


# Tomatoes to Ketchup, Chickens to Omelettes

 **LEVEL:** Grades PreK-6  
**SUBJECTS:** Language Arts, Science, Social Studies, Consumer Education  
**SKILLS:** Analyzing, brainstorming, classifying, collaborating, collecting, constructing media, cooperating, developing vocabulary, discussing, evaluating, identifying, matching, performing, sorting, synthesizing

## MATERIALS

Scissors, glue, large pieces of paper for collages; magazines, weekly newspaper food ads, Sunday newspaper coupon supplements; **Food Products** and photocopies of the attached **Raw Food Pictures** sheets.

## VOCABULARY

crush, dehydrated, flaked, ground, pitted, pressed, processed, product, raw, salted, smoked

## RELATED LESSONS

Nail by Nail, Board by Board  
From Fiber to Fashion  
Step by Step  
What Piece of the Pie?

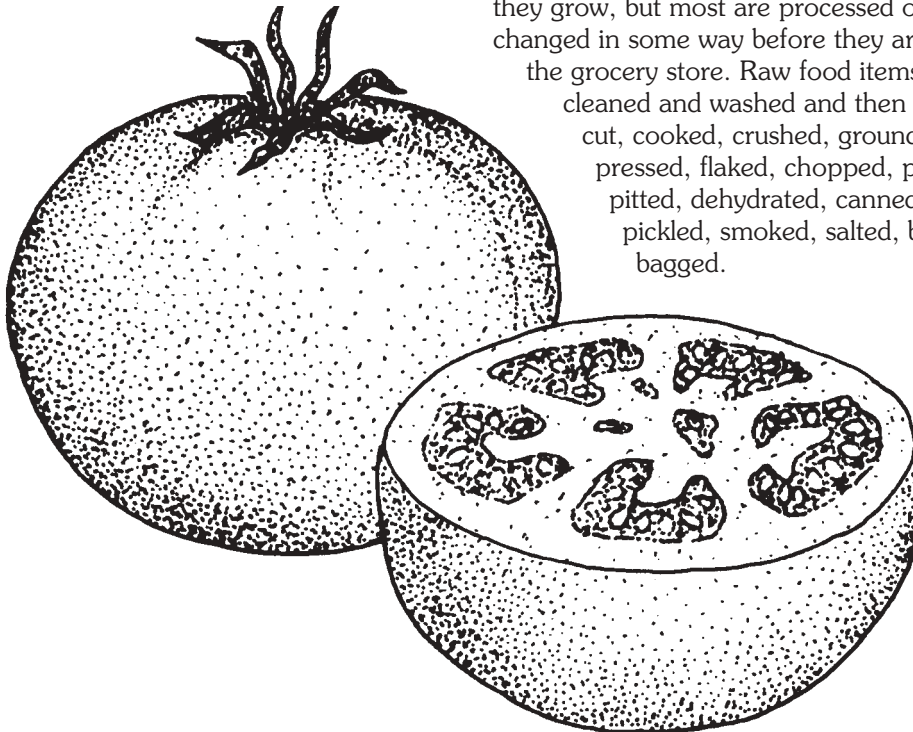
## SUPPORTING INFORMATION

The farmer and rancher are only the first step of the huge agricultural industry. Although farmers' markets are becoming

more common across the country, relatively few farm products are sold by the producer directly to the consumer. Many agricultural jobs link the producer to the consumer. After the food is harvested or picked, truck drivers transport food to a market or a processing plant. Other jobs include packaging, distributing, advertising, and selling the food products. Agriculture-related occupations involve more than 17 percent of the national workforce.

Food production begins on a farm or ranch. Butter is made from milk from dairy cows, and steak comes from beef cattle. Flour comes from ground wheat. Potato chips and french fries are made from potatoes grown on a farm. In some cases, different forms of a product can produce different kinds of food. Beef cattle, for example, are used for their meat, whereas dairy cows are used primarily for dairy products.

Some food products come to you just the way they grow, but most are processed or changed in some way before they arrive at the grocery store. Raw food items are cleaned and washed and then may be cut, cooked, crushed, ground, pressed, flaked, chopped, peeled, pitted, dehydrated, canned, frozen, pickled, smoked, salted, bottled, or bagged.



