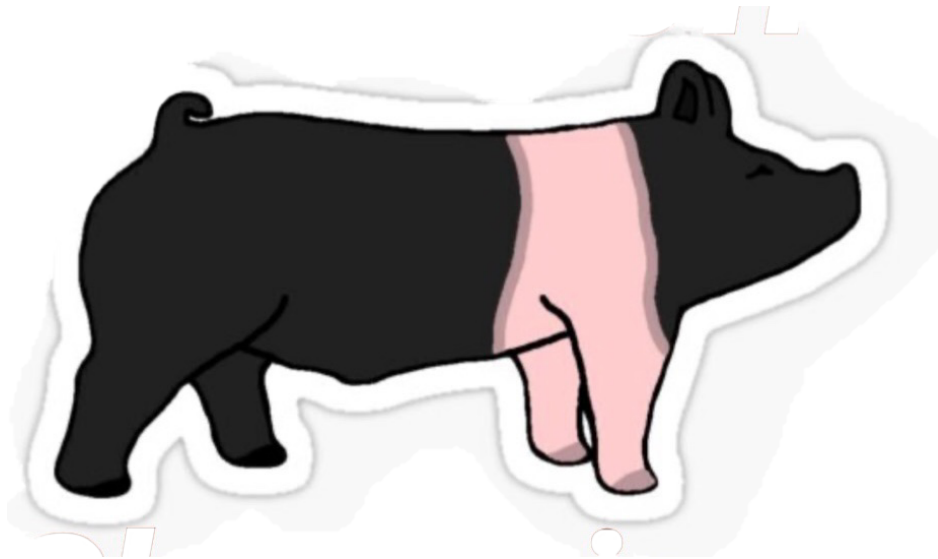


# Osceola County 4-H

## Market Hog

**SKILL-A-THON REFERENCE BOOK  
&  
JUNIOR SKILL-A-THON ACTIVITIES**

**2024-2025**



**UF** | **IFAS Extension**  
UNIVERSITY of FLORIDA



	<b>BEEF CATTLE</b>	<b>SWINE</b>	<b>SHEEP</b>
<b>INTACT MALE</b>	<b>BULL</b>	<b>BOAR</b>	<b>RAM</b>
<b>MALE CASTRATED PRIOR TO DEVELOPMENT OF SECONDARY SEXUAL CHARACTERISTICS</b>	<b>STEER</b>	<b>BARROW</b>	<b>WETHER</b>
<b>MALE CASTRATED AFTER DEVELOPMENT OF SECONDARY SEXUAL CHARACTERISTICS</b>	<b>STAG</b>	<b>STAG</b>	<b>STAG</b>
<b>FEMALE THAT HAS PRODUCED PROGENY</b>	<b>COW</b>	<b>SOW</b>	<b>EWE</b>
<b>YOUNG FEMALE WITH NO PROGENY</b>	<b>HEIFER</b>	<b>GILT</b>	<b>EWE</b>
<b>VERY YOUNG PROGENY</b>	<b>CALF</b>	<b>PIG</b>	<b>LAMB</b>

# HOG SKILL-A-THON

## Introduction

This manual is provided as a *study guide* for the skill-a-thon competition and should be used as an additional aid to ongoing educational programs. Sections are labeled **Junior, Intermediate & Senior, & Bonus** to help exhibitors and educators identify which materials are required for their age level. The topic for this year's Skill-a-thon is **cuts of meat and animal by-products**.

Topics for the Knowledge and Skills Stations may include the following:

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

Body parts  
Breeds  
Structure  
Animal By-Products  
Wholesale Cuts of Meat  
Retail Cuts of Meat

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

All of the above

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

All of the above plus...  
Parts of a Feed Label

### **Bonus For All**

Ear Notching

The contest will be held on **January 29, 2025, from 2:00 p.m. until 6:00 p.m. at the Osceola County Extension Office.**

**The contest will be held on January 29, 2025, from 2:00 p.m. until 6:00 p.m. at the Osceola County Extension Office.**

## **KVLS Skill-a-thon Rules for 2024-2025**

1. **Market exhibitors who do not make the 3.25 grade point requirement must take the Skill-a-thon in their project area for the animal that they are showing in order to participate in the market programs**, i.e. steer exhibitors must take the Steer Skill-a-thon. Any exhibitor who does not meet the required grade average on their report card or who does not have a report card must score 70% on the Skill-a-thon to participate in the Market Animal Program.
2. All exhibitors must take the Skill-a-thon for the first time on their own, then a reader can be requested the second time, if a passing grade is not achieved.
3. Awards will be given on the score of the first Skill-a-thon taken. Top awards are only given for passing scores (70% or above).
4. Only those exhibitors who do not make a 3.25 grade point requirement are required to take and make a passing score of 70% or above in order to participate in the market animal program.
5. Exhibitors must stay in the testing room once they have signed up to take the Skill-a-thon.
6. Exhibitors showing a second animal must stay in the testing room to take the second animal Skill-a-thon.
7. No parents or other adults not on the Committee are allowed in the Skill-a-thon room.
8. No exhibitors are allowed to have cell phones while in the Skill-a-thon room.
9. No time limit will be imposed on the exhibitors.
10. Skill-a-thon handbooks will be given at the start of the project.

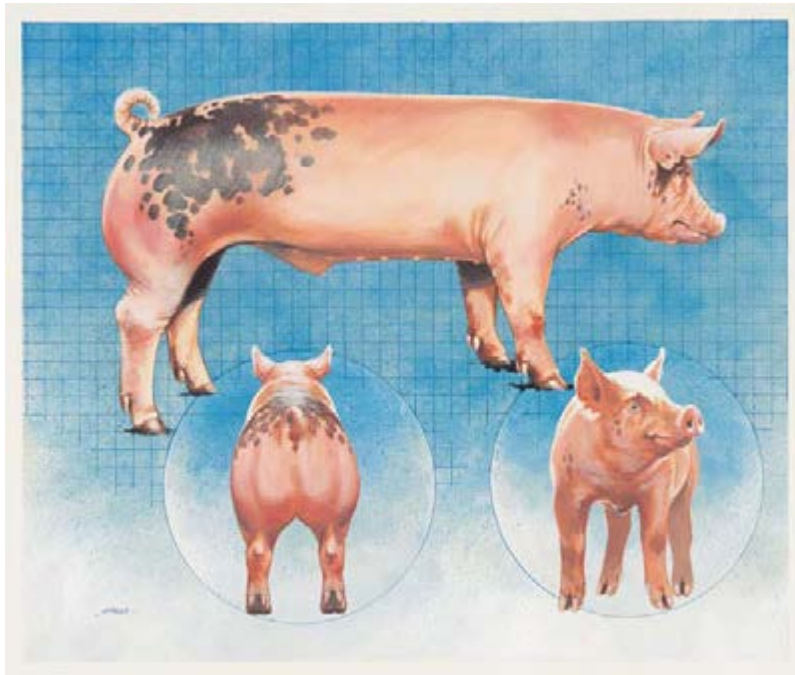
## **KVLS Awards**

There will be a Junior (8-10), Intermediate (11-13), Senior (14 - graduate from High School) division for the contest. Within each division, 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> place will receive rosette ribbons and a monetary award.



