Skill-a-thon Study Guide

General Rules

Purpose:

1. Develop a love for learning that fosters a deeper understanding and encourages hands-on experiences.
2. Help 4-H members apply their knowledge in a fun and educational contest.
3. Encourage integrity, sportsmanship, cooperation and ability to communicate through related activities such as demonstrations, talks, judging events, and the fair.

General Rules:

- This contest will be held in a timed format with alternating practicum stations.
- Each contestant must work independently on their worksheet. They cannot confer with each other. If questions arise, they need to be directed to the context officials only. Officials can help with reading aloud if needed.
- Individuals can compete in only one age category for high point junior and senior awards. Ties will be broken by animal ID, equipment ID, and herbs, fabric, and feeds in this order.
- Parents and other adults are not allowed in the skill-a-thon testing area, unless they are a volunteer for an event station.
- The contest will be scored for high point awards. Stations and quiz scores will be combined to determine total score. Worksheets will be graded by extension staff; their grading is final.
- Contestants are not allowed to have Eletronic devices on their person during the contest.
- Rule violations will cause disqualification.

Ages:

Juniors – ages 8 – 13 years old (must be this age on January 1, 2025)
Seniors – ages 14 - 18 years old (must be this age on January 1, 2025)

Eligibility:

This is an open event, meaning a youth participant does not need to be enrolled in 4-H or FFA to participate. To be eligible they must register for the event within the allotted time. No late entries will be accepted to keep the time rotations on schedule.

Skill-a-thon Topics:

The following components will be included in the contest for Novice and Juniors to complete: Breed Identification, Animal Identification, Tool Identification, General Knowledge, FCHS Tools, Nutrition, and Hands on Components. Also included will be questions of Navajo language terminology.

Identification Section
Cattle Breeds: Béégashii

Black Angus:
Origins: Developed in the early part of the 19th century from the polled and predominantly black cattle of Northeast Scotland.
Characteristics: Naturally polled, predominantly black
Adaptable, early maturing, resistant to harsh weather, easy calving

Black Hereford:
Origins: Derived mainly from Red Hereford cattle with some mix from black Angus cattle.
Characteristics: Like red Herefords, black Herefords are known for their feed efficiency and docile temperament.
Black in color with a white head and underline

Brahman
Origins: Originated from Bos Indicus cattle from India, the “sacred cattle of India.”
Bred in United States beginning in 1885.
Characteristics : Large hump over top of the shoulder and neck
Vary in color from very light grey or red to almost black
Good mothers, hardy, adaptable, heat tolerant

Charolais
Origins: Originated in west-central France.
White cattle were first noticed in the region as early as 878 A.D., and were popular in markets by the sixteenth and seventeenth centuries.
Characteristics: White in color with a pink muzzle and pale hooves, horned, good milking.
Medium to large frame, short broad head, deep broad, long body.

Hereford

Origins :Origin of the Hereford has been lost over time. Generally agreed that it was founded along the border of England and Wales.
Characteristics : Bred for high yield beef and efficiency of production.
Dark red-yellow, white face, crest, dewlap, underline.
Known for their vigor and foraging ability and longevity

Longhorn

Origins: Stemming from ancestors that were the first cattle to set foot on American oil almost 500 years ago.
Characteristics : Color varies widely, usually variegated color pattern, slow to mature, reproductive period is twice as long as that of other breeds.
Natural resistance to most common cattle diseases and parasites.
Most notable for horn size which can reach 100 inches.

Shorthorn

Origins: Evolved over the last two centuries from Teeswater and Durham cattle found in the Northeast of England.
Breed was used primarily as a dual-purpose breed
Characteristics: Come in three colors: Red, White, and Roan.
Cattle may be horned or polled.
Excellent rate of gain, good feed conversion, increased marbling, and tenderness

Limousin

Origins: Originated in the West of the Massif Central between Central and South West France, a rainy region with harsh climatic conditions and poor granite soil.
Limousin cattle evolved into a breed of unusual sturdiness, health, and adaptability.
Characteristics: Large frame, strong-boned, small head, broad forehead.
Originally golden-red in color, coloration has evolved to include black genes

Simmental

Origins: History dates back to the Middle Ages. Early records indicate that they were the result of a cross between large German cattle and a smaller breed from Switzerland.
Original selection criteria in Europe included milk, meat, and draft.
Characteristics: Originally varied from gold to red with white. Modern Simmental are black, may have white on underline of face.
Highly adaptable, heavily muscled, and well conformed

Red Angus

Origins: Red Angus has the same origins as the Aberdeen Angus.
Originally, it was brought in by the Vikings from Europe and introduced to England and Scotland, these cattle were small, dun-colored, and polled. Characteristics: Similar in conformation to the Aberdeen Angus
Medium in size, beefy carcass, red in color with pigmented skin

Swine Breeds:Bisóodi

Berkshire

Origins: Named after Berkshire County, England, where they were first discovered.
First brought to the US in the 1820's.
Characteristics: Terminal Breed, Medium size, black with six white points (four white socks, white snout, and white tipped tail), erect ears, well marbled, highly palatable meat

Chester White

Origins: Originated in Chester County, Pennsylvania around 1815-1818.
Developed using strains of large, white pigs common to the Northeast US and a white boar imported from Bedfordshire County, England.
Characteristics: Dual purpose breed. Versatile, most durable of white breeds Solid white, drooping ears

Duroc

Origins : In 1812, early large "Red Hogs" were bred in New York and New Jersey.
Large litters and the ability to grow quickly were prominent characteristics.
Characteristics : Terminal Breed Reddish-brown and light golden to dark-red, large-frame, muscular, drooping ears.
Tend to be one of the least aggressive breeds, large litters, quick to grow

Hampshire

Origins: Originated in Hampshire, Wessex, UK in 1832
Characteristics: Terminal Breed, Erect ears, black body with a full white belt around the middle covering the front legs.
Muscled and rapid growers, longevity, lean, high carcass quality.

Spotted

Origins: Descended from the Spotted Hogs which trace their ancestry to the original Poland China
Characteristics: Terminal Breed, Black and white spots with no red or brown tints, drooping ears.
Fast-gaining, feed efficient, early maturing.

Yorkshire

Origins: Developed in the county of York, England. The first Yorkshires in the United States were brought into Ohio around 1830.
Characteristics: Maternal breed, White in color with erect ears.
Productive and performance oriented, durable mothers

Poland China

Origins: Developed between 1835 and 1870 in Butler and Warren counties in Ohio by crossing Polish pigs and Big Chinas.
Characteristics: Terminal Breed, Black with a white face and feet and a white-tipped tail, drooped ears.
Known for their large size, excellent feeders, quiet disposition, sound feet and legs

Sheep Breeds: Dibé Yázhí

Suffolk

Origins: Result of crossing Southdown rams on Norfolk Horned ewes.
Adapted for traveling great distances for food, developing a superbly muscular body
Characteristics: Large framed sheep, polled, dark face and legs, fine boned. Derives meatiness and quality of wool from the old original British Southdown.

Finnsheep

Origins: Native to Finland, were first imported to North America by the University of Manitoba, Canada in 1966. Considered to be several hundred years old, descending from the Mouflon that live in the wild on Sardinia and Corsica.
Characteristics: Known for multiple births of three, four, even five lambs at a time. Lambs are often small but are vigorous at birth and grow well. Most often white, but are seen in all colors, solid or spotted, wool is medium to fine. Usually polled, dual purpose breed.

Merino

Origins: Founded in Spain near the beginning of the 12th century.
Characteristics: Known for excellent, fine wool quality
Medium-sized with white legs and face

Rambouillet

Origins: Originated with Spain's Merino flocks, which were known to have the world's finest wool. Characteristics :Largest of fine wool sheep, white face and legs, heavy fleece. Well known for its wool, but also for its meat, both lamb and mutton

Dorper

Origins: South African mutton breed developed in the 1930s from the Dorset Horn and the Blackheaded Persian.
Characteristics: Adaptable, does well in various range and feeding conditions. Easy to care for, required minimum labor. Its skin covering is a mix of hair and wool and will drop off naturally if not shorn to keep tidy.

Navajo Churro

Origins: Descended from the Churra in the late 16th century from the Spanish. First breed of domesticated sheep in the New World.
Characteristics: Have a double coated fleece, a long fleeced top coat that is fine to medium with a undercoat that is medium to coarse. Rams has fully developed horns. Highly disease resistant with high rates of twins and triplet births.
Used for food and fiber. Its fleece was used in weaving for its luster, silky feeling, color absorption, and durability. Remarkable hardiness, adaptability, and fecundity.

Goat Breeds:Tł'ízí

Angora

Origins: Originated in the district of Angora in Asia Minor. Dates back to early biblical history Characteristics: Bucks have a pronounced spiral to their horns, which comes back and away from their head. Except for the face, the breed is entirely covered in a coat of long ringlets of fine mohair. The face and coat are normally white, but black, brown, and grey also occur.

