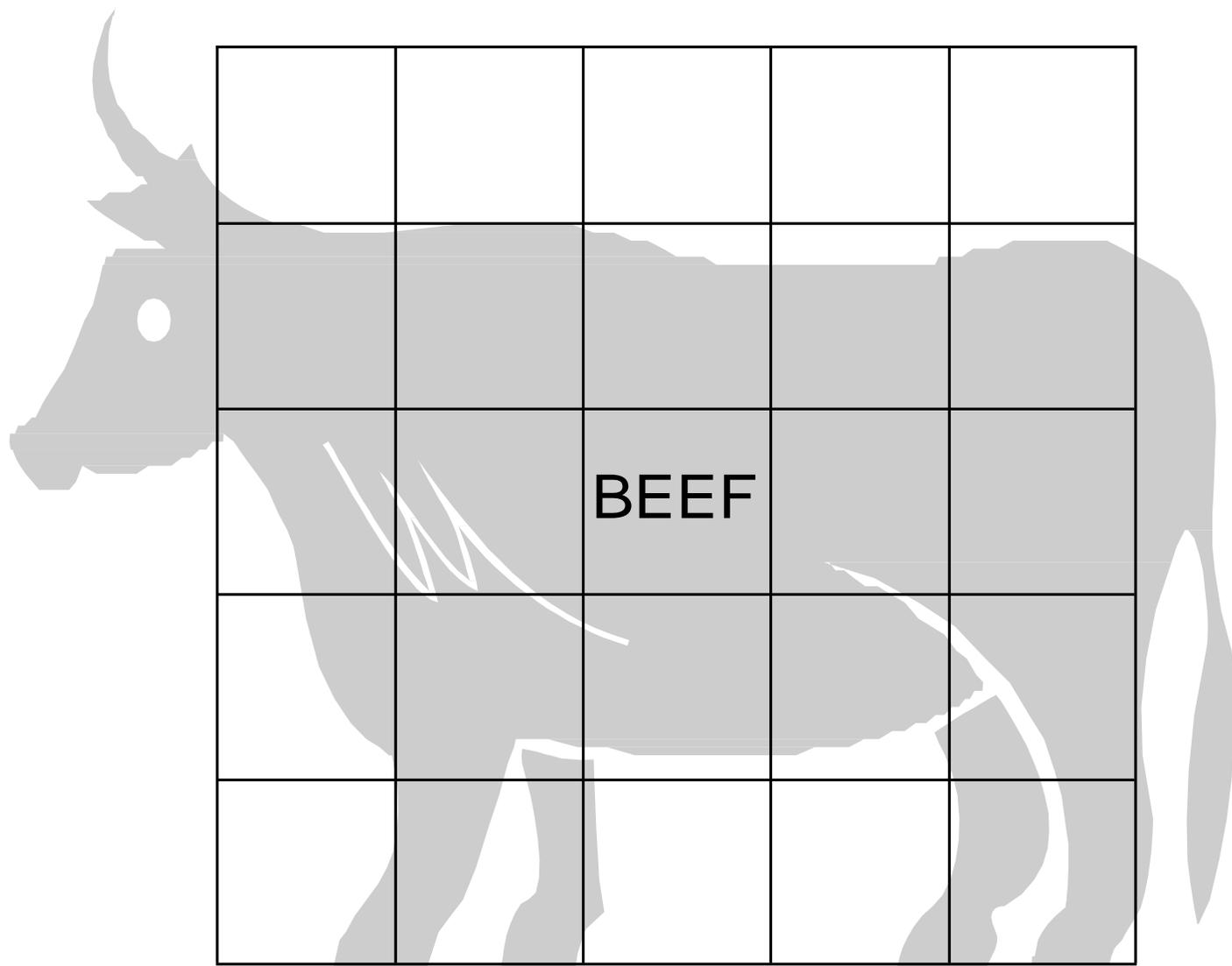
## Discussion Questions:

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:

1. Read *Your Calf: A Kid's Guide to Raising and Showing Beef and Dairy Calves*, by Heather Smith Thomas.
2. Compare the nutritional value of beef to other types of food.

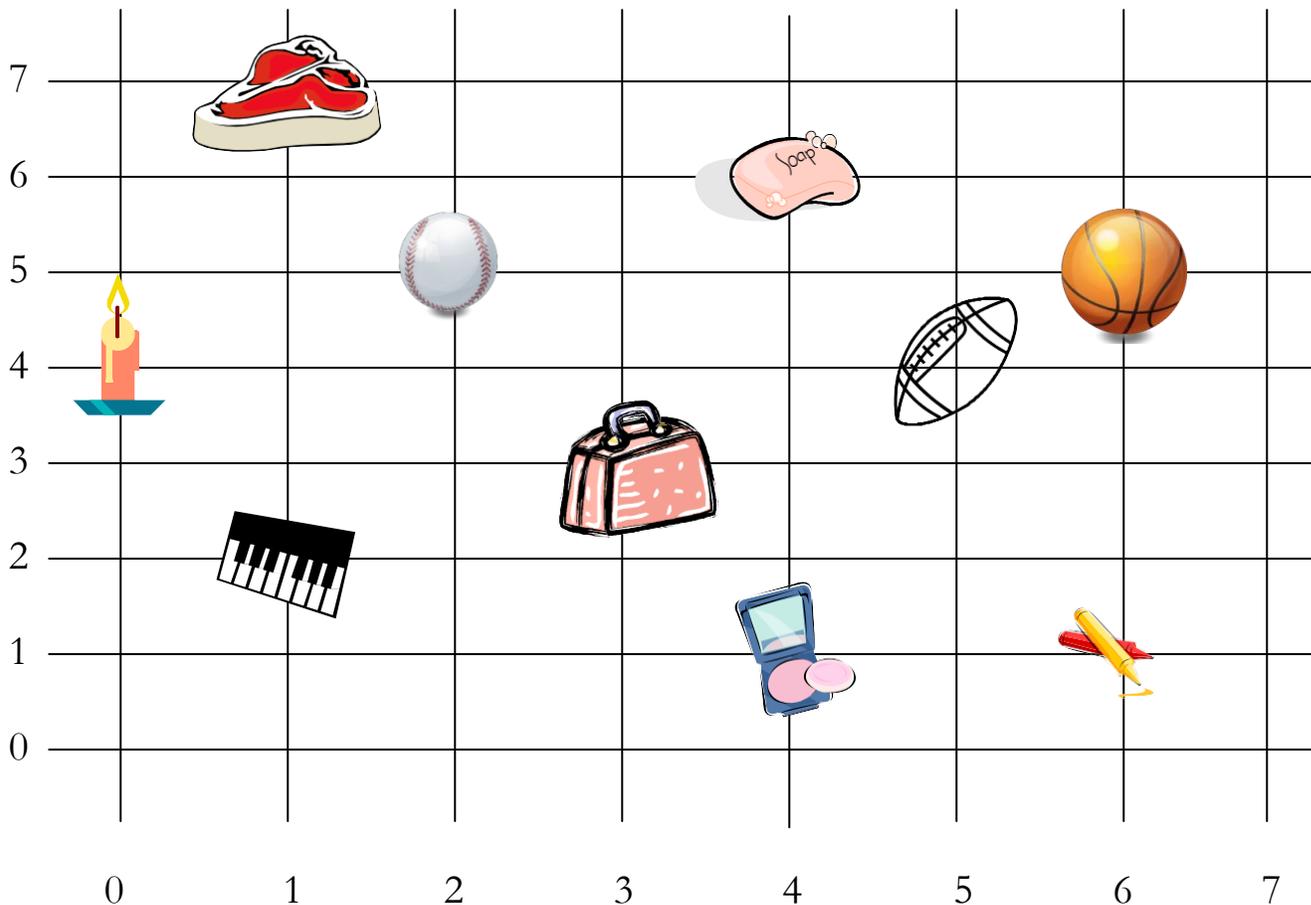
# Beefo Bingo



# By-Products Board Pieces

 Insecticides	 Paints	 Brake Fluid	 Machine Oil	 Tires	 Car Polish
 Feed	 Steel ball bearings	 Cake Mix	 Marshmallows	 Pasta	 MAYO
 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

## Beef Ag - Math



**Directions:** The following products are all products of beef. Give the product from the word list that is found at each coordinate.

- |  |                 |                  |
|--|-----------------|------------------|
| <b>Word List</b><br>Baseball<br>Basketball<br>Candle<br>Crayon<br>Football<br>Luggage<br>Makeup<br>Piano keys<br>Soap<br>Steak | 1. _____ (3, 3) | 6. _____ (2, 5)  |
|  | 2. _____ (1, 7) | 7. _____ (0, 4)  |
|  | 3. _____ (5, 4) | 8. _____ (6, 5)  |
|  | 4. _____ (4, 6) | 9. _____ (4, 1)  |
|  | 5. _____ (6, 1) | 10. _____ (1, 2) |

# R. B. V. Wrap

## (Roast Beef and Veggie Wrap)

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Grade Level: 3

I

### Materials Needed:

set of measuring cups  
measuring spoons  
medium bowl  
2 forks

small bowl  
wire whisk  
cutting board  
small metal spatula/spreader

rubber spatula  
spoon  
small knife

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.

# 3<sup>rd</sup> Grade Pork

***Reading/Vocabulary***

*Welcome To Our Farm*  
by National Pork Producers Council

**Hands-on Activity**

Pig Paper Plates

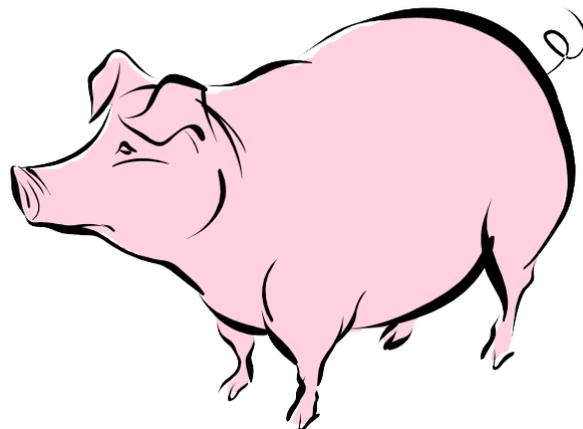
Pig Paper Bags

**Math**

Pork Conversions

**Science**

Pig Cookies



# Paper Plate Pig

**Grade Level:** 3

**Materials Needed:**

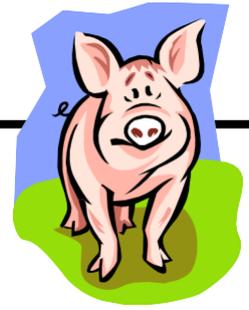
- 1 extra large pink dinner size paper plate
- 1 dessert size pink paper plate
- Pink Construction paper
- Markers
- Stapler and staples
- 1 small paper drink cup
- Pork Ag Mags



**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.
7. The tail can be curled by sliding it along a scissor blade.
8. Then the tail should be stapled to the back of the pig's body.
9. Have the students use the markers to draw eyes and a mouth on their pig.
10. Discuss what pigs eat.

# Paper Bag Pigs



**Grade Level:** 3

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

**Materials Needed:**

Template (Could copy on pink paper)  
Paper bag  
Markers, colored pencils, crayons

Pink paint or construction paper  
Glue  
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!**

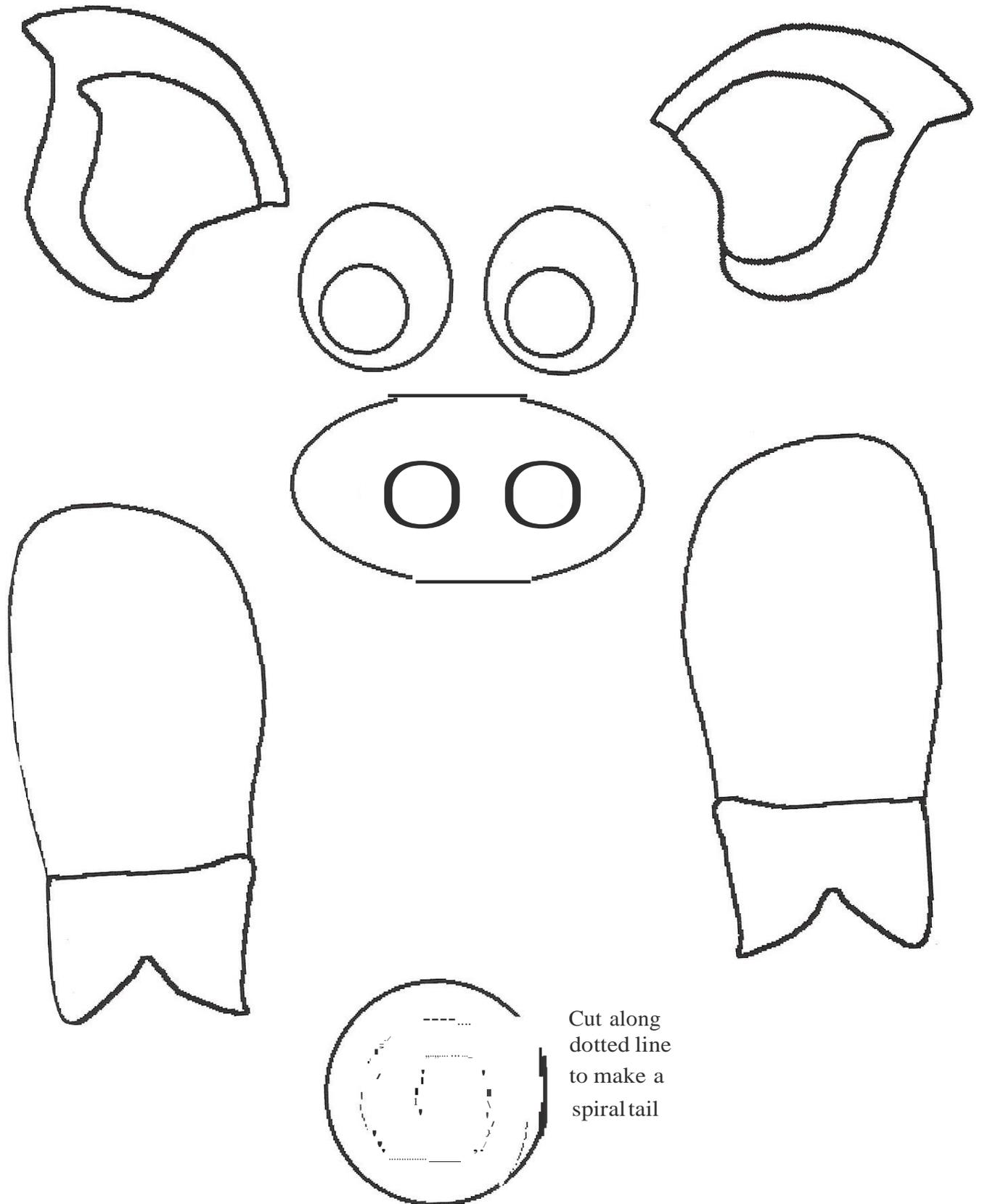
1. Look at your paper bag. It should be closed and flat like a piece of paper. Just like when they are brand new.
2. On one side, it's all smooth. This will be the BACK of your puppet. (It's important that all the kids get the back and front straight at the beginning!)
3. On the other side there's a 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