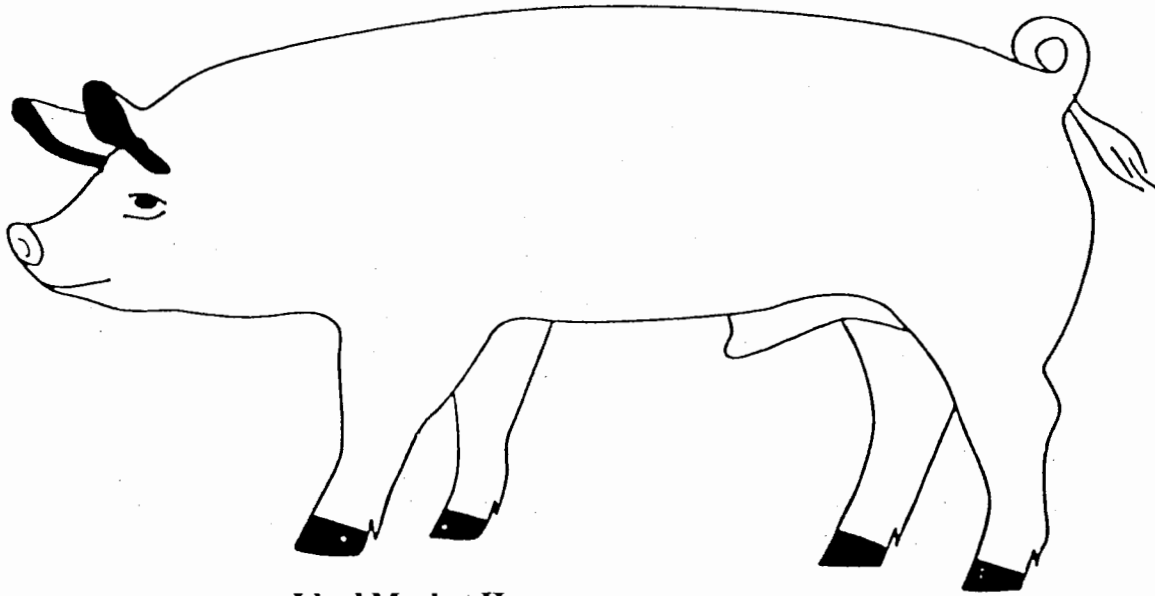
## The Ideal Market Hog

SYMBOL III\* is a Standard of Excellence for the pork industry, developed by the National Pork Board. The standards include production guidelines, carcass characteristics, carcass quality characteristics and a picture of the ideal market hog. The SYMBOL III picture of the ideal market hog illustrates what a market hog should look like. From this picture, we can see that the ideal market hog should have a long muscular body, with good physical structure.



Ideally, this hog should be able to produce one pound of live weight with 2.4 pounds of feed and should produce a carcass with 6.5 square inches of loin eye area (7.1 for gilts) and a 10<sup>th</sup> rib back fat of .7 inch (.6 for gilts).

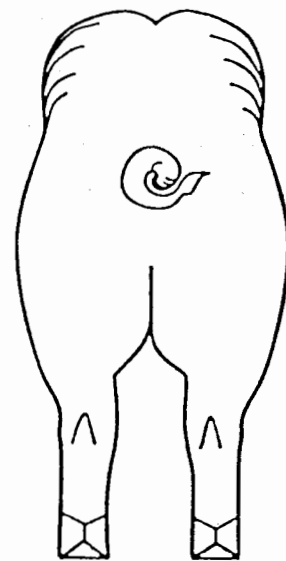
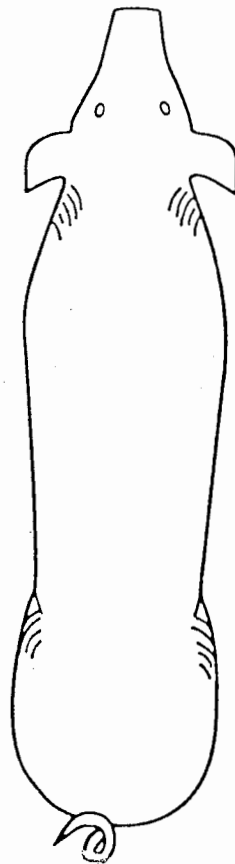
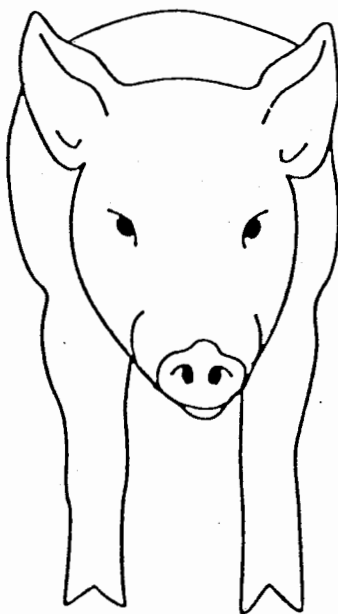
## The Ideal Market Hog



### Ideal Market Hog

- \*240-260 pounds
- \*has a 10<sup>th</sup> rib backfat thickness of .7 or less
- \*is a minimum of 32 inches long
- \*has a loin eye area of 6.0 square inches or more

### Ideal Hog Views



### Evaluation of Market Hogs

A market hog should be moderate in height, long bodied, lean, heavy muscled, big volumed and structurally sound.

Market hogs should have the same general body conformation as breeding swine. In addition to volume and capacity, size and structural correctness traits such as muscling and fat which affect carcass merit are highly emphasized. The primary purpose of a market animal is for meat production. Frame size and structural soundness are examined but to a slightly lesser degree.