Boer

Origins: An improved indigenous breed with some infusion of European, Angora, and Indian goat Characteristics: Largest meat breed goat. Horned breed with lop ears and showing a variety of color patterns, however white with a reddish-brown head and ears is most common.

Kiko

Origins: Breed of meat goat originating from New Zealand. Developed in the 1980s by crossbreeding local feral goats with imported dairy goat bucks. Characteristics: Generally solid white or cream in color, however darker colors, including black, can be seen. Rapid growth, meat breed. Tolerant of rustic conditions, resistant to internal parasites

Spanish

Origins: Developed through natural selection from goats first placed in Texas in the early 1540s by Spanish explorers. Characteristics: Can be any color or color pattern. Moderate in size and growth rate. Especially tolerant of difficult conditions and forage well on local plants. Used often from meat and brush clearing. Spanish does are prolific milk producers for the moderate growth rate of their kids

Horse Breeds: Łįį’

Quarter Horse

The Quarter horse originated in the early 1600's. Characteristics include a having a stockier build, heavier muscling in the hind quarters, lower head carriage, and triangular face. Can come in many colors that include black, bay, sorrel, grey, roan, palomino, perlino, cremello, grulla , buckskin, and dun. Known for being sprinters with high speeds.

Arabian

Originated from the Arabian Peninsula from over 3,500 years ago. Characteristics include having a flatter shorter back, small “dished” face, upright neck carriage, and high tail carriage. They can come in many colors including black, bay, chestnut, and grey. Most do not have excessive white markings. They are considered hot blooded horses with high speed, stamina, and spirited. Have one less lumbar vertebrae, pair of ribs, and tail bone than other breeds

Thoroughbred

Originated in England in the 17th Century for racing and jumping. Characteristics include having a longer leaner build, larger heart girth, and on the taller side. Common colors include black, bay, chestnut, and grey. Is the most used breed for racing events. Known for speed, agility, and temperament and commonly used for racing, jumping, fox hunting, and polo.

American Paint Horse

Originated in North America from horses brought by Spanish explorers in the 16th century. Characteristics include having a stockier build, heavier muscling, lower head carriage, types, a triangular face, and obvious coloring. Color patters include Tobias’s, overdo, torero, and Sabina variances. This could be in the color of black, bay, sorrel, grey, roan, palomino, cremello, grulla, buckskin, and dun.

Fresian

Originated from Friesland in the northern Netherlands in the 13th century. Characteristics include being a larger body breed with thicker bones, feathering on the legs, thicker mane & tail, with animated motion. Black is the only allowed recognized color for the breed registry. There were originally used for riding and farmwork and are descendants of “Great Horses” in Europe.

Clydesdale

Originated in the early 19th century in Lanarkshire Scotland. Characteristics include being a draft horse with a large body to carry heavy loads. Their legs often have feathering. They often come in a bay color with white stockings and face markings.

Appaloosa

Originated in the 16th century from Spanish explores but was bred to have great endurance, strength, and distinctive coat patterns by the Nez Perce tribe. Characteristics include having a stocker build, heavier muscling, lower head carriage, mottled skin, striped hooves and spotted coloring. Colors include a blanker, snowflake, leopard print variations of black, bay, sorrel, grey, roan, palomino, buckskin, and dun.

Shetland Pony

Originated in the 19th century on the Shetland Islands off the coast of Scotland. The breed evolved from the Scandinavian tundra by Viking raiders. It is often short in stature with a thick mane and tail. They are often found in solid and pinto variations of black, bay, chestnut, and grey. Originally used as a pit pony for coal mines and is used today for kid ponies and circus acts.

Rabbit Breeds:Gah

American Fuzzy Lop

A recognized breed in 1989. Known for its lopped ears, large head, and wooled coat, the AFL is a sweet tempered, rabbit that is energetic and popular for beginning and seasoned exhibitors alike. Maximum weight 4 lbs.

Californian

Developed in Southern California in the 1920s by George West, and is one of the most popular breeds of rabbits in the ARBA. Prized for its meat producing qualities as well as its pelt, the “Cal” is a competitive commercial breed in all 50 states and beyond. – Maximum weight 10.5 lbs.

Checkered Giant

Recognized by the ARBA in 1919, is also known as the “rabbit beautiful”. Easily recognized by its distinctive bold markings and arched body type. They are a running breed and require a large cage to move comfortably. – No maximum weight.

Dutch

Developed in England during the 1830s and one of the most recognized breeds. Selecting for correct markings paired with type can be challenging, but the fact that the Dutch remains one of the top 10 most popular breeds, is evidence that many are up to this task. – Maximum weight 5.5 lbs.

Himalayan

The only cylindrical typed breed recognized by the ARBA. The body is white with colored points, recognized colors are black, blue, chocolate and lilac. Their laid back demeanor makes them easy to handle and a joy to exhibit. They are ideal for youth competing in showmanship and challenging enough for seasoned breeders. – Maximum weight 4.5 lbs.

Lionhead

Recognized breed in the United States since 2014, it has the distinctive mane around its head giving it the look of a male lion, as the name implies. It is steadily gaining in popularity throughout the rabbit hobby. Maximum weight 3.75 lbs.

Netherland Dwarf

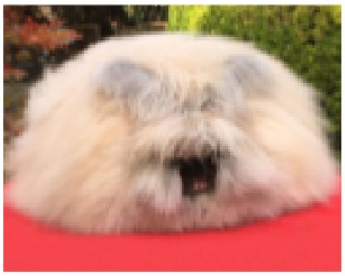
Breed was first produced in the Netherlands in the early 20th century and soon made its way to America. Since then, their popularity has only grown and new color varieties have been recognized; bringing the total to 25. – Maximum weight 2.5 lbs.

Belgian Hare

One of the oldest breeds of rabbits in America, its roots trace back to the 1880s. They were developed in the early part of the 18th century in Eastern Europe through selected breeding of wild and domestic rabbits. Has a very distinct, lithe and elegant body and makes a striking presence on the show table. – Maximum weight 9.5 lbs.

Cinnamon

Became a recognized breed in 1972. The color of the Cinnamon is a rust or ground cinnamon with a uniform gray ticking across the back, smoky grey coloring on its sides, a dark underbelly, and an orange under-color all over. They are a commercial breed and are also valued for their meat production. – Maximum weight 11 lbs.



Angora

The English is the only breed of Angora that is classified as a compact breed. It possesses a silky, luxurious wool that is both beautiful and sought after for spinning – Maximum weight 7.5 lbs.

Poultry Breeds:Naa’ahóóhai

Brahma

Originated in Shanghai, China. It’s combs, wattles, and earlobes are bright red. This chicken breed comes in multiple colors. Plumage is silvery white with a black and white cape. Main tail is solid black with increasing white lace towards the base of the tail. These birds are a favorite among fanciers and for show. They are broody, good mothers, and unable to withstand cold temperatures. Generally all purpose birds used for heavy meat production that are 9 to 12 pounds and are fair layers with brown eggs.

Cochin

Originated in Asia. Has a moderately long, broad, deep, and well-rounded from the breast to the abdomen. They have a mass of soft fluffy feathers. Thye come in black, blue, buff, partridge, cuckoo, and white. They are around 8 to 9 pounds. They have golden yellow eyes, yellow skin, legs, and toes. They are poor flyers and are clam and friendly. They are mostly bred for exhibition but can be meat producers and lay 180-200 eggs per year.

Leghorn

Originated in Italy and is the most popular layer breed in the United States. They have bright red combs and wattles with white earlobes. Body is long, deep, and carried nearly horizontal. They are small, sprightly, noisy, good foragers, capable of flight, and like to roam. They are used mostly for egg production and produce white eggs.

Polish

Originated in Poland and Italy. The breed has a mixture or brown, white, and black feathers with a variation of patterns. They have a distinct pom-pom hairdo that is unique to the breed. They range from 4 to 6 pounds and are good for egg production. They are known to be calm and gentle birds. The do not do well with cold damp weather.

Rhode Island Red

Originated in Rhode Island. Body is long, broad, moderately deep, and appears oblong. Plumage is rick, dark red with greenish black sickles in the tail. They are hardy, dual-purpose birds, the best layers in this group, and good for small flock owner. Used for meat and egg production. Weight ranges between 8 to 6 pounds. Known for being somewhat aggressive and territorial. Not recommended as a pet or other chickens.

Silkie

Originated in the Far East in China and is also called the Bearded White. Has soft, fluffy plumage with a moderately long, deep, broad and rounded body. Has a muff of ear feathers and beard that make the appearance stand out. Shanks and toes are leaden blue and well covered with feathers. They live 7 to 9 years and are 3 to 4 pounds. They come in a variety of colors with cream-colored eggs, which is their prominent job. Generally, have a calm disposition and easily be raised in confinement.