## Pork Ag - 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 - 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

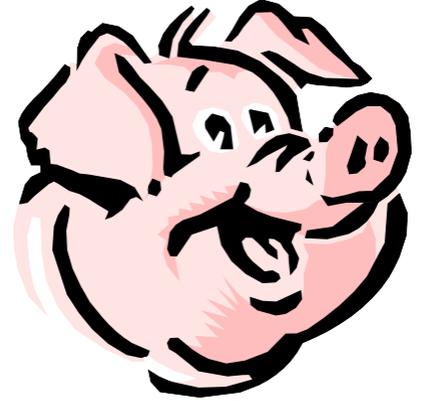
A semi truck and trailer used to transport pigs to market weighs 31,960 pounds. How many tons does the truck and trailer weigh?

- A 15.98 t
- B 159.8 t
- C 1.598 t
- D 63,920 t

# Pig Cookies

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**Grade Level:** 3



**Materials Needed:**

2 Large mixing bowls  
Hand mixer  
Spoon  
Baking Sheet  
Toothpicks

Cookies

- 1 cup butter
- 1 1/2 cups sugar
- 2 eggs
- 1 cup (8 ounces) sour cream
- 1 teaspoon vanilla extract
- 3 cups all-purpose flour
- 1 teaspoon baking powder
- 1 teaspoon salt

Frosting/Decorating

- 4 cups confectioners' sugar
- 1/2 cup butter, melted
- 6 tablespoons vanilla extract
- 3 to 4 drops red food coloring
- Pink sugar wafer cookies
- 36 large marshmallows
- Butterscotch chips
- Miniature semisweet chocolate chips

**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 tablespoonful's 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.

# 2<sup>nd</sup> & 3<sup>rd</sup> Grade Pizza

***Reading/Vocabulary***

*Hold the Anchovies!*

by Shelley Rotner & Julia Pemberton Hellums

**Hands-on Activity**

Grow Your Own Pizza Garden

**Science**

Pizza Anyone?

**Math**

Pizza Probability

**Science**

Pizza Burgers



# Grow Your Own Pizza Garden

---

**Grade Level:** 2-3

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



**Materials Needed:**

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

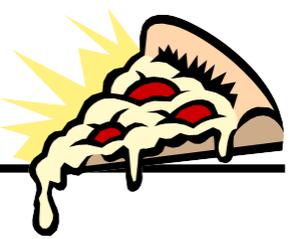
**Activity Instructions:**

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!

# Pizza Anyone?



**Grade Level:** 2-3

**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.

## **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:**

—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)

# Pizza Anyone?



## 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.
4. Collect data for —My Favorite Pizzall worksheet.
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.
6. Visit [www.agintheclassroom.org](http://www.agintheclassroom.org) for more Pizza activities

# 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 (part s 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 canner where they are processed (cooked, squashed, preservatives added) to make sauces or ketchup.

## **Cheese - A Dairy Product**

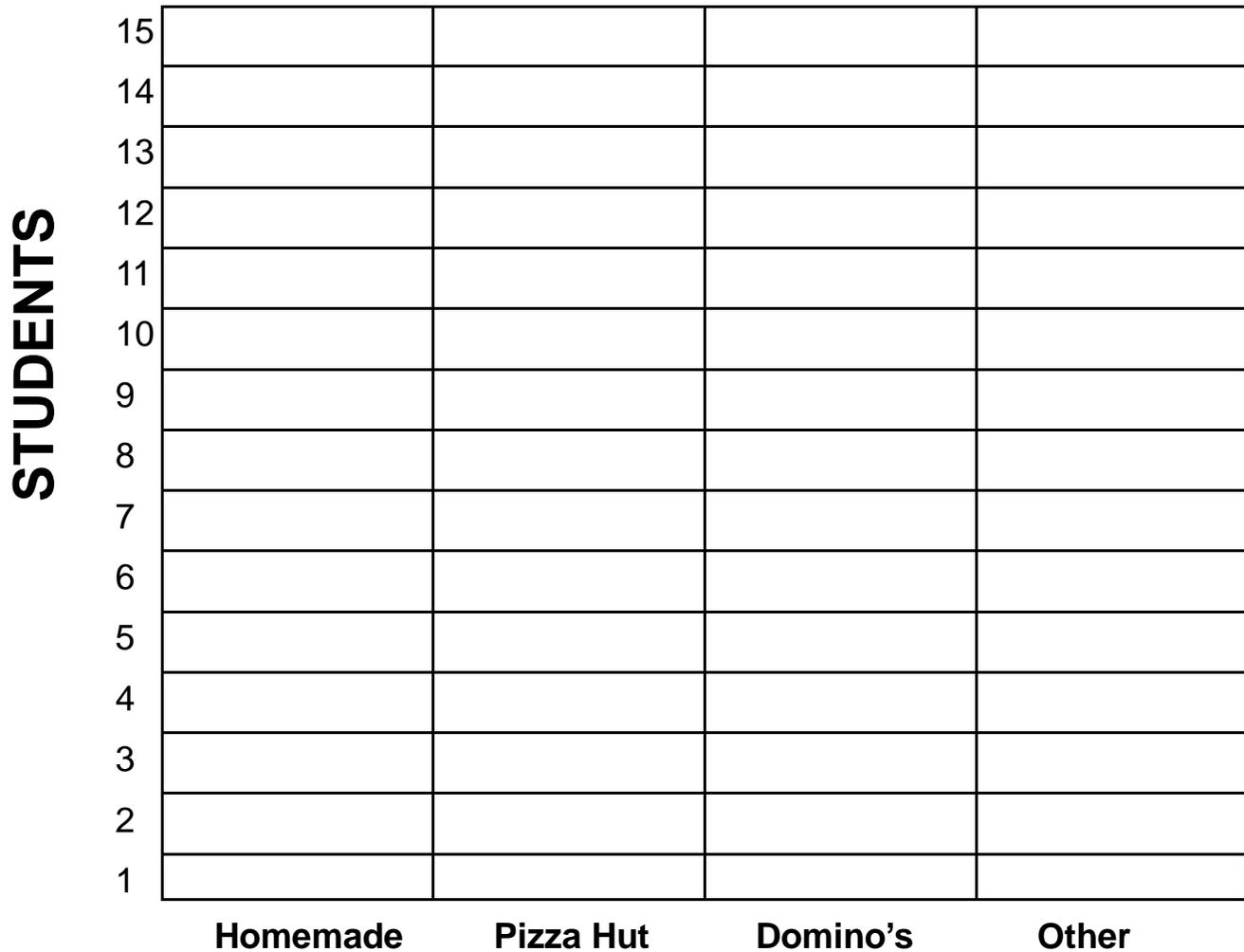
Cheese is a healthy, tasty food that is made form milk. The cows on the farm are milked by using suction cups to pump the milk from the cow into huge storage tanks. These storage tanks cool the milk until refrigerated tank trucks come to pick it up. The milk is then made into cheese. First, the milk 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 —ballll 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 Sates 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.



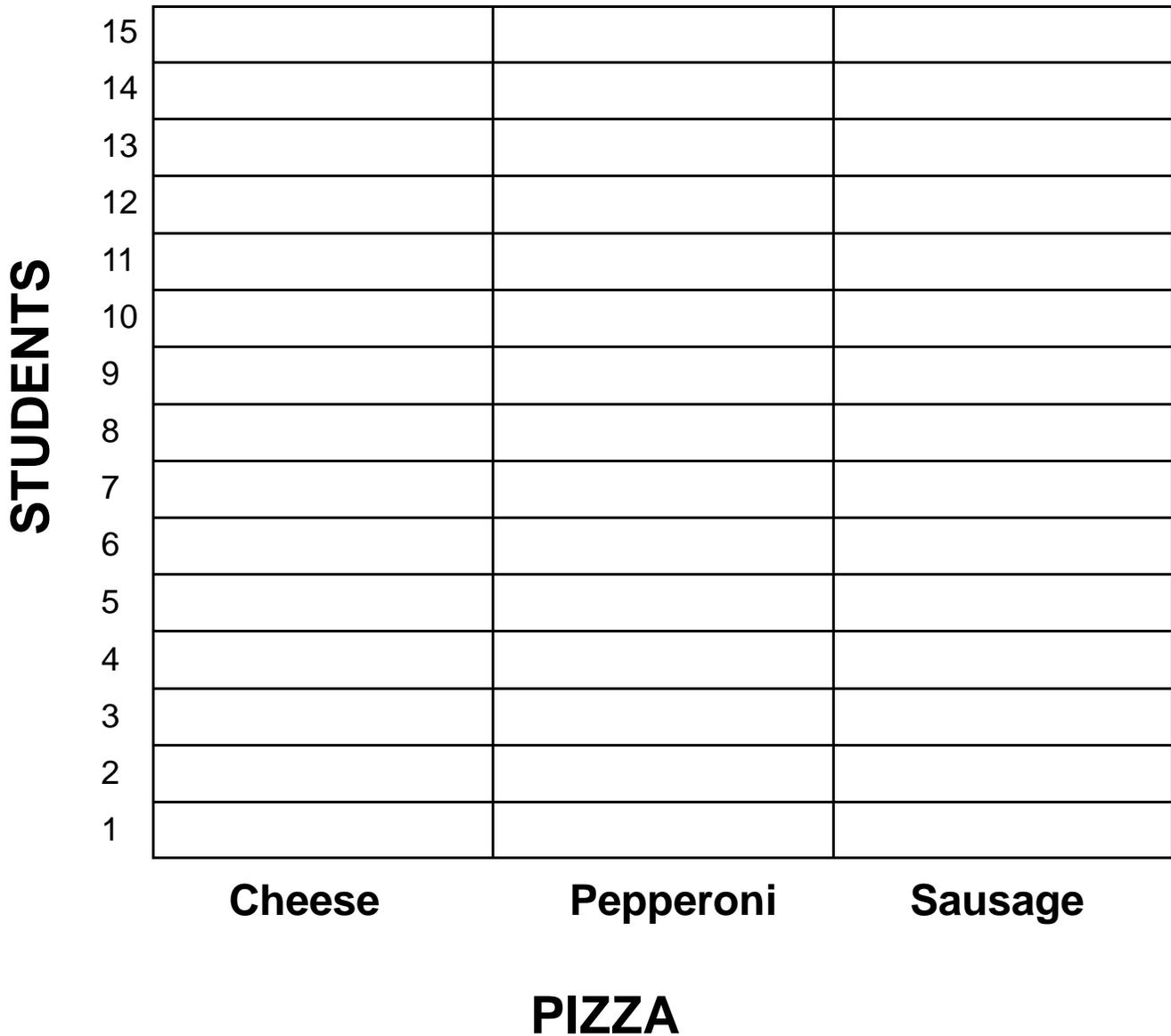
## PIZZA

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? \_\_\_\_\_

To be used with:  
*Pizza Anyone?*

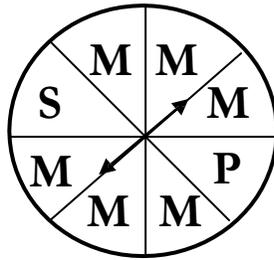
# My Favorite Pizza?

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 - 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

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**Grade Level:** 2-3

**Materials Needed:**

1 package hamburger buns, split  
1 jar (14 ounces) pizza sauce  
1 pound ground beef, cooked and drained  
1 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.

