

# Mystery Meat

**Purpose:** Students will investigate the meaning of terms and information found on beef products in grocery stores and retail centers. Students will gain knowledge that will allow them to make informed choices as consumers.

**Time:** 60 minutes

**Level:** 8-12

**Materials:**

- Labels from retail cuts of beef steaks, roasts, ground beef) and beef products (beef jerky, shredded beef, etc.). Ideally, you would like one label for every pair of students.
- Beef Choices info-graphic <http://www.beefitswhatsfordinner.com/choicesofbeef.aspx>
- OPTION 1: Sugar cookies, red frosting, white sprinkles
- OPTION 2: Red paper, small shreds of white paper



Minnesota K-12 Social Studies Standards and Benchmarks

9.2.1.1.1 Apply reasoned decision-making techniques in making choices; explain why different individuals, households, organizations and/or governments faced with the same alternatives might make different choices.

Minnesota K-12 Science Standards and Benchmarks

8.1.1.2.1 Use logical reasoning and imagination to develop explanations, prediction and models based on evidence.

9.4.4.2.4 Explain how environmental factors and personal decisions affect personal and community health.

National and Minnesota K-12 Health Standard

Students will demonstrate the ability to access valid health information and products and services to enhance health.

## Background

Consumers have many options when buying meat at the grocery store. Cuts of beef and beef products are labeled with terms that can provide information to consumers on what product will best suit their needs and preferences.

Examples of these terms are:

**Terms that address how the animal is raised**

Grass-Finished or Grass-Fed– Cattle spend their entire lives grazing on pasture. There is often confusion because a majority of cattle spend time eating grass on pastures

Grain-Finished – Cattle spend most of their lives grazing on pasture then spend 4-6 months in a feed yard.

Naturally Raised – Cattle that have not been given any additives, hormones, or antibiotics. Cattle can be grain-finished or grass-finished – consumers can look at additional label details to determine this. Must be certified by

USDA’s Certified Organic – Cattle can be grain-finished or grass-finished as long as the feed is 100% organic. Organic is a marketing claim that is regulated by USDA standards. Organic grains and grasses must be grown on land that is managed to reduce erosion and improve soil quality.

Weeds, insects and other pests are controlled using practices like crop rotation, mulching, tillage, and biological control. Most synthetic herbicides and pesticides are prohibited, although a few synthetic products appear on a special National List and are allowed.

**Terms that address the quality grade assigned by the United States Department of Agriculture (USDA):**

USDA Prime – Prime cuts of beef have the most marbling. Marbling is another term for intramuscular fat or flecks of fat found within the muscle or meat. Prime cuts are usually sold to high end restaurants, although some specialty meat markets and supermarkets carry it.

USDA Choice – Choice cuts of beef tend to have a moderate amount of marbling. Choice cuts are the most widely available quality grade in the market.

USDA Select – Select cuts of beef have a slight amount of marbling. This makes these cuts leaner but less juicy and flavorful than the prime and choice grades.

**Terms referring to the beef aging process:**

Wet Aging – Beef is aged up to 21 days in airtight, sealed bags under refrigeration 320F-340F. The resulting beef has a traditional beef flavor. This is the most common aging method

Dry Aging – Beef is aged up to 28 days in a refrigerated in under controlled humidity and air flow. The beef is uncovered during this aging process. The resulting flavor is brown-roasted. This drying method is less common due to the complexity and cost.

