



2025 Lake County Fair Swine Skillathon Study Guide

Juniors (age 8-10 as of September 1, 2024)
Intermediates (age 11-13 as of September 1, 2024)
Seniors (age 14 and over as of September 1, 2024)

Skill-a-thon tests will be administered on March 17, 2025 between 5:00 and 8:00pm at the Lake County Fairgrounds Main Exhibit Hall located at:
2101 County Rd 452 Eustis, Fl. 32726.

All registered Lake County 4H and FFA members showing in the Lake County Fair are eligible to compete in the Skill-a-thon except for Cloverbuds (ages 5-7) who are not eligible to compete.

Exhibitors have two options:

Option one - Exhibitors can take the test for any of the divisions that they are registered in.

Option two- Exhibitors can take the test for all divisions to compete in the Overall Skill-a-thon.

Awards:

Individual area Skill-a-thon - Banners will be awarded to the top 3 scores in each age division for each animal division - only exhibitors that are showing animals in that division will be eligible to place for the banners.

Swine Divisions:

1st Place Junior - Award

2nd Place Junior - Award

3rd Place Junior - Award

1st Place Intermediate - Award

2nd Place Intermediate - Award

3rd Place Intermediate - Award

1st Place Senior - Award

2nd Place Senior - Award

3rd Place Senior - Award

Overall Skill-a-thon - Buckles will be awarded to the top score in each age division.

Overall Skill-a-thon:

Junior: Belt Buckle

Intermediate: Belt Buckle

Senior: Belt Buckle

Skillathon Areas are as follows:

Beef Breeding

Steer

Poultry

Dairy Goat

Breeding and Market Goat

Market Lamb

Rabbit

Swine

*** Each age division will have a record book question as a tiebreaker.****

Market Record Book

https://cdn.saffire.com/files.ashx?t=fg&rid=LakeCoFair&f=2025_Market_Book_FINAL.pdf

** The following pages are from Florida State Fair Skillathon Book***

INTRODUCTION

This manual has been developed as a study guide for the Florida State Fair Swine Skillathon which is part of the Champion Youth Program. The topic for this year's Skillathon is **Products and Marketing**.

The Florida State Fair recognizes that agricultural education instructors, 4-H agents, parents, and leaders provide the traditional and logical instructional link between youth, their livestock projects and current trends in the animal agriculture industry. **PLEASE NOTE:** This manual is provided as a **study guide** for the skillathon competition and should be used as an additional aid to ongoing educational programs.

Sections are labeled **Junior, Intermediate & Senior, Intermediate & Senior, or Senior** to help exhibitors and educators identify which materials are required for each age level.

******* Denotes additional information in the study manual for preparing for the Champion of Champions competition.

The knowledge and skills vary by age group and may include:

Juniors (age 8-10 as of September 1, 2024)

By-Products
Wholesale cuts of Pork & Primals

Intermediates (age 11-13 as of September 1, 2024)

all of the above plus...
Retail Cuts of Pork
Market classes of swine
Cookery

Seniors (age 14 and over as of September 1, 2024)

all of the above plus...
Market Hog and Carcass Evaluation
Carcass Lean Value
Quality Assurance
Skeletal Anatomy

GOOD LUCK!

Products and Marketing***

Youth livestock projects focus on the selection, raising, showing and often selling of animals. By virtue of their participation in livestock projects, youth become part of an industry that provides food and fiber for the world. The steps involved in the movement of animals and animal products from producer to consumer are known as *processing and marketing*. Tremendous changes have occurred in recent years in the ways animal products are harvested and marketed but the fundamentals remain the same. Price is dependent on *supply and demand*. We can impact supply through increased breeding, but demand is more difficult to affect. The swine industry aggressively expanded in the late 1990's but that created a surplus of pork that caused great economic upheaval for small producers. Many small pork producers went out of business. As with many other livestock commodities, the number of producers is decreasing steadily while the size of operations is growing astronomically.

In order to maintain a stable market for animal products, consumers must have confidence in the **wholesomeness and quality** of what they are buying. That means the products must be safe, nutritious and tasty. Many livestock organizations have implemented promotion programs to increase market share, improve prices and increase export markets. The Pork Checkoff is an example of such a program. Read about it at: <http://www.pork.org/home.aspx>.