# 4<sup>th</sup> Grade DAIRY

**Reading/Vocabulary**     *Extra Cheese, Please!*  
By: Cris Peterson

**Hands-on Activity**     Making Mozzarella

**Math**     Evaluation

**Science**     Ice Cream in a Bag

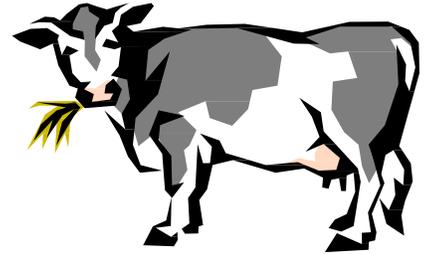


# Making Mozzarella

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**Grade Level:** 4

**Objective:** Students will learn about protein coagulation and the role of enzymes and heat in the making of cheese.



**Materials Needed:**

(per pair of students)

1/4 rennet tablet or vegetable rennet tablet  
6 ounces pasteurized skim milk  
16-ounce Styrofoam cup  
1/4 teaspoon salt  
Paper towel

Additional Materials:

Microwave oven  
Small Strainers  
Dishpan or container to catch  
drained whey from cups

**Activity Instructions:**

Day 1: Provide materials for experiment

1. Crush 1/4 rennet tablet and put into a 16-ounce Styrofoam cup.
2. Add 1/4 teaspoon of salt per cup.
3. Add 6 ounces skim milk heated to 100 degrees Fahrenheit and stir well. The milk will coagulate in the cup overnight.

Day 2: Explain protein coagulation

1. Provide each pair of students with one 16-ounce cup of prepared milk (coagulated skim milk, salt and rennet).
2. Microwave for 1 minute (*Note: 4 cups can be microwaved at a time*)
3. Pour the microwaved, coagulated mixture through a strainer held over a dishpan.
4. Put coagulated milk back into cup and microwave for 10 more seconds—shrinking it tighter and tighter.
5. Repeat microwaving and straining until cheese becomes soft mozzarella—usually two additional times are necessary.
6. Use dishpans to collect the whey.
7. Dry the cheese using a paper towel.
8. It may have an odd texture, but it is edible.

**Discussion Questions:**

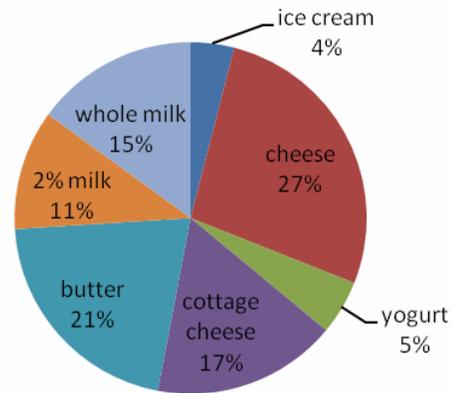
1. Explain the steps from milk to mozzarella.
2. What caused the changes in the ingredients?
3. What else could be done with dairy products to create new recipes?
4. What are some other food examples when enzymes, chemical reactions, or heat cause changes to take place?

# Diary Ag- Math - Evaluating Data

**Directions:** Choose the best answer.

A dairy sells all sorts of products made from the milk produced at the dairy. In one day, the dairy makes \$743.00. The graph below shows the percentage of money earned for each product. Use the graph to answer questions 1 - 4.

**% of money earned**



1

Which product earned the dairy the most money?

- A yogurt
- B ice cream
- C butter
- D cheese

2

How much money was earned from the sale of cottage cheese?

- A \$371.50
- B \$126.31
- C \$81.73
- D cheese

3

How much more was earned from whole milk sales than 2% milk sales?

- A \$81.73
- B \$111.45
- C \$29.72
- D \$44.58

4

How much money did yogurt and ice cream make for the dairy together?

- A \$66.87
- B \$371.50
- C \$297.20
- D \$668.70

## Dairy Ag- Math - Evaluating Data

**Directions:** Choose the best answer.

5

Which of the following groups of products made the most money for the dairy?

- A yogurt and cheese
- B butter and yogurt
- C whole milk and ice cream
- D yogurt, ice cream and cottage cheese

6

Which of the following groups of products made the least amount of money?

- A yogurt and cheese
- B butter and yogurt
- C whole milk and ice cream
- D yogurt, ice cream and cottage cheese

7

Which product earned \$200.61 for the dairy?

- A 2 % milk
- B cheese
- C cottage cheese
- D yogurt

8

Which product earned \$111.45 for the dairy?

- A cheese
- B ice cream
- C butter
- D whole milk

# Ice Cream in a Bag

**Grade Level:** 4

Ice cream freezes at  $-6$  degrees C (21 degrees F). Ice cream can be made in the classroom with the understanding that the freezing point of water is actually lowered by adding salt to the ice between the bag walls. Heat energy is transferred easily from the milk through the plastic bag to the salty ice water causing the ice to melt. As it does so, the water in the milk freezes, resulting in ice cream.



**Materials Needed:**

1/4 cup sugar

1/2 teaspoon vanilla extract

1 cup milk

1 cup whipping cream, half & half or Milnot (I use half & half)

crushed ice (1 bag of ice will freeze 3 bags of ice cream)

1 cup rock salt (approximately 8 cups per 5 lbs.)

1 quart and 1 gallon size Ziploc freezer bags (I find Ziplocs are stronger & work best)

Duct tape

Bath towel

**Activity Outline:**

1. Put the milk, whipping cream, sugar, and vanilla in a 1 quart freezer bag and seal. For security, fold a piece of duct tape over the seal.
2. Place the bag with the ingredients inside a gallon freezer bag.
3. Pack the larger bag with crushed ice around the smaller bag. Pour  $\frac{3}{4}$  to 1 cup of salt evenly over the ice.
4. Wrap in a bath towel and shake for 10 minutes. Open the outer bag and remove the inner bag with the ingredients. Wipe off the bag to be sure salt water doesn't get into the ice cream.
5. Cut the top off and spoon into cups.

Makes about 3 cups. (1 bag will serve 4 students)

Serve plain or top with nuts, coconut or fruit. ENJOY!

# 4<sup>th</sup> Grade Specialty Crop

**Reading/Vocabulary**

*Harvest Year*

By: Cris Peterson

**Hands-on Activity**

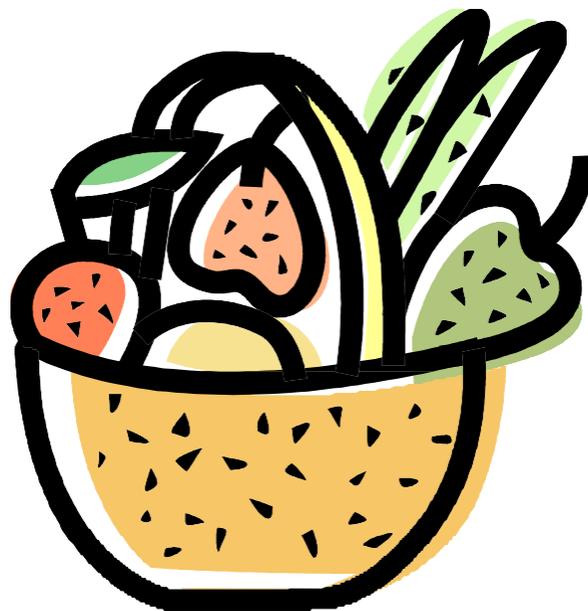
Vegetable Twister

**Math**

Specialty Crop Probability

**Science**

Strawberry Parfait Pie



# Vegetable Twister

**Grade Level:** 4

**Objectives:** Students will learn how vegetables are produced.  
Students will learn how vegetables help our bodies.  
Students will match vegetables to the plant parts they come from.  
Students will name vegetables grown in Georgia.



**Introduction:**

Although definitions of vegetables vary, the definition used by horticulturists is that they are foods that grow on herbaceous plants, or plants that have stems that are softer and less fibrous than the woody stems of trees and shrubs. Vegetables are the bulbs (onions), flower buds (cauliflower), fruits (pumpkins), leaves (cabbage), roots (carrots), seeds (peas), stems (asparagus), or tubers (potatoes) of herbaceous plants. Illinois grows vegetables such as tomatoes, sweet corn, and potatoes.

There are four steps in vegetable production: planting, caring for the crop, harvesting, and packing and shipping. Some vegetable growers have small gardens while others have large vegetable farms. A vegetable grower takes care of his crop by preparing the soil, fertilizing the field, cultivating the soil (tilling), and killing harmful weeds and pests. After harvest, the vegetables are shipped to processing plants, sent to markets, or eaten in the home.

Vegetables are a good source of carbohydrates, Vitamin A, Vitamin C, fiber, and potassium. Carbohydrates are the main source of energy for the red blood cells and the central nervous system. Carbohydrates are found in many vegetables, but are high in potatoes, corn, and peas. Vitamin A helps the body fight infections and gives us healthy skin and eyes. High amounts of Vitamin A are found in carrots, squash, and spinach. Vitamin C helps the body fight infections and heal wounds and bones. It can be found in broccoli, spinach, and green peppers. Vegetables are a good source of fiber, which helps the digestive system, and potassium, which regulates blood pressure and helps nutrients pass into cells.

Vitamins such as Vitamin C and A are necessary for the growth of body tissue. If an athlete eats a balanced diet, he/she will intake adequate vitamins. Vitamin deficiencies can impair physical performance, but there is no evidence that taking extra vitamins (more than the daily requirement) will enhance performance. Sometimes vitamin supplements are taken when a person does not eat enough vitamin-rich foods. Large doses of vitamin supplements can be dangerous to the body tissue. They can also be wasted money because some vitamins go right through the body and are not used if there is an excess.

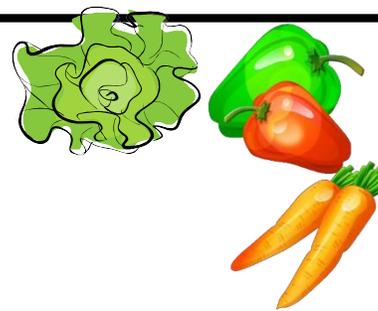
In the following activity, students will be tested on their knowledge of vegetable plant parts through a fun game of twister.

# Vegetable Twister

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## Materials Needed:

- Old bed sheets
- Soy crayons
- Markers
- Cardboard
- Paper clips/metal fasteners



## Activity Outline:

1. Use an old bed sheet (or several sewn together) to create a vegetable twister board. Make a grid on the sheet and let students use soy crayons to draw vegetables. The vegetables should have equal representation from the different plant parts. (bulbs, flower buds, fruits, leaves, roots, seeds, stems, or tubers)
2. Make two spinners out of cardboard and paper clips or metal fasteners. One spinner should be a circle split into four sections: right hand, right foot, left hand, and left foot. The other spinner should be separated into eight sections: bulbs, flower buds, fruits, leaves, roots, seeds, stems, and tubers. (It may be easier to create two vegetable twister boards, each can use four plant parts instead of eight.)
3. Two students can spin the spinners. Only one student moves at a time on the vegetable board. If the two spinners are spun for the first player and the combination is right hand & tuber, the student must place their right hand on a tuber. (such as a potato) The second player is spun for next and also places their hand/foot on the proper vegetable for the plant part that is called. The game continues as the spinners spin for the players in order. Vegetable twister becomes a challenge as it is hard to share vegetables and maneuver. The game continues until one player places their hand/foot in the wrong place or falls down. The last student —plantedll on the board wins!
4. To relate this to sports/health ask children which muscles started to hurt while their were waiting to move their hands and feet. Discuss the names of those muscles and how they help us move.

## Discussion Questions:

1. How are vegetables produced?
2. How do vegetables help our bodies?
3. Name the parts of plants that vegetables come from.
4. Name three vegetables that are grown in Georgia.

## Related Activities:

1. Make vegetable soup using different vegetables.
2. Make art projects using vegetables.
3. Make stamps with potatoes.
4. Make celery wagons: Cut celery in 2 sticks and attach four carrot slices for wheels with toothpicks.

# Specialty Seed Sorting

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**Grade Level:** 4

**Objective:** After completing this activity, students will be more familiar with observation, data collection, and reasoning skills.



**Suggested Reading Material:**

The Vegetables We Eat by Gail Gibbons

ISBN-13: 978-0-8234-2153-4

Up, Down and Around by Katherine Ayres

ISBN 978-0-7636-4017-0

Our Generous Garden by Anne Nagro

ISBN-13: 978-0-9793739-4-7

**What You Will Need:**

- Eating Pumpkin Seeds
- Jack-O-Lantern Pumpkin Seeds
- Zucchini Seeds
- Eating Sunflower Seeds
- Mammoth Sunflower Seeds
- Evening Sun Sunflower Seeds

**Activity Instructions:**

1. Discuss why different seeds have certain characteristics. Why are some seeds round, some brown, some striped, etc.
2. Follow the dichotomous key to figure out what plant the seeds belong to.
3. Then have your students answer the questions on the following page.