## BRIEF DESCRIPTION

Students build connections between raw and processed food items by cutting out pictures, matching pictures, and making collages.

## OBJECTIVES

(Note: All three objectives are appropriate for older students; younger students may accomplish only the first two objectives.)

- The student will:
- sort food pictures according to raw food source;
  - create a collage that illustrates a specific raw food and its products; and
  - analyze the processes raw foods undergo when processed.

## ESTIMATED TEACHING TIME

Three sessions: 45 to 60 minutes each.

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## GETTING STARTED

Collect enough magazines and newspapers with food pictures, food ads, and food coupon supplements for each student to cut out at least five pictures. Students can collect empty food containers and food labels related to the **Food Products** sheet. Gather scissors, 15 or more large pieces of paper, and glue for group collages. Photocopy and cut apart the **Raw Food Pictures** sheets. To model the sorting process in Session One, Step 4, cut out at least five pictures of foods you eat. **Optional:** Write a letter to parents explaining the project and asking them to help students gather pictures and/or empty, clean food containers and labels.

## PROCEDURE

### SESSION ONE

1. Brainstorm with students about the foods they eat and write their verbalized food items in a visible place. Continue until the list is fairly lengthy and includes many of the items from the **Food Products** sheet. Add some of your favorites.

#### **Options for younger students**

Begin the session by visiting a grocery store. Have a store employee show students examples of raw foods and some of their food products. Or read a book such as *From Wheat to Pasta* by Robert Egan (Children's Press, 1997) and begin with a discussion about raw foods and processed foods.

2. Distribute magazines, food ads, and coupon supplements to students. Show them the pictures you cut out. In pairs or alone, have them cut out pictures of food items they eat. (Note: Ketchup, catsup, and catchup are used interchangeably on different brand names.)
3. Place the raw food pictures around the room and ask students to identify the pictures. (*apple, beef animal, chicken, chicken eggs, corn, dairy cow, grapes, hog, oranges, peanuts, potatoes, rice, soybeans, tomatoes, wheat*)
4. Tell students they will be sorting and matching their food pictures, with the raw food pictures, based on what the foods were made from. (Some of their food pictures are not going to match any of the 15 raw food pictures. That's okay! They can put them with the "Other" card for Extension 2.)

Using your pictures of food you eat, model the process. Walk around the room matching your food pictures with the appropriate raw food picture. Place your food pictures around the raw food picture.

5. Have students match their pictures with the raw food pictures or put them in the "Other" pile. Some processed foods may contain more than one raw food. Have students group those foods by the dominant raw food. If food labels are used, older students can examine the ingredients to match processed foods with the raw food. The ingredients will be listed in descending order by weight. Older students can create Venn diagrams for processed foods made from more than one raw food. (For information see the **Venn Diagram #1** and **#2** located in the Appendixes.) Collect all the pictures for each raw food picture for Session Two.

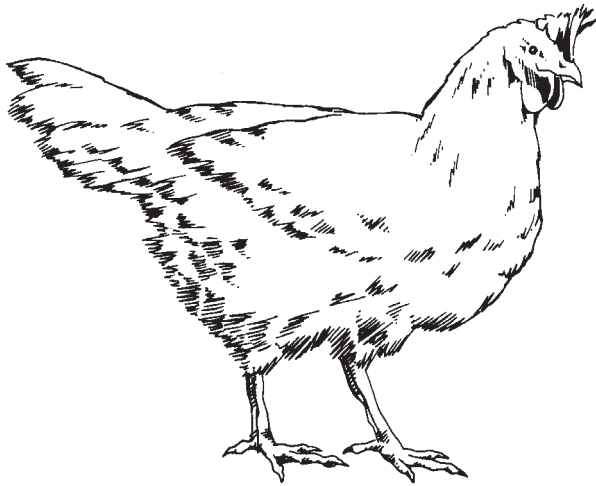
### SESSION TWO

1. Divide students into pairs. Give each pair all the pictures for one raw food to evaluate the accuracy of the matching. Tell students their job is to decide if all the food pictures belong with their raw food picture. If the food in the picture was not made at all from the raw food, have groups find the appropriate match or place pictures in the "Other" pile.
2. Once groups have determined that all the processed foods match their raw food, have them create a collage. Students arrange the processed food items around the raw food or create their own design. Older students may find additional pictures of processed foods.
3. Have each group present its collage to the class. Ask, "Which processed food items around a raw food product surprised you? Why?"