#### Muscle

\*The correct muscle structure is long and thick to fit the frame of a hog. An excess of round, tight, bunched muscle may adversely affect farrowing ease, reproductive efficiency and is related to stress problems. Traits that are found in the ideal market hog include:

- long, thick muscular ham
- wide set to rear legs
- thick rump
- muscular top and loin

#### Fat

\*Fat in market hogs is undesirable. Presently, a back fat thickness of .7 or less measured at the 10<sup>th</sup> rib is acceptable. Desirable traits in regard to leanness include:

- freedom of fat in elbow pocket
- trimness in ham seam and crotch area
- trimness over the loin edge
- no excessive fullness in jowl

Excess fat is a common fault in market hogs. It reduces the cutability (retail value) of market hogs. The amount of back fat on a hog is a reliable measure of overall finish and should be used as a judging tool whenever available. 10<sup>th</sup> rib back fat thickness on superior hogs should be less than .7 inches. It should also be noted that fat indicates inefficiency of gain. It takes 2.5 times the amount of feed to produce a 1 lb. of fat vs. a 1 lb. of lean.

Besides muscling and fat, the overall weight of the market hog is important. Large-scaled, heavy-muscled hogs can be carried to heavier weights. Use weight per day of age if available. Many packers want hogs in the 240-260 pound weights.

#### Carcass Merit

\*Muscling and fat are two major factors in carcass merit. Meaty, heavy-muscled hogs are preferred to over-fat or light-muscled hogs. Thickness and firmness through the ham and over the back are indications of overall muscling.

(Rev. 9/07)

### BASIC LIVESTOCK TERMS

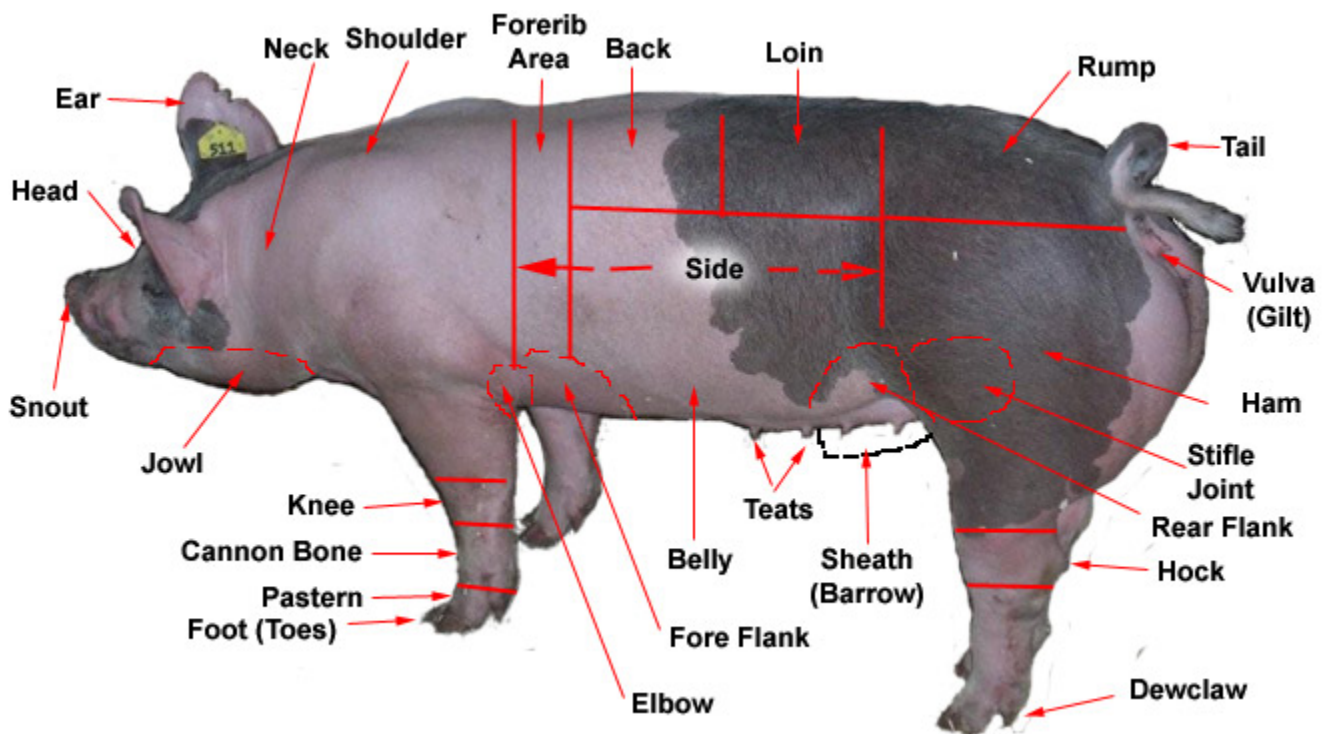
1. Condition, Finish or Covering – All are used to denote fat. The terms finish and covering are used to describe fat on market animals, while condition is used when describing breeding stock.
2. Growthiness – The characteristics of having size and weight at a certain age.
3. Balance or Symmetry – A proper proportion and blending of parts of the animal. Balance or symmetry is evaluated from a side view.
4. Ruggedness, Stoutness – The quality of being heavy or large boned. This is usually determined by the size of the cannon bone (from the knee to the ankle).
5. Quality – A general term that combines smoothness and refinement. Refinement of hair coat, freedom of wrinkles in hogs and freedom of roughness, patchiness in cattle indicates quality.
6. Scale – The size of the animal as determined by skeletal structure, independent of weight. The height, length and width of the animal.
7. Style – The general eye-appeal or attractiveness of the animal. Includes balance, structural correctness and quality.
8. Broodiness – Female breeding stock term that means she has a favorable combination of characteristics to be a good mother. Depth, capacity, prominence of teats and/or mammary system, stoutness and correctness of vulva.
9. Breed Character – Characteristics that separate breeding stock of one breed from other breeds, primarily by differences of the head: shape, length, dish of face, width of muzzle, shape of poll and ears, color markings and wool covering in sheep.
10. Trimness Freedom from fat or finish.
11. Meatiness/Muscling – Having a high proportion of muscle in the areas of the high-priced cuts. This is shown primarily by the relative width, length and fullness of the quarter, leg or ham, and by the thickness and fullness through the rib, rack or loin.
12. Type – A combination of characteristics that make an animal useful for a specific purpose. Determined by the general shape and form of an animal. Desirable types are constantly changing.
13. Tight Framed - The ability of the animal to hold itself together. Indicated by a strong top (back), tightness of shoulder and squareness of feet and leg placements.
14. Structural Soundness – The desirability or correctness of the skeletal structure, with major emphasis on straightness of top and proper feet and leg structure.
15. Femininity – Characteristics that distinguish the female from the male. Indicated by refinement of the head, neck and shoulders.
16. Masculinity – Characteristics that distinguish the male from the female. Indicated by boldness or massiveness of head and chest, thickness of the neck and development of the forequarters.