**Lesson Extender:**

1. Give your students several different seeds packets and have them create their own dichotomous key.

**What is a dichotomous key?**

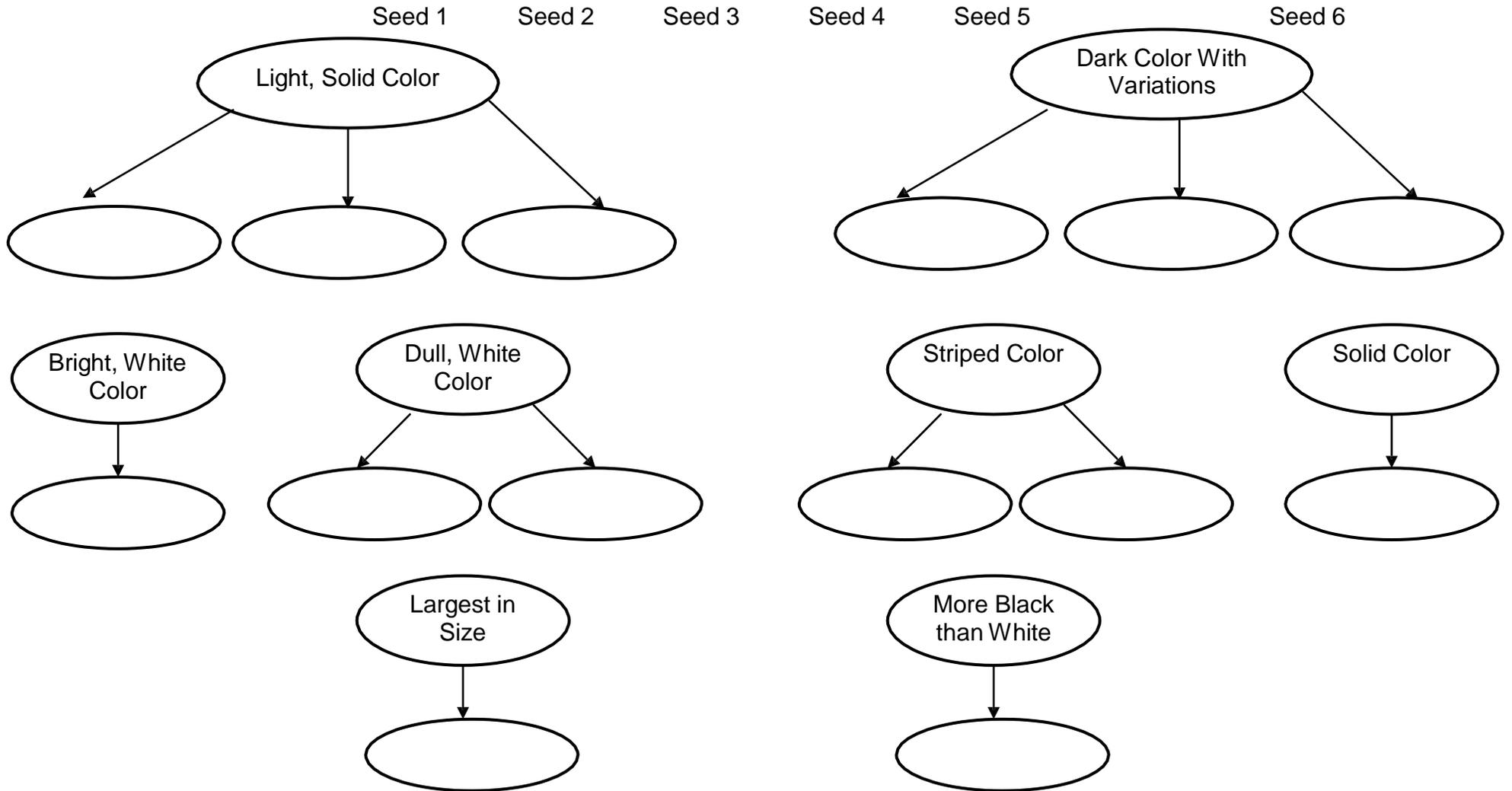
A dichotomous key is a tool that allows you to determine the identity of items in the natural world, such as trees, wildflowers, mammals, reptiles, rocks, and fish. The key consist of a series of choices that lead the user to the correct name of a given item. "Dichotomous" means "divided into two parts". Therefore, dichotomous keys always give two choices in each step.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Specialty Seed Sorting

**Directions:** The purpose of this activity is to sort the seeds using their physical characteristics. Write the number of the seed in the correct ovals, then answer the questions on the following page.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Specialty Seed Sorting

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**Directions:** Use the information below and the information from the previous page to answer the following questions.

- Seed 1: Eating Pumpkin Seed
- Seed 2: Evening Sun Sunflower Seed
- Seed 3: Eating Sunflower Seed
- Seed 4: Zucchini Seed
- Seed 5: Mammoth Sunflower Seed
- Seed 6: Jack-O-Lantern Pumpkin Seed

1. What is the name of the seed that is striped and more black in color than white?

\_\_\_\_\_

2. Seeds 1, 4, and 6 all belong to which of the following families:

- A. *Asteraceae* or *Compositae* (aster, daisy or sunflower)
- B. *Cucurbitaceae* (gourds or squash)
- C. *Brassicaceae* (broccoli)

3. How do zucchini seeds differ from jack-o-lantern pumpkin seeds?

\_\_\_\_\_  
\_\_\_\_\_

4. If I planted my zucchini seeds on May 5th and harvested them on June 24th, how many days did they take to mature?

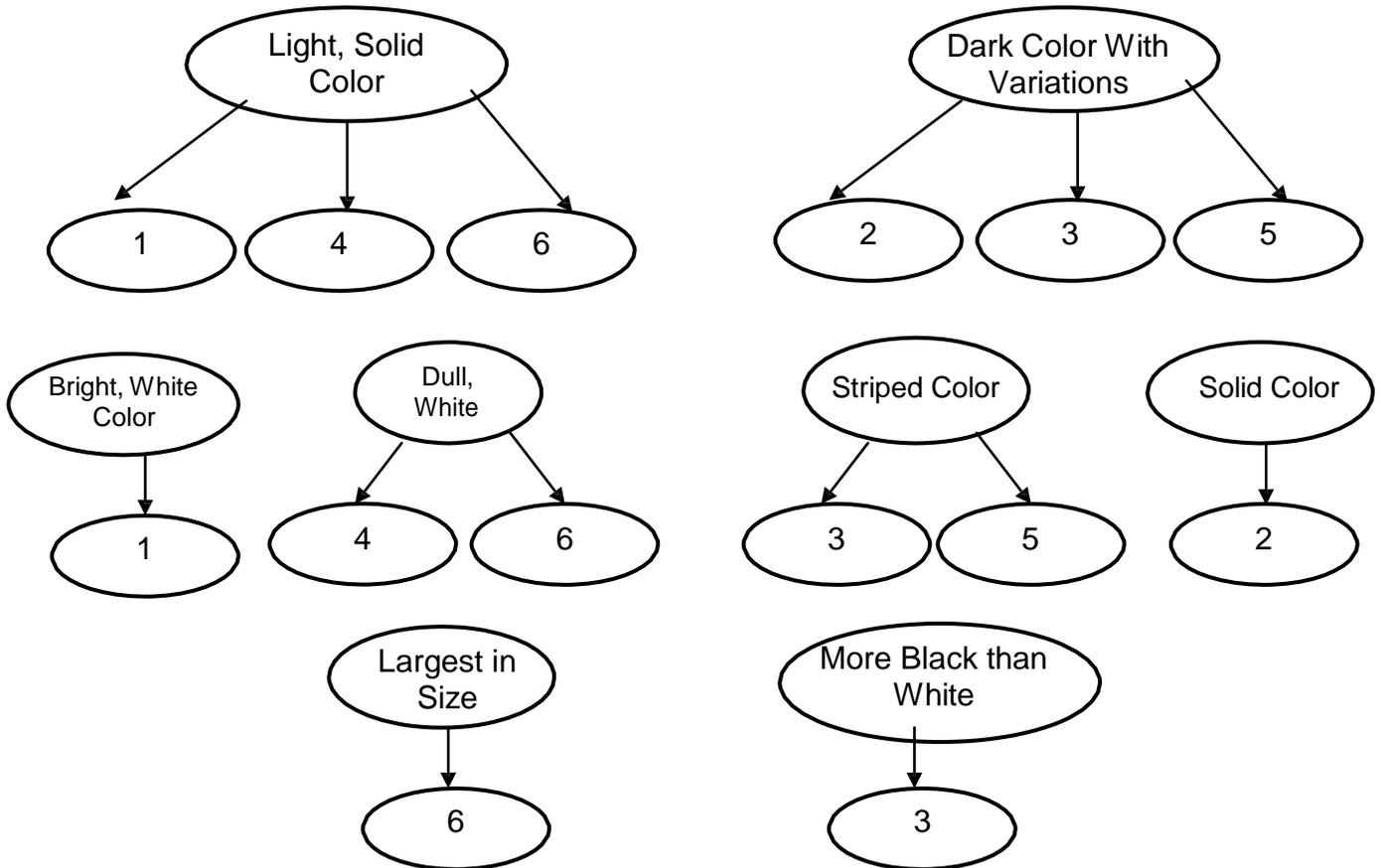
\_\_\_\_\_

5. Jack-O-Lantern seeds germinate in 7 to 14 days and take 100 days to mature. If you wanted to pick a Jack-O-Lantern pumpkin on October 15th, what day would you need to plant your seed?

\_\_\_\_\_

# Specialty Seed Sorting

## ANSWER KEY



1. Eating Sunflower Seed
2. B
3. Zucchini seeds are smaller in size
4. 50 days
5. July 7

# Specialty Crop- Math

## Recording Probability

**Directions:** Choose the best answer. For questions 1-4 suppose you wrote the words SPECIALTY CROP on a strip of paper and cut the paper into pieces with one letter per piece. If you put the pieces into a bag and pulled out one piece without looking, determine the probability of each situation.

1

What is the probability you would draw the letter C?

- A  $\frac{2}{9}$
- B  $\frac{1}{6}$
- C  $\frac{3}{4}$
- D  $\frac{2}{13}$

2

Without returning the letter C to the bag, what is the probability that you would draw the letter P?

- A  $\frac{1}{9}$
- B  $\frac{1}{6}$
- C  $\frac{2}{13}$
- D  $\frac{2}{3}$

3

Without returning the C or P to the bag, what is the probability you would draw a consonant?

- A  $\frac{4}{13}$
- B  $\frac{4}{11}$
- C  $\frac{8}{11}$
- D  $\frac{8}{13}$

4

If you put all of the letters back in the bag, what is the probability of drawing the letter Y?

- A  $\frac{1}{13}$
- B  $\frac{1}{11}$
- C  $\frac{2}{13}$
- D  $\frac{3}{11}$

# Specialty Crop- Math

## Recording Probability

**Directions:** Choose the best answer. There are 15 ping pong balls in a bag. Each ball is labeled with a specialty crop grown in Illinois. There are 3 balls labeled peaches, 4 balls labeled onions, 2 balls labeled wheat, 1 ball labeled herb, 3 balls labeled pumpkin, and 2 balls labeled horseradish. Use this information to answer questions 5-8.

5

What is the probability that you will draw a ball labeled onion?

- A  $\frac{11}{15}$
- B  $\frac{1}{5}$
- C  $\frac{4}{15}$
- D  $\frac{1}{6}$

6

Without putting the onion ball back into the bag, what is the probability that you will draw a ball labeled herb?

- A  $\frac{2}{7}$
- B  $\frac{3}{5}$
- C  $\frac{4}{11}$
- D  $\frac{1}{14}$

7

If you put all the balls back in the bag, what is the probability you will draw a ball labeled peach? Your answer should be in decimal form.

- A .23
- B .20
- C .36
- D .21

8

If you do not replace the ball labeled peach, what is the probability you will draw a ball labeled pumpkin? Your answer should be in decimal form.

- A .23
- B .20
- C .36
- D .21

# Strawberry Parfait Pie

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**Grade Level:** 4

**Materials Needed:**

(recipe for two students to prepare together)

- 1 quart-size zip-top plastic bag
- 1 Tablespoon instant pudding mix (vanilla or cheesecake flavor)
- Scant 1/4 cup milk\*
- 2-3 fresh or frozen strawberries, sliced
- 1 rounded T whipped cream
- Four pretzels
- Two 9-ounce paper or plastic cups



\*You may substitute scant 1/4 cup vanilla yogurt for the pudding mix and milk

**Activity Outline:**

1. Place all but the pretzels in the plastic bag.
2. Gently knead bag to mix.
3. Crumble pretzels into paper cups to create crust.
4. Clip the plastic bag at one corner.
5. Squeeze half the strawberry mixture into each student's cup.
6. Top with spray whipping cream.