### SESSION THREE

1. Write in a visible place the following steps or changes a raw food item goes through before becoming a processed food product. Some possible steps include:
  - growing
  - picking or harvesting
  - transporting
  - processing (raw food items are cleaned and washed and then may be cut, cooked, crushed, ground, pressed, flaked, chopped, peeled, pitted, dehydrated, canned, frozen, pickled, smoked, salted, bottled, or bagged; other ingredients may be added)
  - packaging
  - distributing
  - advertising
  - retailing (grocery store)
  - purchasing and consuming

The steps vary based on the processed product.



Using one of the collages, identify the possible steps on the list that the raw food underwent. In groups, have students select three processed foods from their collages. Tell them to list all the steps the raw food product went through from the field to the grocery store. Have them prepare a skit to present to the class in which they act out the steps.

2. To summarize, ask:
  - Which raw food item had the most processed food pictures? Why? (Make sure students consider whether it's the appeal of the processed food or if it's the diversity of product.)
  - How else do you or your family process corn, apples, chicken, and other items from the raw foods list?
  - What are some other processed food products that could be invented from a raw food? What steps would they undergo in processing? (Also see Extensions and Variations 3.)
  - What did you learn about where processed foods come from?
3. **Optional:** Change a raw food product into one of its processed forms. For instance, whipped cream and butter can be made from heavy cream. Pour one cup of heavy cream into a bowl. Using a wire whisk, beat cream to add air until whipped cream is formed. Continue beating to make butter. Students can spread their butter on crackers to taste it. Commercial butter does taste different since it contains ingredients in addition to cream.

You can also change popcorn kernels into white pieces of popcorn and peanuts into peanut butter. Pop popcorn kernels in a popcorn popper or

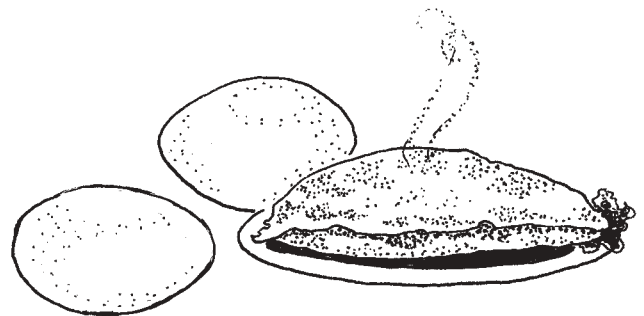
microwave for edible pieces of popcorn. Place whole peanuts in a blender and whip until chunky or smooth for peanut butter.

### EVALUATION OPTIONS

1. Students correctly match a set of processed food pictures or names with particular raw foods.
2. Students choose a raw food product, draw it on paper, and surround it with drawings or pictures of its processed products.
3. Students draw and label all the steps involved in changing a raw food to a specific processed food.
4. Have students name two foods they eat that come from tomatoes, wheat, chickens, peanuts, dairy cows, and so on.

### EXTENSIONS AND VARIATIONS

1. Have small groups of students decide where their foods belong on the **Food Guide Pyramid**. (See the **Food Guide Pyramid** located in the Appendixes.) The fats, oils and sweets on the top layer of the pyramid come from food products such as butter, margarine, maple syrup, sugar beets, sugarcane, canola oil, coconut oil, corn oil, olive

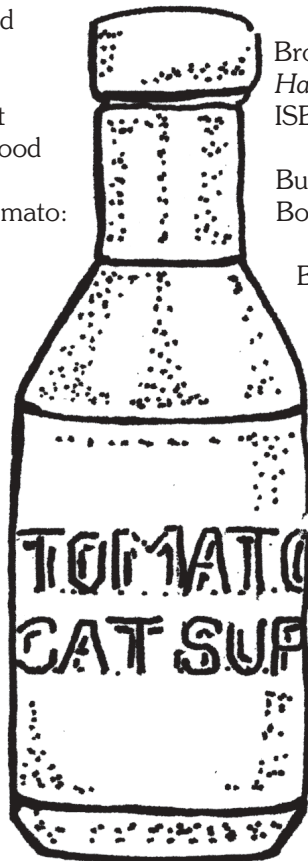


oil, peanut oil, and soybean oil. (To learn about food groups and nutrition see the FLP lesson "What's the Shape of Your Diet?")

