MEATS EVALUATION AND TECHNOLOGY

Updated 3/17/14

PURPOSE:

The purpose of the Meat Evaluation and Technology Career Development Event is to assist the local Agricultural Education instructors in motivating students to become knowledgeable consumers of meat and meat animal products, and / or become involved in the industry of meat animal marketing and merchandising.

OBJECTIVES:

- To develop employment skills for students who are interested in exploring or pursuing career opportunities in the meat animal industry.
- To encourage the development of broader analytical skills, critical thinking strategies and an understanding of appropriate meat terminology for high school students.
- To develop the ability to evaluate meat animal products in order to optimize economic returns to producers and industry as well as to meet the needs of the consumer.

COMMON CORE REFERENCES:

7th Grade

CCSS.Math.Content.7.EE.B.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

8th Grade

MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.

9-10th Grade

CCSS.Math.Content.HSA-CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.

11-12th Grade

CCSS.ELA-Literacy.SL.11-12.2 Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

GUIDELINES:

Clipboards, calculators, and paper will be provided

Required Items:

A hard hat, White Coat/Smock and Hair Net must be brought to the contest by the participant.

EVENT PROCEDURES:

The event will be divided into six sections as follows:

1. **Meat Formulation Problem Solving**
2. **Retail Meats Cuts Identification**
3. **Beef Quality and Yield Grading**
4. **A maximum of six Wholesale or Retail classes**
5. **Keep/ Cull Class**
6. **Multiple Choice Objective-Type Test (Starting 2014)**

1. **Meat Formulation Problem Solving**

Students will be given a situational problem involving the least cost formation of a batch of particular meat product (hamburger, wiener, bologna, etc..). This problem will be worth 50 points and consist of procedural questions and the actual determination of the least cost price.

*Ground Beef Formulation Problem Training Materials: Assume that you manage a meat plant which manufactures ground beef for a chain of retail stores. Your goal is to produce a fresh, wholesome product which complies with all meat inspection regulations and which will have three days shelf life in the meat case. The fat content must comply with the specifications of the stores. The cost of the product should be as low as possible.

* Ground Beef Regulations (USDA) GROUND BEEF: The term "Ground Beef" and "Chopped Beef" are synonymous. Products so labeled must be made with fresh beef with or without seasoning, and without the addition of fat as such, and shall contain no more than 30% fat. It may not contain added water, binders, or extenders. It may contain beef cheek meat not to exceed 25%. Heart meat and tongue are not acceptable ingredients.

If the name is qualified by the name of a particular cut, such as "Ground Beef Round" or "Beef Chuck Ground" the product must consist entirely of meat from the particular cut or part.

*Industry Guidelines on Ground Beef Manufacture

A. To get the most desirable color and maximum shelf life, all boneless meats used to manufacture ground beef shall be fresh (not frozen), well chilled (temperature no higher than 35 degrees Fahrenheit), and shall arrive at the plant within 96 hours of animal slaughter.

B. A least-cost determination shall be performed on acceptable meat ingredients to select those meats which produce the lowest cost product which meets all ground beef guidelines.

C. To simplify the grinding and blending operation, only two meat ingredients will be used for each batch.

D. Rounding of decimals: 5 - 9 will be rounded up; 1 - 4 will be rounded down.

EXAMPLE: Formulating a Batch of Ground Beef to Desired Fat Content - Using the Pearson Square Meats:

a. Boneless cow meat (10% fat - $.99 / lb.)
b. 75% lean beef trimmings (25% fat - $.79 / lb.)