Marketing may be as simple as receiving a set price per pound or may involve a pricing system known as 'Value Based Marketing'. **Value based pricing systems** account for quality and apply deductions or bonuses as products deviate from an accepted *baseline*. This should ultimately improve the quality of products offered to consumers, therefore boosting consumer confidence. Animal products may be marketed at auctions, by direct sales, contracts or electronically with the use of computers and satellite technology. Regardless of the marketing method, the seller is trying to receive the highest *price* while the buyer is trying to receive the greatest *value* (high quality and reasonable price). Producers can manage fluctuations in prices by hedging hogs with futures or with options contracts.

Swine Products and Marketing***



Pork is the world's most widely eaten meat (Pork 36%, Chicken 33%, Beef 24%, Mutton/Lamb/Goat, Other 7%). Global pork consumption has been trending upward in recent years. Hong Kong, China, Poland, Spain, Lithuania, and Montenegro lead the world in per capita consumption of pork. Even though the United States isn't in the top five of per capita pork consumption, Americans still eat over 67 pounds of pork per capita each year. The United States produces almost 11% of the world's pork with a little over 6% of the world's hogs. Through application of research findings and new technology, today's pigs are both leaner and more efficient. Even so, in recent years, high feed prices have made it challenging for producers to make a profit in the swine industry. Sometimes youth exhibitors are unaware of the issues that the industry faces because they buy and sell in a "show pig" environment. Read the following fact sheet for some good insights comparing the commercial swine industry and the show pig industry: <http://porkgateway.org/resource/comparing-the-commercial-swine-industry-and-the-show-pig-industry/>.

As early as the 1950's, pork producers recognized the need to organize and formed the National Swine Growers council which later became the National Pork Producers Council. They began a voluntary check off called "Nickels for Profit". In 1985 the Pork Checkoff was written into the Farm Bill, creating the National Pork Board <http://www.pork.org/Home.aspx> which manages the collection and distribution of money from the program. Major advertising campaigns and educational efforts

have helped pork hold steady in market share. Pork, The Other White Meat® became the national campaign in 1987, repositioning pork as a lean, nutritious protein source. In 2011 Pork: Be Inspired replaced Pork, The Other White Meat®. However, in 2021, Pork, The Other White Meat® campaign was launched as a nostalgic throwback campaign for Gen X consumers. Quick Facts: The Pork Industry at a Glance is available in PDF format at: <http://porkgateway.org/wp-content/uploads/2015/07/quick-facts-book1.pdf>.

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Animal By-Products

Animal by-products are anything of economic value other than the carcass that comes from animals during harvest and processing. They are classified as edible or inedible for humans. There may be some disagreement about what is edible, but we can all agree that there are many uses for what is left after the carcass is rolled into the cooler. In developing countries by-products may become jewelry, religious implements, tools, fuel, construction material, fly swatters, or musical instruments. In developed countries, advances in technology have created many products from non-animal sources (synthetics) which compete with animal by-products, thus reducing their value. Still, by-products represent multibillion dollar industries in the United States and other developed countries. An added benefit of changing inedible parts of carcasses into useful products is that the decaying materials don't pile up and cause environmental problems. **Rendering** is the term for reducing or melting down animal tissues by heat and the rendering industry refers to itself as the "original recyclers". The creativity of meat processors in finding uses for by-products has led to the saying "the packer uses everything but the squeal".