2. Have students sort all the food pictures in the "Other" pile according to their raw food sources. Encourage students to discuss the diversity of foods they enjoy and the food sources or find additional pictures and make collages.
3. Farmers are always looking for new products that will create more sales for the raw food items they produce. (This is called value-added.) Challenge students to imagine a new product that can be processed from a raw food. Have them name their new product and its source, describe the processing steps, design the packaging to sell it, decide where to sell it, identify who would buy it and why, design advertising, and price it. (For additional information

about the steps and careers involved in changing a raw food to a processed food see the FLP lesson "Step by Step.")

4. Have students interview older people in the community to learn about food before such things as microwave foods and fast-food restaurants.
5. Hold a food fair. Ask students to collect processed foods from a common raw food product. Sample the variety of foods collected. For example, from a fresh tomato: ketchup, pizza sauce, salsa, stewed tomatoes, sun-dried tomatoes, tomato juice, tomato paste, tomato sauce, tomato soup, and more.
6. Have students go to a grocery store to research how many brand names and forms they can find for one processed product. Orange juice is a good example. Discuss with students why they think there are so many different brand names and forms for one processed product. Ask, "What are the differences between the various brands of juice?" (*price; size of product; form - frozen, concentrate, ready to drink, powdered; where grown and processed*)
7. Invite a guest speaker from a food-processing plant in your area or arrange a field trip to the plant. Ask the person to be prepared to discuss energy costs involved in transporting, processing and distributing food items.
8. Have the students visit the Web sites listed in the Resources section to see how either orange juice, chocolate or sugar is processed from raw products.
9. Have students analyze the school lunch. Have them list the raw foods and determine the kinds of processing the food underwent. Older students can graph the number of processed foods for each raw food.
10. Explore food processes such as dehydrating (e.g., raisins, jerky), canning and freezing. Older students might explore how different raw foods are processed to make food for animals. What are the similarities and differences with food processed for people?



## ADDITIONAL RESOURCES

Aliki. *Milk: From Cow to Carton*. HarperCollins Juvenile Books. 1992. ISBN: 0064451119.

Aliki. *Corn is Maize: The Gift of the Indians*. HarperTrophy. 1992. ISBN: 0064450260.

Browning, Frank, Sharon Silva. *An Apple Harvest*. Ten Speed Press. 1999. ISBN: 1580081045.

Buff, Sheila. *The Great Tomato Book*. Burford Books. 1999. ISBN: 1580800300.

Burckhardt, Ann and Chuck Kostichka. *Potatoes (Early-Reader Science Foods)*. Bridgestone Books. 1996. ISBN: 1560654511.

Burckhardt, Ann. *Potatoes*. Capstone. 1998. ISBN: 0516202782.

Carle, Eric. *Pancakes, Pancakes*. Simon & Schuster. 1990. ISBN: 0887081207.

Chessen, Betsey, Pamela Chanko. *Orange Juice (Science Emergence Readers)*. Scholastic Trade. 1998. ISBN: 0590149997.

DePaola, Tomie. *Tony's Bread: An Italian Folktale*. Paper Star. Reprint Edition 1996. ISBN: 0698113713.

Egan, Robert. *From Wheat to Pasta*. Children's Press. 1997. ISBN: 0516260693.

Fowler, Allan. *Corn - On and Off the Cob (Rookie Read About Science)*. Children's Press. 1994. ISBN: 0516060279.

Fowler, Allan. *The Chicken or the Egg? (Rookie Read About Science)*. Children's Press. 1994. ISBN: 0516460080.

Fowler, Allan. *If It Weren't For Farmers (Rookie Read About Science)*. Children's Press. 1994. ISBN: 0516460099.

Fowler, Allan. *Thanks to Cows (Rookie Read About Science)*. Children's Press. 1992. ISBN: 0516049240.

Gibbons, Gail. *Farming*. Holiday House. 1990. ISBN: 0823407977.

