TVET CERTIFICATE V in ANIMAL HEALTH

COMPANION ANIMALS KEEPING

ANHCA501

Perform companion animals keeping

Competence

Credits: 8

Learning hours: 80

Sector: Agriculture and Food processing

Sub-sector: Animal health

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Purpose statement

This module is provided for the trainees of level five and describes the skills, knowledge and attitudes required to perform companion animals keeping especially dogs, cats and equine species.

Moreover, this module will enable the trainee to describe companion animal species and breeds; house companion animals; keep companion animals and control specific diseases of companion animals.

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	3.10 Correct reproduction record keeping: Reproduction diagram, Reproduction cards, reproduction data collection and interpretation	
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	4.4 Proper selection and administration of biochemical prevention products	
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List of Acronyms and Abbreviations

%: Percentage

^{0}C: Degree Celsius

^{0}F: Degree Fahrenheit

AHS: African Horse Sickness

Bwt: Body weight

CAV-1: Canine Adenovirus (Infectious Canine hepatitis

Cm: Centimeter

CO: Carbon monoxide

CO_2: Carbon dioxide

FDA: Food and Drug

GI: Gastro-Intestinal

IM: Intra-muscle

IV: Intra-Venous

Kg: kilogramme

m: Meter

m^3: Meter cube

mg: Milligram

N_2: Nitrogen

NSAID: Non-Steroidal Anti-Inflammatory Drugs

PO: Per Os

USA: United State of America

Vit: Vitamin

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Learning Unit 1– Describe companion animals species and breeds

L O 1.1– Identify companion animal species

Companion animal species are familiar with people and their recognition is mainly based on their particular behavior, size and use.

- Topic 1: Dogs

Picture 1: Dog species

A. Common characteristics of dogs

Dogs have a heart and circulatory system to transport blood, lungs to take in oxygen and rid the body of carbon dioxide, a digestive tract to absorb nutrients from food, and so on.

A.1. Body size

Sizes vary within breeds, with males usually being larger than females:

- The smallest breeds include the toy and miniature varieties, such as the Toy poodle, Chihuahua. These dogs usually weigh only 2.3 to 4.5 kg, or even less.
- Medium-sized dogs include many of the terriers and spaniels, which weigh 4.5 to 23 kg range.
- Larger still are the retrievers, shepherds, and setters, which often weigh 30 to 45 kilograms. Finally.
- Giant breeds, such as the Mastiff, Komondor, and Saint Bernard, can approach or exceed 91 kilograms.

A.2. Metabolism

The dog has high metabolism comes with a shorter life span.

Physiological statuses that enable dogs to have shorter life span are:

- breathing faster,
- pumping blood faster,
- maturing faster, and
- Higher normal body temperature.

Life span depends on health and size, with small breeds generally living longer than larger ones.

A.3. Temperature regulation

Dogs are generally much better at conserving heat than at cooling themselves. The fur acts as an insulating blanket that retains the heat generated by the dog's high metabolism.

In hot or humid weather, dogs cannot sweat, which is an effective form of evaporative cooling and they lose heat primarily by panting (rapid breaths that are an attempt to lose heat through evaporation by moving hot, moisture-filled air in and out).

Because the cooling system of dogs is poor, certain summer can be dangerous and even life threatening.

Ways to keep dogs cool during hot weather:

- Drinking water
- Air conditioning,
- Shade,
- Dips in a wading pool, or
- Gentle spraying with a garden tube.
- Keeping dogs wet during the heat of the day.

A.4. The senses

Dogs have the same 5 senses that people do (hearing, sight, taste, smell and touch).

A.4.1. Sight

Dogs have (in retina) more cells called a rods, which are good at collecting dim light, so they have better night vision.

Dogs have a third eyelid, called the nictitating membrane. This is a whitish pink color, and found under the other eyelids in the inside corner (near the nose) of the eye. The third eyelid extends up when needed to protect the eyeball from scratches (for example, while traveling through brush) or in response to inflammation.

A.4.2. Hearing

The ear canal of the dog is much deeper than that of people and creates a better funnel to carry sound to the ear drum.

This enables the dogs to be better at distinguishing the direction of a sound, which is an adaptation useful for hunting.
Unfortunately, this deeper ear canal predisposes dogs to the following ear problems:

- Grease, wax, and moisture can build up in the ear, leading to inflammation and infection.
- Floppy ears or hair within the ears can limit ventilation.
- This is why many dogs need frequent preventive ear cleaning.

A.4.3. Smell and taste

Dogs have an extraordinarily acute sense of smell; it is about a million times more sensitive than that of people.

The fact that the dogs can detect odors at extremely low levels and can distinguish odors that are slightly different, enable them to:

- Sniff out drugs and explosives at airports,
- Search for human victims at disaster sites (including victims deep under water), and
- Follow the scent track of criminals.

A.5. Locomotion

All 4 of the dog's limbs are maximized for locomotion, from a steady walk to a rapid sprint. In many aspects, dogs run like horses, and have the same 4 gaits: **walk, trot, canter, and gallop**. Most dogs can swim, although retrievers can swim better than Bulldogs.

A.5.1. Pads and nails

The canine paw contains specialized structures that help the dog move over different surfaces. The bottom of the paw is covered by **thick, resilient pads** that become hardened after years of steady wear in direct contact with the ground.

The function of these pads is:

- To **protect the paw** and
- To help provide a secure grip on many types of surfaces.

The function of the toenails is:

- Help provide traction while running and are also
- They are used for digging.

A.6. Skin and hair

Canine skin has several layers, including an outer epidermis that is constantly being replaced and an inner dermis that contains nerves and blood vessels. **Dogs should be bathed only with shampoos made for pets because those for people can be irritating to canine skin.**

Canine fur grows from hair follicles in the skin. Sebaceous (oil) glands within the skin **lubricate the hair, keeping the coat shiny and water resistant**.

The main functions of the hair coat are:

- To protect the skin and
- To help in temperature regulation through insulation against the cold.

Different breeds of dogs have different types of hair coats according to the climate:

- Breeds from northern climates (such as Huskies and Malamutes) have a soft, downy undercoat that provides better insulation in cold weather.
- Water breeds (retrievers, for example) have more long and stiff guard hairs to protect the skin and undercoat from harsh environmental conditions. They also have ample oil secretions to lubricate the hair.
- Breeds from warmer climates have shorter coats designed only to shade the skin. Poodles have very fine, curly hair that sheds far less than that of other breeds.

A.7. Teeth and mouth

Adult dogs have incisors, canines, premolars, and molars.

They have 28 deciduous (baby) teeth that are replaced by 42 permanent (adult) teeth between 2 and 7 months of age.

The different types of teeth have specialized functions, depending on their position in the mouth:

The front teeth, which include the 12 incisors and 4 large canine teeth (eye teeth), are designed for grasping and tearing.

The rearward premolar and molar teeth grind food into smaller pieces that can be swallowed.

The mouth also contains the salivary glands, which secrete saliva that lubricates the food and begins digestion.

The functions of the tongue of dogs:

- helps guide food to the back of the throat;
- licking up small food pieces;
- lapping up water ;
- Lick as a sign of affection or subservience, or both.

A.8. Digestive and urinary tracts

The gastrointestinal tract includes the stomach, the small intestine, and the large intestine (colon). This system digests food into useful nutrients, absorbs water, and eliminates waste.

The urinary system eliminates nitrogenous wastes from protein breakdown and helps control fluid levels.

A.8.1. Anal glands

The anal glands are located in a layer of muscle at the 4 and 8 o'clock positions around the anus.

These scent glands contain a foul-smelling secretion that is normally expressed during a bowel movement.

These secretions often thicken, which can plug the duct, causing pressure and irritation that can lead to infection.

Many dogs need to have their anal glands manually emptied by their veterinarian on a regular schedule.

- Topic 2: Cats

Picture 2: Cat species

A. Common characteristics of cats

Cats look very different from people but share many of body's characteristics, such as a circulatory system, lungs, a digestive tract, a nervous system, and so on.

A.1. Breeds and body size

There are many different breeds but the two (2) common are really mixtures of different breeds of cats: **domestic shorthair** and **the domestic longhair.**

On average, only 2.3 to 4.5 kg separate the smallest and largest domestic breeds of cats.

A.2. Metabolism

Cats also have the rapid metabolism that which results in:

- a higher heart rate,
- respiratory rate and
- Temperature than those of people.

Cats generally live longer than dogs, and many live to be 20 years old or older.

A.3. Temperature regulation

To regulate the temperature, the cat behave as follow:

- Cats are better at conserving heat than at cooling themselves.
- Cats lose heat through external radiation.

- They have some sweat glands that aid in evaporative cooling, and licking their fur further improves this process.
- Heat is also lost through panting, although this is not as effective a method of cooling as it is in dogs.
- Cats typically also seek dark, cool places to shelter themselves from the heat of the day.

As with all animals, cats should never be shut in cars or other hot, confined spaces. This can lead to heat stroke and death.

A.4. The senses

Cats have the same 5 senses as people do but to very different degrees. Some senses are much better developed than in people.

A.4.1. Sight

Cats have strong vision; they can see much more detail than dogs. They have concentrated cells called a cones in the center of the retina which gives them excellent visual perception and binocular vision.

The concentration of cones in the retina gives the cats the following ability:

- allows them to judge speed and distance very well,
- ability that helped them survive as hunters'
- Responsible for color vision, cats can see colors.

Like dogs, cats also have a lot of the retinal cells called rods, which are good at collecting dim light. In fact, cats can see 6 times better in dim light than people, so cats can see in the dark.

Cats also have a reflective layer called the **tapetum lucidum**, which magnifies incoming light and lends a characteristic blue or greenish glint to their eyes at night.

Cats have nictitating membrane also called the third eyelid.

A.4.2. Hearing

Cats generally turn their heads toward the direction of the sound while listening to pinpoint the location. The ear canal of cats is deeper and more tapered than in people.

The impact of the deeper canal in cats is: buildup of dirt and wax that can lead to inflammation and secondary infection, although to a lesser degree than in dogs.

The semicircular canals are highly developed in cats, accounting for their agility and excellent sense of balance.

This enable cats to:

- determine their body position at all times and
- rapidly right themselves when falling,

This explains the origin of the expression, "**Cats always land on their feet**."

A.4.3. Smell and taste

Cats do not rely as much on the sense of smell as some other animals. The sense of smell is less developed in cats than in dogs.

Like people, cats are finicky about odors and try to cover disagreeable smells. Also like people, odor is an extremely important part of taste and enjoyment of food for cats.

A.5. Locomotion

The muscles, tendons, joints, ligaments, and spine of cats are extremely flexible, **making them agile hunters** because:

- Cats can walk, run, twist, and even roll into a ball.
- They can leap long distances and twist in mid-air to obtain a better angle of attack.

Their normal gait is a **"pace"** in which both legs on one side move together.

A.5.1. Pads and nails

As in dogs, the bottom of the paw in cats is covered by thick, resilient pads that cushion the foot and help provide a secure grip on many types of surfaces.

Feline claws are very sharp and curved which allows cats:

- to grasp prey while hunting and
- To slash during fights over territory.

The claws are retractable, so that they do not get in the way or make noise when walking or running.

A.6. Skin and hair

Feline skin, like that of people and dogs, has an outer layer called the epidermis that is constantly being replaced, and an inner layer called the dermis that contains nerves and blood vessels, oil glands, and hair follicles. The oil glands secrete sebum that coats and protects the fur, giving it a glossy sheen.

Shampoos and other topical products for people can irritate your cat's skin and should be avoided. These sensitive hairs can be used to judge the size of an opening, such as a rodent hole.

A.7. Teeth and mouth

Cats are carnivores with teeth designed for piercing and tearing meat. They have 26 deciduous (baby) teeth that are replaced by 30 permanent (adult) teeth that erupt between 5 and 7 months of age. Like in dogs the different types of teeth have specialized functions, depending on their position in the mouth.

The feline tongue is covered with tiny, thorn like structures that give it a rough, sandpapery texture. This aids in **grooming** and can be used **to scrape meat** away from bones.

- Topic 3: Equine species
- Topic 3.1: Horses

Picture 3: Horse species

A. Common characteristics of horses

Horses share many of the same physiologic characteristics of people and domestic pets, in that they have a circulatory system, a respiratory system, a nervous system, and so on.

A.1. Size

Height: 1.4m to 1.8m (adult at the withers)

Length: 2.4m (adult)

Weight: 320-1000 kg (adult)

A.2. Metabolism

Horses have a slower metabolism than other companion animals, with resting heart and respiratory rates that are slower than those of people.

This slower metabolism is associated with a longer life span of 25- 30 even 40 years for miniature breeds. Actual life span depends on overall health, level of care, and size.