Desired Final Fat Content: 20 %

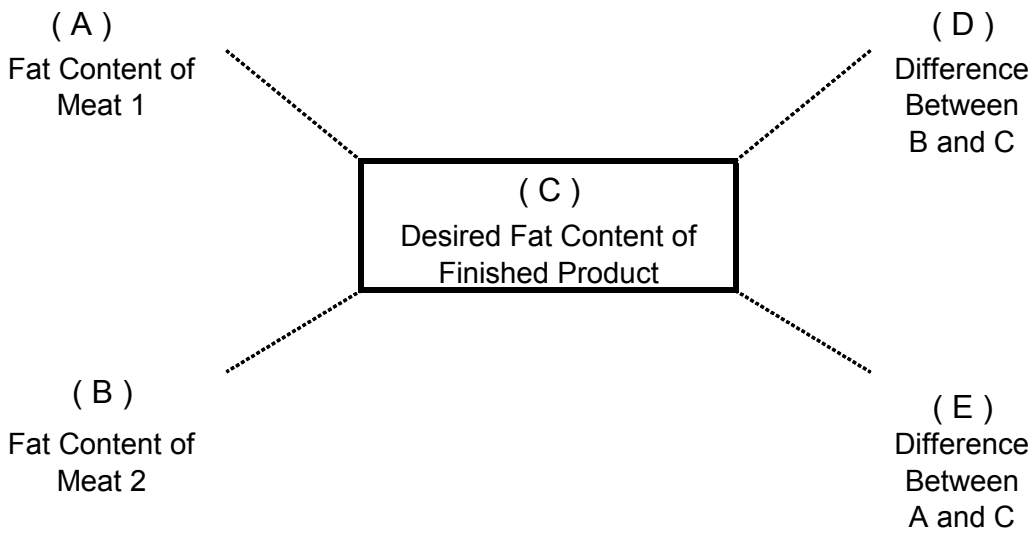
Batch Size: 1,000 lbs.

Determine

a. The amounts of the two types of meat which must be blended together to give the desired fat content.
b. The meat cost of the finished product. **

***NOTE:** You will only be determining meat costs. In an actual situation overhead cost must also be added to the cost of the ground beef to account for labor, equipment, transportation, etc.. In this exercise the student need not be concerned with these overhead costs.*

Pearson Square



Sum of (D) and (E)

Proportion of ingredient (A) = (D) + (Sum)

Proportion of ingredient (B) = (E) + (Sum)

* For Above Information

(A) 10% (D) 5

(C) 20%

(B) 25% (E) 10/15 (SUM)

Proportions:

1. Boneless cow = 5 / 15 = .33 (330 lbs.)
2. 75% Beef Trim = 10 / 15 = .67 (670 lbs.)

Verify Final Fat Content

330 lbs. x 0.10 (fat) = 33 lbs.

670 lbs. x 0.25 (fat) = 167 lbs.

200 lbs. fat
1,000 lbs. batch (20 % fat)

Cost per Pound

Boneless cow meat - .33 x $.99 / lb. = 0.327
75% trim .67 x $.79 / lb. = 0.529
.856 or $0.86 lb.

SAMPLE PROBLEM:

You must follow all government regulations and company policies listed in the training materials. Determine which available ingredients to use (and to what levels) to make the lowest priced ground beef acceptable.

Specifications:

Desired fat content of finished product is 18%
Batch size = 5,000 pounds
Manufacturing Date = February 10
No product over 5 days old may be used
No variety meats may be used
No product over 35 degrees Fahrenheit may be used

Boneless Meat Ingredients Available:

	Slaughter Date	Temp.	Fat Content	Price
Bull Meat	February 6	33 degrees F	8%	$1.05
Boneless Chuck	February 7	35 degrees F	14%	$1.00
75% lean trim	February 4	32 degrees F	25%	$0.75
50% lean trim	February 6	31 degrees F	50%	$0.55
Beef Chuck Meat	February 7	37 degrees F	12%	$0.70
Beef Hearts	February 6	32 degrees F	15%	$0.35

Solution:

Do all potential ingredients meet government regulations and company specifications?

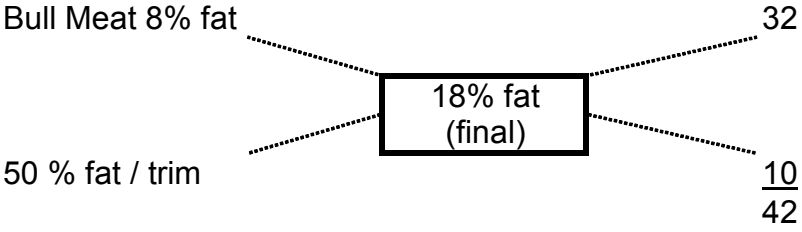
Acceptable	**Not Acceptable**
Bull Meat	75% lean trim (too old)
Boneless Chuck	Chuck meat (too warm)
50 % lean trim	Beef hearts (not allowed)

Therefore, to produce desired fat content, product could be made with either of the two following combinations:

1. Bull meat and 50% lean trim
2. Boneless chuck and 50% lean trim

Which combination results in the lowest meat cost?