Edible by-products

Raw Material

Brains, Kidneys, Heart, Liver
Spleen, Tongue
Cheek and head trimmings
Blood
Fats
Intestines
Esophagus
Pork skins
Bones (& skin)

Principal Use

Variety Meats

Sausage ingredient
Sausage component
Shortening (candies, chewing gum)
Sausage casings, chitterlings
Sausage ingredient
Fried pork skins
Gelatin for confectioneries (marshmallows),
ice cream and jellied food products

Inedible by-products

Raw Material

Skins

Processed by-product

Leather
Glue
Hair

Principal Use

various leather goods
paper boxes, sandpaper, plywood, sizing
Felts, plaster binder, upholstery, brushes,
insulation
Industrial oils, lubricants, soap, glycerin
Insecticides, weed killers, rubber,
cosmetics, antifreeze, nitroglycerine,
plastics, cellophane, floor wax,
waterproofing agents, cement, crayons,
chalk, matches, putty, linoleum
Livestock and poultry feeds
Glue, hardening steel, refining sugar,
buttons, bone china
Animal feed, fertilizer, porcelain enamel,
water filters

Fats

Inedible tallow

Bones

Tankage
Dry bone

Bone meal

Feet

Neatsfoot stock
Neatsfoot oil
Pharmaceuticals

Glands
Lungs

Fine lubricants
Leather preparations
Medicines
Pet foods

Blood

Blood meal
Blood albumen

Livestock and fish feeds
Leather preparations, textile sizing

Viscera and
meat scraps

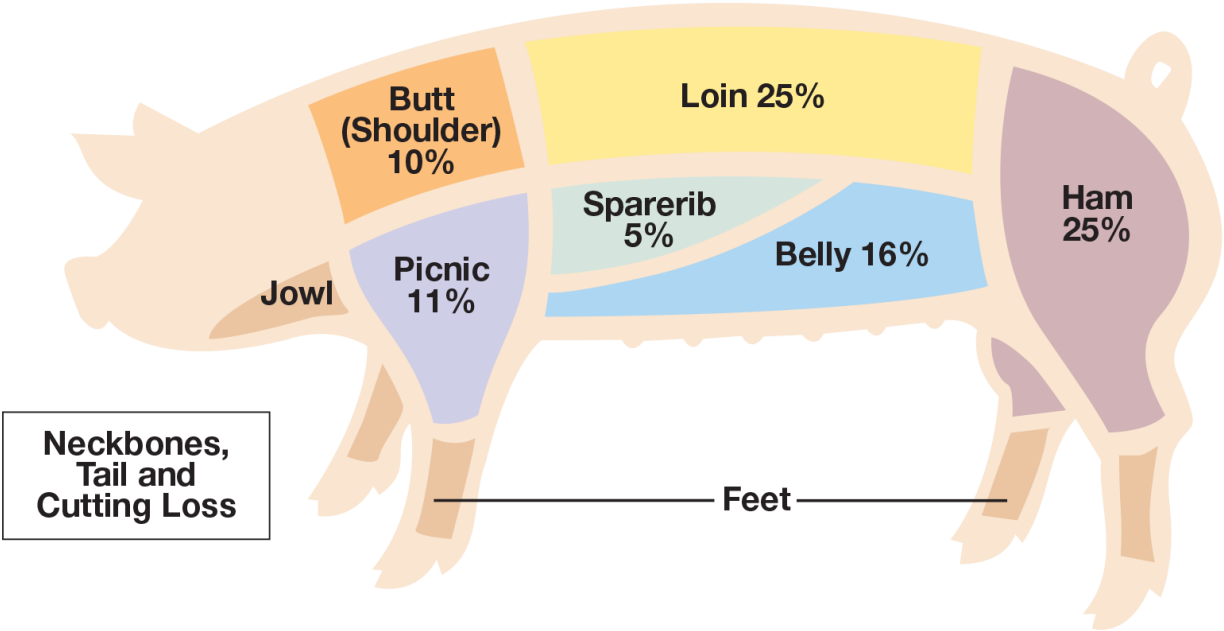
Meat meal

Livestock, pet and poultry feeds

Source: https://www.epa.gov/sites/production/files/201507/documents/ag_101_agriculture_us_epa_0.pdf.