### COMMON LIVESTOCK TERMS

<b>BOAR</b>	Intact male of hog
<b>SOW</b>	Female that has produced progeny in hog
<b>PROGENY</b>	Offspring, young
<b>PIG</b>	Very young progeny
<b>GILT</b>	A young female of hog usually less than 12 months of age which has not farrowed a litter
<b>BARROW</b>	Male castrated prior to development of secondary sexual characteristics in hog
<b>CARCASS</b>	The dressed body of a slaughtered meat animal, offal having been removed.
<b>FINISH</b>	Refers to the amount of external fat covering on an animal.
<b>MARBLING</b>	Refers to flecks of fat distributed within the muscle.
<b>MILKING ABILITY</b>	Refers to the amount of milk an animal can produce
<b>FARROWING</b>	Giving birth
<b>PASTER</b>	Sloping part of the leg just above the hoof.
<b>HAM</b>	The thigh
<b>PARASITES</b>	Organisms living on other organisms - doing harm
<b>CROSSBREEDING</b>	Is the mating of two animals from different breeds.
<b>HYBRID</b>	The offspring produced from crossbreeding.

## Parts of a Hog

It is important for livestock producers to share a common language. Using the correct names for various body parts is one way to be certain your message is understood. Study the pictures with the names of the body parts labeled so that you can communicate with other producers using correct terms.





**Breeds**



**Yorkshire-** Coming from England, these animals have long, large-framed, white bodies with erect ears. They are known as the "mother" breed because they produce large litters and are good mothers.



**Hampshire-** Developed in England, these animals have black bodies with a white belt around their shoulders and both front legs. They also have erect ears and heavy muscles.





**Duroc-** This American breed came from crosses between red hogs in New York and red hogs in New Jersey. These animals have light red to dark red bodies and droopy ears. They grow quickly and efficiently and are good mothers.



**Berkshire-** This breed came from England. These animals have black bodies with white feet, tails, and faces. They also have sound skeletons; dish snouts; and short, erect ears.





**Chester White-** This breed was developed in Pennsylvania. These animals have white bodies and medium-sized, droopy ears. They are also good mothers.



**Poland China-** The members of this Ohio breed have black bodies with six white points. The white points are their four legs, tail, and nose. They also have droopy ears. These animals are lean with heavy muscle.



**Spotted**- Developed in Indiana, these animals are medium-sized. They have black and white spotted bodies and droopy ears. Also, they gain weight easily and are aggressive breeders.



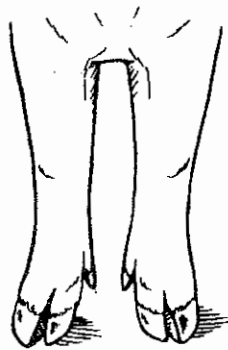
**Landrace**- Coming from Denmark, these animals have very long, white bodies and very large floppy ears. They are good mothers.

## **STRUCTURAL DIFFERENCES DESCRIPTIONS**

<b>Buck-kneed</b>	When the calf is "over at the knees" or buck-kneed, full extension of the knee cannot occur when observed from the side. This is usually seen in cattle that are also too straight in their shoulder.
<b>Calf-kneed</b>	This is the other extreme, where the calf stands "back at the knees" when viewed from the side.
<b>Weak Pastern</b>	Having an angle greater than 45 degrees in the pastern/hoof alignment, putting too much pressure on the joint.
<b>Postlegged</b>	The hock has too little angle or set. The calf is too straight through the joint, resulting in very stiff, constricting movement because of the lack of flexibility. More cattle become unsound because of being postlegged than sickle hocked.
<b>Sickle-hocked</b>	When viewing the rear legs from the side, the hock has too much angle or set, causing the steer to stand too far underneath itself. Often these calves also will droop excessively from hooks to pins.
<b>Bowlegged</b>	When viewed from the front or rear, the knees set too far out.
<b>Knock-kneed</b>	When viewed from the front, the knees are close together.
<b>Toed-out (splayfooted)</b>	The feet toe out away from each other. This problem is often seen in extremely light-muscled, narrow-chested cattle, where the legs are naturally set too close together.
<b>Toed-in (pigeon-toed)</b>	Toes turn in towards each other.
<b>Cow-hocked</b>	When viewing the rear legs from the rear, the hocks are turned in or placed too close together.