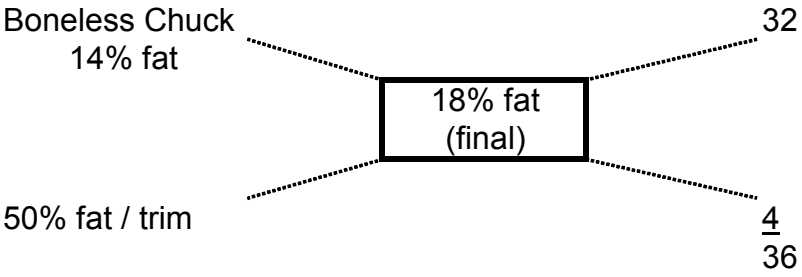
1.



Proportions:
Bull meat = 32 / 42 = 0.76 x 5,000 = (3,800 lbs.)
50% trim = 10 / 42 = 0.24 x 5,000= (1,200 lbs.)
5,000 lbs.

Cost:
Bull meat - 0.76 x $1.05 = $0.798
50% trim - 0.24 x $.55 = $0.132
$0.93 or $0.93 / lb.

2.



Proportions:
Boneless chuck = 32 / 36 = 0.89 x 5,000 = (4,450 lbs.)
50% trim = 4 / 36 = 0.11 x 5,000= (550 lbs.)
5,000 lbs.

Cost:
Boneless chuck - 0.89 x $1.00 = $0.89
50% trim - 0.11 x $.55 = $0.06
$0.95 or $0.95 / lb.

Final Solution: Meats to be used:
Bull meat ……3,800 lbs.
50% trim ……1,200 lbs.

Meat Cost: $0.93 per pound

SCORING:

To facilitate computer scoring of this exercise, the participants will be given a list of meat / price combinations (up to ten) and be required to select the correct one, based upon the above calculations.

Example: Check the correct solution:

a. Bull and chuck meat (0.89)
b. Boneless chuck and 75% lean trim (0.91)
c. Bull meat and 50% lean trim (0.93)
d. Boneless chuck and 50% lean trim (0.90)
e. Bull meat and 50% lean trim (0.68)
f. Beef hearts and 75% lean trim (0.68)
g. Bull meat and 50% lean trim (0.97)
h. Beef chuck meat and bull meat (1.04)
i. 75% lean trim and 50% lean trim (0.67)
j. 50% lean trim and bull meat (0.87)

Example questions:

a. Which ingredients do not meet company temperature constraints?

   Answer: Beef chuck meat

b. Which ingredients do not meet company freshness requirements?

   Answer: 75% lean trim

c. Which ingredients do no meet government regulations?

   Answer: Beef hearts

*** 30 minutes will be allowed for this section**

2. **Retail Meat Cuts Identification**

   Students will identify 40 retail cuts of meat. The cuts will be divided into two classes of 20 cuts per class. Students will be given one (1) minute to identify each cut according to the **"Meat Identification Card"**. The coding of the retail cuts is listed under **"Wholesale Retail Cuts Coding"**. Only the cuts listed on form 7 are eligible to be used in this event. Students will be given one (1) point for correct species identification, two (2) points for correct primal cut identification, three (3) points for correct retail trade name, and one (1) point for cookery.

3. **Beef Quality and Yield Grading**

   Participants will quality and yield grade six beef carcasses. The carcasses will be divided into two classes of three carcasses. Ten minutes will be allowed for each class.

A. Quality Grading: The student should give the carcass a maturity score and a marbling score based on USDA standards and then determine the quality grade. The possible quality grades and a corresponding letter are listed at the bottom of form 5. The student should write the number that corresponds with the quality grade under the column titled **"Number, Quality Grade"**.