# 5<sup>th</sup> Grade Beef

**Reading/Vocabulary**

*Amazing Grazing*  
by Cris Peterson

**Hands-on Activity**

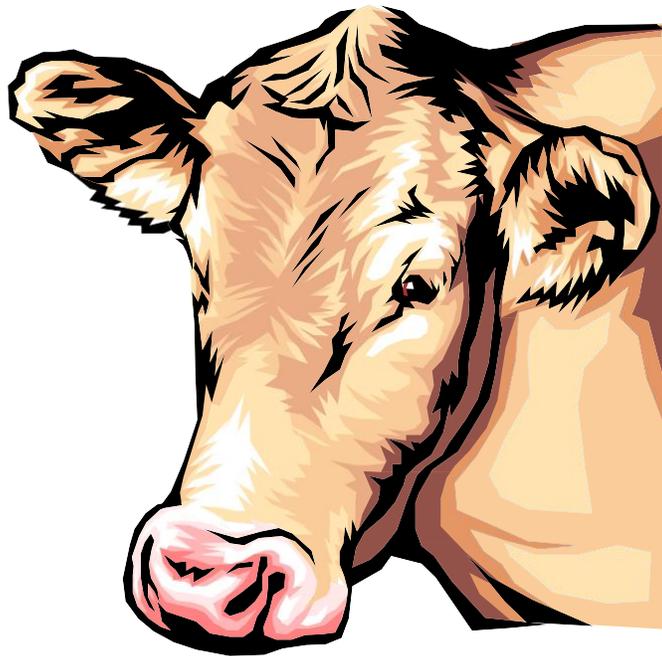
Beef Crossword Puzzle

**Math**

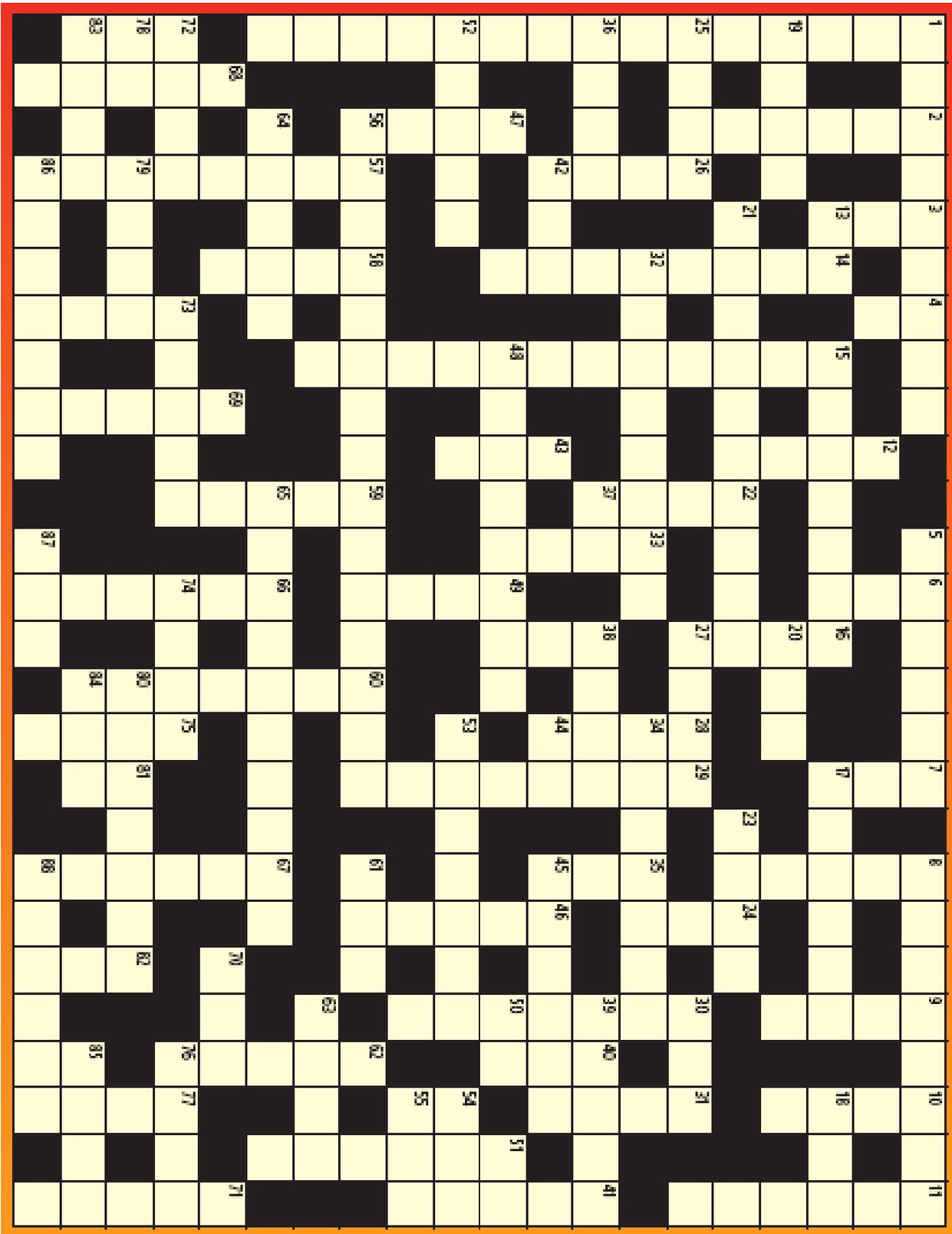
Plotting and Reading pairs

**Science**

Beef on Bamboo



# Beef Crossword Puzzle



Have students visit [www.teachfree.com](http://www.teachfree.com) to help find answers to the crossword puzzle.

# Beef Crossword Puzzle

## Across

- 1 This little oven is a big convenience.  
5 Vitamin that contributes to healthy skin and good appetite.  
8 When complete, these help build body tissues.  
13 \_\_\_ Pound,“ abbreviation.  
15 Beef cut used for corned beef.  
17 Also called a wholesale cut.  
18 Another term for \_\_\_ also.“  
19 From its head to its\_\_\_\_, a beef animal provides valuable by-products.  
20 \_\_\_ a variety of foods for good health.  
21 The arm and shoulder and the foot are examples of \_\_\_ (two words).  
23 Moist or dry, it's essential to cookery.  
25 Back of your foot.  
27 At football games, it's fun to root for the home\_\_\_\_.  
30 Droop.  
32 An identification method that tells shoppers what's in a meat package.  
34 Expresses the energyproducing value of foods.  
36 Ground beef patties should never be eaten\_\_\_\_(degree of doneness).  
37 Ground beef should be stored in the refrigerator no longer than 1 \_\_\_ 2 days.  
38 Two of a kind.  
39 To act in response to an event.  
42 Another word for family \_\_\_ relatives.“  
44 Abbreviation for \_\_\_decibel.“  
45 What's added by herbs and spices.  
48 \_\_\_ beef in a frying pan adds good color.  
50 Opposite of \_\_\_out.“  
51 Spanish for \_\_\_yes.“  
52 Heat methods used for less-tender cuts.  
53 \_\_\_ steak comes from the loin.  
54 Abbreviation for \_\_\_et cetera.“  
55 Noah's\_\_\_\_.  
56 A method that can shorten beef cooking time. (two words)  
61 In \_\_\_ minutes you can cook a stir-fry beef meal.  
63 Vegetable sometimes served with carrots.  
64 The type of farm that produces milk.  
65 The beef grade \_\_\_ contains less marbling than USDA Choice (two words).

- 70 Is beef an important source of iron?  
72 Beef is one type.  
73 Rib-eye or T-bone \_\_\_\_.  
74 What you see out a window.  
76 The freezer can be used for long- \_\_\_ beef storage.  
78 Two letters that follow hours of the morning.  
79 Short for \_\_\_ information.“  
80 This should be done across the grain.  
83 A vegetable that's also used in making a type of yellow bread.  
84 Holds cookies.  
85 Lima, navy, kidney, string or pinto.  
86 Done to indicate beef cut quality.  
87 Stir \_\_\_ can be a quick Chinese-style beef meal.  
88 An old phrase is that \_\_\_ silence is \_\_\_\_.“

## Down

- 1 Best implement for measuring roasts' doneness (two words).  
2 The USDA beef grade with less marbling than prime.  
3 Adding a little bit of this to frying pans can prevent foods from sticking.  
4 Beef \_\_\_ jus means \_\_\_ served with natural juices.“  
6 Added to picnic coolers, helps keep foods cold.  
7 A short sleep.  
8 USDA beef grade that contains the most marbling.  
9 Kitchen show and \_\_\_ is a good way to learn recipes.  
10 Spring turns \_\_\_ summer.  
11 This flavorful type of beef should not be frozen for long periods of time.  
12 Someone who does not tell the truth is a \_\_\_\_.  
14 A dry heat cooking method used for tender steaks.  
15 A dish cooked outside over an open fire, served with tangy sauce (two words).  
16 Inspection is a federal \_\_\_ for beef wholesomeness.  
22 A word that means \_\_\_ leave out.“  
24 Exposure to this changes beef's color from purplish to red.  
26 A relative of the onion, this looks like a giant scallion.  
28 Marinades contain a food \_\_\_ such as vinegar or citrus, to soften meat fibers and

- add flavor.  
29 Flecks of fat throughout the lean.  
30 To compare meat prices, determine cost per \_\_\_\_.  
31 Another word for \_\_\_ equipment.“  
33 Lunch time.  
35 The opposite of \_\_\_ on.“  
38 A wide, shallow container used for frying meat.  
40 Two or more eras.  
41 A 3-ounce cooked serving of ground beef is about 3 inches wide and a half-inch \_\_\_\_.  
43 A female beef animal.  
46 A wrapping job that's not good for beef stored in the freezer.  
47 A word meaning \_\_\_ soggy“ or \_\_\_ wilted“ when describing vegetables.  
49 Beef can be prepared \_\_\_ many different ways (two words)!  
51 Emotional pressure that can result from doing too much at one time.  
54 Abbreviation for \_\_\_ each.“  
57 A dry heat method that uses a rack and open pan.  
58 To separate into different categories.  
59 Shoulder area of the beef animal.  
60 Federal officials \_\_\_ beef for wholesomeness.  
62 A sumptuous spread.  
66 To eat entirely and with gusto.  
67 A tenderizing process done by machines at meat counters, to break down beef's tough fibers.  
68 Juice from this yellow citrus fruit can be used in marinades.  
69 The number after six.  
71 \_\_\_ acids are proteins' building blocks.  
72 Short for macaroni.  
73 Something that's been bought has been \_\_\_\_.  
75 Another word for \_\_\_ delay“ or \_\_\_ postpone.“  
77 In a microwave oven, uniformly-shaped roasts help make cooking more \_\_\_\_.  
81 Abbreviation for Registered Nurse.  
82 What pudding and some pies must do.  
85 Nutrients help people \_\_\_ active and alert.

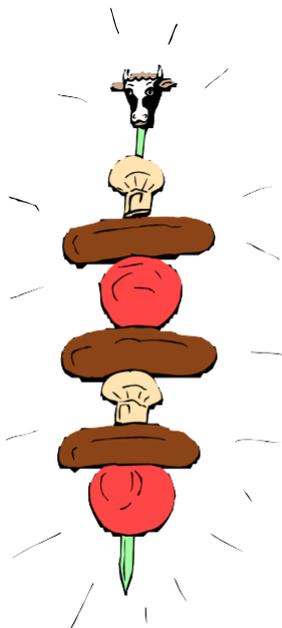
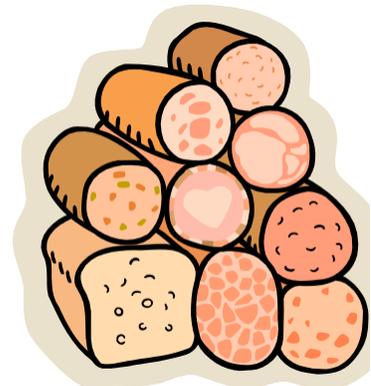
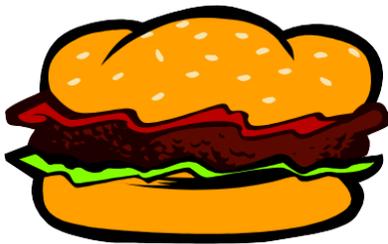
# Beef Crossword Puzzle

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## Answer Key

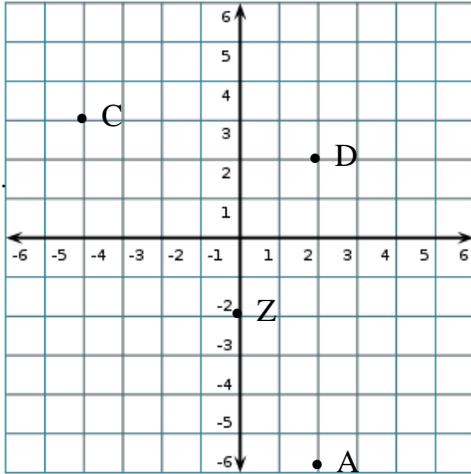
**ACROSS-** 1 microwave, 5 niacin, 8 proteins, 13 lb, 15 brisket, 17 primal, 18 too, 19 tail, 20 eat, 21 bone groups, 23 heat, 25 heel, 27 team, 30 sag, 32 labeling, 34 calorie, 36 rare, 37 to, 38 pair, 39 react, 42 kin, 44 DB, 45 flavor, 48 browning, 50 in, 51 si, 52 moist, 53 sirloin, 54 etc, 55 ark, 56 pressure cooking, 61 ten, 63 peas, 64 dairy, 65 USDA Select, 70 yes, 72 meat, 73 steak, 74 view, 76 term, 78 am, 79 info, 80 carving, 83 corn, 84 tin, 85 bean, 86 grading, 87 fry, 88 golden

**DOWN-** 1 meat thermometer, 2 Choice, 3 oil, 4 au, 6 ice, 7 nap, 8 prime, 9 tell, 10 into, 11 smoked, 12 liar, 14 broiling, 15 beef barbecue, 16 test, 22 omit, 24 air, 26 leek, 28 acid, 29 marbling, 30 serving, 31 gear, 33 noon, 35 off, 38 pan, 40 eon, 41 thick, 43 cow, 46 loose, 47 limp, 49 in so, 51 stress, 54 ea, 57 roasting, 58 sort, 59 chuck, 60 inspect, 62 feast, 66 devour, 67 cubing, 68 lemon, 69 seven, 71 amino, 72 mac, 73 sold, 75 wait, 77 even, 81 RN, 82 gel, 85 be



# Beef Ag - Math - Plotting and Reading Ordered Pairs

**Directions:** Use the following coordinate plane to answer the following questions.



1

What are the coordinates of point A?