A.3. Temperature regulation

Horses generate considerable heat during exercise. They lose heat primarily by evaporative cooling (usually sweating), just like people do.

Horses are large, bulky animals that are good at conserving heat during periods of colder weather. Regardless, they still need adequate **shelter, diet, water,** and **routine health care** to prevent wintertime problems.

A.4. The senses

Horses have the same 5 senses as people do but to very different degrees. Some senses are less developed than in people, while others are more powerful.

A.4.1. Sight

Eyes of horse are **set on the side of the head**, rather than facing front as in people, dogs, and cats. This gives them extraordinary **peripheral vision**, which is useful for animals that must constantly watch for predators (for example, rabbits and most birds).

Horses can generally see over a 340° arc without moving their heads. Horses **step slightly** the side to **see things behind** them, and **back up and lower their head** to see directly **in front**. A horse will **lower its head** to judge **closer distances** and **raise it** to judge objects **farther away**.

In horses, each eye is viewing images independently; they rely on monocular vision, hence they have poor depth perception.

They can misjudge the depth of a small puddle or the distance to a fence. As horses age, their vision may worsen.

A.4.2. Hearing

Horses have large ears that are good at magnifying sound and noting its direction. Each ear can swivel independently up to 180°, allowing horses to locate multiple sounds at the same time.

The ears also provide clues to a horse's emotional state. For example, a horse with ears that are laid back may be indicating aggression, pain, or fear (such as in response to a loud or unfamiliar noise).

The older horse may not hear as well as they did when younger. Hearing loss can also be caused by ear infection or by a mite or tick infestation, so you should ask your veterinarian to periodically check your horse's ears.

A.4.3. Smell and taste

The sense of smell is the primary way that horses recognize each other as well as people. For example, horses exchange breath on meeting, and stallions assess the sexual status of a mare through scent.

The equine nose has a large internal surface area that contains many chemical receptors within the mucous membrane which allows them to detect odor many hundred times greater than in people.

Horses enjoy their food through the sense of taste, which also helps them avoid unpalatable or poisonous food or water.

A.5. Locomotion

One of the unique features of horses is their way of movement, which is designed for maximum speed.

This natural ability has been enhanced by selective breeding as follow:

- Thoroughbreds are designed for high-speed sprints,
- Arabians for endurance racing,
- Quarter horses for agility and bursts of speed, and
- Standard breeds for trotting and pacing.

Horses have 4 natural gaits of progressively increasing speed: **walk, trot, canter, and gallop**.

A.5.1. The equine leg

The equine leg is designed for rapid movement over a variety of surfaces. The upper part of the leg is heavily muscled, while the lower part acts as a trigger to enhance the stride (walk).

The leg is supported by a suspensory apparatus of tendons and ligaments. The tendons, which can be felt along the back of the lower leg, run the length of the limb, while the many joints are held together and protected by ligaments and joint capsules.

Note: Horses also have a unique anatomical feature called the **stay apparatus**, which allows them to "rest" a rear leg while standing on the other 3 for prolonged periods. This is why horses can sleep standing up.

A.5.2. The hoof

The hoof consists of a **wall of horny keratin** (a protein) that grows down from a band called the **coronet** at the top of the hoof. This process is similar to the way our fingernails grow out from the cuticle.

The sole of the equine foot is concave, with a resilient wedge of tissue called the **frog** that juts forward from the heel. Inside the hoof is the **coffin bone** (which is shaped like the hoof) and additional resilient tissue.

The function of hoof tissues are:

- The sole and the frog protect the underside of the foot
- The resilient tissues cushion each step like a spring.

Because the hoof can develop numerous problems that lead to lameness, including bruises (damages), infections, hoof rot (deterioration), and a serious inflammation in the area of the coffin bone and coronet called laminitis.

A.6. Skin and hair

The main functions of the hair coat are **to protect the skin** and **to help regulate temperature**. The hair coat changes with the seasons, with hair being longer and coarser in the winter than in the summer. Additional oil (sebum) is also produced by the skin during winter, adding insulation.

A.7. Teeth and mouth

Horses have 24 deciduous (baby or milk) teeth; these are replaced by 40 to 42 permanent (adult) teeth that erupt between the ages of 6 months and 5 years. Horses may also have up to 4 wolf teeth, which are vestigial and nonfunctional premolars.

The wolf teeth are typically extracted when yearlings are being broken in the late fall or early in their 2-year-old year.

In adult horses, age is typically estimated by the shape and wear pattern of the incisor teeth from 5 up to 11 years.

The function of horse teeth:

- Incisor teeth in the front of the mouth grasp and cut grasses,
- The rearward molars and premolars are designed for grinding

A.8. Digestive system

The equine digestive system combines features of both the **simple stomach** and the **multiple-stomach** digestive systems.

At the beginning of the digestive tract, horses have a **simple stomach** that leads to a small intestine. At the end of the digestive tract, they also have a **fermentation vat** called the **cecum** that leads to the great colon.

The cecum and great colon make it possible for horses to eat grasses for energy, **but because these organs are located at the end of the digestive tract, problems tend to develop**.

Before they can be fully digested, grasses must pass through almost the full length of the digestive tract. This increases the risk of dense, fibrous material becoming impacted and blocking the digestive tract, leading to a condition called **colic**.

- Topic 3.2: Donkeys

Picture 4: Donkey species

A. Common characteristics of donkeys

Donkeys, also known as **asses** or **burros**, are animals that carry heavy loads in environments not conducive to horses or with high levels of poverty.

A.1. Size

Domestic breed size varies greatly, depending on breed:

- Miniatures, the smallest breed of donkey, stand less than 92cm the shoulder and weigh less than 180kg.
- Standard *E. asinus* (Donkey), range from 92cm to 123cm and weigh 180 to 225kg.
- Mammoth stock, the largest breed of donkey: height of 143cm and weigh about 430kg.
- Weight = 80 - 480 kg (adult)
- Life span= 25 - 30 years

Female donkeys larger than the standard donkey are considered Mammoth stock.

A.2. Physical characteristics

- Donkeys look like a small, compacted version of a horse.
- Donkey's ears grow much longer than horses,
- Their hooves are smaller and rounder.
- Donkeys can have gray brown, black or roan coats,
- Their coat color is accompanied by stripes, spots, ear markings, white muzzles, eye rings or white bellies.
- Their tails look like a cow's tail – thin with a tasseled end.

A.3. Behavioral characteristics

The behavioral characteristics are:

- Donkeys can display a range of emotions, from affable and warm to absolutely stubborn and lazy. They can be quite tolerant, as well as depressed at times.
- These creatures possess a good amount of intelligence, making them trainable.
- One can train a donkey to guard a herd of cattle, sheep or goats against canine attacks such as wolves.
- Once a donkey becomes accustomed to children, it makes a wonderful riding pet.
- Donkeys become most animated in the evening, though they remain active during both the day and the night.
- When provoked, threatened or scared, these animals may bite, kick with both hind legs or bolt.

A.4. Reproduction

The reproductive characteristics are:

- Male donkeys are called jacks or jackasses,
- female donkeys are jennies,
- When a jack and jenny mate, they give birth to a foal.
- Sometimes donkeys mate with horses. A jack and a mare create a mule.
- When a jenny and a stallion procreate, they have a hinny.
- Most mules and hinnies can't reproduce.
- A donkey's pregnancy lasts about 12 months and usually results in a single foal.

A.5. Eating habits

As herbivores, donkeys graze on grass and hay. Since these creatures require less protein than horses, you should only feed them low-protein grains because they can cause a donkey to get fat and develop a fat roll on its neck.

L O 1.2 – Identify Companion animal breeds

Companion animals have different breeds; each breed has is categorized based on its performance**.**

Table 1: The categories (groups) of dog and breeds

The table below shows the four (4) of dog and corresponding breeds:

Categories	**Breeds**
Sheepdogs and Cattle Dogs	German Shepherd Dog Belgian Shepherd Dog South Russian Shepherd Dog
Dachshunds	Teckel
Scenthounds and Related Breeds	Dalmatian (spotted dogs)
Companion and Toy Dogs:	Chihuahua Brussels griffon

- Topic 1: Dog breeds

A. Sheepdogs and cattle dogs

A.1. German shepherd dog

Picture 5: German shepherd dog

Origin: Germany

Size: Bread of large-sized or medium-sized working dog;

Weight: the weight standard is 30-40kg for males and 22-32kg for female;

Color of skin: The colors are black or black saddle with tan or gold to light grey markings. All black, all grey with lighter or brown markings are called **sables**.

Conformation: It is well balanced, with harmonious development of the forequarter and hindquarter. The dog is longer than tall, deep-bodied, and presents an outline of smooth curves rather than angles.

Ear position: ears are standing straight up. But as many shepherd owners learn, it can take a while for pups to acquire that signature pointy-eared look.

Color of eyes: The color of the eyes should blend with the color of the coat. They should be as dark as possible.

A.2. Belgian shepherd dog

Picture 6: Belgian shepherd dog

Origin: The origin of Belgian sheepdog (Chien de berger belge) is Belgium;

Size: The Belgian shepherd dog is a medium-to-large size dog.

Shape: it is almond-shaped and the erect ears are triangular in shape.

Weight: 29 - 34 kg; females 27 - 32 kg.

Color of skin: it has a long black coat and an imposing appearance.

Conformation. Closely resembling the popular German shepherd breed save for the hind legs. All variants also share a close cranial features, having a domed forehead, a long, square-cut muzzle and black noses with their ears pointed and fully erect. The breed is that it is square,

Ear position: The erect ears are triangle in shape and in proportion to the head.

Color of eyes: the eyes are brown.

A.3. South Russian shepherd dog

Picture 7: South Russian shepherd dog

Origin: Russia, Ukraine

Size: Russian shepherd dog is a very large, long-haired, robust dog.

Weight: Female: 48–50 kg, male: 48–50 kg

Color of skin: it is a white sheepdog. Coat colors are most often white but also white and yellow, straw color, grayish (ashen gray) and other shades of gray, white lightly marked with gray and gray speckled.

Conformation. The head is an elongated shape with a moderately broad forehead. The nose is big and black. The ears are relatively small, of triangular shape and hanging.

Ear position: the ears are relatively small, triangular in shape, and hang close the body.

Color of eyes: the eyes are oval in shape, with dark, tight rims. They are set horizontally, and are dark in color.

B. Dachshunds: Teckel

Picture 8: Dachshunds: Teckel dog

Origin: Egypt, South America and China, but the dachshund we know now, seems to have originated in Germany.

Size: Dachshunds come in three sizes: standard, miniature, and kaninchen (or rabbit size).

Weight: A full-grown standard dachshund averages 7.3 kg to 15 kg), while the miniature variety normally weighs less than 5.4 kg. The kaninchen weighs 3.6 kg to 5.0 kg.

color of skin: Dachshunds have a wide color variety. Solid colors are: black, red (from strawberry blond to deep auburn), chocolate (brown), isabella (tan or fawn), cream (blond with no trace of red, from golden blond to platinum (the lighter the better) and blue (gray). Bicolor Dachshunds may be black and tan, black and creme.

Conformation. A typical dachshund is long-bodied and muscular, with short, stubby legs. Its front paws are unusually large and paddle-shaped, for extreme digging. The dachshund has a **deep chest** that provides increased lung capacity for **stamina when hunting** prey underground. Its **snout is long** with an increased nose area that **absorbs odors**. It has an elongated head and a slight, convex skull that is arched with protruding eyebrows. The muzzle is long.

Ear position: The mobile ears hang long on its cheeks.

Color of eyes: the almond-shaped eyes are dark red or brown-black. Light-colored dachshunds can sport amber, light brown, or green eyes.

C. **Scenthounds and related breeds: Dalmatian or spotted dog**

Picture 9: Dalmatian or spotted dog

Origin: Europe, United Kingdom, and Croatia

Size: Large

Weight: 25kg

Colour: Dalmatian puppies are born with plain white coats and their first spots usually appear within **three weeks after birth**.

After about a month, they have most of their spots, although they continue to develop throughout life at a much slower rate. Spots are most commonly black or brown (liver) on a white background.

Conformation: The body is as long from fore-chest to buttocks as it is tall at the withers, and the shoulders are laid back. The Dalmatian's feet are round with well-arched toes. The Dalmatian is a large, well-defined, muscular dog with excellent endurance and stamina.

Ear position: The thin ears taper towards the tip and are set fairly high and close to the head.

Colour of eyes: Eye color varies between brown, amber, or blue,

D. Companion and toy dogs

D.1. Chihuahua

Picture 10: Chihuahua dog

Origin: Middle East, Eastern Asia,

Size: Standard, Miniature, and Toy are used to describe size only. (Height: 15-25cm);

Weight: 1.8-2.7kg

Colour of coat: fawn, red, cream, chocolate, brown, mixed white and black many breeds will have an occasional "blaze", stripe, or "star" of white fur on their chest or underside.