B. Yield Grading: Using Form 5, students should write in the carcass weight which is given for each carcass, give the carcass a preliminary yield grade based on USDA Standards, then adjust the preliminary yield grade using "Ribeye Area" and "Kidney, Pelvic, and Heart Fat". After completing these steps, the student should write in the number that corresponds to the final yield grade (chart on lower portion of Form 5) under the "Number, Yield Grade" column. Only the final yield will be graded.

4. Placing of Four Classes

Using Form 2, four classes selected from the following, will be placed.

a. one class of four beef carcasses
b. two classes of retail cuts - beef, pork, or lamb
c. one class of four pork carcasses
d. one class of four wholesale pork cuts
e. one class of beef wholesale cuts

*** Seven minutes will be allowed to place each class**

5. Placing of Two Classes and Ten Questions

Two classes selected from the list in "Section D" will be placed. Ten minutes will be allowed to place each class and then 10 questions will be asked covering both classes.

Sample Question:

Which beef carcass had the highest percentage of kidney, pelvic and heart fat?

6. Objective-Type Multiple Choice Test

25 objective-type multiple choice questions will be selected from the CEV Meat Science and Food Safety DVD reference. Each question will be worth two points.

7. Keep/ Cull Class - 50 points

Participants will be provided with a scenario based on an industry standard or situation. Participants will be given time to review the scenario and then time to evaluate the meat product and make a selection based on the provided information. *Example:* Select the four ribeye steaks to be sold to a high class "white table cloth" restaurant that advertises superior quality.

Scoring: Four meat products to be kept will have an aggregate score of 50 points

Scoring of the Event will be as follows:

Section 1 - Problem Solving	50 points
Section 2 - Retail Meat Cut Identification	400 points
Section 3 - Quality Grading (3-5 carcasses 12pts each)	60 points (Maximum)
- Yield Grading (3-5 carcasses 10pts each)	50 points (Maximum)
Section 4 - Placing of Four Classes	200 points
Section 5 - Placing of Two Classes	100 points
- Questions	50 points
Section 6 - Objective-Type Multiple Choice Test	50 points
Section 7 - Keep/ Cull Class	50 points
Total Event	**1010 points (possible)**

GENERAL INFORMATION:

1. **Participant and official judges are to make their placing's and identifications without handling the meat.** Official grading of the grading classes of carcasses will be done by the USDA Grading Service, if possible.
2. Other than the official cards for the career development event, participants will be allowed to have **blank paper. No mechanical aids such as measuring devices or lights can be used** in arriving at a decision. Non-programmable calculators may be used in the event.
3. **Clothing:** Participants must come prepared to work in a cold storage room for two hours. They should have heavy sweaters, coats and other warm clothes and footwear. Participants **MUST wear a clean white coat and a hard hat.**
4. There will be four (4) members per team.

References

National FFA Core Catalog – http://shop.ffa.org/cde-materials-c1289.aspx

- Meat Evaluation Handbook (hard bound)
- Retail Meat Instructional Materials/Instructor Combo Pack
- Retail Meat Team Combo Pack
- Retail Meats Field Guide
- Retail Meats Flash Cards
- Meat Identification Tutorial CD-ROM
- Meat Buyer's Guide
- NAMP Meat Posters
- Beef, Lamb, Pork and Veal Cut Charts
- Meats Evaluation Scan Forms
- National FFA CDE Q&A's (2007-2010)
- FFA Learn-National FFA CDE Q&A's (2005 & 2006)
  https://ffa.learn.com/learncenter.asp?id=178409&page=31&mode=preview

CEV Multimedia
1020 SE Loop 289, Lubbock, TX 79404, (800) 922-9965

- Meat Evaluation Handbook (DVD)
- Retail Cuts Identification (DVD)
- Meat Science and Food Safety (DVD) - written exam resource

Beef Myology - http://bovine.unl.edu/bovine3D/eng/nIntro.jsp

National Cattlemen's Beef Association
9110 E. Nichols Ave. #300, Centennial, CO 80112, (303) 694-0305/1-800-368-3138

- USDA Marbling Photographs
- Guide to Identifying Meat Cuts
- https://store.beef.org/