Wholesale Cuts of Pork












Fabrication of carcasses is the cutting of the carcass into wholesale and retail cuts for distribution to various markets. The size of the carcass and the preferences of the customer will determine how it is fabricated. For pork carcasses, wholesale cuts come from standard cutting methods developed to: a) *Separate fat from lean portions* b) *Separate tough from tender sections* c) *Separate thick from thin sections* d) *Separate valuable from less valuable cuts* e) *Separate retail cuts by cutting across the grain.*



Source: <https://www.pork.org/facts/stats/consumption-and-expenditures/wholesale-usda-prices-for-pork-sub-primals/>

Primal Cuts

Of the wholesale cuts, those that are lean, *tender, thick, and valuable* and that contain a large proportion of their muscles running in the same direction are called *primal cuts*. The **primal pork cuts are Ham, Loin, Arm Picnic Shoulder, and Blade Boston-Style Butt.**

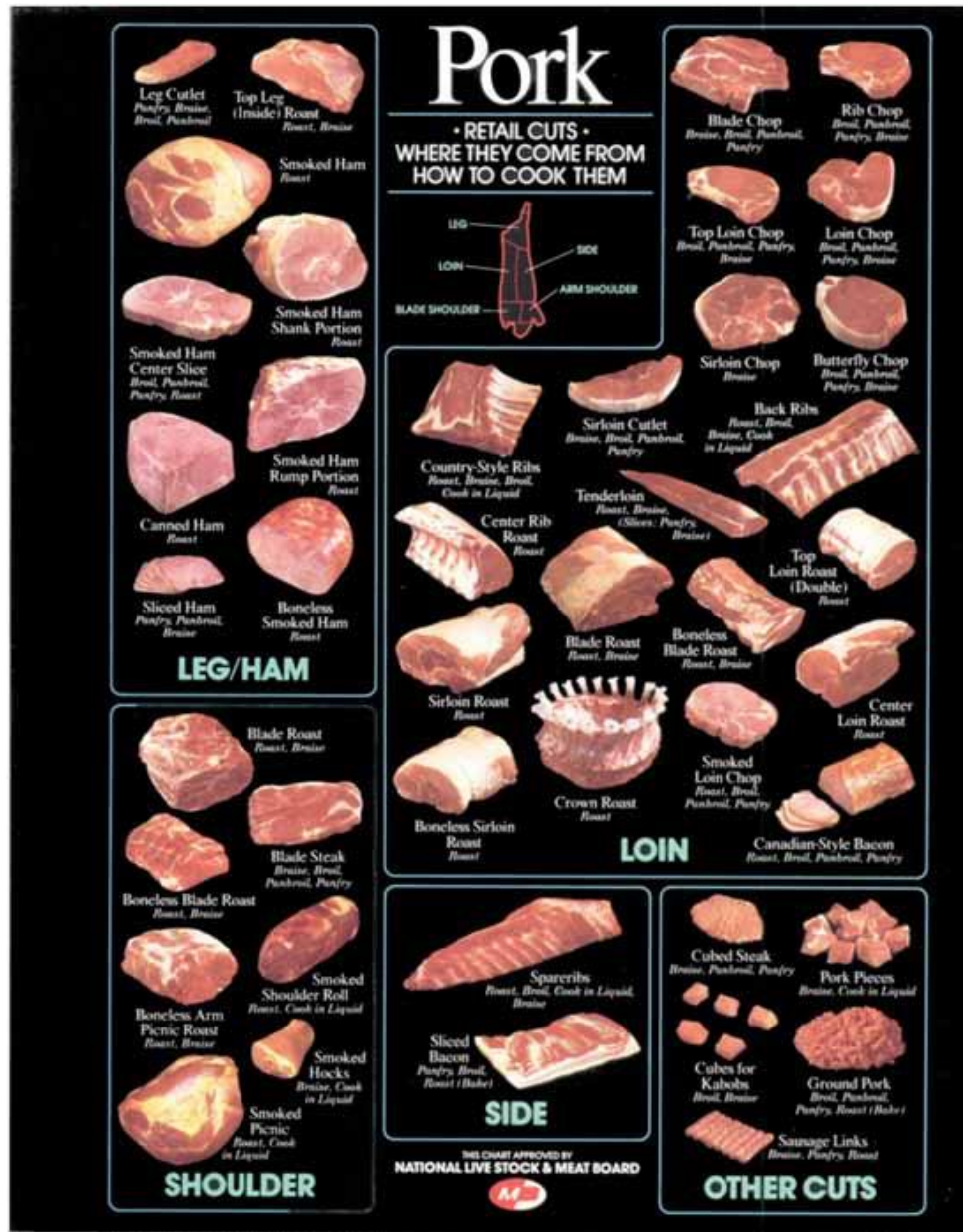
| | |
|--|--|
| Shoulder Arm Cuts |  Arm Bone |
| Shoulder Blade Cuts (Cross Section of Blade Bone) |  Blade Bone (near neck)  Blade Bone (center cuts)  Blade Bone (near ribs) |
| Rib Cuts |  Back Bone and Rib Bone |
| Short Loin Cuts |  Back Bone (T-shape) T-Bone |
| Hip (Sirloin) Cuts (Cross Sections of Hip Bone) |  Pin Bone (near short loin)  Flat Bone (center cuts)  Wedge Bonet (near round) |
| Leg or Round Cuts |  Leg or Round Bone |
| Breast or Brisket Cuts |  Breast and Rib Bones |