Conformation: They are longer than they are tall and they have curved tails that arc over the back.

Ear position: Their large ears are the breed's trademark and sit erect atop the head.

Colour of eyes: Their eyes are very large, very round and very dark.

D.2. Brussels griffon

Picture 11: Brussels griffon dog

Origin: Belgium

Size: small and large sizes

Weight: For dogs of a small size, the weight is 3 kg. For dogs of a large size, that is weighing more than 3 kg, the weight should not exceed .5 kg for dogs and 5.5 kg for bitches.

Colour: Red, black, black and tan, and Belge (which is red and black mixed); also seen is blue, brown, chocolate, tan and wheaten.

Conformation: Brussels griffons are meant to be square in proportion, so their height from the top of the shoulder to the ground should equal their length from chest to buttocks.

Ear position: Set at the highest points of the sides of the skull, the ears are cropped, cut rather long and tapering, and raised when alert.

Colour of eyes: Eyes set well apart, very large, black.

- Topic 2: Cat breeds

There are many breeds and types of cats. Mixed-breed cats are typically categorized by the length and color of their hair coat. For example, there are domestic short-, medium-, and long-haired cats, with colors including gray, black, brown, white, calico, and tortoise shell. Coat length is an important consideration when choosing a cat, because longer-haired cats require more grooming to prevent and eliminate mats. Long-haired cats are also more prone to hairballs.

Cat breeds are numerous, here are the most common breeds.

A. **Scottish fold cats**

Picture 12: Scottish fold cats

Origin: Scotland

Size: medium-sized cat

Weight: average 2.5-6kg

Color: White, blue, cream, red, silver, cameo, brown, bluecream, tortoiseshell, black.

Conformation: The body is stocky, the face is round and the eyes are large and round. The tail should be flexible, bushy, and at least 2/3 of the body length.

Ear position: folded ear that give the breed an owl-like appearance;

Color of eyes: blue, green, gold, odd-eyed

B. **Siamese cats**

Picture 13: Siamese cats

Origin: Thailand (the Siam)

Size: Medium

Weight: 3-7kg

color : Siamese come in a variety of color “points blue, chocolate, and lilac point colors, as well as the colors associated by other registries with the color point shorthair, such as red, cream, tortie, blue-cream, and lynx points, seal point, a cream-colored body with dark-brown legs, tail, ears and face.

Conformation: Siamese is a well-balanced, moderately sized, muscular short-haired cat with a body of average length.

Ear position: very large ears

Color of eyes: Brilliant intense blue eyes.

C. **Sphynx cats**

Picture 14: Sphynx cats

Origin: Latin America (France, Austria, the Czech Republic, England, Australia, Canada, USA, Mexico, Morocco, Russia and Hawaii).

Size: Medium size and **Weight:** 4-5kg

Colour: Red, cream, chocolate, fawn and being noted for its lack of hair (hairless)

Conformation: The body is medium length, hard and muscular with a broad, rounded chest and abdomen. The rump is well rounded and muscular. The neck is medium to long and well-muscled.

Ear position: Large (big ears), wide open at the base tapering to a rounded tip. They are set at a slight angle to the head with the outer base of the ears level with the outer corner of the eye but are not flaring.

Color of eyes: eye color should correspond to coat color.

D. **Abyssinian cats**

Picture 15: Abyssinian cats

Origin: Probably Egypt;

Size: medium-sized cat;

Weight: 3-4kg for male and 2-3kg for female;

Colour of coat: different colours from blue to lilac to red, the dense, silky fur of the Abyssinian was originally silver or fawn in colour. The tail may be tipped with black.

Conformation: It has a long and muscular yet slender body and a relatively short tail.

Ear position: the ears are large, alert and moderately pointed, broad at the base and well cupped.

Color of eyes: Accepted eye colors are gold, green or hazel.

E. **American shorthair cats**

Picture 16: American shorthair cats

Origin: North America (formal breed development) Europe (original landrace stock)

Size: Medium to large in size,

Weight: Male: 5kg-7kg and Female: 4-5.5kg

Colors: White, blue, black, cream, red, silver, golden, brown, cameo, blue cream, tortoiseshell, chinchilla
Pattern: Solid color, bicolor, tricolor

Conformation: it has a broad chest, a muscular neck, strong jaws and a well-developed muzzle. Its legs are thick and strong.

Ear position: The ears are set quite wide apart.

Color of eyes: Blue, copper, green, gold, hazel, odd-eyed

F. <u>British shorthair</u>

Picture 17: British shorthair

Origin: Great Britain.

Size: medium to large in size

Weight: males 6.8 to 8.1kg; females 4.5 to 5.4kg.

Color: white, black, blue, red, cream, chocolate lilac, tortie and even the newer colours of cinnamon and fawn. With the addition of white, there are now bicoloured and tricoloured

Conformation: well balanced and powerful, showing good depth of body, a full broad chest, strong short legs, rounded paws.

Ear position: The ears, medium to small, are wide at the bottom and placed at a distance from one another, being covered with fur.

Colour of eyes: Eye colour varies according to coat colour: deep sapphire blue eyes, deep gold, copper or orange eyes.

G. Ragdoll cats

Picture 18: Ragdoll cats

Origin: Ragdoll is believed to have originated in California

Weight: Female: 3.6 to 6.8 kg, males are substantially larger, ranging from 5.4 to 9.1 kg or more.

Color: Ragdolls are born white and don't obtain their full colour until 2 years of age.

The main colors in the Ragdoll are seal, blue, chocolate, lilac, red and cream. Bicolor - white inverted "V" in the facial mask, white legs, feet, ruff and stomach, point colored ears and tail. Colour point - facial mask, ears, feet, tail and nose. A colour point has no white.

Conformation. They have large usually oval eyes, a long bushy tail and a long muscular body with medium legs and large round paws and is large in size

Ear position: The ears are medium-size and feature rounded tips.

Colour of eyes: large blue eyes

H. Maine coon cats (American cat)

Picture 19: Maine coon cats

Origin: United State (Maine)

Size: large

Weight: males 6 to 8kg; females 4 to 5kg.

Colour: There are solid colored cats: black, white, gray ("blue"), black and white, blue and white, and calico. There are tortoiseshell colored cats where black and red are brindled.

Conformation: their body is rectangular and generally large. They have a neck ruff. Their tail is long, thick, and flowing. They have lynx tips on their ears and hair tufts between their toes. They have long whiskers.

Ear position: Ears are large and well tufted for protection and warmth (Large, tall ears, wide at base).

Colour of eyes: A blue-colored or odd-eyes (i.e. two eyes of different colors) in cats possessing coat colors other than white. The traditional eye color is green-gold.

I. **Persian cats (Persian Longhair)**

Picture 20: Persian cats (Persian Longhair)

Origin: Persia (now Iran)

Size: medium to large in size and **Weight:** males 3.6 to 6.8kg; females 3.2 to 4.5kg.

Colour: Persians come in all cat colours.

Conformation: short thick legs, massive rumps and distinctively cobby profiles, short, sturdy legs; and the tail is shorter than many other breeds.

Ear position: ears are especially tiny in comparison and are tufted, which is called having “ear furnishings.

Colour of eyes: green color, blue color and copper.

J. Exotic shorthair cats

Picture 21: Exotic shorthair cats

Origin: United States (cross between Persians and American shorthairs.)

Size: small, medium and large sizes;

Weight: 3.5 - 6 kg

Colour: White, blue, black, the lion dog face red, cream, chocolate, lilac, shaded silver, silver chinchilla

Conformation. Cobby, low to the ground. Broad chest. Massive shoulders. Large-boned, powerful muscles.

Ear position: Small, rounded at the tip, not too open at the base. Widely spaced and well-furnished with hair on the inside.

Colour of eyes: Gold to copper; green in the chinchilla and the golden; blue in the white and the color-point).

- Topic 3: Equine breeds

Equine breeds are divided into horses and donkey breeds.

- Topic 3.1: Horses

A. Arabian horse

Picture 22: Arabian horse

Characteristics:

Origin: Middle East (notably Arabian peninsula)

Size: 145 to 155 cm tall (height);

Weight: 360-450kg

Color of skin: Redish-brown, grey,

Conformation: finely chiseled bone structure, concave profile, arched neck, comparatively level croup, high-carried tail.

Ear position: The ears, smaller in stallions and of good size in mares, are pointed, set evenly together in an upright position,

Colour of eyes: blue eyes

B. Quarter horse

Picture 23: Quarter horse

Characteristics:

Origin: American breed

Size: 143-166 cm of height;

Weight: 360 to 550 kg

Colour: Quarter Horses are found in most colors. Paints, Pintos and Appaloosas are not permitted.

Conformation. There are three types of Quarter horses: (bulldog type, thoroughbred type and popular intermediate type):

- The bulldog type has massive muscles, large hind quarters and shoulders and a body with substantial barrel.
- The Thoroughbred type shows the frequent crosses between the two breeds. It is lean in musculature, has fine bone in the legs and is sleeker than other types.
- The intermediate type has substantial muscle, good bone, a short back and deep body. The head is short, broad and full at the jowl, the ear small, and the neck full. The quarters are high and muscular, the legs spread.

Colour of eyes: blue eyes

C. **Painthorse**

Picture 24: Painthorse

Characteristics:

Origin: Spain

Size: 163 cm of height and **Weight:** 360 to 550 kg

Colour: Each horse has a unique combination of white and any one of the colors of the equine rainbow: black, bay, brown, chestnut, dun, grulla, sorrel, palomino, gray or roan; more important than their physical coloring, are their distinctive white markings.

Conformation: Paint horses are built for versatility and maneuverability; they are well-balanced and muscular with a broad chest, powerful hindquarters, and a low centre of gravity.

Colour of eyes: blue eyes

D. Miniature horse

Picture 25: Miniature horse

Characteristics:

Origin: America and Europe.

Size: usually less than 86-97 cm of height;

Weight: no more than 90 to 115 kilograms, with some weighing considerably less.

Colour of skin: different colours;

Conformation: small stature, expressive head with pointed ears, a well-muscled, trim barrel and long, slender legs with refined joints, it is elegant and athletic in built.

Colour of eyes: blue eyes

E. Thoroughbred horse

Picture 26: Thoroughbred horse

Characteristics:

Origin: Britain

Size: 155-173 cm of height;

Weight: 450 to 550 kg

Colour: solid colors like bay, chestnut, and black

Conformation: a refined head, long neck, well-defined withers, deep shoulder, strong chest, short back and powerful hindquarters.

Colour of eyes: brown-eyed (sometimes blue eyes)

F. Appaloosa horse

Picture 27: Appaloosa horse

Characteristics:

Origin: The Appaloosa as a breed originated in the United States but their classic spotted pattern has been depicted in ancient cave drawings and artifacts throughout Europe and Asia.

Size: average size 144-153kg

Weight: 360to 550kgs

Colour: The appaloosa is best known for its leopard spotted pattern (leopard complex dotted fur).Spotted coats come in many patterns like marble, snowflake, leopard, and blanket

Conformation: Compact, strong, correct legs; short-coupled thin mane & tail; hard, striped feet.

A well angulated shoulder, relatively short strong back, a long strong hip, a neck put on so it flows smoothly from the withers on top and is set on high into the chest underneath, legs that are straight and correct with comparatively longer strong forearms and gaskins, relatively short cannon bones, pasterns with sufficient angle.

Colour of eyes: blue eyes.

G. Morgan horse

Picture 28: Morgan horse

Characteristics:

Origin: United State (Massachusetts);

Size: 145-157cm

Weight: average weight 450kgs

Colour of skin: Red and black are the base colour; bay and brown are modification of black

Colour of eyes: blue eyes (it is not unusual to have a chestnut, bay, black, or grey with one blue eye, often marbled, where the eye is only partially blue.

Conformation: The head should be expressive with broad forehead; large prominent eyes; with straight or slightly dished short face .The neck should come out on top of an extremely well-angulated shoulder with depth from top of withers to point of shoulder.

H. Tennessee walking horse

Picture 29: Tennessee walking horse

Characteristics:

Origin: Tennessee, USA

Size: 146-174.5cm

Weight: 404-544kg

Colour of skin: the colour may be black, bay, chestnut, white.

Ear position: well-shaped and pointed ears

Colour of eyes: blue eyes

Conformation: neat head, clear and alert eyes and a tapered muzzle. The neck should be long and graceful and the shoulders muscular and well sloping. The back should be short with good coupling at the loins. The animal should be deep in the girth and well ribbed and the chest should be of good proportion and width. The croup should be generally sloping and the hips well-muscled with muscular development extending down toward the hocks. The legs should be flat and cordy.