- A (-6, 2)
- B (1, 5)
- C (1, 6)
- D (2, -6)

2

Which letter is at (-4, 3)?

- A A
- B B
- C C
- D D

3

What are the coordinates of point D?

- A (-2, 2)
- B (2, -2)
- C (2, 2)
- D (-2, -2)

4

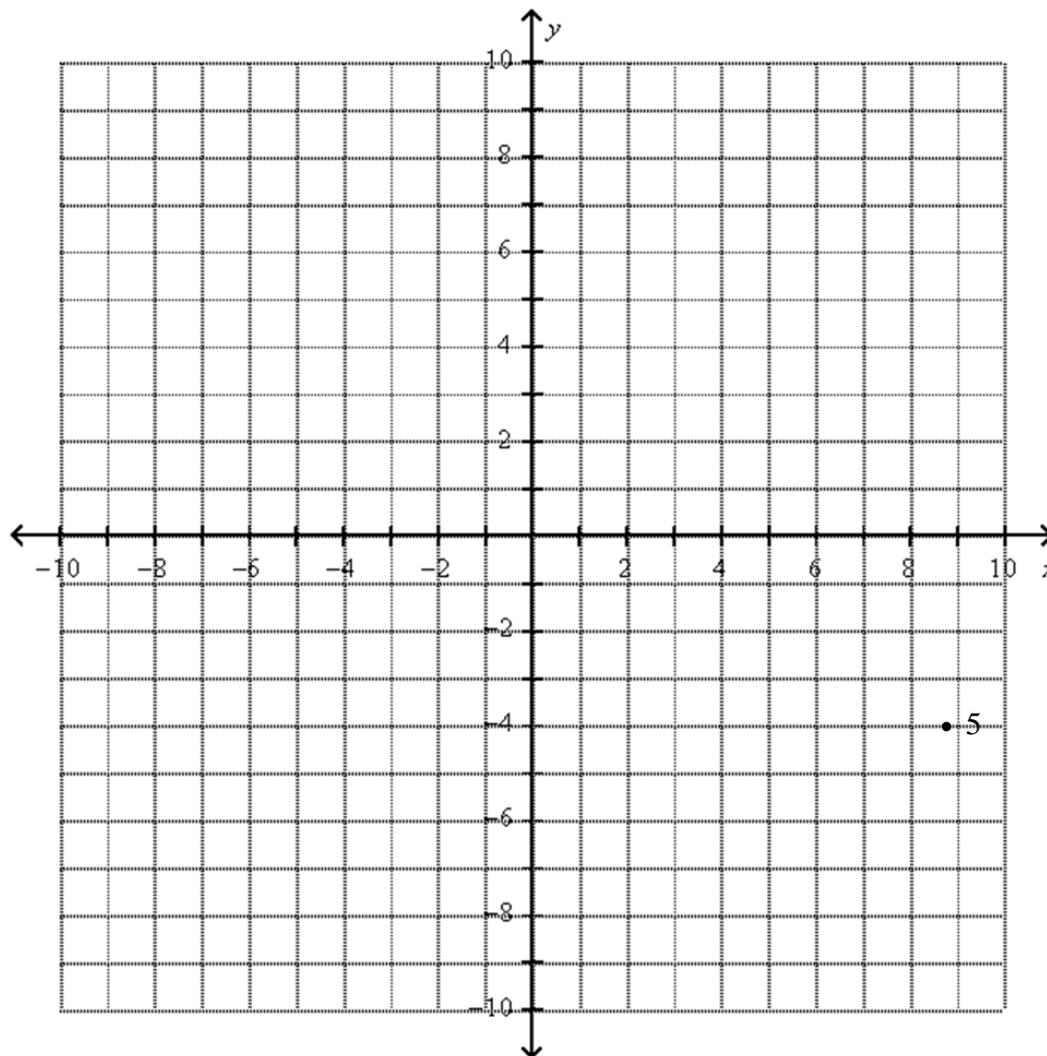
Which letter is at (0, -2)?

- A A
- B C
- C D
- D Z

Name \_\_\_\_\_ Today's Date \_\_\_\_\_

## Beef Ag- Math - Plotting and Reading Ordered Pairs

**Directions:** Use the coordinate plane to plot the following points. Label them with the number that corresponds with the question number. The first one is done for you.



5.  $(3, -4)$

8.  $(-1, 3)$

6.  $(6, 5)$

9.  $(0, 8)$

7.  $(-4, -8)$

10.  $(-6, 0)$

# Beef on Bamboo

**Grade Level:** 5

**Materials Needed:**

Spoon	small bowl	rubber spatula
1/4 cup dry measure	sharp knife	pastry brush
measuring spoons	pot holders	serving platter
large microwave-safe dinner plate	cutting board	
6-inch bamboo skewers		
1 pound fully-cooked smoked beef sausage		
1/4 cup Dijon-style mustard		
2 tablespoons honey		
1 or 2 small zucchini or yellow squash		
16 cherry tomatoes		



Total preparation and cooking time: 25 minutes

**Activity Outline:**

1. PLACE the mustard and honey in a small bowl. STIR with a rubber spatula to mix well. SET ASIDE.
2. **Adult help needed:** PLACE the beef sausage on a cutting board and carefully CUT it cross wise into 4 equal pieces, using a knife. CUT each sausage piece in half the long way. You will then have 8 pieces. CUT each of these sausage pieces crosswise into 6 equal pieces. You will then have 48 pieces.
3. **Adult help needed:** PLACE the zucchini on cutting board. Carefully CUT zucchini crosswise into 1/4-inch thick slices, using a knife. You should have 16 zucchini coins (round slices).
4. Carefully PUT 2 sausage pieces on a 6-inch bamboo skewer and PUSH them to the very end of the skewer. Then PUT 1 zucchini coin, 2 more sausage pieces, 1 zucchini coin and 2 more sausage pieces onto the skewer, PUSHING them tightly together.
5. REPEAT step 4 to make a total of 8 kabobs.
6. PLACE the kabobs on a large microwave-safe dinner plate. MICROWAVE on HIGH 4 to 5 minutes or until the sausage is thoroughly heated and the zucchini is just starting to get tender.
7. Meanwhile PUT 4 cherry tomatoes onto each of 4 skewers. SET ASIDE.
8. **Adult help needed:** Careful! Plate will be very hot. Using pot holders, REMOVE the plate of kabobs from the microwave. PLACE the kabobs on a large serving platter, using tongs.
9. BRUSH sausage kabobs with 3 tablespoons of the honey mustard mixture.
10. ADD the tomato kabobs to the platter. SERVE the sausage and tomato kabobs with the remaining honey mustard.

Makes 4 servings.

**Nutrition information per serving:** 415 calories; 17 g protein; 18 g carbohydrate; 31 g fat; 1,648 mg sodium; 76 mg cholesterol; 4.1 mg niacin; 0.2 mg vitamin B6; 2.1 mcg vitamin B12; 2.4 mg iron; 3.3 mg zinc.

# 5<sup>th</sup> Grade Pork

**Reading/Vocabulary**

*A Hog Ate My Homework*  
by Gary Metivier

**Hands-on Activity**

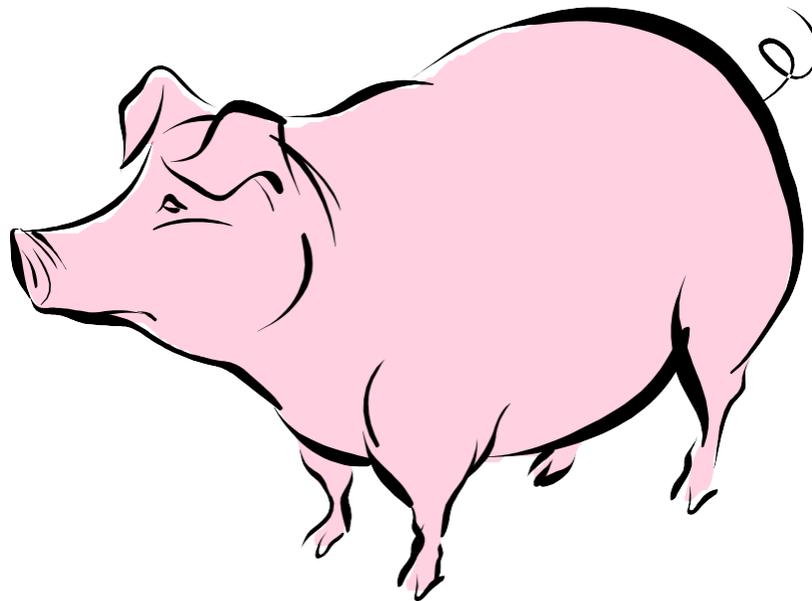
Hitch Your Wagon to Science

**Math**

Pork Identity and Inverse Properties

**Science**

Make Your Own Feedsack



# Hitch Your Wagon to Science

**Grade Level:** 5



**Objectives:** Instruction in this lesson should result in students achieving the following objectives:

- 1) Use directions provided to create a scale model of a wagon.
- 2) Assess a design to build a prototype
- 3) Record results from experiment.
- 4) Explain comprehension of project in writing.

## Make Your Own Origami Wagon

**Materials Needed:**

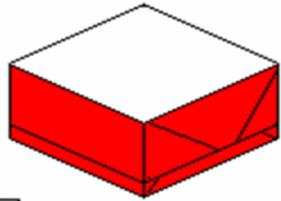
- 1 Box Template—copied onto paper or cardstock
- 3 Straws—flexible if possible
- Tape
- Scissors

### Directions:

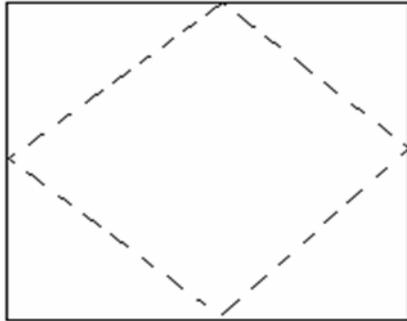
1. Cut along the line that continues across the entire paper. Set aside the small piece with circles on it that is left over.
2. With the square piece of paper, follow the origami box directions on the next page.
3. Once you have folded the origami box, put it aside and pick up the small piece of cardstock with circles on it that you cut off the original sheet.
4. Cut around the circles to create 4 wheels.
5. Cut an X in the center of each wheel (like on the lid of a cup which you put a straw into) to create a place for the wheel to slip onto the straws .
6. Cut 2 of the straws 5 inches in length.—removing the flexible part—to create the axles.
7. Tape the straws to the bottom of the box about 1/4 inch in from each side.
8. Place one wheel onto each end of the straw.
9. Cut the remaining straw 5 inches long—with the flexible part intact.—to create the handle.
10. Tape the handle into place in the center of one end of the box.
11. Decorate your wagon in any way that you would like!

# Hitch Your Wagon to Science

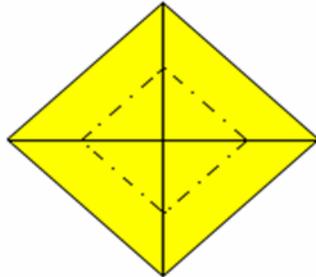
## Box



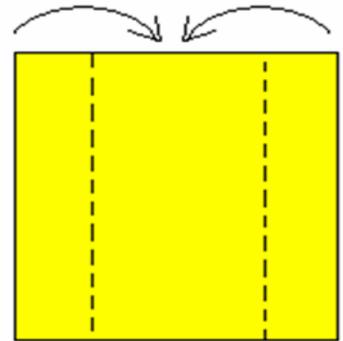
Traditional design.  
Diagrammed by Aaron Walden.



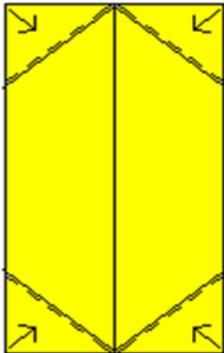
1. Fold corners to center.



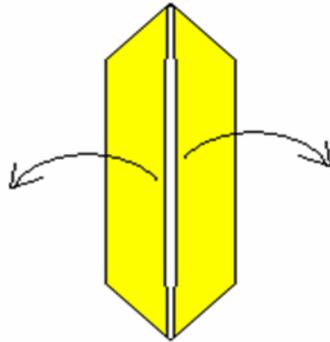
2. Fold corners under, to edge. Turn over.



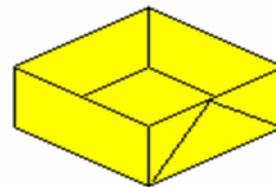
3. Fold left and right to center.