Gibbons, Gail. *The Milk Makers*. Aladdin Paperbacks. 1987. ISBN: 0689711166.

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- Julius, Jennifer. *I like Potatoes (Good Food)*. Children's Press. 2001. ISBN: 051623059X.
- Kalman, Bobbie. *Hooray For Dairy Farming!* Crabtree Publishing. 1997. ISBN: 0865056641.
- Knight, Bertram. *From Cow to Ice Cream*. Children's Press. 1997. ISBN: 0516260669.
- Kurtz, Shirley. *Applesauce*. Good Books, Inc. 1992. ISBN: 1561480657.
- Landau, Elaine. *Tomatoes*. Children's Press. 1999. ISBN: 0516210289.
- Lillegard, Dee. *Potatoes On Tuesday (Let Me Read Level 1)*. Goodyear Publishing Company. 1995. ISBN: 0673362353.
- Llewellyn, Claire. *Chocolate (What's for Lunch)*. Children's Press. 1998. ISBN: 0516262181.
- Llewellyn, Claire. *Bread (What's for Lunch)*. Children's Press. 1998. ISBN: 0516215469.
- Llewellyn, Claire. *Milk (What's for Lunch)*. Children's Press. 1998. ISBN: 0516208403.
- Llewellyn, Claire. *Eggs (What's for Lunch)*. Children's Press. 1998. ISBN: 0516215477.
- Llewellyn, Claire. *Oranges (What's for Lunch)*. Children's Press. 1998. ISBN: 0516215485.
- Llewellyn, Claire. *Peas (What's for Lunch)*. Children's Press. 1998. ISBN: 0516215493.
- Llewellyn, Claire. *Peanuts (What's for Lunch)*. Children's Press. 1998. ISBN: 051626222X.
- Llewellyn, Claire. *Potatoes (What's for Lunch)*. Children's Press. 1998. ISBN: 0516208381.
- Micucci, Charles. *The Life and Times of the Apple (Orchard Paperbacks)*. Orchard Books. 1995. ISBN: 0531070670.
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- Older, Jules. *Cow*. Charlesbridge Publishing. 1998. ISBN: 0881069566.
- Peterson, Chris. *Extra Cheese Please!* Boyds Mills Press. 1994. ISBN: 1563971771.
- Pohl, Kathleen. *Potatoes*. Unknown. 1990. ISBN: 0817227237. (available from amazon.com)
- Powell, Jillian. *Potatoes (Everyone Eats)*. Raintree/Steck Vaughn. 1997. ISBN: 0817247629.
- Reid, Mary Ebeltoft. *Let's Find Out About Ice Cream*. Scholastic Trade. 1997. ISBN: 0590738003.
- Repchuck, Caroline. *My Little Supermarket*. Millbrook Press, Inc. 1997. ISBN: 0761301453.

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- Chocolate Ibarra. (both Spanish and English). 2002. <http://chocoibarra.com.mx>
- Cocoa Production: From Pods to Beans*. Cocoa, Chocolate, and Confectionery Research Group. Penn State. 2002. <http://www.cde.psu.edu/dept/ccrg>
- The Dairy Industry. 2002. <http://www.dairybiz.com>
- The Extraordinary Egg*. The Teacher's Corner. Canadian Egg Marketing Agency. 2002. <http://www.canadaegg.ca/English/educat/educat.html>
- General Egg Information. Poultry and Egg Association. 2002. <http://www.poultryegg.org>
- General Egg Information. United Egg Producers. 2002. <http://www.unitedegg.org>
- The Hershey's Factory Tour. 2002. <http://www.kidztown.com/factorytour.shtml>
- Honey.com. National Honey Board. 2002. <http://www.honey.com>
- How Peanut Butter is Made*. Peanut Butter Lovers.com. 2002. <http://www.peanutbutterlovers.com>
- Just For Kids*. Del Monte Foods. 2002. <http://www.delmonte.com>

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*Milk. Dairy Biz Moo Milk.* 2002. <http://www.moomilk.com>

Processed Tomato Industry Information. 2002. <http://www.tomatonet.org>

Refining Sugar from Both Sugarcane and Sugar Beets. 2002. <http://www.sugar.org>

Refining Sugar From Sugar Beets (take the refinery tour). 2002. <http://www.monitorsugar.com>

Refining Sugar From Sugarcane. 2002. <http://www.worldwidemart.com/starwing/refinery>

*Sights at Morning Star Farms - Los Banos.* Tomato Processing. Morning Star Company. 2002. <http://www.morningstarco.com>

*Sights In and Around Morning Star Packing - Yuba City.* Tomato Processing. Harter Tomato Products, Morning Star Company. 2002. <http://www.morningstarco.com>

*The Story of Florida Orange Juice.* The Florida Citrus Web Site. 2002. [http://members.aol.com/citrusweb/oj\\_story.html](http://members.aol.com/citrusweb/oj_story.html).