I. Cob horse

Picture 30: Cob horse

Characteristics:

Origin: United Kingdom

Size: 148-155cm of height

Weight: 400-500kg

Colour of skin: All colors

Conformation. Head is sensible & sometimes Roman nosed, neck is crested, body is small & compact. Legs are short & sturdy

Colour of eyes: blue eyes

J. Andalusian horse

Picture 31: Andalusian horse

Characteristics:

Origin: Iberian Perninsula

Size: 155cm

Weight: average 408kg

Colour of skin: Color is usually white but can also be grey, golden dun, bay, and different roans.

Conformation: this breed has hard feet, a short strong back, strong hindquarters, high neck, and a large head. It is known for its long wavy mane and tail.

Colour of eyes: dark brown eyes

- Topic 3.2: Donkey breeds

There is a variety of domestic donkey breeds & bloodlines range based on local needs, local terrain and the need for stronger & more robust animals.

A. **Abyssinian / Ethiopian donkey**

Picture 32: Abyssinian / Ethiopian donkey

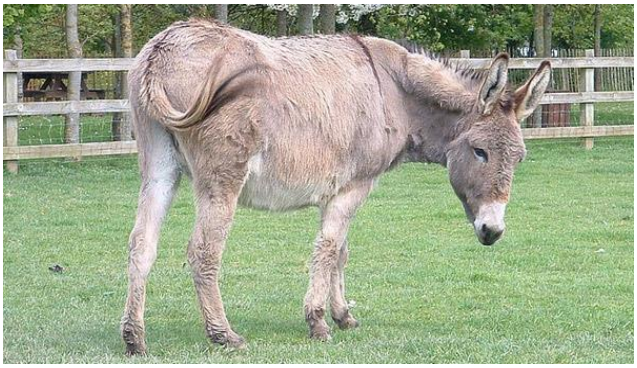
Origin: Ethiopia

Size: 125-145cm height

Weight: 275kg

Colour: grey or brown coat with dark stripe down centre of back; stripe may not be continuous, underside lighter; legs may have bands.

B. Cotentin donkey



Picture 33: Cotentin donkey

Origin: France (Lower-Normandie)

Size: height 1.20m-1.35m for male and 1.15m-1.30m for female;

Colour of coat: The coat is dove grey, with a well-defined darker dorsal stripe and shoulder-stripe; the legs may show zebra-striping. The lower part of the muzzle is grey-white, as is the belly.

Conformation: the head is straight, formed well to the neck with or without reddish shades. The neck is strong, with a straight mane; the chest is broad, the back is straight; hindquarters are round, or sloping; members are Solids, with a firm stance.

Ears position: With good dimensions (half the facial length), opened well, with the circumference and the base darker.

Colour of eyes: Bright, with glasses grey-white, sometimes encircled the russet-red one, well-marked arch of the eyebrows.

C. Mammoth donkey

Picture 34: Mammoth donkey

Origin: United State

Size: they have a height of 143 cm for male and 135cm for female (the largest mammoth has 174 cm);

Weight: 453-906kg for a jack, jennet slightly less

Colour of skin: Any color is acceptable, but black, chestnut and roan are preferred by breeders of draft mules. The darker gray color of smaller donkeys is looked down upon by breeders.

D. **Miniature Mediterranean donkey**

Picture 35: Miniature Mediterranean donkey

Origin: Mediterranean islands

Size: 66-92cm of height with average of 84 to 86 cm;

Weight: 113-204 kg

Colour of skin: spotted, white, sorrel, chocolate (dark brown) or black. Gray-dun, the various shades of gray with the dorsal stripe and cross is the most common colour of these donkeys.

Conformation: the animals is supposed to be that of a small, compact, well rounded animal standing on four straight strong legs with all parts in symmetry and balance.

E. Poitou donkey

Picture 36: Poitou donkey

Origin: France

Size: height is 1.40 m for jacks and 1.35 m for jennies

Weight: 250–430kg

Colour of coat: the coat is always dark brown or black

Conformation: large, long heads, strong necks, long backs, short croups and round haunches. The limb joints and feet are large, and the legs strong.

Thought to have been introduced to the Poitou region of France by the Romans, this donkey is specifically used to create mules. These are mighty, robust animals and possess a thick, woolen brown coat.

F. Zamorano-leones donkey

Picture 37: Zamorano-leones donkey

Origin: Spain

Size: 145cm height male; 135cm for female;

Weight: 300-370 kg for male; 270-360 kg for female

Colour coat: long and shaggy, black or dark bay in colour.

L O 1.3 – Select companion animals

Care and breeding of companion animals must take into account the specific characteristics according to species.

Pets' owners would like to be able to predict the probable future behaviors and performance of companion animals in order to choose an appropriate companion animal and to anticipate problematic behavior.

- Content/Topic 1: Dogs selection criteria

A. Temperament

Dogs must have suitable basic temperament and behavior, this includes:

- being friendly,
- gentle,
- obedient,
- responsive to the commands of the handler, and
- Happy interacting with the residents and staff of the facility.

Dogs also need to **be calm** around the objects, noises, and general environment of the facility.

Dogs also need to **be comfortable** with the vocalizations and strange or irregular movements of the residents.

B. Health

Dogs must be in good health. It should be on a wellness program with a veterinarian and current on all immunizations.

C. Cleanliness

Dogs must be clean and well groomed; this includes bathing within 24 hours of the visit, making sure nails are trimmed short and teeth brushed, and also making sure the dog is free of fleas and ticks. Dogs should not have flea collars, flea powders, or chemicals on their coats during visits.

D. Gender

A female usually is smaller in stature and lacks the profuse feathering and coat length of the male in many breeds. If spayed, a female is equal to a male in terms of competency in this career.

If unspayed, a female's usefulness is compromised by her bi-annual menstrual cycles. Male dogs may be easier to manage in the presence of unspayed females and intact male dogs if neutered. You can't cure hereditary temperament traits, poor socialization, dominance issues or psychological trauma with surgery.

E. Age

One of the most important decisions to make is whether to start out with a young puppy or to seek an adult dog, age 18 months to 3 years old, which can commence training immediately. Puppies under 6 months of age should not visit. This is due to immaturity, unpredictable behaviours, and zoonotic reasons.

F. Size at maturity

Identify accurately and predict the size of her pups or young dogs at maturity is the important step in ensuring that the dog's size will be compatible with the job it is supposed to do.

G. Hereditary breed traits

Each breed was developed for a purpose. If considering a breed developed for hunting, herding or guard dog work, realize that the traits that made a dog of that particular breed an excellent hunting dog, an effective sheepdog or a successful guard dog do not disappear just because the traits are no longer highly desired by most dog owners.

H. Longevity

Most large breeds have a 10-12 year lifespan. Small and medium size dogs might live well into their teens. One giant breed only has a lifespan of 4 years, while another averages 10 years.

- Content/Topic 2: Cats selection criteria

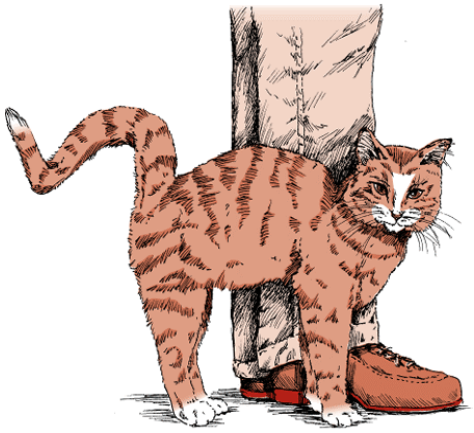
Cats do not require the same level of attention or activity often demanded by dogs. This makes them excellent pets for people who have decreased mobility, a busy lifestyle, or limited living space (such as apartment residents). However, as with dogs, you should consider temperament, breed characteristics, age, and other factors when deciding whether cat ownership is right for you.

A. Temperament and communication

Cats are very different than dogs in temperament and character. While dogs are pack animals that desire and need social contact cats behave as follow:

- cats are mostly solitary hunters with a very different type of social structure,
- Some cats spend most of their time alone,
- Others live in groups and spend most of their time together.

Because cats often tend to seek attention on their terms, some people perceive them as aloof (detached). Of course, many cats are highly affectionate and frequently solicit attention from people.



Affectionate cats: show by purring and rubbing against a favored individual with their face and tail.

Aggression and fear cats: are associated with an arched back, raised hackles, spitting, and hissing.

Cats also can communicate by making other types of vocalizations:

- Low-volume calls are associated with greeting or requests for attention.
- Loud calls include cries of complaint or bewilderment (confusion), urgent demands for attention, and the well- known mating cry of a queen in heat.

B. Breeds

Many breeds of purebred cats have distinctive characteristics. For example, the Abyssinian is an active, high-energy breed, while Persian and Scottish Fold cats are generally calmer. Siamese cats are very intelligent but often require more attention and tend to meow loudly when ignored.

C. Sex

It is necessary to consider whether you want a male or a female cat.

Male cats that have not been neutered are more aggressive and usually fight for territory or dominance.

Intact cats, both male and female, try to roam during the mating season, which can lead not only to unwanted kittens but also to bite wounds, car accidents, ingestion of poison, and other problems.

Many of these undesirable behaviors can be decreased by spaying or neutering when the cat is young, although some cats may still spray when they sense their home environment is being invaded by, for example, new cats or cat odors.

D. Age

Kittens raised with your family usually integrate well into the environment. However, kittens have a lot of energy and require a lot of care and attention. Adult cats are usually calmer, less demanding, and less destructive.

- Topic 3: Equine breeds selection
- *Topic 3.1: Horse selection criteria*

Before deciding what type of horse to purchase, **it is best to consider the purpose**. If the decision has been made to purchase a horse, the following criteria for selecting an animal may help.

A. Expected use

The type of horse purchased determines how easily it can perform the intended use:

- A quiet horse will **work for a trail** and **pleasure** horse as long as it is sound
- A relaxed, mannerly horse that has a prompt, flat-footed walk will be best for **trail riding**.
- **Western horses** tend to be lower headed, quiet, and most often heavier muscled **being purchased for show purposes** and
- **Hunters (horses)** have longer, flatter strides and move forward with more impulsion and a higher head carriage are **being purchased for show purposes.**

B. Soundness (physically capable of performing)

Horses must be sound enough to perform the expected activities. Horses that are **lame in their movement** may have permanent problems that will limit the performance or make it vicious to use the horse. Horses should also be sound in their breathing, vision, and reproductive capacity if for breeding.

C. Breed of horse

The breed will dictate to some extent the activities and performance abilities of the horse. These horses lend themselves to the conformation and action to do well:

- Thoroughbreds are designed for high-speed sprints, so they are hunters
- Arabians for endurance racing,
- Quarter horses for agility and bursts of speed and they are also hunters
- Standardbreds for trotting and pacing.

D. Colour

The color of the horse has nothing to do with disposition, performance ability, or soundness. Color is, however, a significant determining factor in many people's decision.

Many breed registries such as Buckskin, Pinto, Appaloosa, Palomino, Pony of the Americas, and Dominant Grey are based primarily on color. If you are breeding or involved in these breeds, then color should be high on your priority list. Otherwise, the training, disposition, and soundness of the horse are more critical.

E. Conformation

The conformation or shape of the horse will dictate the athletic ability and the ability to stay sound.

- Straight legs, especially through the knees and hocks, suggest that the horse will not breakdown as soon as a horse with crooked legs.
- Body conformation and the angle at which the neck ties into the shoulder determine whether the horse is capable of being a saddle type
- Short, strong-backed horses, horses with good angle to the shoulder, horses with long hips and strong hind quarters are desired.
- A bright, alert head and eye, a long neck, and a deep heart girth makes horses more athletic and consequently, attractive.

F. Size of rider and horse

The horse is capable of carrying a tremendous amount of weight. The only time the relative size of the rider and the horse is important is when showing, then the suitability of horse to rider becomes an issue:

- Small children are better off on quite dispositional large horses than on small ponies that are wild.
- Most adults would do well to buy horses (over 147 cm at the top of the withers).
- As long as the mount is quiet enough for the child to work around and mount, the size of the animal should be considered secondary.
- A rider's leg ought to fit down the sides of the horse's side in order to give leg cues (signals to the horse), but not be so long that the leg from the knee down does not touch the ribs.

G. Age of rider and horse

Basically, **the younger the rider the older the horse needed**. This is a function of training, calmness, and experience that comes with an older horse rather than with age itself. For a novice (beginner) rider, it would be rare to find a horse under five that is trained and quite enough.

Horses live to be 25 to 30 years of age, so **the purchase of a 6 to 12 year old is wise for amateurs and beginner**. Older riders or those with more expertise and experience can buy, **handle, and train yearlings or two year olds**. These young horses do not make predictable mounts for beginners.