American Meat Science Association (AMSA)
2441 Village Green Place, Champaign, Illinois 61874, (800) 517-2672
http://www.meatscience.org/page.aspx?id=539
Email: information@meatscience.org

- USDA Marbling Photographs

Art Services, Inc.
3015 Earl Place, N.E., Washington, D.C., 20018, (202) 526-5607

- Beef Ribeye Grids

NASCO
901 Janesville Avenue, P.O. Box 901, Fort Atkinson, WI 53538-0901, 1-800-558-9595

- Preliminary Yield Grade Rulers (http://www.enasco.com/product/C02615N)
- Beef and Pork Ribeye Grids

Example Meats Evaluation Websites of Classes and Materials
http://aggiemeat.tamu.edu/judging/meatjudging.html
http://animalscience.unl.edu/meats/id/

Retail Cuts Code Sheet with Cookery

Species	Primal	Retail Cut	Cooking Method	Species	Primal	Retail Cut	Cooking Method
B	B	89	M	Beef	Brisket	Corned	Moist
B	B	15	M	Beef	Brisket	Flat Half, Bnls	Moist
B	B	10	M	Beef	Brisket	Whole, Bnls	Moist
B	C	26	M	Beef	Chuck	7-bone Pot-Roast	Moist
B	C	03	M	Beef	Chuck	Arm Pot-Roast	Moist
B	C	04	M	Beef	Chuck	Arm Pot-Roast, Bnls	Moist
B	C	06	M	Beef	Chuck	Blade Roast	Moist
B	C	13	D/M	Beef	Chuck	Eye Roast, Bnls	Dry/Moist
B	C	45	D	Beef	Chuck	Eye Steak, Bnls	Dry
B	C	20	M	Beef	Chuck	Mock Tender Roast	Moist
B	C	48	M	Beef	Chuck	Mock Tender Steak	Moist
B	C	21	D	Beef	Chuck	Petite Tender	Dry
B	C	29	D/M	Beef	Chuck	Shoulder Pot Roast (Bnls)	Dry/Moist
B	C	58	D	Beef	Chuck	Top Blade Steak (Flat Iron)	Dry
B	D	47	D/M	Beef	Flank	Flank Steak	Dry/Moist
B	F	49	D	Beef	Loin	Porterhouse Steak	Dry
B	F	55	D	Beef	Loin	T-bone Steak	Dry
B	F	34	D	Beef	Loin	Tenderloin Roast	Dry
B	F	56	D	Beef	Loin	Tenderloin Steak	Dry
B	F	59	D	Beef	Loin	Top Loin Steak	Dry
B	F	60	D	Beef	Loin	Top Loin Steak, Bnls	Dry
B	F	64	D	Beef	Loin	Top Sirloin Cap Steak, Bnls	Dry
B	F	63	D	Beef	Loin	Top Sirloin Steak, Bnls Cap Off	Dry
B	F	62	D	Beef	Loin	Top Sirloin Steak, Bnls	Dry
B	F	40	D	Beef	Loin	Tri Tip Roast	Dry
B	G	28	M	Beef	Plate	Short Ribs	Moist
B	G	54	D/M	Beef	Plate	Skirt Steak, Bnls	D/M
B	H	22	D	Beef	Rib	Rib Roast	Dry
B	H	13	D	Beef	Rib	Ribeye Roast, Bnls	Dry
B	H	45	D	Beef	Rib	Ribeye Steak, Bnls	Dry
B	H	50	D	Beef	Rib	Ribeye Steak, Lip-On	Dry
B	I	08	D/M	Beef	Round	Bottom Round Roast	Dry/Moist
B	I	09	D/M	Beef	Round	Bottom Round Rump Roast	Dry/Moist
B	I	43	M	Beef	Round	Bottom Round Steak	Moist

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Retail Cuts Code Sheet with Cookery (cont.)