*Tomato Facts.* California Tomato Commission. 2002. <http://www.tomato.org>

USA Rice Federation. 2002. <http://www.usarice.com>.

## **EDUCATOR'S NOTES**

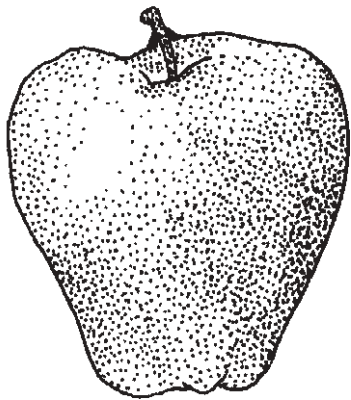
# FOOD PRODUCTS

| <u>Raw Food Item</u> | <u>Possible Processed Products</u>  |
|----------------------|---|
| apple                | - apple juice, applesauce, dried apples, fruit rollups, jelly   |
| beef animal          | - bologna, corned beef, hamburger, liver, roast beef, steak   |
| chicken              | - broth, chicken meat parts, patties, soup  |
| chicken eggs         | - bread, brownies, cakes, cookies, donuts, egg rolls, ice cream, mayonnaise, noodles, omelettes, pastries, pickled eggs, powdered egg whites, quiche                          |
| corn                 | - cereal, corn chips, corn meal, corn oil, corn syrup, popcorn, tortillas   |
| dairy cow            | - butter, cheese, ice cream, milk, yogurt   |
| grapes               | - fruit rollups, grape juice, jelly, raisins  |
| hog                  | - bacon, bologna, ham, hot dogs, pork chops, pork roasts, ribs, sausage   |
| oranges              | - marmalade, orange juice, orange slices  |
| peanuts              | - nuts, peanut butter, peanut oil   |
| potatoes             | - french fries, hashbrowns, instant mashed potatoes, mashed potatoes, potato chips  |
| rice                 | - baby food, bread, brown rice, candy, cereal, pastries, pet foods, rice cakes, rice flour, rice pilaf, rice pudding, rice snacks, rice syrup, soup, Spanish rice, white rice |
| soybeans             | - bean sprouts, cooking oil, flour, margarine, shortening, soy milk, soy sauce, tamari, tempeh, tofu  |
| tomatoes             | - canned tomatoes, ketchup, pizza sauce, salsa, stewed tomatoes, sun-dried tomatoes, tomato juice, tomato paste, tomato sauce, tomato soup                                    |
| wheat                | - bread, cereal, flour, pancakes, pasta   |

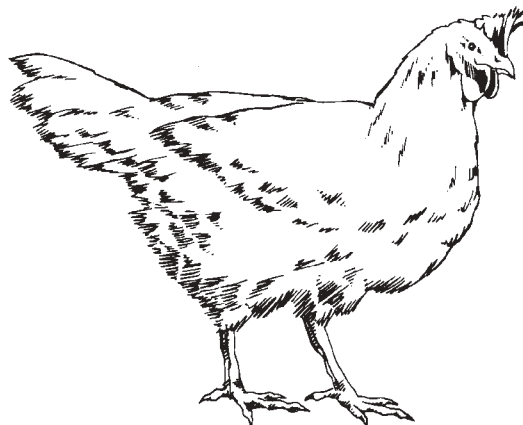
The **Raw Food Pictures** feature these 15 raw food items. This is a suggested list only. Students can decide on other raw foods they are interested in investigating. Some suggestions include sap from sugar maple tree, oats, and other grains. (An "other" and two "raw food of choice" cards are provided.)

# RAW FOOD PICTURES

(Cut cards apart.)