H. Training

The willingness of a horse to respond to the handler's cues is a result of training. Horses that have "been around some" increase in value for the beginner. Sometimes, highly tuned horses are so responsive to the riders' cues that the novice confuses the horse and gets no response. It is also possible to have a horse trained to the point that you get more response than you want, ie. too fast a spin, too quick a start, too hard a stop, and the rider gets hurt. Adequate training for the intended use combined with an experienced disposition is important.

I. Sex

Mares and geldings (castrated males) are the only good choices for horsemen with limited experience:

- Mares often look more refined and prettier, but can have dramatic behavior changes when in estrus.
- Geldings are often quieter and more consistent but more difficult to show in halter classes.
- The only reason to own a stallion is to either breed mares or performance test a potential breeding stallion.

J. Disposition and vices

The **manners** of the horse may **be changed with training and handling**, but the **natural disposition is genetic** and/or acquired from the dam. Bad habits such as kicking, biting, wood chewing and leaning on the handler can be corrected with firm (stable), consistent, human handling.

K. Price

The price will influenced by the following criteria:

- The performance record,
- the breed type and conformation,
- the pedigree,
- the degree of advertising,
- training and
- Subsequent race or show success.

- *Topic 3.2: Donkey selection criteria*

Farmers need some guidelines for the purchase of new donkeys and in deciding which of the males should not be castrated. They may also need to decide which of their donkeys may be used for which purpose.

It is the needs of the user which must therefore decide what characteristics are most desirable and what further training the donkey should be given. Some of the characteristics mentioned here, such as speed and obedience, are often the outcome of training before the donkey is old enough to be used.

A. Donkeys' temperament

A donkey with a calm temperament: would, in an open field, allow a strange human (or donkey) to come quite close before moving away, and when it moves, it will move slowly.

An excitable donkey: will run, probably kicking its heels in the air, when seeing a stranger in an open field.

A donkey is obedient: is it knows the commands, responds to them quickly and does not need to have them repeated.

A faster donkey moving 1 km in under 5 minutes, and it cannot be expected to go much further than 1 km at this speed.

A donkey is too slow: when walks more slowly than a human being.

A donkey is agile: if it can turn in a space only a little wider than itself and climb up and down steps at least 50 cm high; if it cannot do these things, it is clumsy.

B. Gender

A castrated male donkey is the best type to have. A castrated donkey is believed to use less energy than an intact stallion, while still producing the same amount of work. Of course, less sexual excitement contributes to a reduction in excitability, but a castrated donkey can still be a very alert and responsive donkey, and will be more willing to work.

Female donkeys (or Jennies) when on heat, will forget their work and friends and follow male donkeys of their fancy.

Fully male donkeys ('intact' with testicles: jacks) become difficult to control when they are anywhere near a female in oestrus: they may leave their work and their friends to pursue it.

C. Adaptation to the work to be performed

The choice is greatly influenced by the expected work to be used**.**

C.1. Donkey for carrying loads

Strength of back and legs are more important in carrying than in other kinds of work, because the animal must not stumble (stagger).

The good physical characteristics for a donkey carrying loads:

- large size,
- straight back,
- straight legs,
- well-angled and concave feet,
- Good eyesight.

The good behavioral characteristics for a donkey carrying loads are:

- A responsive temperament
- Prompt obedience and fast speed.
- Be nimbleness (agility), in negotiating narrow paths and rocks.

C.2. Donkey for riding

The only difference between a donkey which is ridden by a person and one which is carrying a load, is that the desirable characteristics should become more important.

Less desired characteristics: Stumbling and running away

Highly desired characteristics: alertness, agility and prompt obedience to commands are paramount.

C.3. Donkey for agricultural work

Since all field operations require the strength to pull, and the pulling must be done by the chest or adjacent shoulders (depending on the type of harness), with the legs providing the power and the back taking the vertical force.

Physical characteristics: large size, wide and deep chest, straight back, straight and well-muscled legs, breathing ability and is therefore related to the conformation of its chest.

Behavioral characteristics are: willingness and patience and able to stand still for long periods

C.4. Donkey for pulling carts

The animals will presumably be operating on roads that other vehicles use.

Desirable characteristics are: a calm and unexcitable temperament and speed.

Note: Donkeys should be trained as young as possible, if donkeys do any heavy work before they are **three years old**, their bones which are still forming and hardening (particularly the backbone) will get twisted into the wrong shape. This will cause them **pain and disablement** for the rest of their lives, rendering them less **capable of good work**.

D. Movement

Long stride: 2 back and 2 front legs form equilateral triangle with ground when donkey walking;

Fast walk: any one leg moves once per second;

Trotting or cantering: No up-and-down movement of back.

Learning Unit 2 – House companion animals

L O 2.1 – Identify companion animal houses/ cages types

The enclosure (house) is defined as an area of confinement such as a **cage, run, kennel, stall, or pen,** where an animal eats, sleeps, and in most sheltering situations spends the majority of its time

- Content/Topic 1: Houses types for dogs and cats

Houses and cages types for dogs and cats are vary depending on:

- the used materials (plastic, metal, wood wire);
- purpose (portable, non-portable);
- Breeding system (indoor or outdoor).

Special housing accommodations are sometimes necessary and they vary according to species depending on different factors: special behavioral and/or reproductive needs, their size.

Many other factors may include the following:

- **Safety**: Providing a secure enclosure that addresses physical safety, fear, and stress;
- **Food and water**: Providing easy access to food and water;
- **Biological needs**: Maintaining appropriate body temperature, permitting urination and defecation, ensuring timely waste removal, and, as appropriate, facilitating or preventing reproduction;
- **Cleanliness**: Keeping animals dry and clean, depending on species requirements;
- **Restraint***:* Avoiding unnecessary physical restraint; and
- **Behavior**: Ensuring the animals' ability to engage in normal species behavior.

A. <u>Wire dog crate</u>

Picture 38: Wire dog crate

B. <u>Plastic dog crate</u>

Picture 39: Plastic dog crate

C. **Wooden dog kennel with superior pitch roof**

Picture 40: Wooden dog kennel with superior pitch roof

D. **Wooden cathouse/dog cage**

Picture 41: Wooden cathouse/dog cage

E. **Indoor cat cage**

Picture 42: Indoor cat cage

F. **Portable metal cat cage**

Picture 43: Portable metal cat cage

G. **Wooden dog house with play yard/wooden house for cat**

Picture 44: Wooden dog house with play yard/wooden house for cat

- Topic 2: House types for horses and donkeys

A. **Houses for horses or donkeys**

Picture 45: Houses for horses or donkeys

B. Shelter for horses or donkeys with feed storage

Picture 46 Shelter for horses or donkeys with feed storage

L O 2.2 – Select companion animals house/cages site

The site where the companion animal house/cage should be chosen taking into account its needs, facility of needed care and local regulation.

- Content/Topic 1: Site selection criteria for dogs and cats houses/cages

The site selection must take into consideration many elements such as:

- sound,
- safety,
- working condition to properly confine animals,
- prevent injury,
- keep other animals out,
- enable the animals to remain dry and clean,
- No any sharp edges, gaps or other defects that could cause an injury or trap a limb or other body part.

A. Surfaces and drainage

A sealed and impermeable surface, such as sealed concrete or epoxy is ideal for flooring.

B. Heating and ventilation

Heating, ventilation, and air quality recommendations vary with the species of animal being housed, but it is essential that each site allows an animal to comfortably maintain normal body temperature.

C. Temperature and humidity

Temperature and humidity levels should be evaluated at the site. For dogs and cats, the recommended ambient temperature should be kept **above 60°F (15.5°C**), and **below 80°F (26.6°C),** and the relative humidity should range from 30 to 70%.

D. Light

Facilities should be designed in the site where there is **much natural light as possible**. When artificial light is used, it should **closely approximate natural light** in both duration and intensity.

E. Sound

The site must be where noise should be minimized in animal areas. Dog and cat hearing is more sensitive than human hearing so it can be assumed that noise levels that are uncomfortable to humans are even more uncomfortable for animals.

- Content/Topic 2: Site selection criteria for horses and donkey houses

A. High ground

A good location that allows to drain water the high spot in the pasture.

B. Proximity to road or driveway

A nice driveway or road that gives easy access to the barn can be a life saver. It's also nice for bringing the hay or horse feed not to have to carry it too far.

C. Security

Security is now an important consideration when selecting the barn site. The site must be where farmer is able to keep an eye on animals preventing them from being stolen.

D. Proximity to electricity and water

Water is needed for animal to drink and hygiene while electricity may help in security and facilitate regular monitoring even in the night.

E. Expansion potential

It is better to pick a location that will allow to add a riding ring or paddocks down the line or expansion if necessary.

F. Flat or sloping

Site preparation is expensive, but necessary, so it is good to reduce the cost (bring the soil in) by trying to find a fairly level spot to start with.

G. Direction of barn and climate considerations

The barn style and considerations that are appropriate for a cold climate are not the same considerations that would be used in a hot climate. Try to keep climate conditions in mind when selecting where and how to place your barn.

H. Convenience

There is a happy medium where it is close but not so close that the guests smell manure. Having the barn close to the house is also nice if there is a sick horse this will facilitate coming and going a lot checking on the animal**.**

L O 2.3 – Sketch and construct companion animals' house/cages

- Content/Topic 1: Selection of construction material and equipment for dogs houses/cages

To select materials for dog houses/cages constructions will depends on the following criteria:

- **Cost**: the cost should be reasonable to maximize the profit.
- **Strength and durability**: long life materials are more profitable than short ones.
- **Availability**: Use the locally available materials.
- **Hygienic**: used materials that should be cleaned easily.
- **Safety**: used materials should provide protection against predators and adverse weather.
- **Vermin protection**: protect against ants and other vermin.
- **Degradation of materials in cowshed**: animal damage, vermin, contaminants, condensation, corrosion and decay.

A. Selection of construction material and equipment for dogs and cats houses/cages

A1. Materials and their uses

Table 2: Materials of construction of dogs/cats houses

	Floors	Wall	Roof
Materials	- Wooden materials - Metallic materials - Fired bricks - Cement and cement bricks - Concrete and stones	- Wooden materials - Metallic materials - Muddy bricks - Fired bricks - Cement and cement bricks - Concrete and stones	- Wooden materials - Metallic materials - Plastic materials - Iron sheets

A.2. Cleaning dog and cat house/cage

The following are the most required materials:

- Water.
- Brush
- Wheelbarrow

B. Selection of construction material and equipment for horses and donkeys houses

B.1. Materials and their uses

Table 3: Materials of construction of horses/donkeys houses

	Floors	Wall	Roof
Materials	- Wooden materials - Metallic materials - Fired bricks - Cement - Concrete and stones	- Wooden materials - Metallic materials - Muddy bricks - Fired bricks - Cement and cement bricks - Concrete and stones	- Wooden materials - Metallic materials - Plastic materials - Iron sheets

B.2. Cleaning horses and donkeys houses

The following are the most required materials:

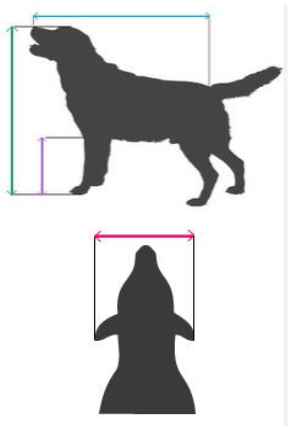
- Water.
- Brush
- Wheelbarrow

- Content/Topic 2: Standards of companion animals houses/cages

A. Standards of dogs houses/cages

The size of the container (crate, kennel, and carrier) must be such that it will allow the pet **to stand in a natural position, turn around easily** and to **lie down in a natural manner** at all times.

The measures of dog house/cage must have the following:



Length: Distance from the top of the nose to the root of the tail

Width: Width of the widest point of the animal

Height: From the ground to the highest point of the animal

You should consider the following measurement**:**

- The door height should be at least 3/4 of the pet's shoulder height.
- The length and width of the house should not be more than 25 percent larger than the distance between the nose and the base of the tail.
- The height of the house should be at least 25 percent (but no more than 50 percent) taller than the height from the top of the dog's head to his toes.

B. Standards of cats houses/cages

Individual cages:

- Cubicles plus exercise area should be a minimum of 2.2m^3 with an open mesh front.
- Each cubicle should have a bed, a dirt/litter tray and space for food and water bowls.
- Good ventilation is essential and where cubicles face each other and they should be separated by at least 2m to prevent the spread of disease

C. Standards of horses and donkeys houses

The horse must have sufficient room to lie down, readily rise and turn around in comfort, without the risk of injury. The recommended minimum box sizes may vary size of animal or age.