Retail Cuts of Pork

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At the retail markets, boxed primal cuts are used to generate retail cuts for the meat case. Different stores have their own styles for each cut in an attempt to meet their customers' needs. Retail specifications include size or thickness of cut, external fat trim, boneless or bone-in, and number of cuts per package. Items generated other than steaks and roasts may include stir fry, kabob, cubing material, and grinding material for processed or value-added products. Labels on meat must be specific for species, wholesale cut and retail cut names (example: Pork Shoulder Roast). A guide for fabricating your own pork retail cuts can be found at:

<https://extension.sdstate.edu/pork-carcass-fabrication-primal-and-retail-cuts>.



Visit the grocery store and practice visually identifying retail cuts of pork or go to:

<http://edis.ifas.ufl.edu/pdf/files/4H/4H37900.pdf>.

Classes of Hogs

In the swine industry producers may sell breeding animals, feeder pigs or market hogs. There are five primary types of swine operations:

1. Feeder pig production - maintain breeding herd and sell weaned pigs at 10 - 15 pounds or feeder pigs at 40 - 60 pounds.
2. Feeder pig finishing - purchase feeder pigs and feed to market weight of 270 - 290 pounds.
3. Farrow to finish - maintain breeding herd and sell finished pigs at market weight.
4. Purebred or hybrid seedstock producers - sell breeding boars, boar semen, and gilts.
5. Integrated corporate production - farrow to finish with different segments of the operation often located at different sites for biosecurity. Feeders may be contracted out by the company. These large companies employ highly trained managers and utilize cutting edge technology.

Market Hogs

Today's industry has identified the average market hog as finishing at a live weight of 282 pounds, producing a carcass that weights 211 pounds.

| Typical Market Pig | |
|--------------------------------------|--------|
| Live weight (lbs.) | 282.00 |
| Carcass weight (lbs.) | 211.00 |
| Backfat, 10th rib (inches) | 0.68 |
| Loin-eye area (square inches) | 7.93 |
| Percent Lean | 55.15 |
| Lean meat (lbs.) | 116.40 |

Feeder Pigs

The pictures below show a pig on the left whose secondary indicators of growth suggest he should be a nice project; a low-volume gilt in the middle that will likely remain lean to a heavy weight and will likely be too slow-growing; and a wide-chested, big-bodied barrow on the right that will likely have too much 10th rib fat thickness by 280 lbs.



These pigs from left to right will have about 0.75 in fat thickness at the 10th rib by approximately 250, 275 and 290 lbs, respectively. (National Swine Registry)



Youth exhibitors select pigs with the hope of doing well in a show. The pictures above along with additional helpful information can be found at:

<http://www.thepigsite.com/articles/3934s/selecting-pigs-for-youth-swine-shows>.

Meat Cookery

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Methods of cooking meat include dry heat or moist heat. Dry heat cookery methods improve flavor of meat through crust formation and caramelization but increase chewiness and decrease tenderness because of protein hardening. Moist heat cookery methods increase the tenderness of meat cuts that are comprised of muscles containing large amounts of connective tissue. Cookery under moist conditions for long periods at relatively low temperatures, generates steam that then converts the collagen in connective tissue into gelatin. Methods should be selected based on initial tenderness of the cut, desired quality characteristics of the resulting product, available cooking facilities/equipment, and the amount of time available for preparation.