Barred Rock

Originated in the United States in the 1800's around Massachusetts and is also called Plymouth Rock. Body is long, broad, and deep. Its plumage has sharp, parallel bars of alternating light and dark colors with a dark tip. They are good general farm chickens, hardy, broody, docile, and tame easily. They are excellent dual-purpose breeds used for meat and egg production.

Wyandotte

Originated in the Northeastern part of the United States. They are dual-purpose reeds and have a lifespan of 6-12 years. They come in several colors with feathers that are laced, the most famous being silver. The average size is 8 to 6 pounds. They have a good temperament but are not cuddly. They are adaptable to any weather conditions.

Herbs & Spices

Basil

An Old World aromatic annual herb (Ocimum basilicum) in the mint family, cultivated for its leaves. Also called sweet basil. The leaves of this plant are used as a seasoning. Any of various plants in the genus Ocimun, native to warm regions, having aromatic foliage and terminal clusters of small, usually white flowers

Bay Leaves

The leaf of the bay laurel or “true laurel”, Laurus nobilis, is a culinary herb often used to flavor soups, stews, and braises and pates in Mediterranean Cuisine.

Chives

A Eurasion bulbous herb (Allium schoenoprasum) in the lily family, having clusters of usually pink to rose-violet flowers and cultivated for its long, slender, hollow leaves. Often used in the plural. The leaves of this plant are used as a seasoning.

Cilantro

Parsley-like herb that is used as a seasoning or garnish, usually in Mexican dishes and salsas, sometimes referred to as Mexican parsley.

Ginger

A plant (Zingiber officinale) of tropical Southeast Asia having yellowish-green flowers and a pungent aromatic rhizome. The rhizome of this plant is often dried and powdered and used as a spice. Also called gingerroot

Paprika

A mild powdered seasoning made from sweet red peppers. A dark to deep or vivid reddish orange.

Sumac (Chiiłchin)

Tangy, smoky, earthy, and slightly sour, sumac is an essential spice in Middle Eastern cooking. With its deep red hue and fruity, citrusy flavor, sumac spice is the perfect way to add acidity and color to your meals. Sumac spice that is used in cooking is red, more like a deeper berry color. It comes from sumac berries, which are turned into a coarse powder, sifted. This deep red spice is the main flavor maker in some traditional Middle Eastern dishes

Juniper Berries

Comes from the Juniper evergreen shrub which grows throughout the northern hemisphere. The berries are about a quarter-inch wide and bluish-purple. Their flavor is intensely spicy with a slight touch of pine. Commonly used with lamb (or mutton) and is particularly good with venison, wild boar, and even domestic pork. A rustic flavor that complements ground smoked Chile peppers. It is also used as a fermentation starter in sauerkraut or bread baking

Cinnamon

Obtained from the inner bark of several tree spices from the genus Cinnamomum. It can be purchased in its reddish-brown ground form or in the form of curled sticks called quills. Used in many baking dishes and as a topping.

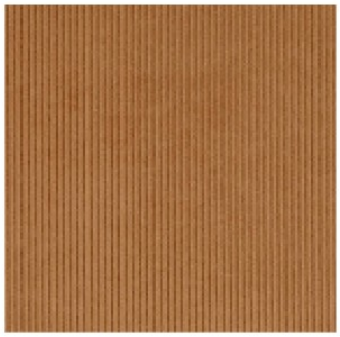
Sage (Ts'ah)

Is a perennial evergreen shrub with grayish leavers and blue to purple flowers. Used in cooking and traditional herbal medicine. Belongs in the mint family with a strong flavor of citrus and pine.

Fabric Identification

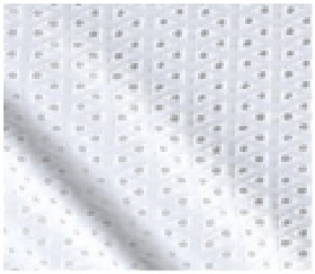
Broadcloth

Is very lightweight, smooth, flat looking fabric, with no pattern in the weave of the threads. It is similar in quality to pinpoint fabric, but has less texture. This usually means it is slightly more transparent and not as shiny as the pinpoint



Corduroy

A textile with a distinct pattern, a "cord" or wale. Mod□ern corduroy is most commonly composed of tufted cords, sometimes exhibiting a channel (bare to the base fabric) between the tufts. Both velvet and corduroy derive from fustian fabric.



Eyelet fabric

A type of lace made by creating holes in a fabric medium. Each hole is edged using a buttonhole stitch. The holes are precisely sized and situated to create a pattern or patterns, often floral designs or abstract geometric arrangements.

Faux Fur

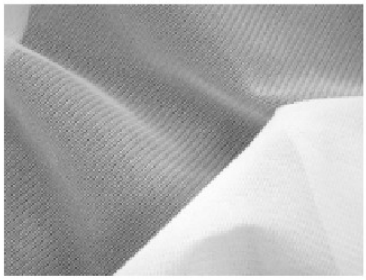
Fake fur is a type of textile fabric fashioned to simulate genuine animal fur. It is known as a pile fabric and is typically made from polymeric fibers that are processed, dyed, and cut to match a specific fur texture and color. Today's fake furs can be nearly indistinguishable from the natural furs they imitate.

Iron on Interfacing

Used to add stiffness to fabric. The interfacing you'll find in a craft store today is fusible, and it's applied to the wrong side of the fabric with an iron

Jersey

A knit fabric used predominantly for clothing manufacture. Originally made of wool, but is now made of wool, cotton, and synthetic fibers. Jersey Channel Islands, where the material was first produced, had been an important exporter of knitted goods. The fabric can be a very stretchy single knitting, usually light-weight, jersey with one flat side and one piled side. Most often used to make T-shirts



Knit®

A fusible knit interfacing and supple stabilizer for dresses, jackets, an pants. It is best used with light to midweight knits, wovens, sweater knits, and machine knitted fabrics and is excellent with fabrics such as wool, flannel, and gabardine.

Leather (’Akał)

Leather is a durable and flexible material created by tanning animal rawhides, mostly cattle hide. It can be produced at manufacturing scales ranging from cottage industry to heavy industry

Spandex

A strong fiber with medium weight and good elasticity. Used for clothing and swimsuits.

Wool (Aghaa’)

A rough fiber with good crimp. Has a stiff drape and good cover. Use in carpets and some clothing

Equipment Identification

Barnes Dehorner
Used to dehorn calves, sheep, and goats.

Cattle Clippers
Used to clip and groom the hair on cattle, sheep, horses, and goats.

All Weather Paint Stick
A nontoxic, weather-resistant marking crayon for temporary identification of livestock

Chain End Twitch
The twitch is placed on the horse's nose to restrain the horse as required

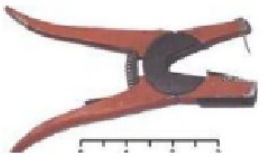
Balling Gun
Used to administer various pills (medications) to cattle and horses. It is placed down the throat to administer the pills.

Ear Tag
Placed in an animal's ear to provide an easy to read form of individual identification

Disposable Syringes
Used to measure precise amounts of a vaccine and to administer vaccines to livestock and horses.

Drench Gun
Used to administer precise amounts of liquid medications to cattle, sheep, goats, and horses. The hooked portion is placed in the animal's mouth to administer the liquid medication.

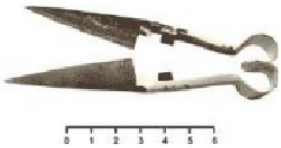
Ear Notchers
Used to clip small notches in a pig's ear to provide a form of permanent, individual pig identification.



Ear Tag Pliers
Used to place ear tags into the ears of cattle, sheep, goats, and pigs to provide a means of animal identification.

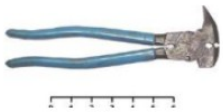
Elastrator
An instrument used for the bloodless castration (young male calves, lambs, and goats) and docking of tails (young lams and goats). It is used to place a small rubber ring over the scrotum or tail to shut off circulation.

Electric Branding Iron
Used to brand cattle. The branding iron can be designed to brand numbers, letters, or a unique farm brand.



Hand Sheep Shears
Used to shear and groom the wool from sheep. Blade lengths typically range from 3 to 6-1/2 inches

Hanging Scale
Used to weigh young animals, feed ingredients to include in a diet, or the amount of feed to feed to an animal.



Fencing Pliers
Used when building fences. These pliers will cut, splice, and stretch wire, and drive and pull staples.

Hoof Pick
Used for the regular daily cleaning of a horse's foot.

Plastic Sleeve
Placed over the hand and arm when artificially breeding cattle or when pulling newborn animals during difficult births (dystocia).

Rasp
Used by farriers to smooth the foot after the excess hoof wall has been removed during trimming.

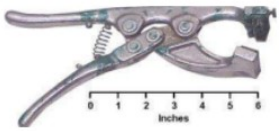
Grooming and show table
A table used to prop small livestock on during grooming and showing events.

Saboten Hoof Trimmer
Device used to trim the hooves of sheep and goats.