Minimum stable sizes for horses are:

- horses: 3.65m x 3.65m
- large horses: 3.65m x 4.25m
- ponies: 3.05m x 3.05m
- large ponies: 3.05m x 3.65m and foaling box: (horse): 4.6m x 4.6m

Minimum stable sizes for donkeys are:

- mules: 3.65m x 3.65m
- donkeys: 3.05m x 3.05m
- large donkeys: 3.05m x 3.65m

Boxes for foaling, and for mares with a foal at foot, should be a minimum of 4.6m x 4.6m.

Learning Unit 3 – Keep companion animals

L O 3.1 – Accommodate companion animals

The accommodation, environment and security of animals should be of a standard which ensures their security, safety and wellbeing

- Content/Topic 1: Accommodation of dogs and cats

The basic accommodation standards for dog and cat may include the following:

- Vehicles, caravans, portable crates and the crawl space under any dwelling must not be used as permanent housing for dogs and cats.

- Breeding facilities must have a continuous water supply, adequate to meet the daily requirements of the dog and cats held.
- Breeding facilities must be designed, constructed, serviced and maintained in a way that prevents the transmission of infectious disease agents, the escape of animals and does not cause injury to either animals or humans.
- Animals must be provided with protection from rain and wind, direct sunlight or other adverse weather conditions and must be provided with a clean and dry dedicated sleeping area.
- Where a facility houses both dogs and cats, cat housing must be a sufficient distance or otherwise isolated from dog housing to minimise the stress created by the sound, sight or smell of dogs.
- Dog housing and cat housing must meet the minimum pen sizes.
- Dogs and cats must not be in extended contact with wet floors.
- Each cat must be provided with a suitable box in which to hide or sleep.
- All sleeping areas for cats and dogs must have clean, hygienic, dry and soft bedding, appropriate to the species and breed.
- Provide a tray which is at least 1.2 times the length of the cat, and which contains a sufficient depth of material such as commercial cat litter, sawdust, shavings, sand or shredded paper.

A. Isolation facilities

An isolation facility must be available either at the facility or at a veterinary hospital, and must have documented and demonstrable biosecurity measures in place.

Animals known or suspected to be suffering from a significant infectious disease or severe injury must be taken directly to the isolation facility.

A cat isolation facility must be a sufficient distance or otherwise isolated from dog enclosures to minimise the stress created by the sound, sight or smell of dogs.

B. Environment

A good environment for a dog and cat house should include following elements:

- Dog housing and cat housing must have a shaded area when exposed to sunlight.
- Dogs and cats must be protected from extremes of temperature.
- The duration and intensity of artificial lighting, where used, must be as close as possible to natural conditions.
- Animal housing areas must be provided with ventilation which is sufficient to maintain the health of the animals;

- Air ventilation devices, where used, must have an air change rate which is sufficient to distribute fresh air evenly to all of the areas holding animals.

C. Security

The standards of security for dog and cat house are the following:

- The facility must be able to be reasonably secured to prevent access to the facility by unauthorised people.
- Dog housing and cat housing must be fitted with a secure closing device that cannot be opened by the dogs and cats held.
- An animal must not be able to escape except in circumstances that cannot reasonably be foreseen and guarded against.
- Functioning fire-fighting equipment must be readily available and staff trained and practised in its use.
- All potential poisons and harmful substances, whether in storage or in use, must be kept out of reach of dogs and cats.

- Content/Topic 2: Accommodation of horses and donkeys

Welfare aspects should be considered when constructing housing for horses.

The main considerations are:

- The building should be constructed soundly, with no exposed surfaces or projections likely to cause injury.
- All surfaces should be capable of being cleaned and disinfected.
- Fixtures and fittings such as tie rings, hay racks and water bowls should be free of sharp edges and positioned so as to avoid injury, particularly to the eyes
- Floors should be reasonably even, nonslip and designed to give good drainage, taking stable waste away from the horse.
- Doors should be of a suitable size for the individual horse as a guide 1.25m wide.
- Roofs should be high enough to provide adequate ventilation including good air circulation.
- There should be a reasonable clear space 0.6 to 1.0 m to the roof above the withers of the horse in its normal standing position.
- Sufficient light is essential within all stabling both for the horse to see adequately and also to enable inspection and safe handling of horses at all times.
- Slats should provide adequate air circulation without creating draughts. Adequate ventilation in any equine housing is essential to prevent respiratory problems.

- The stable size should be suitable for the individual horse, as a minimum, each horse should have sufficient room to lie down, readily rise and turn around in comfort.
- Boxes for foaling and for mares with a foal at foot will require additional space.
- Adequate and suitable bedding material is necessary in all equine accommodation to provide warmth, protection against injury and to enable the horse to lie down in comfort.

If poorly designed or managed, stabling can contribute to the rapid spread of disease, cause injury and pose significant risks.

L O 3.2 – Feed companion animals

Feeding is an important aspect in the management of any farm animal. It requires knowledge of the feeding behavior and nutrient requirements of animals for specific production functions.

The following elements should be considered:

- Feeders must allow easy access to food, and dirtying by urine and feces must be prevented,
- Food must be available in sufficient amounts to provide for normal growth, and maintenance of normal body weight, reproduction, and lactation;
- Areas where food is prepared or stored must be kept clean, cool, dry, and free of vermin, preferably off the floor on pallets, racks, or carts;
- Storage time should be minimized and the manufacturer's recommendations for proper storage followed to preserve nutritional quality and prevent contamination.
- Animals must have access to fresh, potable, uncontaminated drinking water.

- Content/Topic 1: Feeding and watering dogs

A good diet of dogs provides the right amounts of essential nutrients: proteins, carbohydrates, fats, vitamins, minerals, and water.

A. Basic dog feeding guide

The basic feeding guide for adult dogs are:

- Feed high quality balanced premium commercial food that is appropriate for the life stage and health status of your dog.
- Offer some natural foods to provide some variety
- Natural foods include fresh raw meat (e.g. raw lamb), raw meaty bones and vegetables
- Always check first that raw meaty bones are suitable for your particular dog (e.g. some dogs with misshapen jaws or dental disease may find chewing on raw bones difficult)

- Choose human-grade raw meat and raw meaty bones.
- Bones must be raw
- Raw meaty bones such as raw lamb ribs (not lamb chops though), raw lamb flaps and raw chicken wings provide several important health benefits including keeping teeth and gums healthy
- Too many raw bones may lead to constipation. Generally 1-2 raw bones may be offered per week with a few days in between each serving.
- The bone must be large enough so that the dog cannot fit the whole bone in its mouth or swallow the bone whole
- Never feed cooked bones as these can splinter and cause internal damage or become an intestinal obstruction
- Always supervise dogs when they are eating raw bones
- Dogs 'like' bones very much and sometimes become protective. Do take care and discourage young children and others from approaching dogs that are eating.
- Dogs may be offered fish such as tinned sardines in spring-water, tinned tuna and tinned salmon as a treat occasionally (care with any fish bones). Please avoid feeding fish constantly
- Dogs may also be offered a small amount of cooked vegetables e.g. pumpkin, carrots etc
- Cooked meat such as boiled chicken or lamb may also be offered but ensure there are no cooked bones; onions/onion sauces or other toxic substances present.
- A small amount of cooked plain pasta/rice may be offered
- Provide access to grass (avoid chemically treated grass and toxic plants) - dogs will sometimes eat grass which may provide a source of vegetable matter and micronutrients
- The amount of food required will depend on the dog's size, breed, age and level of exercise, but take care not to overfeed or underfeed. It is advisable to weigh the dog, assess the dog's body condition score and provide in order to feed it correctly.
- Adult dogs should be fed at least twice a day to help avoid bloat which can be fatal.
- Also, dogs should not be exercised immediately before or after eating, to avoid bloat, particularly deep-chested dogs.
- Fresh water must be available at all times

B. Feed to avoid when feeding dogs

The following is a list of what to do not feed (note: this is not an exhaustive list)

Table 4: Feed to avoid when feeding dogs

Feed to avoid	Caused health problems to the dogs
Avocado	Cardio-vascular damage and death
Chocolate, coffee and caffeine	Contains methylxanthines that cause vomiting, diarrhea, panting, excessive thirst, abnormal heart rhythm, seizures and death
Citrus	Irritation and central nervous system depression
Coconut and coconut oil	Stomach upset, loose stools or diarrhea
Grapes and raisins	Cause kidney failure
Macadamia nuts	Weakness, vomiting, depression, tremors and hyperthermia
Raw/ undercooked meat	Contains bacteria like salmonella and E. coli
Raw Eggs	Contains Avitin enzyme which block Biotin (Vit B) action and lead to the skin and coat problems, contain also salmonella.
Raw bones	Can puncture the digestive system
Salt and salty snack food	Cause Sodium poisoning highlighted by vomiting, diarrhea, depression, high temperature, tremors, seizures and death
Cooked bones	Are very hard and can splinter (fragmentation) and can cause damage in the digestive tract
Xylitol used as sweeteners many in products	Cause Insulin release and lead to hypoglycemia and liver failure: signs are vomiting, lethargy and loss of coordination.
Yeast bread	Gas accumulation caused by fermentation lead to abdominal pain and bloat
sausages, sausage meat and cooked manufactured meats	contain sulphites which cause depletion of Thiamin, this lead to severe illness and death

C. Feeding and watering puppies

Puppyhood is a time of rapid growth and development, so require different levels of nutrients than do older dogs.

Because of their special nutritional needs, the puppy should only receive puppy food for the first year (giant breeds, several months longer).

Many dog food manufacturers offer a special formula for puppies and sometimes, large breed puppies, for whom the protein, calcium, and phosphorus levels may be more critical,

The puppy's feeding schedule will be somewhat dictated by the owner personal schedule. Not leave food out for the puppy so that he can eat it whenever it wants,

Puppies may seem to drink large quantities of water. They need water and cannot be deprived of it. A dog should not lose 15% of its body water because it can die. Water is the most important nutrient of all,

Puppies also need more water per kg than adults do because they are growing. Growth. Providing fresh, clean water is important and greatly reduces the risk of disease and therefore keeps the pet happy and healthy.

- Content/Topic 2: Feeding and watering cats

Cats are carnivores. Cats are different from human being and from dogs, considering the nutrition, they are very inflexible, and owners must realize that; cats need to eat a lot of meat for protein and for fat. If the cat likes the food and doesn't have any gastrointestinal upsets (such as diarrhea) afterward, that is good.

Cats like to eat small meals throughout the day, so plan to leave food out so the cat can come and eat when they feel the need to nibble (bite). In the morning the half is put out before leaving for work and the other half when owner returns back.

Schedule of the cat's meals: Daily feeds intake:

- small size: 20-30g;
- medium size:30-50g;
- large size:50-70g

A. Cat feeding mistakes

A.1. Feeding only dry food

The biggest mistake people make is feeding cats dry .We know that a cat's sensitivity to thirst is blunted compared to a dog, they don't voluntarily drink water like a dog would and, because cats naturally produce high concentrated urine we're setting them up for urinary tract problems when their diet is low in liquids. Cats are designed to get their water with their food.

A.2. Offering too little water

A serious water deficiency can have critical repercussions for pets, causing serious illness or death. Cats should also have several sources of fresh water available through the house.

The owner must be aware that some cats prefer running water;

Others can detect the taste of chlorine in tap water so he might want to buy bottled water for them; there is a tasty tip to help encourage your cat to drink more.

A.3. Going vegetarian or vegan

Cats are obligate carnivores, meaning they must eat mainly meat and animal organs to thrive. The amino acid taurine, for example, is found only in animal tissue. Lack of taurine can lead a cat to experience heart problems, blindness, and even death.

A.4. Creating nutrient deficiencies

When making cat food from scratch, some people fail to balance the meat with the correct amount of calcium, forgetting that a cat would be eating both the meat and bones of their prey, which provides a proper calcium-to-phosphorus ratio.

A cat diet too heavy in tuna, liver, or liver oil (such as cod liver oil), can lead to vitamin A toxicosis, resulting in bone and joint pain, brittle bones, and dry skin.

A diet too rich in raw fish can destroy vitamin B1, causing muscle weakness, seizures, or brain damage.

- Content/Topic 3: Feeding and watering horses

A horse's natural diet includes a variety of grasses of different types and age (from fresh new growth to older rougher stalks), and also other herbs and weeds browsing and grazing for much of the time.

Old pasture is ideal for most horses and ponies with only supplementary hay requirements during the winter months.

A. The horse's diet

Horses require a balanced diet that includes the right proportion of nutrients (carbohydrates, protein, fats, vitamins and minerals) for proper digestive function. This should ensure the maintenance of a good body condition, a healthy weight, a repair from injury and should provide energy for growth and work.

A.1. Concentrates (hard/short feed)

These are foods with proportionately high (concentrated) levels of nutrients and energy. When fed they **should not account for more than half** of the horse's total dietary-provision. They provide energy and nutrients for horses with high energy demands such as those in hard work and competing regularly and they increase digestibility.