4. Fold corners under top layer.



5. Open out center.



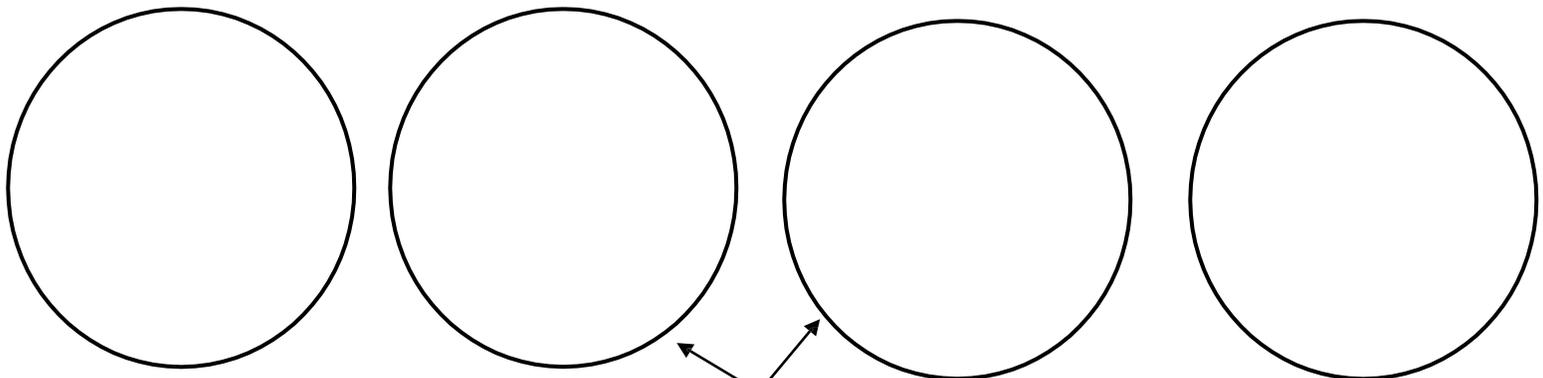
6. Flatten sides, and crease corners.

For Lid, fold the corners, in the first step, somewhat short of the center, and the rest of the steps the same as for box.

Copyright © 2003 by Aaron Walden.

### Directions:

1. Find the center of the box by folding the square into a triangle or a taco fold in both directions. Unfold into a square.
2. Fold all of the corners to the center point.
3. Take one center point and fold it back to the middle of the edge of the square.
4. Repeat this step for each of the points in the center of the box.
5. Flip the entire square over.
6. Fold the left and right edge to the center of the square as shown in the picture above.
7. Fold each of the corners under the top layer.
8. Open out center, gently.
9. Flatten sides and crease corners to create your box.
10. Tuck the flaps under the sides of the box.
11. Smile at how great you are for completing your origami box!
12. Follow directions for turning the box into a wagon on the previous page.



CUT



# Hitch Your Wagon to Science!

*Answer the following questions as they pertain to **your** wagon.*

1. Name two simple machines that are found on your wagon.
2. Explain how you found the center of your project to make your wagon. Is there another way you could find the center?
3. Make a conclusion as to what might happen if you build your wagon with all light-weight paper? All heavy-weight paper?
4. There is an old saying that —A heavy wagon can tow no load. What do you think was meant by this saying? Explain.

*Answer the following questions as they pertain to **Willie's** Wagon.*

1. What was Willie using, work or force, to move Mrs. Wright's garbage? Explain.
2. Willie's wagon has four wheels. What would be the difference for Willie if his wagon only had two wheels? What if his wagon had one wheel?
3. What did Willie learn about using the tools that you have to help others while he was visiting the farm?

## Pork Ag- Math Identity and Inverse Properties

The **identity property of addition** states that the sum of any number and zero is the original number.

The **identity property of multiplication** states that the product of any number and one is that number.

**Inverse operations** are operations that undo each other.

**Directions:** Write the inverse of each of the following.

1.  $+ 9$  \_\_\_\_\_

6.  $- 7$  \_\_\_\_\_

2.  $\times 3$  \_\_\_\_\_

7.  $+ 5$  \_\_\_\_\_

3.  $- 4$  \_\_\_\_\_

8.  $\times 8$  \_\_\_\_\_

4.  $\div 6$  \_\_\_\_\_

9.  $\div 11$  \_\_\_\_\_

5.  $\times 2$  \_\_\_\_\_

10.  $+ 13$  \_\_\_\_\_

**Directions:** Indicate whether the following equations illustrate the identity property of addition (A), the identity property of multiplication (M), or neither (N).

11.  $9 + 0 = 9$  \_\_\_\_\_

12.  $4 + (3 + 7) = (4 + 3) + 7$  \_\_\_\_\_

13.  $5 \times 1 = 5$  \_\_\_\_\_

14.  $0 + a = a$  \_\_\_\_\_

15.  $z \times 1 = z$  \_\_\_\_\_

# Make Your Own Feed Sack

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**Grade Level:** 5

**Objectives:** Students will describe how hogs are raised.  
Students will explain the nutritional value of pork and how it assists our bodies.  
Students will assemble a feed sack after learning about what pigs eat.  
Students will compute the market price for hogs.



## Introduction:

The hog was among the first animals to be domesticated, in as early as 7000 B.C. Hernando DeSoto, an explorer, brought the first pigs to America in 1539. Today, hogs are raised across the United States. The U. S. pork industry employs an estimated 600,000 people. Producers raise hogs today that weigh more, grow more efficiently, and yield more lean meat than ever before. Bacon, pork sausage, pork chops and ham all come from hogs, but there are about 500 different by-products of pigs as well. Some examples are fertilizers, glass, china, floor wax, chalk, and crayons.

Sows give birth to litters of piglets twice a year. Each litter usually has seven to ten piglets. Giving birth to piglets is also called farrowing. Some pork producers have —farrow to finishll farms, which means the pigs are bred, born, and fed on the farm until they are taken to market. Pigs are weaned when they are 2-4 weeks old. Until a pig reaches 120 pounds, it is known as a pig. When a pig weighs more than 120 pounds, it is called a hog. Hogs are usually taken to market when they weight 240-260 pounds.

Pigs/hogs are fed a balanced diet so they grow healthy and strong to provide good food for us. In Illinois we feed corn, soybean meal, vitamins, and minerals to pigs/hogs. Additives are also added to pig and hog feed to provide minerals and vitamins for the animals. This helps to increase growth and improve health.

Pigs are very much like humans because their heart and other organs work the same way. That is why doctors can use a pig's heart valve in a human when the human's valve wears out. Pigskin can also be used to treat people who have been badly burned. If certain medication helps pigs, then chances are it will also help humans.

Caring properly for pigs/hogs is a big job and has great economic impact upon the producer. Quality livestock is very important in producing valuable products. Because of changes in consumer demands, farmers practice careful breeding practices to genetically improve livestock products.

Pork producers must calculate their costs accurately, making sure that they are producing high quality products at a reasonable cost. Farmers, as well as other business people, must make a profit on their products in order to make a living for their families. The reason that research and development is so important in the hog industry is to find new product uses to increase economic opportunities.

Pork in our diet is important because it has high amounts of protein, B-vitamins, and Thiamin. In fact, pork has three times as much Thiamin as any other food. Thiamin changes carbohydrates into energy promotes a normal appetite.

# Make Your Own Feed Sack

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## Materials Needed:

- Get the Pig Picture worksheet
- Hog Feed Labels sheet
- Welcome to Our Farm* by National Pork Producers Council
- Blue jellybeans
- Candy corn
- Ground peanuts
- M & M's
- Raisins
- Puffed wheat cereal
- Resealable plastic bags
- Yarn or string (25 pieces - one per student)



## Activity Outline:

1. Discuss hog production with your class. You may want to read *Welcome to Our Farm* from the National Pork Producers Council, P. O. Box 10383, Des Moines, IA 50305, (515)223-2600, FAX (515)223-2646, [pork@nppc.org](mailto:pork@nppc.org), <http://www.nppc.org/>
2. Discuss the nutritional value of pork. What category is pork in on the Food Guide Pyramid? How many daily servings are recommended from this group?
3. Discuss what pigs/hogs eat from the information provided in the introduction (water, corn, soybean meal, vitamins, minerals, wheat)
4. Help the students make their own Hog Feed Sacks. Give each student a piece of string/yarn, a resealable plastic bag, and a copy of a Hog Feed Label. Have the students punch holes in the top left and right corners of their plastic bag. String one end of the string/yarn through the left hole and tie, then string the other end of the string/yarn through the right hole and tie. Now the students have made a feed bag.
5. After the students study and discuss the Hog Feed Label, they should put the jellybeans, candy corn, ground peanuts, raisins, M & M's, and puffed wheat into their feed bags to represent the diet of hogs. They can eat their goodies as a snack or save them for later. \*\*\* Teacher Note: You can either write the Hog Feed Label on the board or you can copy the Hog Feed Labels sheet, cut them on the dotted line, and have the students place them in their feed bags. (The label and picture of the pig can be folded in half to fit in the bag.)
6. Read the following paragraph and answer the following questions as a class: Mr. Wilkinson raises pigs and takes them to market to sell them whenever they reach the market weight of at least 250 pounds each. Mr. Wilkinson knows that if he feeds the pigs a balanced diet they will grow strong and healthy. If he feeds the pigs an unbalanced diet that does not include all of the pigs' nutritional needs, then the pigs will not be as strong and healthy. The balanced diet will help the pigs to grow lean and muscular. The unbalanced diet will cause the pigs to grow slower.
  - A. Mr. Wilkinson feeds one pig a balanced diet and one pig an unbalanced diet. The pig with a balanced diet grows to weigh 256 pounds. The pig with the unbalanced diet grows to weigh 225 pounds. Which pig weighs more?

# Make Your Own Feed Sack

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## Discussion Questions:

1. How do farmers care for pigs?
2. What is the nutritional value of pork to our bodies?
3. What do pigs eat?
4. Do pigs grow better when they are fed a well-balanced diet or an unbalanced diet?
5. How are pigs helpful to humans?



## Related Activities:

Swine —Sitell-ings: Ask students to research various hog web sites or books and make a list of the similarities between hogs and humans. Do they have the same temperature, heart rate, and respiration rate? Think of some other comparisons, too! Here are some sites to check out:

National Pork Producers Council: <http://www.nppc.org/>

The Electronic Zoo: <http://netvet.wustl.edu/pigs.htm>

## Other Resources:

1. "The World of Pigs," teaching activities for K-8 classrooms—Illinois Pork Producers Association, 6411 South Sixth Street Road, Springfield, IL 62707-8642, (217)529-3100.
2. "Pig Tales," Preschool-1 activity newsletter, National Pork Producers Council, P. O. Box 10383, Des Moines, IA 50306.
3. "Pig Talk," A brochure from the Minnesota Pork Producers Association, 360 Pierce Plaza, Suite 106, North Mankato, MN 56003, (507)345-8814.
4. "Teaching and Tasting at the Table," Pork recipes from the National Pork Producers Council, P. O. Box 10383, Des Moines, IA 50306.
5. "Facts about Pork," Pork information and recipes from the Pork Industry Group of the Meat Board, 444 North Michigan Avenue, Chicago, IL 60611.
6. "Pigtionary," A dictionary of pig-related terms from the Minnesota Pork Producers Association, 360 Pierce Ave. #106, North Mankato, MN 56003.
7. "Learning About Pork," an activity book from the National Pork Producers Council, P. O. Box 10383, Des Moines, Iowa 50306.

# Get the "Pig" Picture

Directions: Write the names of products that come from pigs in the appropriate category.

## FOOD

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## CLOTHING

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## HEALTH NEEDS

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## HOUSEHOLD

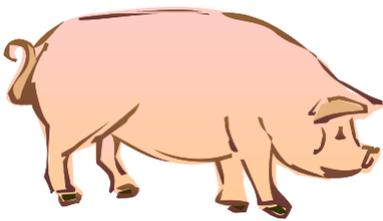
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## OTHER

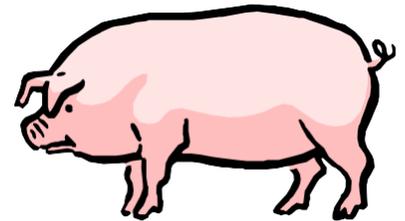


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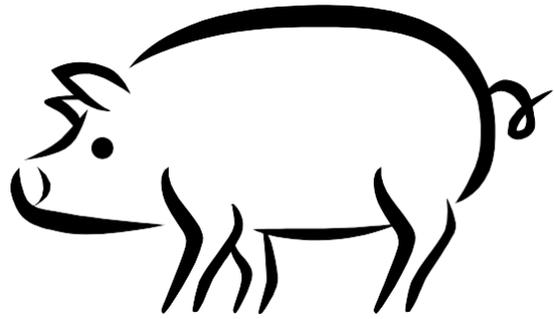
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To be used with:  
Make Your Own Feed Sack

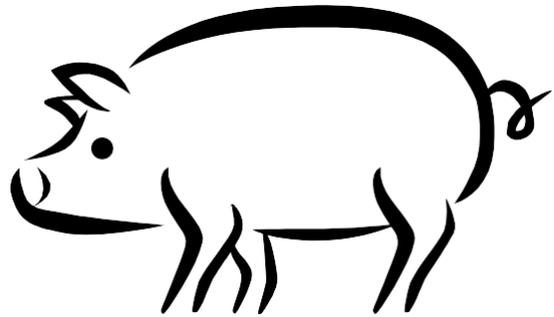
# Hog Feed Labels

Hogs Need:	Represented by:
Water	Blueberry Jellybeans
Carbohydrates	Candy Corn
Protein	Ground Peanuts
Minerals	Raisins
Vitamins	M & M's
Carbohydrates	Puffed Wheat



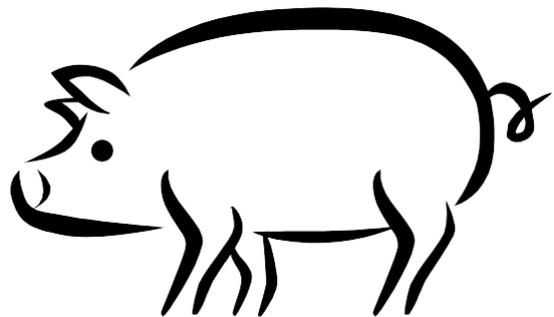
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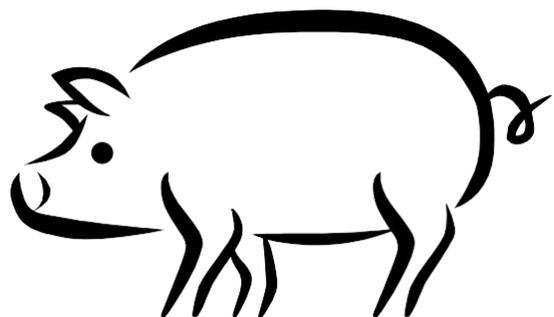
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Vitamins	M & M's
Carbohydrates	Puffed Wheat

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# 4<sup>th</sup> and 5<sup>th</sup> Grade

## Pizza

**Reading/Vocabulary**     *Pizza for the Queen*  
by Nancy Cataldo

**Hands-on Activity**     Between the Slices

**Math**     Pizza Percentages

**Science**     Classic Pizza



# Between the Slices



**Grade Level:**4- 5

**Objectives:** After completing this activity, students will be able to identify products grown on a farm and how they are processed into items eaten every day.