## *Procedure*

1. Collect labels from cuts of beef and beef products. Contact local grocery stores or meat markets to get samples or also search online resources.
2. Give one label to each pair of students. Have them review the label for about five minutes. Instruct the students to make note of the information the label contains and also record any terms that they are not familiar with. After five minutes, have the pairs switch labels. Instruct the pairs to review their new label and compare and contrast it to their previous label. Switch labels one more time.
3. Discuss with students the different terms they observed and lead a discussion to learn what knowledge the students have about the beef labels and terms. Some possible questions could include:
  - a. What is the difference between grass-fed and grain finished beef?
  - b. Are all natural beef products also organic? Why or why not?
  - c. If you were grilling a steak would you want to have a choice or select steak?
4. Use the “Choices of Beef” info-graphic at <http://www.beefitswhatsfordinner.com/choicesofbeef.aspx> to help students define the terms they found on the beef product labels.
5. Have students work individually or in pairs to create a graphic organizer that compares and contrasts two or more of the terms grass-fed, grain finished, natural, organic. Possible graphic organizers could include Venn Diagrams, T-chart, Compare/Contrast Matrix. Examples of these graphic organizers can be found on many online education sites.
6. Discuss with students how knowing these terms can help them make informed choices as a consumer and use their money wisely.
7. Have students gather additional information on how the different beef options affect the nutritional content, flavor and cost. This research could be done through on-line sources, by interviewing beef farmers and ranchers, interviewing chefs, grocery store/meat market managers and employers and any other appropriate professionals and experts.
8. OPTIONAL – Prepare cuts of beef that are labeled as grass-fed, grain-finished, natural, organic, prime, choice, and/or select by grilling or cooking. Have students taste the different types of beef and compare flavor, juiciness, tenderness and any other characteristics determined important by the students.
9. Discuss with the students what choice they would make when purchasing beef. Have students list the factors that influenced their choice and also what factors would cause them to change their choice.
10. To help students understand the USDA quality grades of beef have them create a model using a cookie, frosting, and white sprinkles.
  - a. Purchase or bake a sugar cookie for each student. A recipe is included at the end of this lesson.

- b. Show students how to frost the cookies using red frosting. This frosted cookie represents a beef steak.
  - c. Assign each student a USDA quality grade (prime, choice, or select.). Based on their grade, they must put the correct amount of sprinkles on each cookie.
  - d. Have students display their cookies and guess which quality grade(s) their classmates were assigned based on the sprinkles.
  - e. Allow students to eat their “steak” cookies.  
If food allergies, wellness policies or any other circumstance prevents you from having cookies, frosting and/or sprinkles, you can cut out red ovals of paper to symbolize the steak and use small pieces of white paper to act as the marbling.
11. Review the beef label terms. Assess students understanding by having students choose what type of beef they would select for different situations. Have students defend their choices. A few examples:
- a. You would like to purchase beef to slice and cook for beef fajitas. You have limited funds to purchase this meat. *Grain-finished, Select, wet aged*
  - b. You are hosting a very important person and want to grill them a very juicy and flavorful steak. *Prime, possibly dry aged*

### Additional Activities

- Invite a meat and/or food scientist, food inspector or other professional involved in food labeling and safety to visit your class. Have this professional share information about opportunities in this field about the educational requirements, working practices and rewards.
- Take a field trip to a beef farm and hear from the farmer or rancher and the process of raising beef cattle. Help students investigate the science utilized on the farm and social impacts of the product that is produced.

*Adapted from Elizabeth Palmer, National Beef Council*

*In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651/201-6000. TTY users can call the Minnesota Relay Service at 711 or 1-800-627-3529. The MDA is an equal opportunity employer and provider.*

## “Steak” Sugar Cookie Recipe

3 cups all-purpose flour

½ tsp baking soda

½ tsp baking powder

2 sticks of butter

2 eggs

1 cup sugar

1 tsp vanilla

In a mixing bowl sift together flour baking soda, and baking powder. On low speed add butter to mixer and mix until the mixture resembles cornmeal. In a small mixing bowl, beat eggs; add sugar and vanilla and beat thoroughly. Blend egg mixture into flour, butter mixture. Add red food coloring (optional).

Chill the dough. ON a lightly floured surface roll dough to 1/8 inch thickness; cut with floured cookie cutters. Try to make the cookies an oval shape to resemble a rib eye steak. With wide spatula transfer to baking sheet.

Bake in over preheated to 375 degrees F for 6-8 minutes or until lightly browned.