A.2. Compound feeds

These come in two forms – nuts (cubes or pellets) and mixes. Generally compound feeds have been specifically prepared to suit the needs of particular types of horses and ponies, ranging from high-fibre maintenance (nuts) to high-energy competition (mixes).

A.3. Succulents

Soaked sugar-beet pulp, apples and carrots are useful for bulking a ration as well as tempting fussy feeders.

A.4. Feeding forage

In the stable, hay and haylage is best fed from a net tied to a ring on the wall, as it is more economical and the hay does not get trodden into the bed as it would if placed on the floor.

When feeding hay in the field, scatter it in small piles so that horses can walk from pile to pile as if they were grazing. If horses are sharing a field, make sure there are more piles of hay than horses. This will help minimize any fighting over food. A horse should 1-2 % of his body weight in roughage every day.

B. Food storage and distribution

Hay should be stacked when it is cool and dry, and kept undercover.

Hay and straw should be stored so that air can circulate under the bales to prevent them getting damp and musty that cause deterioration. This can be achieved by stacking the bales on pallets or planks of wood so that the bottom layer is raised a couple of inches from the ground.

Hard feed should always be kept in a cool dry place in a vermin proof container with a secure lid. All food bowls and equipment should be kept clean and free from stale feed.

The feed room should be kept organized and measures taken to clean up any spilt food. Feed bins should be cleaned regularly before new feed is added. Keeping feed in its sack within the feed bin reduces spoiling and cross contamination.

An uneaten ration should be disposed of safely rather than fed later and steps taken to discover and resolve the reason why the ration was left.

C. Practical feeding

Always dampen down any dry food with water before feeding.

Mangers that attach to the stable door or the fence are also acceptable means of feeding a horse, although it is more natural for horses to feed from ground level.

D. Watering

Horses drink approximately 18 to 55 litres of water per day depending on the weather, their diet and the level of work they are doing. The horses should have access to fresh clean water at all times, in the stable and the field.

E. Ten golden rules of feeding

A good understanding of horse nutrition is key to ensuring your horses remain in peak condition all year round, so it is crucial that every horse owner knows the golden rules of feeding**.** These basic rules can be applied to every horse and will help maintain health and avoid problems associated with poor horse nutrition.

1. Provide access to fresh clean water at all times. The container of the water, be it a trough or bucket should also be kept clean. In a cool climate, an average horse will drink around 18 litres a day. This can increase to more than double this amount if the horse is working hard in a hot environment.
2. Feed by weight not volume. To ensure you are feeding the correct quantities you need to weigh one scoop of each different type of feed you use.

3. Concentrates must be fed "little and often". In practice, feed between two to four feeds a day, depending on work levels. No more than 2kg of concentrates should be fed in one feed.

4. Always use high quality feeds. Never be tempted to feed dusty, mouldy or old feed.
5. Feed according to body weight and temperament. Every horse is an individual and adjustments must be made according to how he responds to feed.

6. Make any changes to the diet gradually to reduce the risk of digestive upsets. This applies to both concentrates and roughage, including grass.
7. Don't exercise directly after feeding. Allow one to two hours after feeding concentrates before working the horse and, if the horse worked hard, do not offer a feed of concentrates until they have fully recovered. This allows the digestive system to process the feed most effectively.
8. Feed the horse at the same time each day. Horses are creatures of habit and thrive on a regular routine.

9. Increase feed quantity and energy content according to the level of work the horse has done.
Increase his levels of work gradually. Providing the horse with grazing during the winter, but just how good grass quality is in January.

10. Feed plenty of good long fibre. Horses have evolved to live on high fibre diets and good fibre levels will help to stimulate a healthy gut function and reduce the risk of digestive upsets. A minimum of 50% of the horse's diet should be roughage.

- Content/Topic 4: Feeding and watering donkeys

In arid and semi-arid areas, donkeys eat a wide variety of feeds. The donkeys graze, eat herbs and shrubs and the bark of trees.

A. Practical feeding

They normally should be allowed to graze for six to seven hours a day on free range,

Dry matter intake of the donkey is high compared with other large herbivores, being about 3.1 % of live weight.

A general rule of thumb is that a donkey should be provided daily with straw or hay equal to 5% of its bodyweight, even though it may only eat about half of this.

The ration should be given to the donkey in the morning, and then the same amount again in the evening.

Horse cubes are available in most countries for supplementary feed for horses, which donkeys actually enjoy.

If donkeys have access to cattle lick with urea in the constituents, they must not consume too much to prevent urea poisoning,

Donkeys drink from 10 to 25 liters per day.

B. Feeding behavior

The donkey differs somewhat from the horse because its narrow muzzle and mobile lips promote greater selectivity in feeding. This allows it to maximize feed quality rather than quantity.

Chewing activity is an important aspect of feeding behavior in donkeys.

The donkey chews fragments of plant cells to reduce the feed particle size, promote salivary secretion and allow wetting of feed.

The donkey (a non-ruminant herbivore) has only one opportunity during mastication to complete the physical processing of feed, unlike the ruminants that chew upon initial ingestion (mastication) and again during rumination.

In the donkey, microbial digestion occurs principally in the **caecum and colon** while in ruminants it takes place in the rumen. The stomach of ruminants and the large intestine of the donkey are therefore functionally similar.

C. Feeding guides for donkey

The feeding guide for donkey are the following:

- Provide adequate clean, fresh water in clean watering troughs every day.
- Feeding time and method should be consistent daily for the donkey.
- Feed donkeys intermittently with little food each time to prevent or minimize the risk of digestive upsets.
- Food provided should be free of foreign materials like plastic bags and any other materials (hardware), which might be dangerous to the donkey.
- A regularly working donkey with no adequate grazing time should be provided with some concentrate feeds to supplement its basal roughage diet.
- A donkey should be allowed a rest period after a very large feed.
- If necessary donkeys can be fitted with rope-mesh muzzle to stop them eating when they are working.
- Donkeys should be allowed to rest between long working hours. During the rest period, the animals should be offered water and a little feed.
- Many donkeys will not eat or drink when in harness. Therefore, it may be necessary to remove all harnessing depending on individual donkey's preferences.
- Donkeys should be fed to maintain body condition rather than to recover condition, which is more difficult, once it is lost.

Note: Coprophagy (Caecotrophy) occurs in young donkeys which often eat the faeces of their dams within a few months of birth. This is viewed as a way for the young donkeys **to obtain cellulose digesting bacteria and other microbes**, which are abundant in the faeces.

In adult it occurs occasionally in housed donkeys that **are bored and due to lack of stimulatory activities start to eat their own faeces**. This is regarded as a behavioural disorder or bad habit.

D. Feeds for donkeys

Donkeys should be fed hay or straws and legumes when available in **the proportion of 4:1 straw to legume** to appetite. Fresh legumes should not be fed as the only food. Also working donkeys should be given about 500 g of cereal bran per day.

D.1. Roughage

Donkeys are good grazers as well as browsers. Traditionally in donkeys that graze freely on rangeland throughout the year obtain enough roughage when they are not working.

During the long dry season when the crude protein value of the grasses is low, and the quantity and quality of the grasses are poor, donkeys browse more time.

Donkeys at times peel the bark of trees with their teeth when there is food scarcity, e.g. *Acacia* species. At times, some farmers feed crop residues to their donkeys such as sorghum stover (dried stalks, leaves and heads without grains) and bran, maize stovers and bran, cowpea husks and rejected water melon fruits.

When possible, straw should be collected after harvest and stored in a dry shaded place for dry season feeding. Straw should be fed in dry clean troughs or containers to minimize wastage and contamination with dirt and faeces.

D.2. Concentrates

Protein can be supplied to donkeys by offering them leguminous forage to supplement their donkeys. Although leguminous forages are not concentrates, they are good sources of protein. Donkeys can be fed dried groundnut tops or cowpea hay for protein. **Urea must never be fed** to donkeys because of the **risk of ammonia poisoning**.

Cereals and cereal by-products such as millet, sorghum, maize and their brans can be fed to donkeys as a source of energy. By-products like brewers' spent grains are good sources of energy and proteins to donkeys.

NOTE: Silage is not suitable for feeding to donkeys because the moisture level is usually too high, with a low pH, and a low fibre and high protein level.

L O 3.3 – Train companion animals

Companion animals training refers to teaching animals specific responses to specific conditions or stimuli. Training may be for different purposes depending on species and breeds. The type of training an animal receives will vary depending on the training method used and the purpose for training the animal.

An animal trainer should consider **the natural behaviors** of the animal and aim **to modify behaviors** through a basic system of **reward and punishment**.

The behavioral approach (Principles)

During training, an animal trainer can **administer one of four potential consequences** for a given behavior: positive reinforcement, negative reinforcement, positive punishment, and negative punishment:

- **Positive reinforcement** occurs when an animal's behavior is followed by a stimulus that increases occurrences of the behavior in the future.
- **Negative reinforcement** occurs when a behavior is followed by the removal of an aversive stimulus and occurrences of the behavior increase in the future.
- **Positive punishment** occurs when a behavior is followed by the addition of an aversive stimulus and this decreases occurrences of the behavior in the future.
- **Negative punishment** occurs when a behavior is followed by the removal of a stimulus and occurrences of the behavior decrease in the future.

Behavior analysts emphasize the following consideration:

- use of positive reinforcement for increasing desirable behaviors and
- Use negative punishment for decreasing undesirable behaviors.

If punishment is going to be used to decrease an undesirable behavior, the animal must be able to receive positive reinforcement for an alternative behavior.

Establishing new behaviors

Reinforcement should be delivered on a predetermined schedule. A schedule of reinforcement specifies whether each response is reinforced or only some responses.

Schedules of reinforcement include variable ratio, fixed ratio, variable interval, and fixed interval:

- In a fixed ratio schedule, a specific number of responses occur before a reinforcer is delivered,
- In a variable ratio schedule, reinforcer delivery occurs after a set number of responses, but that number varies around an average number,
- In a fixed interval schedule, the first response that is emitted after a set time has elapsed (forgotten) is reinforced,
- In a variable interval schedule, the first response that is emitted after a set but variable amount of time has elapsed is reinforced.

While continuous reinforcement in a fixed ratio schedule may be necessary for the initial learning stages, a variable ratio schedule is the most effective at maintaining behavior over long periods of time.

There are various methods animal trainers can use to prompt an animal to respond to a stimulus in a specific way:

- **Shaping is a process** by which successive approximations are rewarded until the desirable response structure is attained.
- An animal trainer can use **conditioned reinforcers**, like clickers, to bridge the interval between response and positive reinforcement.
- **Discriminative stimuli** such as signals, targets, and cues can be used to prompt a response from an animal, and can be changed to other stimuli or faded in magnitude.

In order to delay satiation, **reinforcer size** should be **as small as possible** and still be effective for reinforcement.

Also, the **timing of the delivery** of a reinforcer is crucial; initially the interval between response and consequence must be minimal in order for the animal to associate the consequence with the response.

Training also may take into consideration the natural social tendencies of the animal species (or even breed), such as **predilections for attention span**, **food-motivation, dominance hierarchies, aggression, or bonding to individuals** (conspecifics as well as humans).

Consideration must also be given to practical aspects on the human side such as the ratio of the number of trainers to each animal. Sometimes training is accomplished with a single trainer working individually with a single animal.

- Content/Topic 1: Dogs training purposes

Dog training is defined as the purposeful changing of a dog's behavior, e.g.: raising a dog accommodated to his environment by modifying natural digging, barking and eliminating behaviors. The purpose of dog training may be **hunting, guarding or accompanying**.

Basic obedience training tasks for dogs include:

- Walking on a leash, attention, housebreaking, nonaggression, and socialization with humans or other pets, dog sports, service dogs, and other working dog tasks.
- Positive reinforcement for dogs can include primary reinforcers such as food, or social reinforcers such as vocal (good boy) or tactile (stroking) ones.

- Positive punishment, if used at all, can be physical, such as pulling on a leash or spanking, or may be vocal (bad dog).

Bridges to positive reinforcement include vocal cues, whistling, and dog whistles, as well as clickers used in clicker training, a method popularized by **Karen Pryor**. Negative reinforcement may also be used. Punishment is also a tool, including withholding of food or physical discipline.

A. **Training methods for dogs**

There are a variety of established methods of animals training, each with its adherents and critics.

Some of the better known dog training procedures includes:

- Koehler method,
- clicker training,
- dominance-based training, and
- Negative relationship-based training.

The common characteristics of successful methods are knowing the animal's **attributes and personality**, **accurate timing of reinforcement and/or punishment** and **consistent communication**.

A.1. Koehler method

The method is based in the philosophy that a dog acts on its right to choose its actions.

Koehler explained **that a dog's learned behavior is an act of choice based on its own learning experience:**

- When those choices are influenced by the expectation of reward, the behavior will most likely be repeated, and
- When those choices are influenced by the anticipation of punishment, they will most likely cease.