Scalpels
Used by veterinarians for various surgical procedures, and by farmers for various health related and management practices (such as castration)

Scotch Comb
Used to comb (groom) the hair of cattle.

Syringe Needles
Used for injecting vaccines and medication (intramuscularly, subcutaneously, intraperitoneally) into livestock and horses.



Tattoo Pliers
Used to place tattoo numbers on a pig's ear to serve as a form of permanent identification.

Poultry Feeder
Metal or plastic container used to hold and store poultry feeder. Individual holes minimize waste and spillage.

Small Animal Nail Clipper
Used to safely clip the nails of small animals including dogs, cats, and rabbits.

Exhibitor Back Number Harness
Used to hold the exhibitor number during competition.

Air fryer
A kitchen appliance that uses superheated air to cook foods, giving results very similar to deep-frying or high-temperature roasting but without all the oil and fat needed to deep-fry. Is much more efficient and creates an intense environment of heat from which the food cannot escape.

Countertop Mixer
A countertop mixer with different attachments that blends ingredients, beats ingredients, beat dough or whip eggs. A handheld mixer can do many of the things a stand mixer can, but a stand mixer enables you to work hands free.

Kitchen Scales
A kitchen scale is specifically designed to measure various ingredients that are used for preparing all sorts of dishes. It can quantify liquid, dry, chopped or mixed ingredients and give the accurate measurement. That way, you do not have to rely solely on kilograms or pounds.

Grater
A device with sharp edged holes against which something is rubbed to reduce it to shreds. Used to grate such things as cheese.

Food Processor
An appliance consisting of a container in which food is cut, sliced, shredded, grated, blended, beaten or liquidized. Used to prepare foods.

Bench Knife
A bench scraper, sometimes also called a bench knife, a dough scraper, or any number of other variations, is a flat, rectangular piece of steel with a handle along one edge. It's a sort of wide, dull knife that bakers use to divide, portion, scoop and transfer hunks of dough from one place to another.

Butter Dish
A small dish with cover used to store and serve butter.

Cake Icing Knife
A utensil designed especially for the use of spreading a substance onto a flat surface, such as frosting on a cake. It is also an ideal tool for applying spreads onto sandwiches in mass quantities.

Egg Separator
A spoon shaped utensil, which has a hole in the bottom and is used to separate the white from the yolk of the egg.

Ground Meat Chopper
A non-stick-safe tool to break up ground meat while cooking. Silicone edge is great for scraping and transferring food out of pans

Instant-read Thermometer
A stainless steel stem that serves as a temperature probe that is inserted into the meat. Can have either a dial or a digital readout.

Navajo Stir Sticks (Ádístsiin)
Are made from Greasewood and used to stir hot items. Comes in a bundle 7 to represent ceremonies and/or starts. Was a gift from Changing Women. Protects the family against hunger.

Grinding Stone (Tsédaashjéé')
A tool used to grind corn and seeds into flour or meal. Consists of two parts a metate is a flat stone used with another stone (a mano) for grinding maize or other grains.

You can use corn husks to wrap food for grilling or as a wrap. This method helps keep the food moist and adds a hint of corn flavor.

General Knowledge

A young chicken from hatch to five weeks of age is called?
a. Baby chick
b. Baby bird
c. Chicklings

A mature female greater than one year of age may be called a hen.
a. True
b. False

What is the average life span of a chicken?
a. 2 - 4 years
b. 3 - 5 years
c. 6 - 7 years
d. 1 - 2 years

What is a baby rabbit called?
a. Bunny
b. Kit
c. Doe
d. Buck

What age are rabbits sexually mature?
a. 3 - 8 months
b. Over 12 months
c. 9 - 12 months

What is the body temperature of a chicken?
a. 98.7 F
b. 103 F
c. 100 F
d. 88 F

How long is the incubation period of an chicken egg?
a. 20 - 22 days
b. 25 - 28 days
c. 18 - 20 days
d. 30 - 32 days

Large breeds of rabbits weigh?
a. 14 - 16 pounds
b. 9 - 12 pounds
c. 2 - 4 pounds

What does a meat pen of rabbits consist of?
a. same breed
b. not over 10 weeks old
c. At least 3 pounds but not more than 5 pounds each
d. All of the above

What is the gestation period of a rabbit?
a. 28 - 33 days
b. 18 - 24 days
c. 35 - 45 days
d. 60 days

General Knowledge

Which Substance is used to treat a disease?
A. Fertilizer
B. Vaccine
C. Antibiotic
D. Implant

If we are to give a steer an intramuscular injection of a product which causes
tissues irritation, which is the preferred injection site?
A Rump
B Quarter
C Loin
D Neck

Which tow types of twine should not be used to tie wool bags?
A Jute and Sisal
B Plastic and Sisal
C Plastic and Cotton
D Jute and Cotton

Shelled corn is used in rations primarily as a source of?
A Protein
B Fat
C Energy
D Minerals

Which of the following is not a legume?
A. Alfalfa
B. Bluegrass
C. Clover
D. Soybeans

Which of the following chemicals would not be used in a foot bath to treat foot rot?
A Copper Sulfate
B Formaldehyde
C Wormer
D All of the above

Which of the following is not an example of internal parasites?
A Lung Worms
B Ticks
C Tape Worms
D Flukes

Which of the following occurrences can be prevented by vaccination?
A Foot Rot
B Founder
C Bloat
D Overeating Disease

General Knowledge

A symptom of bloat is?
A Lameness
B Abortion
C Bulging on the left side
D Severe bulging on the right side

The mating of animals of different breeds is known as?
A Inbreeding
B Rebreeding
C Crossbreeding
D None of the above

A feed low in fiber and high in food value is?
A Roughage
B Silage
C Haylage
D Concentrate

When the term burly is used in livestock judging it means:
A Close at the knees
B Upstanding
C Rugged and masculine
D More feminine

The female reproductive organ where the embryo develops is called?
A Uterus
B Ovary
C Oviduct
D Cervix

Which of the following is a mineral?
A Thiamine
B Riboflavin
C Copper
D Niacin

What does A.I. stand for (as it pertains to animal agriculture)?
A Adjusted information
B Artificial intelligence
C Adjusted intake
D Artificial insemination

An animal whose sire and dam are both from the same breed is called a _____.
A Grade
B Outcross
C Crossbred
D Purebred

General Knowledge

Which of the following is not an energy feed?
A Barley
B Steam Flakes
C Soybean Hulls
D Fish Meal

What is an animal called that has two or more breeds in its ancestry?
A Crossbred
B Purebred
C Toxoplasmasis
D Goiter

What are the top 5 USDA beef carcass cutability grades, from leanest to fattest?
A Prime, choice, select, standard, utility
B 1, 2, 3, 4, 5
C Utility standard, select choice, prime
D 5, 4, 3, 2, 1

Which of the following is not a factor in determining beef yield grade?
A Rib eye area
B Back fat
C Hot carcass weight
D Live weight

The American Royal Livestock Show is held where?
A Denver
B Kansas City
C Houston
D Louisville

What is the money made on a hog after the purchase price and cost of raising is subtracted from the selling price?
A Initial Cost
B Invoice
C Profit
D Loss

When feeding corn silage to lactating beef cows, which tow nutrients are usually deficient?
A Calcium & phosphorous
B Calcium & protein
C Protein & energy
D Protein & phosphorous

When selecting a bull to breed to heifers, which piece of information would be helpful
in predicting the birth weight of his calves?
A His birth weight
B His sire's birth weight
C His birth weight EPD
D His frame size

General Knowledge

Which quality grade of beef is most commonly sold in grocery stores?
A Prime
B Choice
C Good
D Standard

What is another word for calving difficulty?
A Laminitis
B Founder
C Enterotoxemia
D Dystocia

Which of the following is the poorest quality grade for cattle?
A Prime
B Standard
C Choice
D Select

Two seasons of the year when most purebred calves are born?
A Spring and Fall
B Spring and Winter
C Summer and Fall
D Fall and Winter

At what age should a heifer be bred?
A 9 months
B 12 months
C 15 months
D 20 months

The small flecks of fat in a cut of beef which gives meat its flavor and is also one of
the factors indicating quality is called:
A Seam Fat
B Marbling
C External Fat
D Speck Fat

What is the inflammation, becoming infected and hardening of the udder called:
A Constipation
B Lactation
C Productivity
D Mastitis

When a lamb is born, you should.....
A Check the ewes' udder
B Identify the lamb
C Dip the navil in an iodine solution
D All of the above

General Knowledge

A two-year sheep will have how many permanent front teeth?
A 2
B 4
C 6
D 8

What is another name for white muscle disease?
A Grass Tetany
B Bloat
C Hypomagnesemia
D Stiff lamb disease

Which term refers to sheep?
A Ovine
B Bovine
C Porcine
D Equine

What is the term used to describe a castrated male sheep?
A Steer
B Weather
C Gelding
D Buck