**Juniors, Intermediates, Seniors**

**Front view**

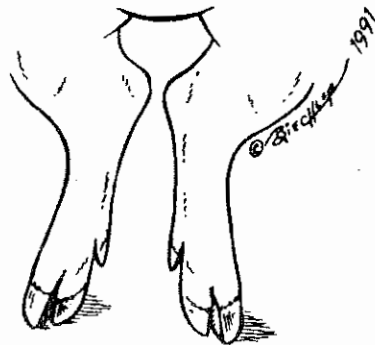


**Splayfooted**  
(toes pointed out)



**Pigeon-toed**  
(toes pointed in)

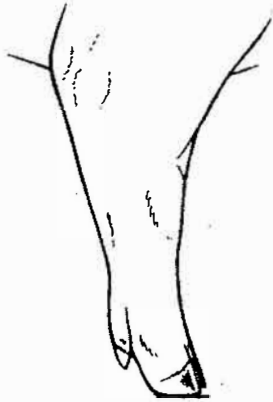
**Rear view**



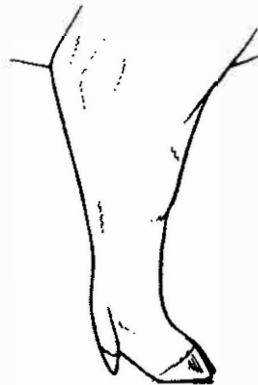
**Cow-hocked**

## Foot and Leg Structural Deficiencies

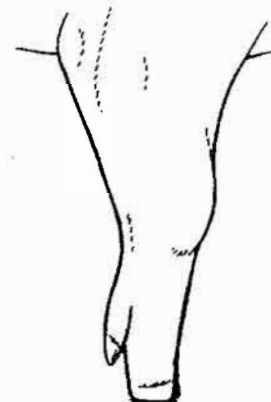
### Side view of front leg



Normal

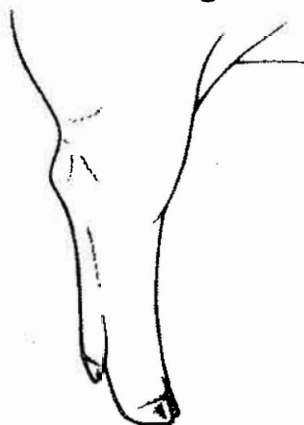


Weak pastern

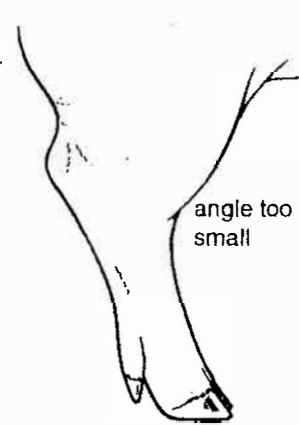


Buck-kneed

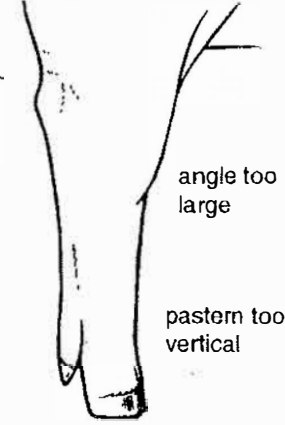
### Side view of rear leg



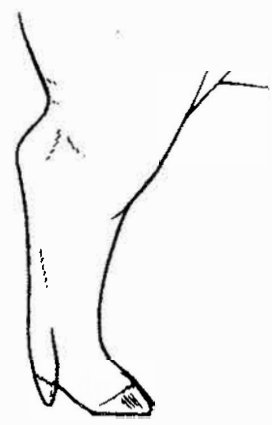
Normal



Sickle-hocked



Post-legged



Weak pastern

angle too small

angle too large

pastern too vertical

## Animal By-Products

Everything but the oink! 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, byproducts represent multi-billion 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.

### **Hide and Hair**

Artist's Brushes  
Insulation  
Upholstery  
Gelatin  
Footballs  
Luggage  
Gloves  
Shoes  
Drumhead

### **Intestines**

Insulin  
Medicine  
Surgical sutures  
Heart valves

### **Bone**

Glue  
Button  
Glass  
Fertilizer  
Minerals for feed  
Bone meal

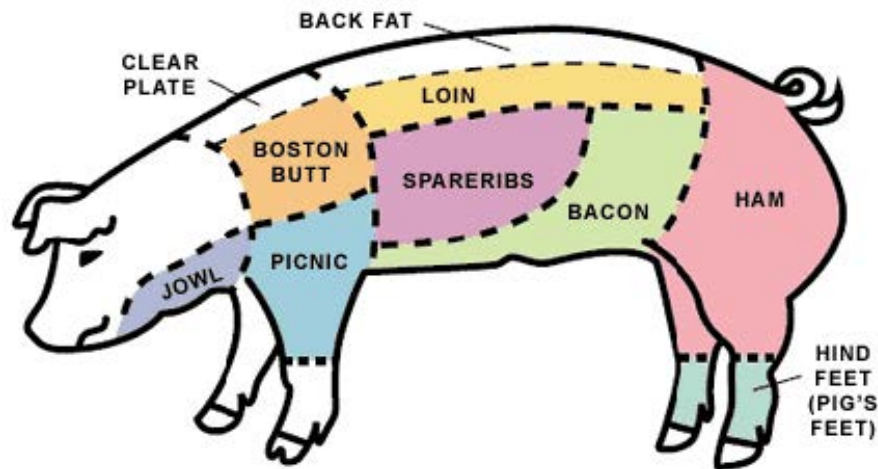
### **Fat and Fatty Acids**

Insecticides  
Weed killers  
Lubricants  
Cosmetics  
Oil polishes  
Rubber  
Antifreeze  
Plastics  
Floor wax  
Crayons  
Chalk  
Putty  
Matches  
Linoleum














## 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 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.



## 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

# Pork Retail Identification Cuts

Junior, Intermediate, Senior

## Ham/Leg



Fresh Ham  
Center Slice



Fresh Ham  
Rump Portion



Fresh Ham  
Shank Portion

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Smoked Ham  
(Bnls)



Smoked Ham  
Center Slice



Smoked Ham  
Rump Portion



Smoked Ham  
Shank Portion



Tip Roast  
(Bnls)



Top Roast  
(Bnls)

## Loin



Back Ribs



Blade Chop



Blade Chop  
(Bnls)



Blade Roast



Butterflied Chop  
(Bnls)



Center Loin  
Roast



Center Rib  
Roast



Country Style  
Ribs



Loin Chop



Rib Chop



Sirloin Chop



Sirloin Cutlets



Sirloin Roast



Smoked Loin  
Chop



Smoked Rib  
Chop



Tenderloin  
(Whole)



Top Loin  
Chop



Top Loin Chop  
(Bnls)



Top Loin Roast  
(Bnls)

## Spareribs



Spareribs

### Cookery Method



Dry



Dry/Moist



Moist

## Shoulder



Arm Picnic



Arm Roast



Arm Steak



Blade Boston



Blade Steak

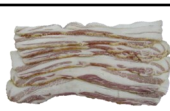


Smoked Picnic  
(Whole)

## Side/Belly



Slab Bacon



Sliced Bacon



Fresh Side

## Various



Ground Pork



Hocks



Pork Cubed  
Steak



Sausage Link/  
Patties



Smoked Hocks



## Feed Label Information

A commercial law requires each bag or bulk load to be accompanied by a label showing several key items:

- Net weight
- Product name and brand name
- Drug additives
- Guaranteed analysis of the feed – crude protein, crude fat and crude fiber must be guaranteed on all feeds except straight mineral or vitamin supplements, molasses or drug compounds.
- Minimum percentage of crude protein, percentage of equivalent protein from non-protein nitrogen, if any. The amount of crude or total protein in a feed is guaranteed. Crude protein is determined by multiplying the nitrogen content of a feed by the factor 6.25.
- When non-protein nitrogen (NPN) is applied to feedstuffs, a statement “for ruminants only” must appear underneath the name of the feed. Additionally, it must also have a guarantee for crude protein which has been supplied from non-protein nitrogen.
- Minimum crude fat content – Fat has an energy value approximately 2.25 times the value of carbohydrate feedstuffs.
- Maximum crude fiber content – Crude fiber is a measure of the indigestible or non-useful portion of a feed. Feeds having low fiber values tend to be higher in digestible energy or total digestible nutrients than those feeds having high fiber values.
- Minerals – feeds containing 6.5 percent or more minerals must show a guarantee of: calcium – minimum and maximum; phosphorous- minimum; salt – minimum and maximum
- Vitamins, only if guaranteed
- Common and usual name of each ingredient or the collective term for each grouping of feed ingredients
- Directions for use and cautionary statements
- Name and principle mailing address of the manufacturer

50 lbs net weight

**Brand Name Show Feed**  
**(for ruminants only)**

### Medicated

Feed for 28 days as an aid in the maintenance of weight gains in the presence of respiratory diseases, such as shipping fever.

**Caution:** Use only as directed.  
Discontinue use 14 days prior to slaughter.

**Active Drug Ingredients:**  
Chlortetracycline 7.6 grams/ton

### Guaranteed Analysis

**CRUDE PROTEIN**, not less than 12%

This includes not more than 1.00% equivalent crude protein from non-protein nitrogen.