## **Introduction:**

Today's farmers make it possible for food processors to use the quality products such as wheat, pork, and milk to produce the foods we eat and enjoy. But it takes more than the farmer to get these products to our tables. Growing and harvesting crops and raising livestock is only the beginning. It takes thousands of workers to get the agricultural products to our stores and restaurants. Read below to find out what some products go through to get from the farm to the consumer.

## **Wheat – A Grain**

Wheat is planted in the fall and is typically called winter wheat. In July, the wheat is ready to harvest. Farmers use a giant machine called a combine to harvest the wheat. The combine cuts the wheat stalks out of the field and separates the wheat head from the stalk. The wheat head moves into a storage tank on the combine. When the tank gets full the farmer unloads the combine into trucks or wagons using an auger. An auger is like an arm on the combine. It pushes grain through the combine and into the truck or wagon. The farmer then takes it to the elevator. The 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 or feed, and for shipment 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 kernel) out. This is repeated three 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.

## **Cheese – A Dairy Product**

Cheese is a healthy, tasty food that is made from milk. The cows on the farm are milked using a milking machine that pumps the milk from the cows and 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 thousands of small cubes, and the whey oozes from them. Heating and motion force more whey from the curd. The curd —ballll is then lifted from the vat. The —ballll 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 clocks or wheels. After it is pressed, it is immediately wrapped in plastic. The cheese is then aged in cool storage rooms. The aging times vary for different cheeses. Brick cheese and others need two months to age while parmesan cheese requires about a year. After being aged, the cheese is packaged in a wide variety of shapes and sizes.

# Between the Slices

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## Pepperoni, Sausage and Ham – Pork Products

Pigs go to market when they are only five to six months old and 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 pigs, 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. Pork is sold as fresh meat or as processed meat. Fresh meat is the sausage, pork chops, and roasts. Processed meat is the salami, hot dogs, pepperoni, bologna, and luncheon ham. Processed meats are cured with salt and then smoked, baked, or dried. 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.

### Activity Outline:

1. Ask the students if they know how the food grown and raised on a farm gets to them. Using the introductory information help the students understand the processes that food goes through.
2. Discuss how food processing is the changing or preparing of food by special treatment. Hand out the worksheet —Vocabulary Match-Up. Have the students complete the worksheet and then go over the answers with the class. Answer Key: 1.D; 2.E; 3.G; 4.F; 5.A; 6.C; 7.B
3. Next, have the students write a paragraph describing how to make their favorite pizza. Remind students to use transition words in their writing such as next, first, second, and finally.
4. Pass out the —Secret Slices worksheet. Have the students figure out what type of pizza each child ate. Answer Key: Sara – Bologna; Sam – Ham & Cheese; Sally – Egg Salad; Steven – Peanut Butter & Jelly.

### Discussion Questions:

1. What is food processing?
2. Explain how food gets from the farm and to the grocery store.
3. How is wheat processed into flour?
4. How is milk taken to a dairy plant?
5. How is pork cured into processed meat?

# Between the Slices

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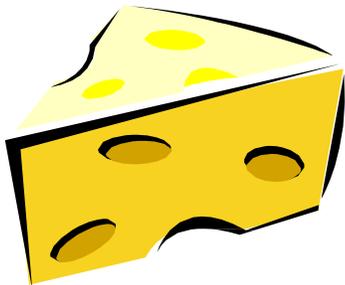
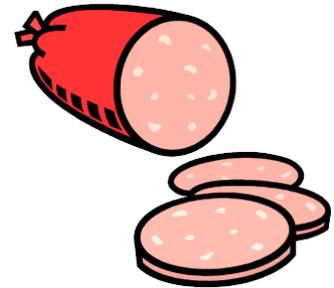


## **Wheat—A Grain—Grown on a Plant**

Grains must be processed before people can eat them. Some grains are fed to livestock after they are harvested. In addition to pizza crust, what else can wheat be made into?

## **Pepperoni, Sausage or Ham—From Pigs—Livestock**

Cement, leather, gelatin, cosmetics and paint brushes are only a few of the by-products we get from pigs. Can you name some of the other meats we enjoy that come from pigs?

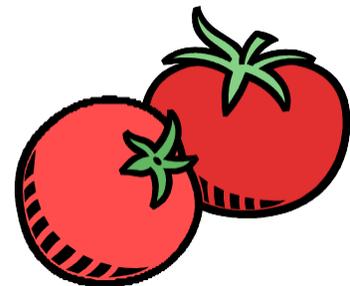


## **Cheese—Dairy Product**

Milk comes from dairy cattle. It is high in calcium which builds strong bones. Many other products are made from milk. What are some other dairy products?

## **Pizza Sauce—From Tomatoes—Grown on a Plant**

Pizza sauce is made from tomatoes. While tomatoes are considered a vegetable by most people, they are really a fruit. A fruit is defined as any product of a flowering plant that contains seeds. What other —vegetablesll can you think of, that have seeds, and are technically fruits?



Name \_\_\_\_\_

# Vocabulary Match-Up

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Directions: Match the vocabulary word to the correct definition. Write the correct letter in the blank before the vocabulary word.

- |                         |  |
|-------------------------|--|
| 1. _____Agriculture     | a. to rely or support one another  |
| 2. _____Consumer        | b. the process of selling and making goods available   |
| 3. _____Food Processors | c. companies that sell and market goods  |
| 4. _____Producer        | d. the science of producing crops and raising livestock  |
| 5. _____Interdependent  | e. a person who buys and uses goods  |
| 6. _____Distributors    | f. a person who grows agricultural products  |
| 7. _____Marketing       | g. companies that change raw products (tomatoes, wheat, milk) into other products (sauce, flour, cheese) |



# Vocabulary Match-Up

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Directions: Match the vocabulary word to the correct definition. Write the correct letter in the blank before the vocabulary word.

1.      D   Agriculture                      a. to rely or support one another
  
2.      E   Consumer                      b. the process of selling and making goods available
  
3.      G   Food Processors                c. companies that sell and market goods
  
4.      F   Producer                        d. the science of producing crops and raising livestock
  
5.      A   Interdependent                e. a person who buys and uses goods
  
6.      C   Distributors                    f. a person who grows agricultural products
  
7.      B   Marketing                      g. companies that change raw products (tomatoes, wheat, milk) into other products (sauce, flour, cheese)



Name \_\_\_\_\_

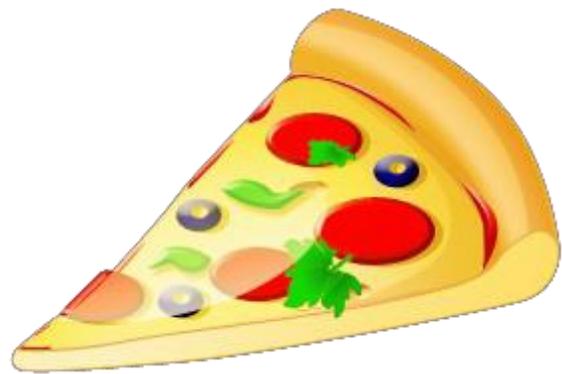
# Secret Slices

Four classmates, Sara, Sam, Sally, and Steven, enjoyed their favorite pizza for lunch yesterday. Each child had a different slice. Can you match the child with the correct pizza?

	Cheese	Pepperoni	Sausage	Supreme
Sara				
Sam				
Sally				
Steven				

## Clues:

1. Sam had 5 different ingredients on his pizza.
2. Sara sat next to the boy who was eating the cheese pizza.
3. Steven's pizza was not made with meat.
4. Sally always drinks soda with her sausage pizza.



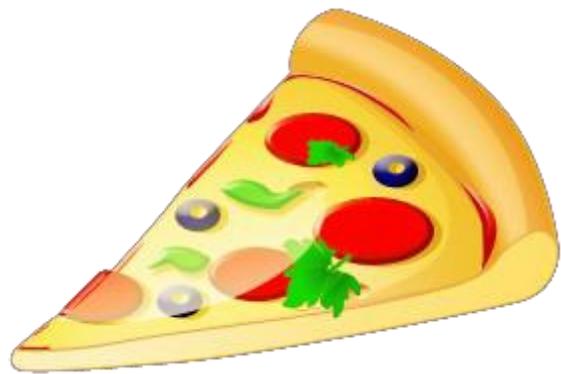
# Secret Slices

Four classmates, Sara, Sam, Sally, and Steven, enjoyed their favorite pizza for lunch yesterday. Each child had a different slice. Can you match the child with the correct pizza?

	Cheese	Pepperoni	Sausage	Supreme
Sara		X		
Sam				X
Sally			X	
Steven	X			

## Clues:

- Sam had 5 different ingredients on his pizza.
- Sara sat next to the boy who was eating the cheese pizza.
- Steven's pizza was not made with meat.
- Sally always drinks soda with her sausage pizza.



# Pizza Ag - Math - Percentages

**Directions:** Choose the best answer.

1

The average number of toppings placed on a pizza has increased 25% from six months ago. The average number of toppings six months ago was 4. What is the average number of toppings today?

- A 4.25
- B 100
- C 1
- D 5

2

Peggy's Pizza Place gave the FFA chapter a 20% discount on pizzas they ordered for a party. Each pizza originally cost \$14.00. How much would the FFA chapter have to pay for 10 pizzas?

- A \$11.20
- B \$280.00
- C \$112.00
- D \$140.00

3

The tax on dinner for a family is 8% of the sale price. What would the amount of tax be on a dinner that cost \$50.00?

- A \$4.00
  - B \$14.00
  - C \$40.00
  - D \$400.0
- 0

4

Thirty percent of workers at a pizza shop are males. If there are 10 workers at the pizza shop, how many are female?

- A 3
- B 5
- C 7
- D 10

## Pizza Ag- Math - Percentages

**Directions:** Choose the best answer.

5

A pizza parlor can seat 64 diners. If the restaurant is 25% filled with diners, how many diners are seated in the pizza parlor?

- A 48
- B 16
- C 2
- D 33

6

It is estimated that every American eats 46 slices of pizza each year. If this number has gone up 50% in the last 20 years, how many slices of pizza did the average American eat 20 years ago?

- A 23
- B 2.3
- C 230
- D 15

7

20% of the total sales made in an evening at Pizza Uno are donated to a local charity. If the total sales for the night are \$934.50, how much money was donated to the charity?

- A \$1,869.00
- B \$747.60
- C \$914.50
- D \$186.90

8

Kim and Kevin work together on a project to remodel the kitchen at It's Pizza Time. If they are going to split the payment with Kim getting 53% and Kevin getting 47% and they get paid \$2986.00, how much money did Kim get?

- A \$1582.58
- B \$158.25
- C \$158,258.00
- D \$15.82

# Classic Pizza

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## Materials Needed:

Skillet

Pizza Pan/Baking Sheet

Flour

1/4 pound bulk Italian sausage

2 frozen bread dough rolls, thawed

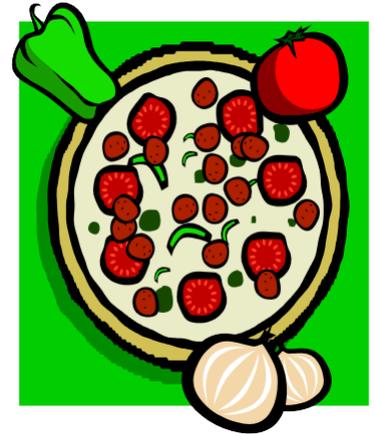
1/4 cup pizza sauce

1/2 cup shredded part-skim mozzarella cheese, *divided*

1/4 cup chopped fresh mushrooms

3 tablespoons chopped red onion

1/2 teaspoon Italian seasoning



## Activity Outline:

1. Crumble sausage into a large skillet. Cook over medium heat until no longer pink; drain. On a lightly floured surface, knead the two rolls together. Roll dough into a 7-1/2 inch circle.
2. Transfer to a greased pizza pan or baking sheet. Spread pizza sauce over dough; sprinkle with 1/4 cup mozzarella cheese, sausage, mushrooms, onion and remaining cheese. Top with Italian seasoning.
3. Bake at 375 degrees for 20-22 minutes or until crust is golden brown.

**Yield:** 1 serving