The largest compartment of the 4-part stomach of cattle or sheep is the?
A Cecum
B Reticulum
C Abomasum
D Rumen

A good source of protein for beef and sheep rations is:
A Corn
B Trace mineral salt
C Soybean meal
D Steak

What is the first milk from a ewe called?
A Lactaid
B Bolostrum
C Syrup
D Milk

Which of the following is a hair breed of sheep?
A Hampshire
B Soughdown
C Lincoln
D Dorper

General Knowledge

What is the carcass from an old sheep called?
A Rack of Lamb
B Easter Lamb
C Mutton
D Leg of Lamb

Lambs born in this month would be the least costly to raise?
A December
B January
C February
D April

What is goat meat called?
A. Mutton
B. Cabrito
C. Chevon
D. Both B&C

What breed of goat is all white?
A. Angora
B. Boar
C. Saanen
D. All of the Above
E. Both A & C
F. Both B& C

What should a goat's navel be dipped in immediately after being born?
A. Alcohol
B. Iodine
C. Colostrum
D.Water

How many compartments does a goat stomach have?
A. 1
B.3
C. 2
D. 4

What is the best food for kids less than 4 months old?
A. Whole goats milk
B. Alfalfa
C. Corn
D. Water

Which state has the most goat dairies?
A. Texas
B. New Mexico
C. Colorado
D. Indiana

General Knowledge

How many teats should a goat have?
A. 1
B. 2
C. 4
D. 0

During what season of the year are both dairy and meat goats most goats most likely to get pregnant?
A. Winter
B. Summer
C. Spring
D. Fall

What part of a goat is directly above the hoof and below the dewclaw?
A Pastern
B Knee
C Hock
D Wither

Which state in the US has the highest meat goat population?
A Oklahoma
B Texas
C California
D Kentucky

What is the reproductive organ in a doe where kids grow and develop?
A Fallopian Tube
B Uterus
C Cervix
d None of the above

What is the term that refers to a sheep or goat that has a jaw defect in which the top jaw is overshot (teeth hit in the back of the dental pad)?
A Monkey Mouth
B Scrapie
C Parrot Mouth
D Spider Syndrome

Which sex tends to be the heaviest in a group of hogs that are the same age?
A Gilt
B Barrow
C Boar
D No difference

The average gestation period of swine is?
A 21 days
B 114 days
C 150 days
D 130 days

General Knowledge

Which breed of swine has erect ears?
A Tamworth
B Poland China
C Chester White
D Landrace

The average dressing percent of a market hog is?
A 40%
B 50%
C 60%
D 70%

A castrated male pig is called a?
A Steer
B Wether
C Barrow
D Gilt

How old should a gilt be when she first farrows?
A 6 months
B 1 Year
C 2 Years
D 3 Years

What breed of hogs originated in Pennsylvania?
A Poland China
B Herford
C Duroc
D Chester White

How old should gilt be when they are bred?
A 6-7 months of age
B 8-9 months of age
C 12-13 months of age
D 15-16 months of age

What is the average length of gestation in pigs?
A 28 days
B 115 days
C 150 days
D 283 days

What is the average weight when hogs are marketed for slaughter?
A 170-190
B 240-280
C 180-200
D 300-350

General Knowledge

What are the main two feed ingredients in a swine ration?
A Corn and Soybean Meal
B Lysine and Corn
C Ivomec and Barley
D Ground Limestone and Soybean Meal

What is a baby pig born dead called?
A Weanling
B Active
C Barrow
D Stillborn

A stallion does not reach full reproductive capacity until years of age?
A 2
B 3
C 4
D 5

A mare is one that has never been bred.
A Maiden
B New
C Virgin
D Young

Which of the following terms describes a mane that is cut off so part is left standing upright?
A Pulled mane
B Roached mane
C Thinned mane
D Trimmed mane

Which of the following is not a part of a horse's foot?
A Beam
B Frog
C Sole
D White line

If wood shavings are used as bedding, what type of shavings should be avoided?
A Ash
B Balsa
C Black Walnut
D Pine

How tall is a 14.2 hand equine?
A 48 inches
B 52 inches
C 56 inches
D 58 inches

General Knowledge

What is the approximate capacity of a horse's stomach?
A 3 gallons
B 5 gallons
C 12 gallons
D 3 quarts

Where on the horse is the pastern bone located:
A Head
B Leg
C Neck
D Tail

What part of the body supports the weight of the saddle and rider?
A Back
B Neck
C Rumb
D Withers

The is a rope attached to the halter for leading.
A Cinch
B Lead Rope
C Tree
D War Bridle

The back of the saddle is the .
A Bosal
B Cantle
C Cinch
D Honda

What is the most important winter feed for horses?
A Beet pulp
B Corn
C Hay
D Oats

What features of the horse can be used to determine age?
A Eyes
B Hair Coat
C Legs
D Teeth

A is a person who works on horses' feet.
A Farrier
B Float
C Manger
D Shoderr

General Knowledge

The mother of a horse is called a .
A Dam
B Dame
C Damsel
D Lady

The father of a horse is called a .
A Lord
B Mare
C Pater
D Sire

Horses drink to gallons of water a day.
A 1 to 2
B 4 to 6
C 10 to 12
D 8 to 10

The leather flap on the side of an English saddle covering area where the stirrup
attaches to the saddle is called the >
A Cantle
B Girth
C Panels
D Skirt

This type of saddle is rugged; seat is medium deep for added security; always
has a back cinch.
A All-purpose Saddle
B Barrel Racing Saddle
C Endurance Saddle
D Roping Saddle

The are attached to the bit and used by the rider to communicate with the horse.
A Dams
B Ears
C Foals
D Reins

Financial Goals should be:
A Specific and Realistic
B Numerical
C Flexible
D Both A and C

Credit reports are used to determine your credit:
A Standing
B Need
C Worthiness
D None of the above

General Knowledge

True or False: You should consider the weather in planning a garage sale?
Ture
False

You should always pay for services up front to guarantee you get results.
True
False

What three states make up the Navajo Nation?
A. New Mexico, Utah, and California
B. New Mexico, Arizona, and Utah
C. Arizona, California, Utah
D. Utah, Colorado, South Dakota

How do you pronounce Navajo Tea in Navajo?
A. Dilchxoshí
B. Déédh
C. Tó
D. Gohwéédh

Ear notches on the left side of swine denote the ._____?
A. Size
B. Litter
C. Number
D. Age

What should you do before signing a contract?
A Read it
B Look for blank lines or spaces
C Consult an attorney
D All of the above

What is used to make blue corn mush blue in color?
A. White corn
B. Juniper Ash
C. Food Coloring
D. Sugar

What fabric a fabric that is strong medium and elastic?
A. Leather
B. Spandex
C. Cotton
D. Silk

What lamb sheep breed was created by the Navajo people?
A. Churro
B. Suffolk
C. Rambouillet
D. Chevron

When starting to sewing on a button, you insert the needle from _____ first.
A. Outside
B. Inside
C. Side
D. None of the above

Feeds: Ch'iyáán (Nutrition)

Water- The most critical component of any ration. Is need for most of the physiological functions in the body. Animals should always have access to this nutrient to prevent illness or death.

Protein- Is needed for the structuring of muscles, skin, hair, and internal organs and the only source of nitrogen. Crude protein is noted on feed labels to indicate the protein level in that feed.

Energy- Allows the animal to do physical work. It provides the ability to grow, lactate, reproduce, digestion, and other functions. Total digestible nutrient (TDN) is the energy value most commonly used in simple rations.

Fiber- Crude fiber is an estimate of structural carbohydrates found in plants and grains. Fiber helps regulated the digestive

Shelled Corn

Most extensively produced feed grain in U.S. Typically the energy standard to which other grains are compared. Has a high energy content, but low in protein and low fiber content. Usually processed in some way prior to feeding (ground, cracked, steam, flaked, etc.).

Whole Oats

Widely grown in cool, moist climates of the U.S. Compared to corn, it is lower in energy and higher in protein. Used extensively in horse feeds and feeds for starting young animals. Can be fed whole, but usually processed prior to feeding (rolled, ground, crushed, crimped, steamed, etc.).

Dehydrated Alfalfa Pellets

Excellent feedstuff for horses and ruminants (high in protein, minerals, and vitamins). Lower fiber content than traditional alfalfa hay. Limited use in monogastric diets (sometimes used as a laxative in prefarrowing sow diets).

Soybean Meal

Most widely used protein supplement in the U.S. Produced by grinding the flakes that remain after oil is extracted from whole soybean. Very palatable with the highest nutritional value of any plant protein source. Excellent source of protein and amino acids.

Dried Beet Pulp

Produced by extracting the sugar from sugar beets and drying the remaining pulp. Good source of digestible fiber for ruminants and horses. Sometimes added to sow diets to prevent constipation

Vegetable Oil

A very potent energy source supplying about 2.25 times more energy than starch or sugar. Used primarily to increase the caloric density of the diet. Increases diet palatability. Sometimes added to diets to reduce dustiness.