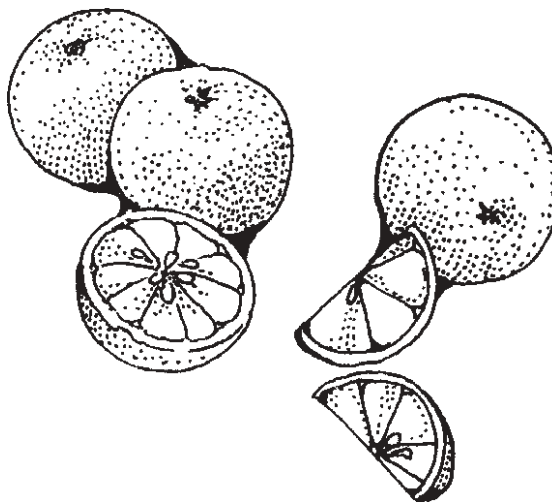
**Apple**



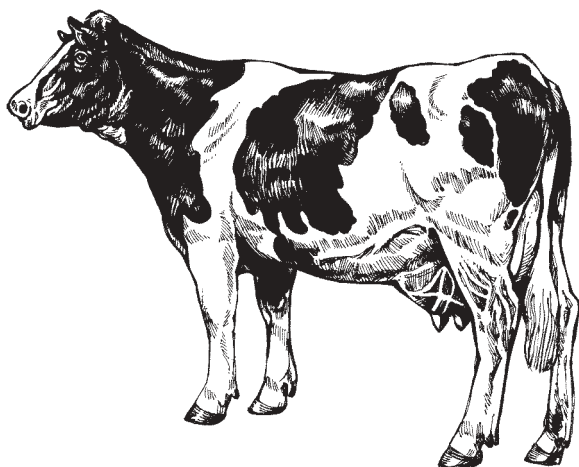
**Chicken**



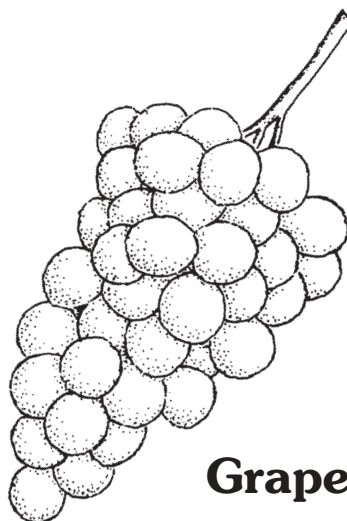
**Corn**



**Oranges**



**Dairy Cow**

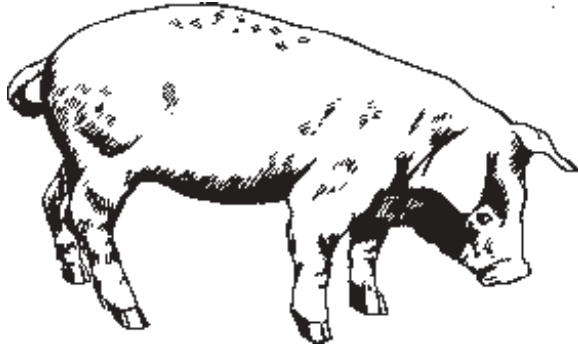


**Grapes**

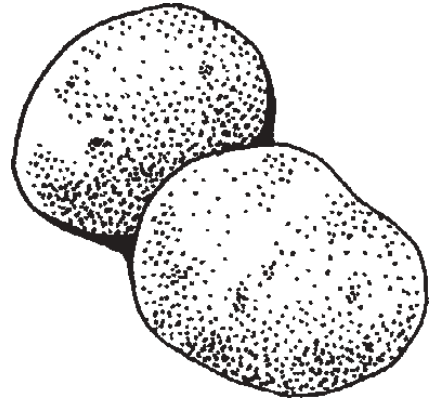


# RAW FOOD PICTURES (page 2)

(Cut cards apart.)