Species	Primal	Retail Cut	Cooking Method	Species	Primal	Retail Cut	Cooking Method
B	I	14	D/M	Beef	Round	Eye Round Roast	Dry/Moist
B	I	46	D/M	Beef	Round	Eye Round Steak	Dry/Moist
B	I	51	M	Beef	Round	Round Steak	Moist
B	I	52	M	Beef	Round	Round Steak, Bnls	Moist
B	I	36	D/M	Beef	Round	Tip Roast - Cap Off	Dry/Moist
B	I	57	D	Beef	Round	Tip Steak - Cap Off	Dry
B	I	39	D	Beef	Round	Top Round Roast	Dry
B	I	61	D	Beef	Round	Top Round Steak	Dry
B	N	82	M	Beef	Various	Beef for Stew	Moist
B	N	83	D/M	Beef	Various	Cubed Steak	Dry/Moist
B	N	84	D	Beef	Various	Ground Beef	Dry
P	E	44	D/M	Pork	Ham/Leg	Pork Fresh Ham Center Slice	Dry/Moist
P	E	25	D/M	Pork	Ham/Leg	Pork Fresh Ham Rump Portion	Dry/Moist
P	E	27	D/M	Pork	Ham/Leg	Pork Fresh Ham Shank Portion	Dry/Moist
P	E	91	D	Pork	Ham/Leg	Smoked Ham, Bnls	Dry
P	E	90	D	Pork	Ham/Leg	Smoked Ham, Center Slice	Dry
P	E	96	D	Pork	Ham/Leg	Smoked Ham, Rump Portion	Dry
P	E	97	D	Pork	Ham/Leg	Smoked Ham, Shank Portion	Dry
P	E	35	D	Pork	Ham/Leg	Tip Roast, Bnls	Dry
P	E	38	D	Pork	Ham/Leg	Top Roast, Bnls	Dry
P	F	05	D/M	Pork	Loin	Back Ribs	Dry/Moist
P	F	66	D/M	Pork	Loin	Blade Chops	Dry/Moist
P	F	67	D/M	Pork	Loin	Blade Chops, Bnls	Dry/Moist
P	F	06	D/M	Pork	Loin	Blade Roast	Dry/Moist
P	F	68	D	Pork	Loin	Butterflied Chops Bnls	Dry
P	F	11	D	Pork	Loin	Center Loin Roast	Dry
P	F	12	D	Pork	Loin	Center Rib Roast	Dry
P	F	69	D/M	Pork	Loin	Country Style Ribs	Dry/Moist
P	F	70	D	Pork	Loin	Loin Chops	Dry
P	F	71	D	Pork	Loin	Rib Chops	Dry
P	F	73	D	Pork	Loin	Sirloin Chops	Dry
P	F	53	D	Pork	Loin	Sirloin Cutlets	Dry
P	F	30	D	Pork	Loin	Sirloin Roast	Dry
P	F	93	D	Pork	Loin	Smoked Pork Loin Chop	Dry
P	F	95	D	Pork	Loin	Smoked Pork Loin Rib Chop	Dry
P	F	34	D	Pork	Loin	Tenderloin, Whole	Dry
P	F	74	D	Pork	Loin	Top Loin Chops	Dry
P	F	75	D	Pork	Loin	Top Loin Chops, Bnls	Dry
P	F	37	D	Pork	Loin	Top Loin Roast, Bnls	Dry

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Retail Cuts Code Sheet with Cookery (cont.)