Liquid Molasses

Liquid by-product of the manufacture of sugar from either sugar beets, or more commonly, sugarcane. Highly palatable, readily available source of energy. Most commonly added to ruminant and horse diets.

Alfalfa

High quality, cool season perennial legume with an extensive root system that makes it drought resistant. Can grow to heights of 2 to 3 feet. Grows best in hot, dry climates in soils that are deep, fertile, and well drained. As a pasture forage it is not very tolerant to continuous grazing ruminants. As hay it is very palatable, high in protein, and excellent for general feeding purposes.

Oat Hay

Annual or perennial grass that grows in dense, upright clumps. Can reach heights of 2 to 4 feet at maturity. High-quality, palatable forage that is well-suited for grazing and hay production, especially in cooler climates. Drought tolerant and resistant to cold, but not tolerant of excessive heat or frequent cutting.

Timothy

Perennial bunchgrass with a fairly shallow and fibrous root system. Can grow to heights of 2 to 5 feet in seed head stage. Primarily a hay plant but can be used for pasture when part of a mixture - grows well with Alfalfa and (or) Red Clover. Disadvantages include a short stand life, low quality when cut late, clumpy growth habits, and sensitivity to hot temperatures.

Practicum Section

Navajo Tea (Dééh)

Scientific Name: Thelesperma Subnudum
Navajo word : Ch'ilgohwéhí'deí
Plant type: Forb
Growing season: Warm season
Habitats: Piñon- Juniper woodland and brushlands
Flower color: Yellow
Bundling Navajo tea

Harvesting Navajo Tea

- Harvesting Navajo tea leave 2 inches before collecting for re sprout.
- The plant is most favorable before the flower opens.
- Preparation of bundle
- Once harvest begin to gather the shrub together make a bundle of 1 inch in width.
- Gentle fold the shrubs from one end to another and repeat the process.
- The bundle should be 1 inch in width and grab a small Navajo tea shrub.
- Wrap the shrub around the bundle tightly.
- Once it is wrapped tightly begin weaving the shrub with the bundle.
- The bundle should be wrapped tight. It is ready.

Making Navajo Tea

1) Fill a coffee or tea pot with water.
2) Heat the water on the stove.
3) 1 tea bundle for 32 oz of water.
4) Add Navajo tea bundles to the tea pot.
5) Let it boil until brown, red color appears.
6) Pour and serve.

43

How to Use a Measuring Cup

For Liquid Ingredients:

1. Choose the Right Measuring Cup: Use a liquid measuring cup, which is usually made of glass or plastic and has a spout for pouring. It often has measurement markings on the side.
2. Place the Measuring Cup on a Flat Surface: Set the cup on a flat surface like a countertop or table. This helps you get an accurate reading.
3. Pour the Liquid: Slowly pour the liquid into the measuring cup. Fill it above the measurement line you're aiming for (e.g., 1 cup, ½ cup).
4. Check at Eye Level: Bend down or squat so that your eyes are level with the top of the liquid. This ensures you're reading the measurement accurately. The liquid should settle at the bottom of the measurement line. Avoid measuring from above, as that can lead to an inaccurate reading.
5. Adjust the Amount (if needed): If you've overfilled the cup, carefully pour out a little liquid until you reach the exact measurement.
6. Use the Liquid as Needed: Now you can pour the liquid into your recipe, or whatever you're using it for!

For Dry Ingredients:

1. Choose the Right Measuring Cup: Use a dry measuring cup (typically made of metal or plastic) that has a flat top. These are designed to measure dry ingredients like flour, sugar, or rice.
2. Scoop the Ingredient: Scoop the dry ingredient with the measuring cup. Don’t dip the measuring cup directly into the ingredient container, as it can compact the ingredient and result in an inaccurate measurement.
3. Level Off the Ingredient: Use a flat utensil (like a knife or spatula) to scrape off the excess ingredient, leveling it with the top of the measuring cup. This ensures an accurate measurement.
4. Add to Your Recipe: Pour or dump the measured ingredient into your recipe as needed.

Tips:

- For dry ingredients, fluff them up before measuring (especially flour), as it can get packed down in the container.
- If you're measuring sticky liquids (like honey or syrup), lightly grease the inside of the cup with cooking spray to make pouring easier and reduce waste.

Swine Ear Notches

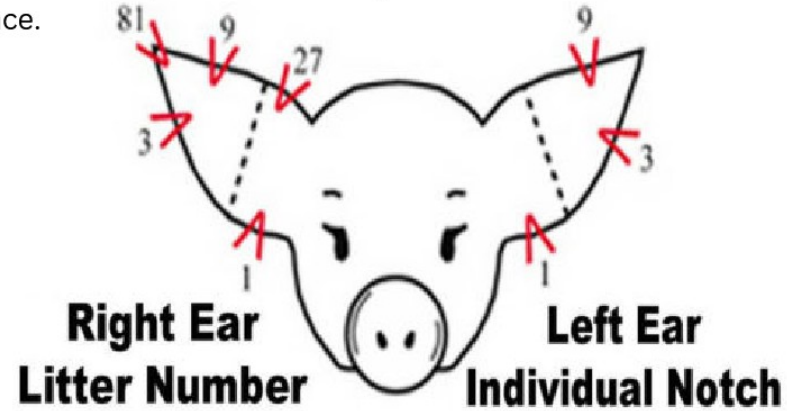
Swine ear notching is a method used to identify pigs, especially in breeding or farm management. The system of ear notching is based on a combination of left and right ear notches that represent different numbers. Left Ear: Indicates the pig's litter number. This is represented by notches placed in the ear at different positions. Right Ear: Indicates the individual pig number within the litter.

Read the Notches:
Left Ear: Identify the notches in the left ear and add the values together to determine the litter number.
Right Ear: Do the same for the notches in the right ear to determine the pig's number within that litter.
Example: Left Ear: Notches at the top and middle = 1 + 3 = 4 (Litter Number 4) Right Ear: A single notch at the top = 1 (Individual pig number 1 within Litter Number 4)

Giving Notches: To apply ear notches to a pig, you will need an ear notching tool (ear notching pliers or punch) that is clean and sharp to ensure clean cuts. An assistant or restraint equipment to safely hold the pig. A pen or marker to mark where the notches will be.

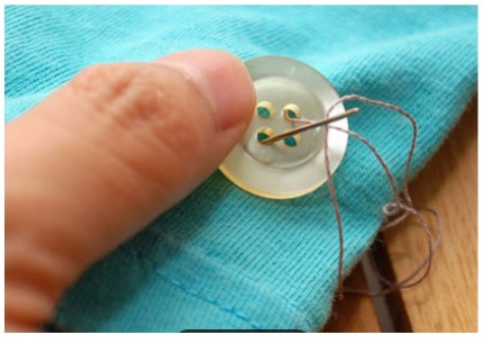
Steps for Notching:

1. Restrain the Pig: Secure the pig in a comfortable and safe position to minimize stress and prevent injury.
2. Determine the Litter and Pig Number: Before starting, determine the litter number (for the left ear) and individual pig number (for the right ear).
3. Positioning the Ear: Hold the ear flat and choose a spot in the appropriate ear for the notch.
   - For the left ear, the notches are typically placed on the bottom portion of the ear.
   - For the right ear, the notches are typically placed near the top or middle of the ear.
4. Making the Notches: Use the ear notching tool to carefully make the notches. Ensure each notch is deep enough to be visible but not so deep as to harm the ear.
5. Clean the Notches: Ensure there is no bleeding or infection. Keep the tools clean, and disinfect if necessary.
6. Record the Information: Keep a written or digital record of the litter and individual pig numbers for future reference.



Sewing on a Button

What You'll Need:
- Needle
- Thread (matching the fabric color)
- Button
- Scissors
- Pins (optional)
- Fabric or garment with the missing button



Steps for Sewing on a Button:

1. Prepare Your Needle and Thread
   - Cut a piece of thread about 18-24 inches long.
   - Thread the needle and tie a knot at the end of the thread.
2. Position the Button
   - Place the button on the fabric where it belongs, lining it up with the buttonhole (if there's a matching hole). If necessary, pin the button in place to hold it steady.
3. Insert the Needle
   - Start from the **back** of the fabric (inside the garment) and push the needle up through one of the button's holes.
   - Pull the needle all the way through until the knot catches on the fabric.
4. Sew Through the Button
   - Insert the needle down through the opposite hole on the button.
   - Pull the needle all the way through, and repeat this a few times, going up and down through the button holes. This creates a solid base for the button.
5. Add Extra Loops for Strength
   - For extra security, you can wrap the thread around the button a few times before going through the fabric again. This forms a "shank" (a small loop of thread) underneath the button, which makes it easier to button through the buttonhole and prevents the button from being too flat on the fabric.
6. Secure the Button
   - After going through the button several times, insert the needle through the fabric to the back again.
   - Tie off the thread securely at the back of the fabric with a knot.
7. Trim the Thread
   - Once the button is secured tightly, cut any excess thread with scissors.
8. Check the Button
   - Test the button by gently pulling on it to make sure it's securely fastened.
   - If the button feels loose, repeat the process or add more loops around the button.