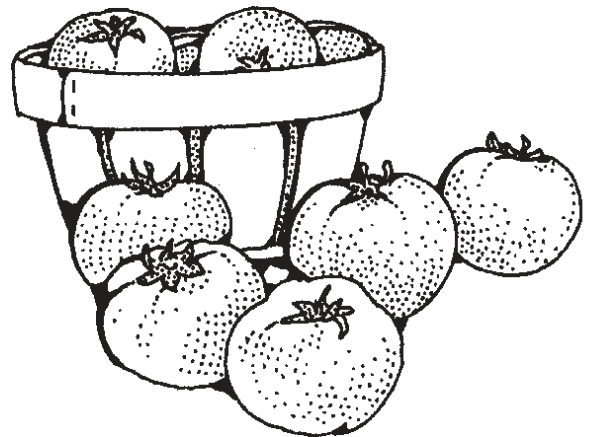
**Hog**



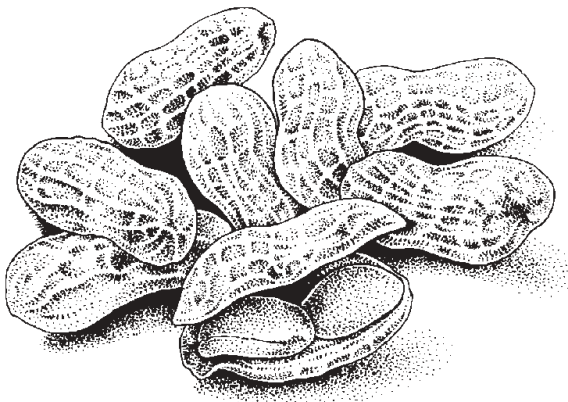
**Potatoes**



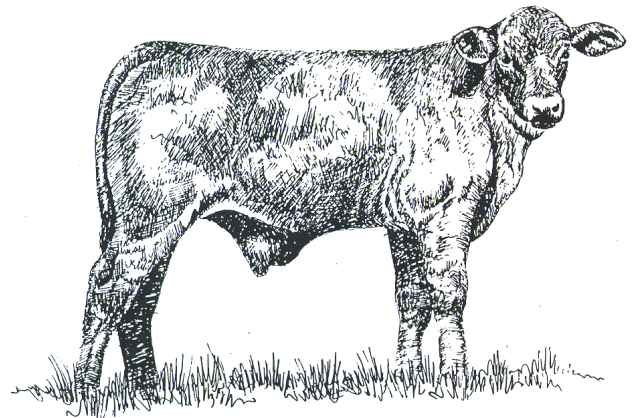
**Wheat**



**Tomatoes**



**Peanuts**

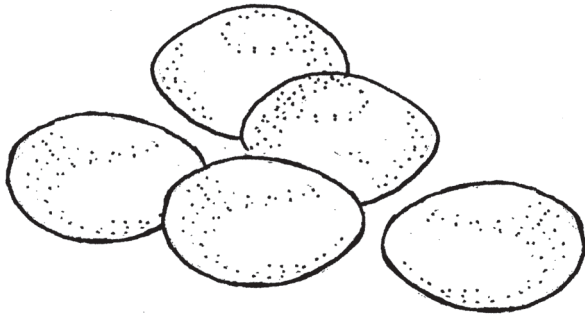


**Beef Animal**

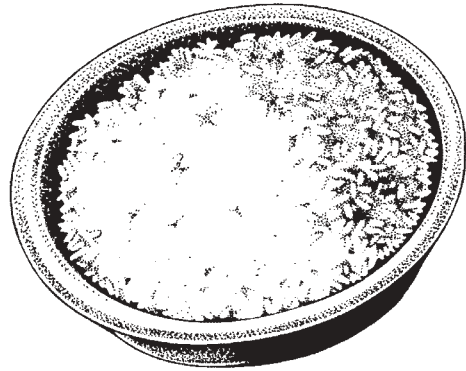


# RAW FOOD PICTURES (page 3)

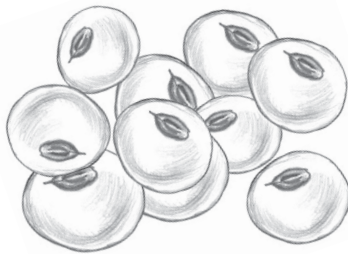
(Cut cards apart.)



**Chicken Eggs**



**Rice**



**Soybeans**

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**(raw food of choice)**

**OTHER**

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**(raw food of choice)**