**CRUDE FAT**, not less than 2.0%

**CRUDE FIBER**, not less than 19%

**Ingredients:** Grain products, roughage products, plant protein products, processed grain by-products, forage products, molasses products, calcium carbonate, salt, vitamin E supplement, vitamin A supplement, ferrous sulfate, potassium iodide, manganese oxide copper chloride, cobalt glucoheptonate, vitamin D3 supplement, sodium selenite.

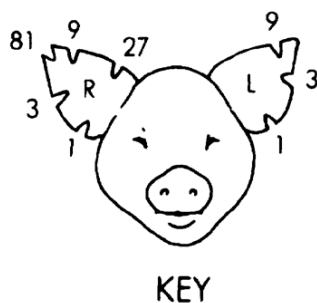
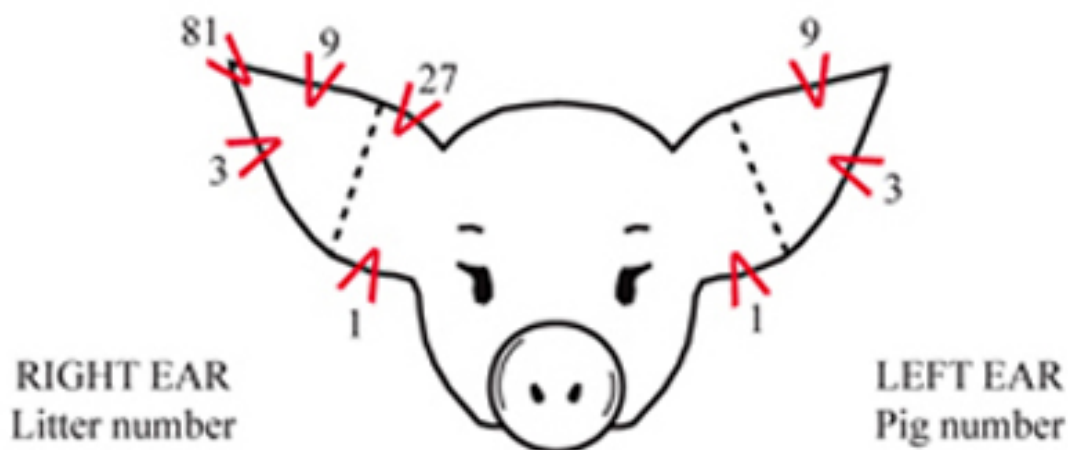
RUMINANT MEAT AND BONE MEAL FREE

**FEEDING DIRECTIONS:** Feed at the rate of 12 pounds per head per day.

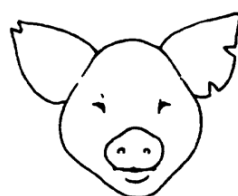
**MANUFACTURED BY:**  
The Best Feed Company  
P. O. Box 00000  
Small Town, USA

# EAR NOTCHING

Ear notching helps identify a pig's litter and which one of the litter it is, giving each pig a unique identity number. Notches are placed in one of five locations in the pig's right ear — to show the litter number — and in one of three locations in the left ear — to show the individual pig number. "Reading" the notches allows producers, judges, and other swine professionals to know more about the pig they're viewing. Ear notching is permanent and can be read from a distance. However; it may disfigure the animal and requires training (math skills) to read.



PIG NO. 47-1



PIG NO. 81-4



PIG NO. 128-5



PIG NO. 100-14

# Activities

It is recommended that you complete the six activities provided in this skill-a-thon book to help prepare you for the skill-a-thon. **The activities are very similar to what you should expect during the skill-a-thon and can be used for practice.**

**4-H Members Only:** After you have completed an activity you should record it in your record book using the table on the 4-H Project Book/ Activity or you can attach the activity pages you have completed in the record book. Before turning into 4-H in May have your leader sign the Activity Page showing they have seen your six (6) completed Activities.

# JUNIOR HOG BODY PARTS ACTIVITY

## #1

Write in the name below that corresponds to the correct part of the animal.