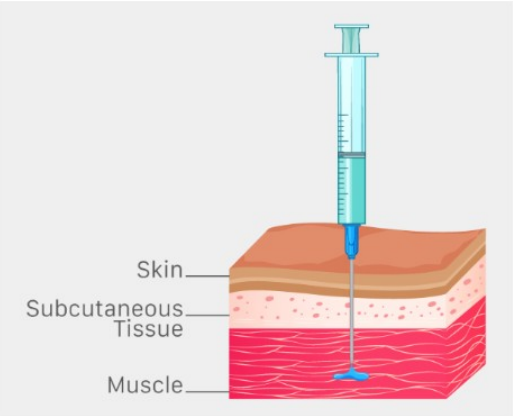
Administrating Injections

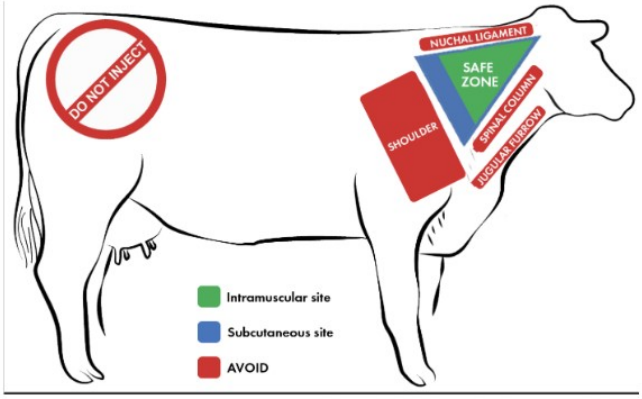
Intramuscular (IM) Injection

An IM injection is typically given into a muscle. This method is commonly used for larger volumes of medication.

Steps for IM Injection:

1. Choose the injection site: For cattle, the neck muscle is the preferred site (avoiding the meat cuts and near the spinal cord). For swine, the neck or hindquarters are common. For sheep and goats, the neck or hind leg is appropriate.
2. Clean the area: Use an alcohol swab to clean the area where the injection will be given.
3. Insert the needle: Use a sterile needle (typically 1.5 to 2 inches for larger animals) at a 45-degree angle to the skin. Aim for the muscle tissue, avoiding veins and nerves.
4. Inject the medication: Insert the needle, draw back the plunger (aspiration), and ensure there is no blood. If there is blood, you have hit a vein, so adjust the needle placement.
5. Withdraw the needle: Once the medication has been injected, remove the needle quickly and apply pressure to the site.



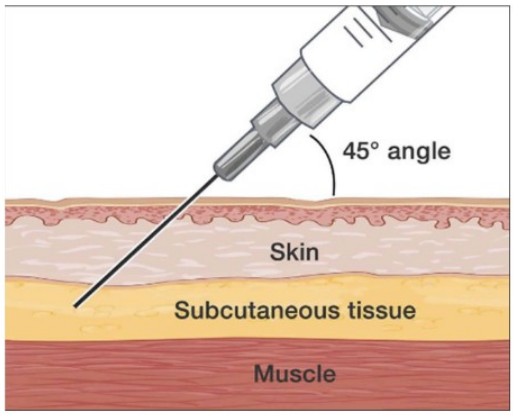


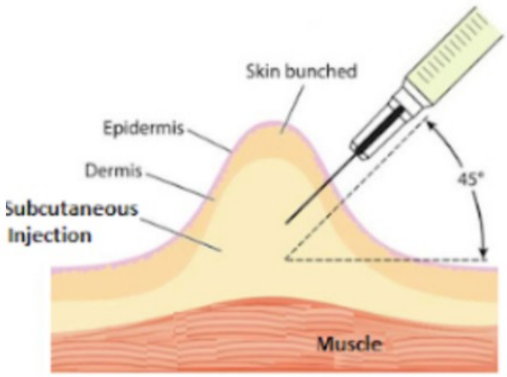
Subcutaneous (SQ) Injection

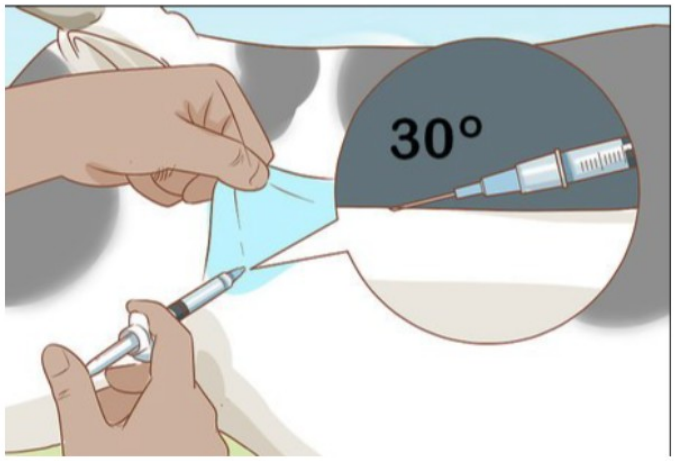
Subcutaneous injections are administered just beneath the skin and are typically used for fluids and certain medications.

Steps for SQ Injection:

1. Choose the injection site: Common sites for livestock are the loose skin over the neck or behind the shoulder. In swine, the neck is often used. In sheep and goats, the loose skin over the neck or flank is ideal.
2. Clean the area: Wipe the injection site with an alcohol swab to disinfect.
3. Insert the needle: Use a shorter, smaller needle (usually ½ to 1 inch) and insert it at a 30- to 45-degree angle to the skin.
4. Gently lift the skin to form a “tent” and insert the needle just below the skin.
5. Inject the medication: Slowly push the plunger to administer the medication.
6. Withdraw the needle: Once the injection is complete, quickly remove the needle and gently massage the area.







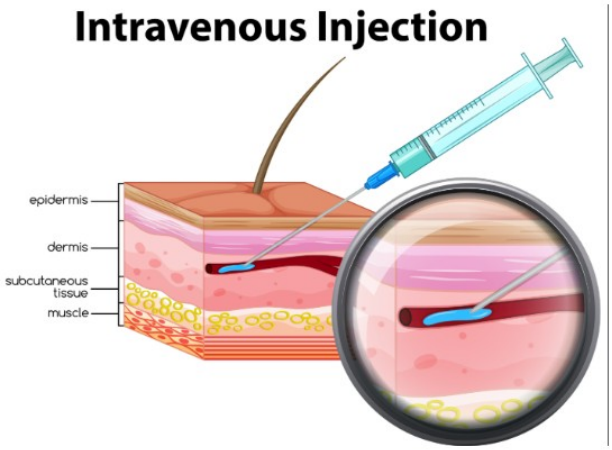
48

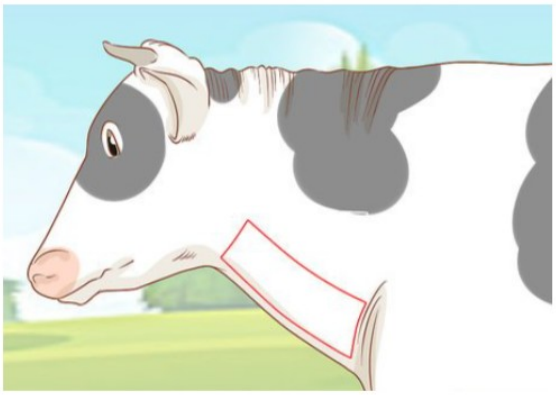
Intravenous (IV) Injection

IV injections are given directly into a vein and are often used for fluids or medications that need to act quickly.

Steps for IV Injection:

1. Choose the injection site: For cattle, the jugular vein (on either side of the neck) is the most common. For sheep, goats, and swine, the jugular vein or ear vein can be used.
2. Clean the area: Wipe the site with an alcohol swab to disinfect.
3. Locate the vein: For the jugular vein, gently press on the vein to make it more prominent.
4. Insert the needle: Use a longer needle (1.5 to 2 inches) at a 15- to 20-degree angle to the skin, aiming toward the vein.
5. Once the needle is in the vein, you should see a flash of blood in the hub of the needle (this indicates you're in the vein).
6. Inject the medication: Once you confirm proper placement, slowly inject the medication.
7. Withdraw the needle: Remove the needle and apply pressure to the vein to stop any bleeding.





General Tips:

- Sterility: Always use sterile needles and syringes and ensure proper sanitization.
- Needle Size: Choose needle sizes appropriate for the animal and medication volume (e.g., larger animals typically require larger needles).
- Site Rotation: Avoid injecting in the same location repeatedly to prevent tissue damage or scarring.
- Monitor for Reactions: After the injection, observe the animal for any signs of swelling, inflammation, or adverse reactions.
- Restraint: Ensure the animal is properly restrained during the procedure to prevent injury to both the animal and handler.

