



New Mexico FFA

Meats Evaluation & Technology

Career Development Event

MEATS EVALUATION AND TECHNOLOGY

Updated 10/23

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 sections as follows:

1. Retail Meats Cuts Identification
 2. Beef Quality and Yield Grading
 3. Four Wholesale or Retail classes
 4. Two Classes with Ten Questions
 5. Keep/ Cull Class
 6. Multiple Choice Objective-Type Test
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1. Retail Meat Cuts Identification (210 points)

Students will identify 30 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. Each cut is worth a total of 7 points.

2. Beef Quality and Yield Grading(40-80 points)

Participants will quality and yield grade two to four beef carcasses. Ten minutes will be allowed for each class. Each carcass is worth 20 points.

2 Carcasses (40 points)

3 Carcasses (60 points)

4 Carcasses (80 points)

- 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".

Ten points are awarded for each correct grade. Each will be scored for the applicable adjacent grade as follows: 10, 8, 5, 0. However, in the case of "B" Maturity, Select High and Select Low will be awarded zero points.

- 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 (FYG) to the nearest one-tenth of a grade (chart on lower portion of Form 5) under the "Number, Yield Grade" column. Only the final yield will be graded.

Full points will be earned for every tenth (0.10) above or below official yield grade. A two-point deduction will be made for 2/10ths to 5/10ths (0.2 to 0.5) above or below the official yield grade. A five-point deduction will be made for 6/10ths to 9/10ths (0.6 to 0.9) above or below official yield grade. Zero points will be awarded for answers one yield grade above or below the official yield grade.

Official United States Department of Agriculture Yield Grades are 1.0 to 5.9.

SCORING EXAMPLE

Official Yield Grade (FYG Official) = 2.2

FYG 2.1–2.3 = full points (10)

FYG 1.7–2.0 or 2.4–2.7 = minus 2 points

FYG 1.3–1.6 or 2.8–3.1 = minus 5 points

Zero points for any FYG a full yield grade above or below official FYG.

3. Placing of Four Classes (200 points)

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**

4. Placing of Two Classes (100 points) and Ten Questions (50 points)

Two classes selected from the list in "Section 3" will be placed. Ten minutes will be allowed to place each class and then 10 questions will be asked covering both classes (five per class). Participants will be given a short time period to study their notes before answering questions after they have observed and placed the classes. Participants will not be able to use their notes when answering questions. Questions will be worth five points each.

GUIDELINES FOR QUESTIONS:

- All questions must be written in a manner that they can be answered by only one of the following responses: 1, 2, 3, 4.
- Questions should pertain to the criteria and differences used in placing the class (trimness, muscling, quality and/or sex). Questions that do not relate to the placing of the class or are not significant to the overall evaluation are not desirable questions and should not be used if possible.
- When asking questions about the differences within a class, the differences must be visually distinguishable

Sample Question:

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

5. Objective-Type Multiple Choice Test (50 points)

25 objective-type multiple choice questions relating to meat storage and handling, cookery, nutrition, food safety (HACCP principles, bio-security and personal safety), processed meats, legislation and history, purchasing meat, and animal care and handling will be given to each student. Each question will be worth two points. See references for resource material. Questions may also be pulled from past three years of National FFA Contest Written Exam.

6. 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 tablecloth" 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 - Retail Meat Cut Identification	210 points
Section 2 - Quality Grading (2-4 carcasses 10pts each)	20-40 points
- Yield Grading (2-4 carcasses 10pts each)	20-40 points
Section 3 - Placing of Four Classes	200 points
Section 4 - Placing of Two Classes	100 points
- Questions	50 points
Section 5 - Objective-Type Multiple Choice Test	50 points
Section 6 - Keep/ Cull Class	50 points
Total Event	700-740points(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/>

Meat Evaluation Handbook

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, Wis. 53538-0901, 1-800-558-9595

Preliminary Yield Grade Rulers (<https://www.enasco.com/p/USDA-PreliminaryCutability-Grade-Ruler%2BC02615N>)

Beef and Pork Ribeye Grids

Example Meats Evaluation Websites of Classes and Materials

<http://aggiemeat.tamu.edu/meat-identification-pictures>

<https://www1.unl.edu/search/?q=meat+identification+pictures&u=https%3A%2F%2Fanimalscience.unl.edu%2F>

USDA Carcass Beef Grades and Standards, copy and paste url into your search bar,

<https://www.ams.usda.gov/sites/default/files/media/CarcassBeefStandard.pdf>

Announcement of Changes to the U.S. Beef Grade Standards,

<https://www.ams.usda.gov/content/usda-announces-changes-us-beef-grade-standards>

[CEV Meat Science and Food Safety.pptx](#)

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	Porter House 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

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

Species	Primal	Retail Cut	Cooking Method	Species	Primal	Retail Cut	Cooking Method
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	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
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
Species	Primal	Retail Cut	Cooking Method	Species	Primal	Retail Cut	Cooking Method
P	N	87	D	Pork	Various	Sausage	Dry
P	N	92	M	Pork	Various	Smoked Pork Hock	Moist
P	N	69	D/M	Pork	Various	Country Style Ribs	Dry/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
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