Ear

Snout

Tail

Rump

Belly

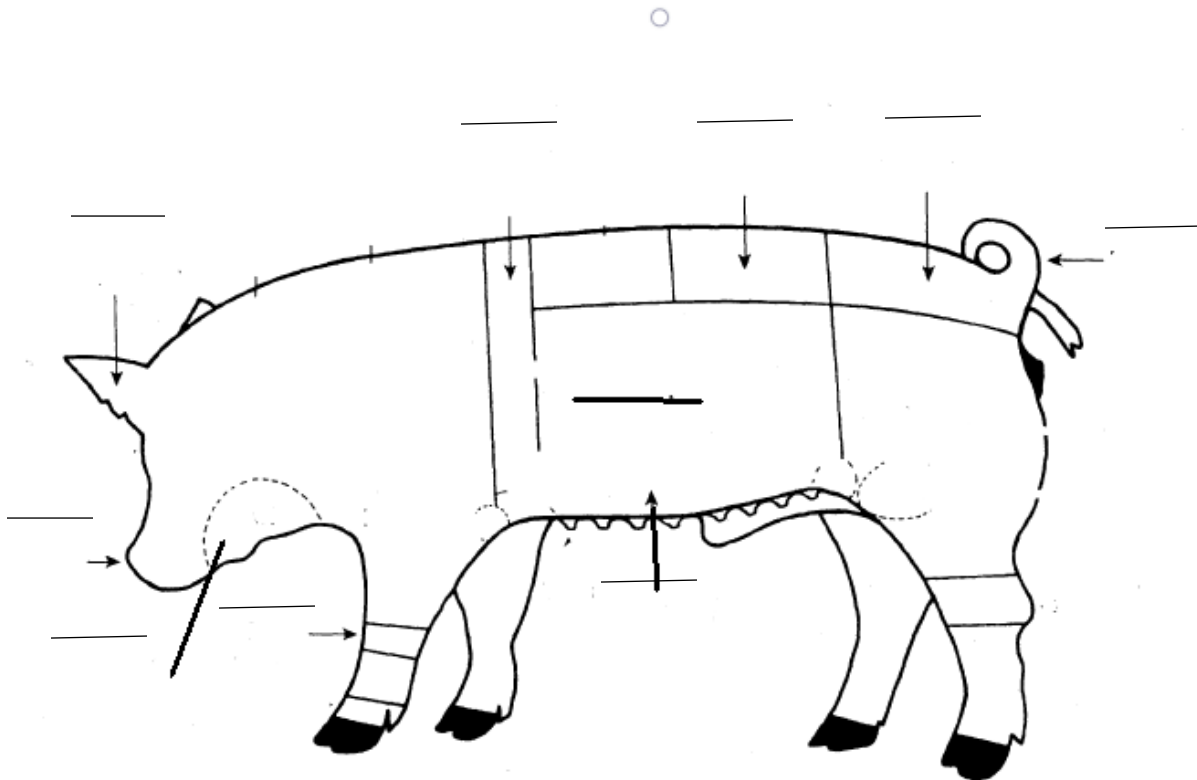
Ham

Side

Jowl

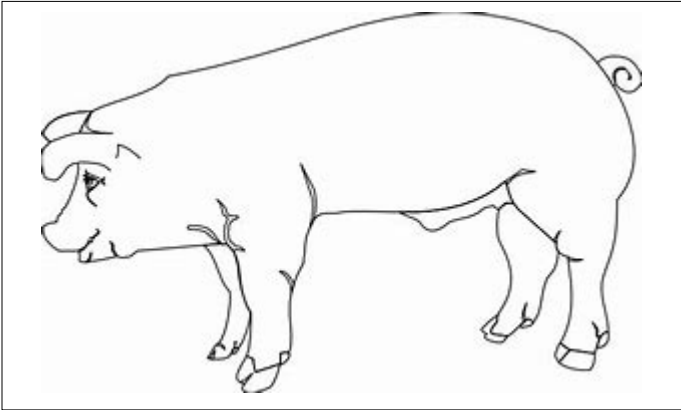
Knee

Loin



## JUNIOR HOG BREEDS ACTIVITY #2

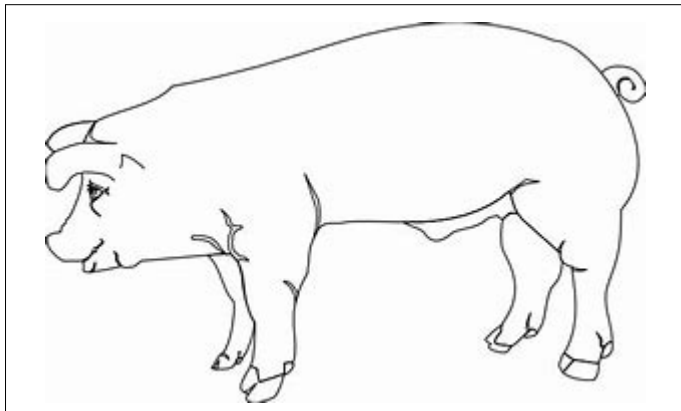
Use the breed pictures in the skill-a-thon book to color in each animal.  
List two interesting facts about each breed.



**Breed: Duroc**

\*

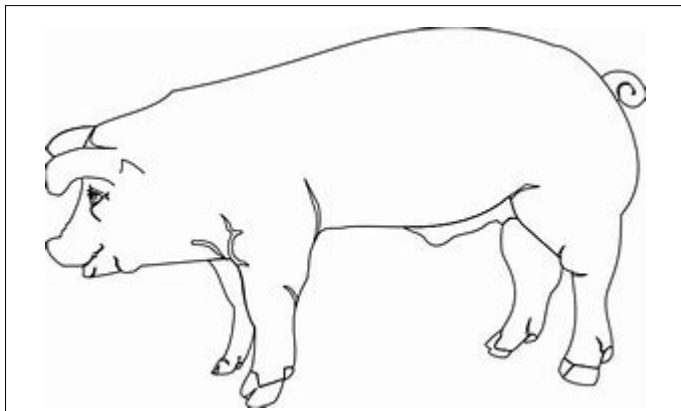
\*



**Breed: Spotted**

\*

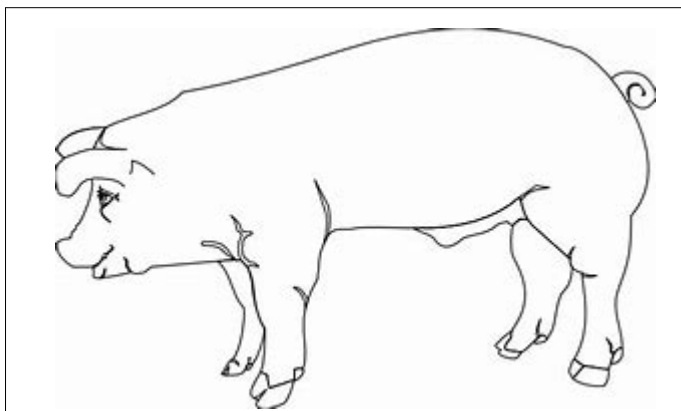
\*



**Breed: Hampshire**

\*

\*



**Breed: Chester White**

\*

\*

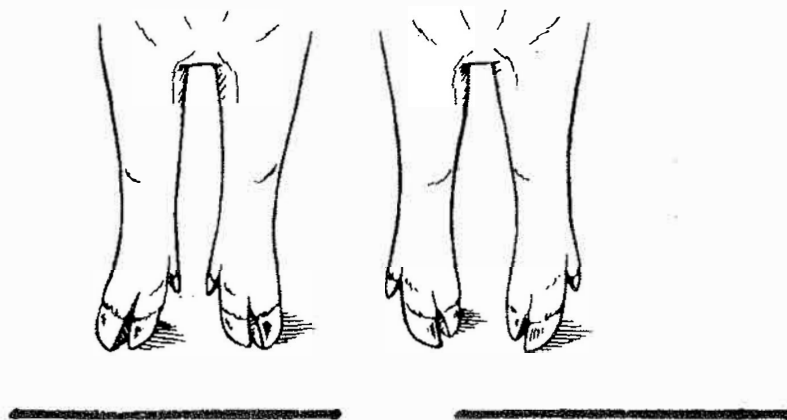
# JUNIOR HOG STRUCTURAL DEFICIENCIES FRONT & REAR VIEW