Species	Primal	Retail Cut	Cooking Method	Species	Primal	Retail Cut	Cooking Method
P	J	02	D/M	Pork	Shoulder	Arm Picnic, Whole	Dry/Moist
P	J	03	D/M	Pork	Shoulder	Arm Roast	Dry/Moist
P	J	41	D/M	Pork	Shoulder	Arm Steak	Dry/Moist
P	J	07	D/M	Pork	Shoulder	Blade Boston Roast	Dry/Moist
P	J	42	D/M	Pork	Shoulder	Blade Steak	Dry/Moist
P	J	94	D/M	Pork	Shoulder	Smoked Picnic, Whole	Dry/Moist
P	K	98	D	Pork	Side	Slab Bacon	Dry
P	K	99	D	Pork	Side	Sliced Bacon	Dry
P	K	17	M	Pork	Side/Belly	Fresh Side	Moist
P	L	32	D/M	Pork	Spareribs	Pork Spareribs	Dry/Moist
P	N	85	D	Pork	Various	Ground Pork	Dry
P	N	86	M	Pork	Various	Hock	Moist
P	N	83	D/M	Pork	Various	Pork Cubed Steak	Dry/Moist
P	N	87	D	Pork	Various	Pork Sausage Links	Dry
P	N	87	D	Pork	Various	Sausage	Dry
P	N	92	M	Pork	Various	Smoked Pork Hock	Moist
L	A	24	D/M	Lamb	Breast	Ribs (Denver Style)	Dry/Moist
L	E	01	D	Lamb	Leg	American Style Roast	Dry
L	E	44	D	Lamb	Leg	Center Slice	Dry
L	E	16	D	Lamb	Leg	Frenched Style Roast	Dry
L	E	18	D	Lamb	Leg	Leg Roast, Bnls	Dry
L	E	73	D	Lamb	Leg	Sirloin Chops	Dry
L	E	31	D	Lamb	Leg	Sirloin Half	Dry
L	F	70	D	Lamb	Loin	Loin Chops	Dry
L	F	19	D	Lamb	Loin	Loin Roast	Dry
L	H	71	D	Lamb	Rib	Rib Chops	Dry
L	H	72	D	Lamb	Rib	Rib Chops Frenched	Dry
L	H	22	D	Lamb	Rib	Rib Roast	Dry
L	H	23	D	Lamb	Rib	Rib Roast, Frenched	Dry
L	J	65	D/M	Lamb	Shoulder	Arm Chops	Dry/Moist
L	J	66	D/M	Lamb	Shoulder	Blade Chops	Dry/Moist
L	J	33	D/M	Lamb	Shoulder	Square Cut	Dry/Moist
L	N	88	M	Lamb	Various	Shank	Moist
B	M	76	D/M	Beef	Variety	Heart	Dry/Moist
L	M	76	D/M	Lamb	Variety	Heart	Dry/Moist
P	M	76	D/M	Pork	Variety	Heart	Dry/Moist
B	M	77	D/M	Beef	Variety	Kidney	Dry/Moist
L	M	77	D/M	Lamb	Variety	Kidney	Dry/Moist
P	M	77	D/M	Pork	Variety	Kidney	Dry/Moist

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Retail Cuts Code Sheet with Cookery (cont.)

Species		Primal		Retail Cut		Cooking Method		Species	Primal	Retail Cut	Cooking Method
B		M		78		D/M		Beef	Variety	Liver	Dry/Moist
L		M		78		D/M		Lamb	Variety	Liver	Dry/Moist
P		M		78		D/M		Pork	Variety	Liver	Dry/Moist
B		M		79		M		Beef	Variety	Oxtail	Moist
B		M		80		D/M		Beef	Variety	Tongue	Dry/Moist
L		M		80		D/M		Lamb	Variety	Tongue	Dry/Moist
P		M		80		D/M		Pork	Variety	Tongue	Dry/Moist
B		M		81		M		Beef	Variety	Tripe	Moist

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USDA BEEF GRADING TRAINING AID
Carcass Yield Grading

Carcass NO.	PYG		Carcass Weight	Required REA	Rib Eye Area		% KPH		FYG
	Est.	Adj.			Est.	Adj.	Est.	Adj.	
1									
2									
3									
4									
5									

Identify the final yield grade (to the nearest tenth) and complete the scan form correspondingly. Full points will be earned for a correct answer and $1/10^{th}$ above or below official yield grade. A two point deduction will be made for $2/10^{th} - 5/10^{th}$ above or below official yield grade. A four point deduction for $6/10^{th} - 9/10^{th}$ above or below official yield grade. Zero points will be awarded for answers one yield grade above or below the official yield grade. Perfect score will be a maximum of forty points (eight points for five carcasses).

Carcass Quality Grading

Carcass No.	Age		Marbling	Quality Grade
	Skeletal Maturity	Lean adj.		
1				
2				
3				
4				
5				

Prime High	Select High	Commercial High
Prime Avg.	Select Low	Commercial Ave.
Prime Low	Standard High.	Commercial Low
Choice High	Standard Low	Utility High
Choice Avg.		Utility Avg.
Choice Low		Utility Low

The participant should establish the quality grades for each carcass according to USDA standards. Each participant should complete the section of answers for quality grading on the computerized scorecard.