<http://www.wikihow.com/Cook-Pork> OR <http://www.porkbeinspired.com/>.

Dry Heat

Dry Heat methods of cooking are suitable for tender cuts of meat or less tender cuts which have been marinated. Use cuts low in collagen and elastin.

Roasting - This method of cooking is recommended for larger cuts of meat. Meat is seasoned and placed in an open roasting pan with a cooking thermometer placed in the center to determine degree of doneness.

Broiling - This method is most suitable for tender, usually thin cuts of meat. Less tender cuts may also be broiled when marinated. Meat is directly exposed to the source of heat from above or from both sides at the same time. It involves high heat and produces a distinct caramelized flavor.

Grilling - This method is actually a method of broiling. Meat can be grilled on a grid or rack

over coals, heated ceramic briquettes or an open fire.

Pan-Broiling - This method is faster and more convenient than oven broiling for cooking thinner steaks or chops. It involves conduction of heat by direct contact of the meat with hot metal. Fat drippings are poured off as they accumulate.

Pan-Frying - This method differs from pan-broiling in that a small amount of fat is added first, or allowed to accumulate during cooking. Pan-frying is for ground meat, small or thin cuts of meat.

Air-Frying – This method rapidly circulates hot air around food. Like a convention oven, hot air is continuously moved around the surface of food, which is typically located in a basket, by a fan.

Stir-Frying - This method is similar to pan-frying except that the food is stirred almost continuously. Cooking is done with high heat, using small or thin pieces of meat.

Deep-Fat Frying - This method is cooking meat immersed in fat. This method is only used with very tender meat.

Microwave Cookery - High frequency electrical energy causes molecules inside the product to vibrate creating friction and heat without heating the surrounding air. The rapid speed of microwave cooking makes it ideal for frozen cuts in institutions and restaurants. Consumers complain that microwaved meat is inferior in flavor.

Moist Heat

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Moist Heat methods of cooking are suitable for less tender cuts of meat. Moist heat cooking helps to reduce surface drying in those cuts requiring prolonged cooking times. With moist heat cookery, meat may lose some water-soluble nutrients into the cooking liquid. However, if the cooking liquids are consumed, as in stews or soups, nutrients are transferred and not totally lost. Meat should never be boiled because high temperatures toughen protein.

Braising - In some regions of the country the term “fricassee” is used interchangeably with braising. The surface of the meat is seasoned, covered with flour and browned. Afterward the meat is placed in a covered pan with a small amount of liquid and cooked at low temperatures to soften the connective tissue and yield a more tender product.

Stewing – Small pieces of lean meat can be browned on the surface then covered with liquid and gently simmered in a covered pan until tender. Care should be taken not to let the temperature of the liquid exceed 195°F, because boiling toughens meat protein.

Simmering - Involves cooking in water at low temperatures (180°F) like stewing except more water is used and the meat is usually not browned first.

Pressure Cooking – Cooking under pressure produces steam which aids in softening connective tissue. Pieces of meat may be browned then cooked with a small amount of water in a special vented pressure cooker.

Poaching - Cook in a liquid that is not actually bubbling at 165 to 180 degrees. It is usually used to cook delicate foods such as fish and eggs. It takes one third less time than roasting. Poaching helps to keep shrinkage of the meat to a minimum.

Meat Facts ***

| 100g Roasted | Calories (g) | Fat (g) | Sat'd Fatty Acids (g) | Protein (g) | Iron (mg) |
|--------------------|-----------------|------------|--------------------------|----------------|--------------|
| Beef | 216 | 9.9 | 3.79 | 29.58 | 2.9 |
| Chicken | 190 | 7.41 | 2.04 | 28.93 | 1.21 |
| Goat | 108 | 2.58 | .79 | 29 | 3.3 |
| Lamb | 206 | 9.52 | 3.4 | 28.22 | 2.05 |
| Pork | 212 | 9.66 | 3.41 | 29.27 | 1.1 |
| Rabbit (stewed) | 206 | 8.41 | 2.51 | 30.38 | 2.37 |