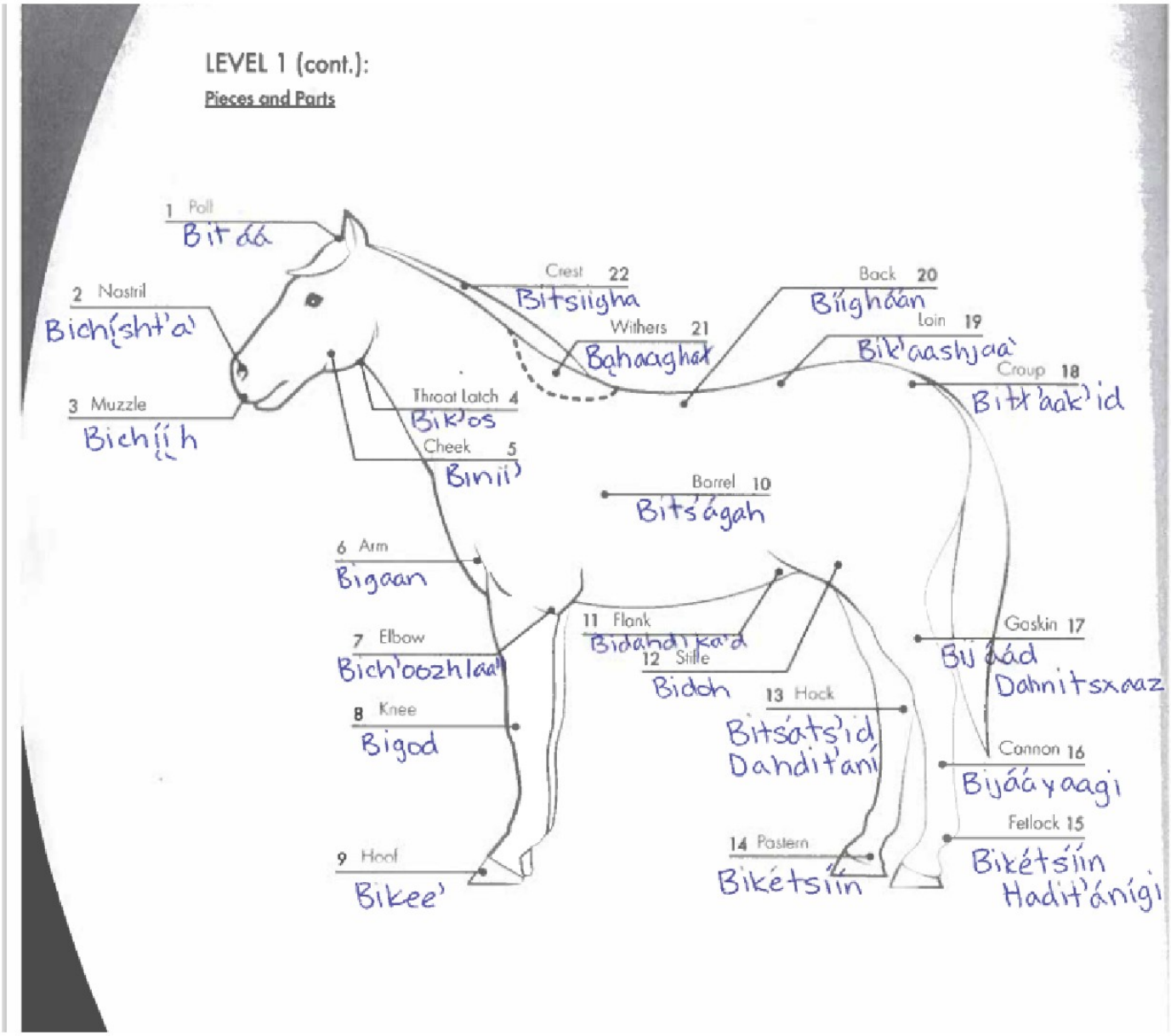
Conclusion

Proper injection techniques help ensure the health of livestock and the safety of both the animals and the person administering the injection. Always follow veterinary guidelines and consult with a veterinarian for specific instructions on medication, dosage, and injection sites based on the species and individual health conditions of the animal.

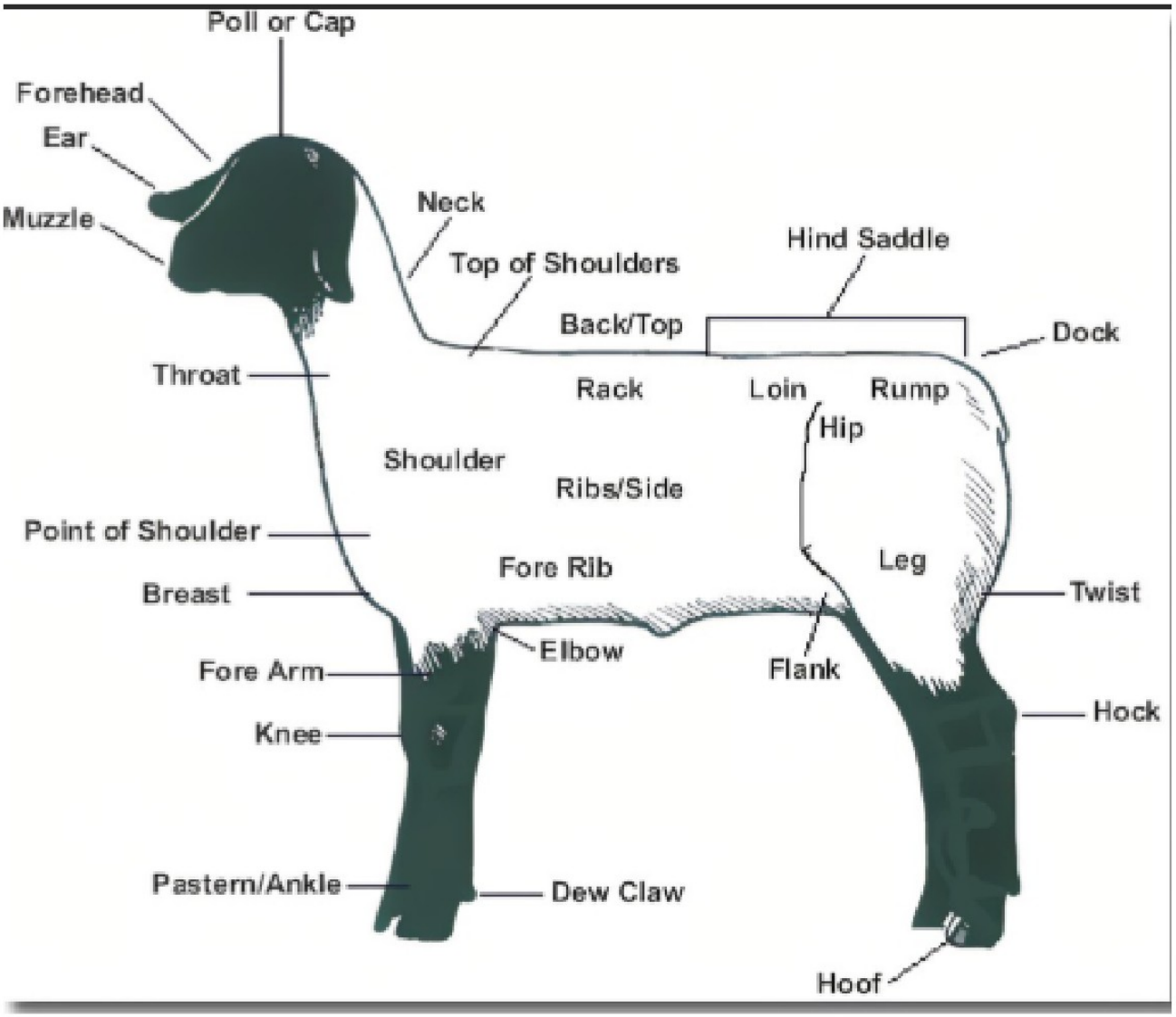
NEEDLE GAUGE SIZE CHART

S.No	Gauge size	Colour	Needle	Species used in
1	16G	WHITE		Cattle and Horses
2	18G	PINK		Cattle,Horse, Swine
3	19G	CREAM		Cattle, Horse, Swine
4	20G	YELLOW		Sheep, Goat,Piglets
5	21G	GREEN		Large Dogs,Kids of small ruminants
6	22G	BLACK		Small Animals
7	23G	BLUE		Dogs and Cats
8	24G	MEDIUM PURPLE		Puppies and Kittens
9	25G	ORANGE		Poultry and Kittens
10	26G	BROWN		Lab animal
11	31G	INSULIN NEEDLE		Poultry and Labanimals

Horse Anatomy



Sheep Anatomy



Poultry Anatomy