## ACTIVITY #3

Fill in the blank with the correct FRONT LEG Alignment

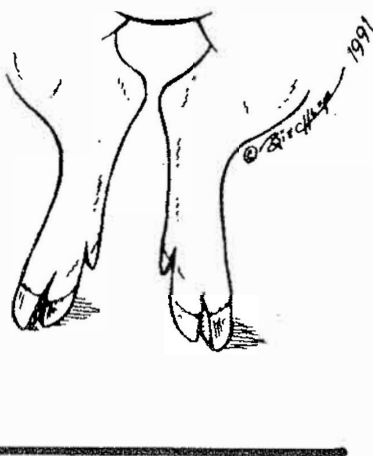
*SPLAYFOOTED*

*PIGEON-TOED*



Fill in the blank with the correct REAR LEG Alignment

*COW-HOCKED*



# JUNIOR HOG STRUCTURAL DIFFERENCES SIDE VIEWS

## ACTIVITY #3

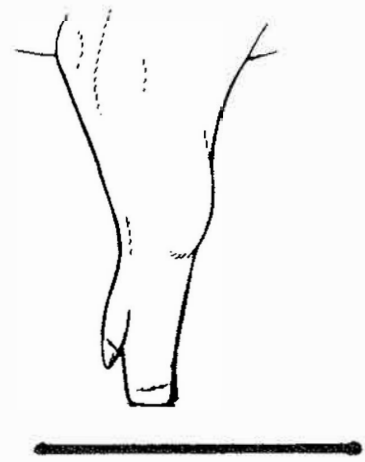
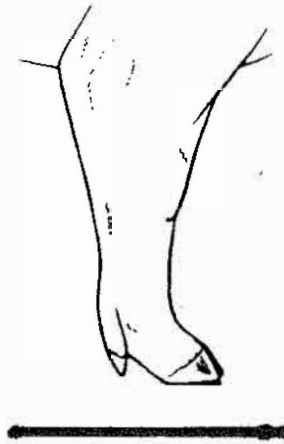
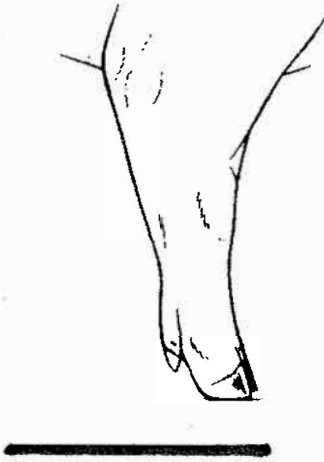
Fill in the blank with the correct Front Leg Set

*WEAK PASTERN*

*NORMAL*

*BUCK-KNEED*

Side view of front leg



Fill in the blank with the correct Hind Leg Set

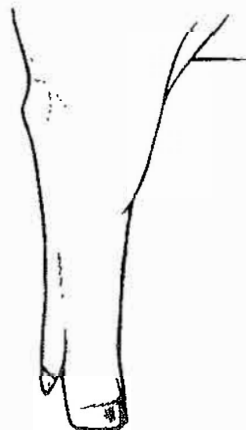
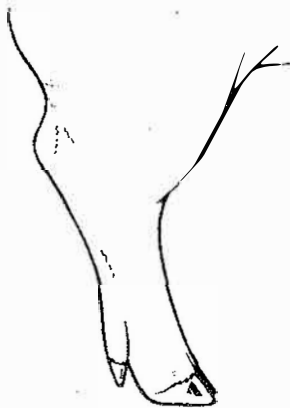
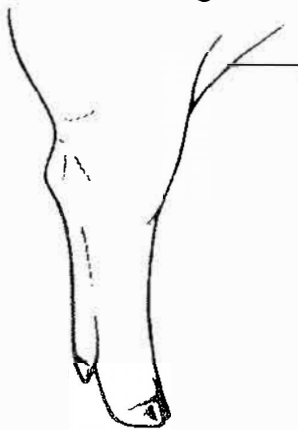
*WEAK PASTERN*

*NORMAL*

*SICKLE-HOCKED*

*POST-LEGGED*

Side view of rear leg



# JUNIOR MARKET HOG ANIMAL BY-PRODUCT

## ACTIVITY #4

Circle the items below that are hog by-products.



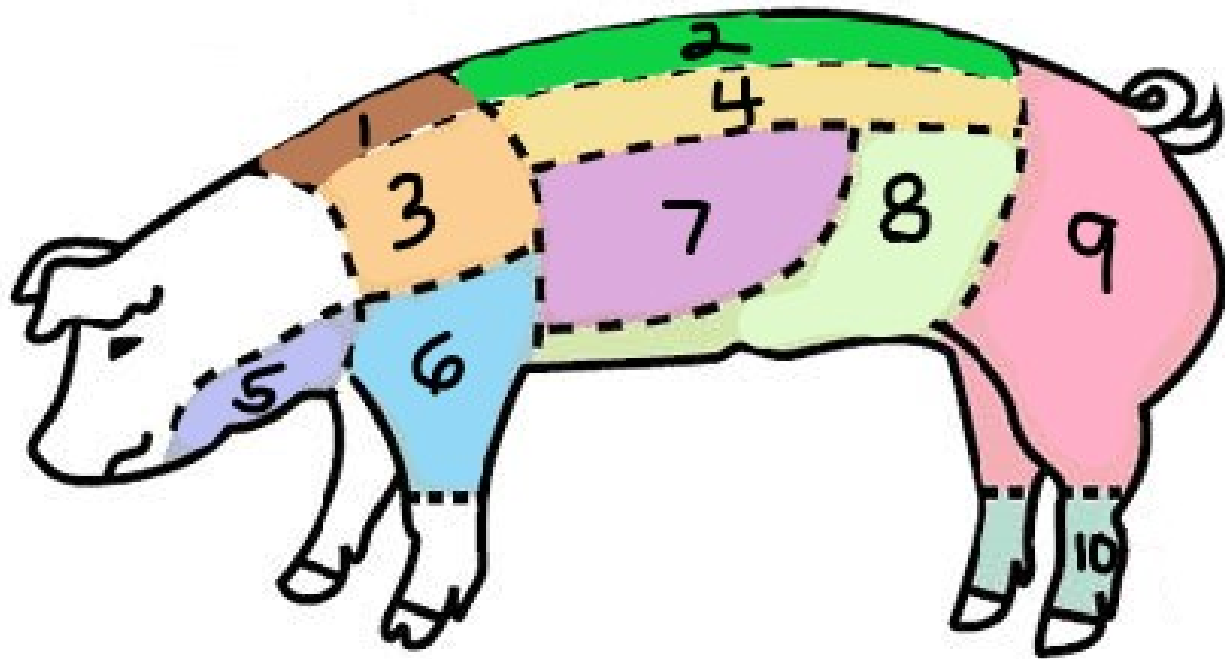


## JUNIOR MARKET HOG

### WHOLESALE CUTS OF PORK ACTIVITY #5

Enter the correct number by the corresponding cut of pork.

- \_\_\_\_\_ Jowl
- \_\_\_\_\_ Ham
- \_\_\_\_\_ Boston Butt
- \_\_\_\_\_ Loin
- \_\_\_\_\_ Bacon



## Junior Retail Cuts of Pork Activity #6

Write the retail cut in the blank.

Match:

Sliced Bacon  
Smoked Ham

Sausage Link/ Patties  
Spareribs



Retail cut: \_\_\_\_\_



Retail cut: \_\_\_\_\_



Retail cut: \_\_\_\_\_



Retail cut: \_\_\_\_\_