Once the dog has learned that its choices result in comfort or discomfort it can be taught to make the correct decisions.

The learning pattern used by the method: Action→ Memory→ Desire; the **dog acts**, **remembers the consequences**, and **forms the desire to repeat** or **avoid those consequences**.

A.2. Motivational training

Purely positive or motivational training employs the use of rewards to **reinforce good behavior, and ignores all bad behavior.**

It is based in Thorndike's Law of Effect, which says that "actions that **produce rewards** tend to **increase** in frequency and actions that **do not produce rewards** tends to **decrease** in frequency".

As a dog training strategy, purely positive training is feasible, but difficult, as it requires time and patience to control the rewards the dog receives for behavior.

Some activities such as jumping up or chasing squirrels are intrinsically rewarding, the activity is its own reward, and with some activities the environment may provide reinforcement such as when the response from dog next door encourages barking.

A.3. Clicker training

Clicker training is a nickname given to **a positive reinforcement training** system based on operant conditioning.

The system uses **conditioned reinforcers** which are able to be delivered more quickly and more precisely than **primary reinforcers** such as food.

The term 'clicker' comes from a small metal cricket adapted from a child's toy, however some trainers using the method use a whistle, a word, or even a light as the conditioned reinforcer.

The basis of effective clicker training is **precise timing to deliver the conditioned reinforcer** at the same moment as the desired behavior is offered.

The clicker is used as a **'bridge' between** the **markings of the behavior** and the **rewarding with a primary reinforcer** such as a treat or a toy. The behavior can be elicited (provoked) by 'luring' where a hand gesture or a treat is used to coax (persuade) the dog to sit, for example; or by 'shaping' where increasingly closer approximations to the desired behavior are reinforced; and by 'capturing' where the dog's spontaneous offering of the behavior is rewarded.

Once a behavior is learnt and is on cue (command), the clicker and the treats are faded out.

Some clicker trainers use mild corrections such as a "**non-reward marker**"; an **Uhuh or whoops** to let the dog know that the behavior is not correct, or corrections such as a "**Time out**" where attention is removed from the dog.

- Content/topic 2: Cats training purposes

Cat training is the process of modifying a domestic cat's behavior for:

- Entertainment,
- companionship purposes,

To reduce unwanted or problematic behaviors.

This is done to enhance interactions between humans and pet cats, and to allow them to coexist comfortably.

There are various methods for training cats which employ different balances between reward and punishment.

A. House training

A.1. Litter box training

Cats may be easily trained to use a kitty litter box or tray, as this is natural behavior. Many cats and kittens will instinctively use a litter box without needing to be taught, because of their instincts to eliminate in dirt or sand.

Therefore, with a new kitten, owners usually need:

- to simply show the kitten where the litter box is located
- how to get in and out
- to help a new cat adjust to a litter box, or
- To help an older cat that suddenly stops using the litter box.

A.2. Inappropriate elimination

When a cat stops using his litter box to urinate and defecate or be picky about their litter boxes, the solutions are:

- often to make a change to the litter box,
- cleaning the litter box more often,
- getting a bigger box,
- filling it with more litter,
- changing to an unscented litter and
- Changing the litter box's location.

If the cat has begun using one specific spot in the house to defecate, behavior modification can also include making it inconvenient for the cat to use that area by:

- using an enzymatic cleaner that clears away all scent of cat feces,
- blocking access to the room or area,
- spraying the area with a cat repellent (nauseating), and
- Placing the cat's food in the area (as cats do not like to defecate where they eat).

A.3. Toilet training

Cats may also be trained to use a human toilet.

The benefits of this method are:

- the cat owners can eliminate the task of maintaining a clean litter box on a regular basis and
- Avoid the disagreeable smell that results when a litter box is not cleaned often enough.

Disadvantages of this method are:

- The cat restricts the owner from monitoring changes in the cat's urine and feces (which are often related to the health of the pet).
- Toilet training can cause various stresses to the cat, because using the toilet goes against a cat's natural instinct to dig and cover its own feces, and because the toilet seat can be physically difficult for cats to straddle (especially those who are old or ill).

Note: The scent from urine and feces provide important signs that the cat owns a territory, and if flushed away (removed), there is a greater chance that the cat will urinate or defecate in unwanted areas of the house.

B. Training methods for cats

B.1. Positive reinforcement

Cats are known for their independence and self-interest. They will **resist training by punishment**, reacting with **fear and stress rather than obedience**.

Therefore most trainers encourage cat owners to use positive reinforcement training only, **rewarding** the cat **for desired or good behavior**, and **offering her alternative options** or distractions (instead of punishment) for undesired behavior.

Note: Training a cat involves motivation, cooperation, time, and patience from the human.

B.2. Clicker training

Clicker training was developed by **Keller Breland**, **Marian Breland Bailey**, and **Bob Bailey**. The technique was initially used in the training of marine mammals, and later spread into the world of pet training (mainly dogs and cats, but it has been used with other animals as well).

Clicker training uses a sound to signal to the animal that it has performed the correct, or desired, behavior. Trainers can utilize any item that makes a sound (e.g. a whistle, a beep, or a pen that clicks).

Many people use a training tool called a clicker, a little plastic box with a metal tab that, when pressed quickly, makes the click sound.

When clicker training a cat, the **trainer clicks at the exact moment that the cat does the desired behavior** and **rewards with a treat immediately after the click**. The cat will begin to associate the sound with the treat, and understand that the sound means it has done the right thing.

B.3. Problem behaviors

A veterinarian can rule out possible medical causes for behavioral issues in cats. If medical causes are ruled out, cat behaviorists can help address problematic behaviors by **retraining the cat and humans** so that the cat's needs are met.

Scratching

Many cats scratch furniture like chairs and couches (even when scratching posts are provided for them in the home) because a cat's instinct is to scratch various objects, like trees, as a marker for other cats to see and smell.

Trainers suggest to:

- guiding cats toward designated scratching objects that they will enjoy,
- changing the style or location of scratching posts around the house,
- making scratching the furniture inconvenient,

Use positive reinforcement training, often accompanied by a clicker, to engage the cat in using the scratching post.

Spraying urine

Urine spraying is a problem usually found with intact male cats, but can also occur with females and neutered cats.

Solutions for this issue include:

- keeping the litter box extremely clean,
- removing causes of stress from the cat's environment,
- providing separate food and litter boxes in a multiple cat household, and
- Preventing outdoor cats from accessing the yard and area around the house.

In cases where spraying persists, owners are recommended to seek veterinary help as this could be due to anxiety or physical health issues.

Meowing

The cat meow for various reasons, and some are naturally more vocal than others. This becomes a problem behavior when there is excessive meowing (crying) or yowling, especially at night. Positive reinforcement training, sometimes accompanied by a clicker, is commonly used in this case. This involves **ignoring the cat when it is making noise**, and **rewarding with treats and affection when sit is being quiet**.

B.4. Tricks training

A cat may be trained to do tricks such as playing dead or ringing the doorbell. Because of the cat's flexibility and bone structure, they are able to twist and bend their bodies, and jump a fair distance from standing still. This talent can be turned into tricks involving **jumping through hoops and off scratching posts**. Cats are able to learn many types of commands, **such as to come when called, sit, roll over, shake a paw, and jump**.

C. What not to do.

C.1. Never punish the cat

You may be sorely tempted to yell at the cat if it is caught sitting next to a broken vase or clawing the furniture, but punishing the cat after the fact is ineffective. It won't connect the punishment with something it's already done and forgotten about. Instead, it'll think you're yelling at it for whatever it's doing at that very moment, which might be welcoming you home from work.

Yelling, hitting, and shaking will only make the cat fearful and confused and could lead to it avoiding you altogether.

C.2. Don't force the cat

Don't pick the cat up and take her to the scratching post or litter box to get it to use them. She won't understand what you're doing, and she'll probably be frightened.

C.3. Don't turn the cat into a beggar

Use treats only for training. If you give the cat a treat every time she paws you, it will quickly learn that pawing treat, and she'll never leave you alone.

- Content/Topic 3: Horses training purposes

Horse training refers to a variety of practices that teach horses to perform certain behaviors when asked to do so by humans. Horses are trained to be manageable by humans; **horses are trained for sports, traction** or **transport**.

The primary purpose of training horses is:

- to socialize them to be around humans,
- teach them to behave in a manner that makes them safe for humans to handle, and
- Adults to carry a rider under saddle or to be driven in order to pull a vehicle.

Unlike dogs, horses are **not motivated as strongly by positive reinforcement rewards** as they are motivated by other **operant conditioning methods** such as the release of pressure as a reward for the correct behavior, called negative reinforcement.

During training horses you should consider the following:

- Positive reinforcement techniques such as petting, kind words, rewarding of treats, and clicker training have some benefit,
- Punishment of horses is effective only to a very limited degree, usually a sharp command or brief physical punishment given within a few seconds of a disobedient act.
- Horses have a remarkably long memory, and once a task is learned, it will be retained for a very long time.

The range of training techniques and training goals is large, but basic animal training concepts apply to all forms of horse training.

The initial goal of most types of training is:

- to create a horse that is safe for humans to handle (under most circumstances) and
- be able to perform a useful task for the benefit of humans

A few specific **considerations and some basic knowledge of horse behavior** helps a horse trainer be effective no matter what school or discipline is chosen:

- Safety is paramount; Horses are much larger and stronger than humans, so must be taught behavior that will not injure people.
- The human has the responsibility to think about how to use the psychology of the horse to lead the animal into an understanding of the goals of the human trainer.
- Horses are social herd animals and, when properly handled, can learn to follow and respect a human leader.
- Horses, as prey animals, have an inborn fight or flight instinct that has to be adapted to human needs. Horses need to be taught to rely upon humans to determine when fear or flight is an appropriate response to new stimuli and not to react by instinct alone.

- Like most animals, a young horse will more easily adapt to human expectations than an older one, so human handling of the horse from a very early age is generally advised.

A. Training of foals and younger horses

Most young domesticated horses are handled at birth or within the first few days of life, though some are only handled for the first time when they are weaned from their mothers, or dams.

Advocates of handling foals from birth sometimes use the concept of imprinting to introduce a foal within its first few days and weeks of life to many of the activities they will see throughout their lives.

Within a few hours of birth, a foal being imprinted will have:

- a human touch it all over,
- pick up its feet, and
- Introduce it to human touch and voice.

The young horse needs to be calm for basic grooming, as well as veterinary care such as vaccination and de-worming.

A foal needs regular hoof care and can be taught to stand while having its feet picked up and trimmed by a farrier.

A.1. Basic skills

Ideally a young horse should learn all the basic skills it will need throughout its life, including:

- being caught from a field,
- loaded into a horse trailer, and
- Not to fear flapping or noisy objects.

It also can be exposed to the noise and commotion of ordinary human activity, including seeing motor vehicles, hearing radios, and so on.

A.2. Advanced skills

More advanced skills sometimes taught in the first year include:

- learning to accept blankets placed on it,
- to be trimmed with electric clippers, and
- To be given a bath with water from a hose.

The foal may learn basic voice commands for starting and stopping, and sometimes will learn to square its feet up for showing in in-hand or conformation classes. If these tasks are completed, the young horse will have no fear of things placed on its back, around its belly or in its mouth.

The argument for gentling and halter-breaking at weaning is that the young horse, in crisis from being separated from its dam, will more readily bond with a human at weaning than at a later point in its life. Sometimes the tasks of basic gentling are not completed within the first year but continue when the horse is a yearling.

Yearlings are larger and more unpredictable than weanlings, plus often are easily distracted, in part due to the first signs of sexual maturity. However, they also are still highly impressionable, and though very quick and agile, are not at their full adult strength.

Rarer, but not uncommon even in the modern world, is the practice of leaving young horses completely unhandled until they are old enough to be ridden, **usually between the age of two and four, and completing all ground training as well as training for riding at the same time**. However, waiting until a horse is full grown to begin training is often far riskier for humans and requires considerably more skill to avoid injury.

A.3. Ground training

Several ground training techniques are commonly introduced to a young horse sometime after it is a year old, but prior to being ridden.

Common ground training techniques include:

- **Liberty work**: (sometimes called free longeing, round pen work or roundpenning, but regardless of terminology): is the process of working a loose horse in a small area (usually a round pen 15–20 meters in diameter) with the handler holding only a long whip or a rope lariat, teaching the horse **to respond to the voice** and **body language** of the handler as he or she asks the horse to **move faster** or **slower**, **to change direction** and **to stop**.
- **Longeing** (pronounced "lungeing"): the training of a young horse to move in circles at the end of a long rope or line.
- **Desensitization** (sometimes called sacking out): the process of introducing a horse to flapping objects such as blankets, teaching the horse to allow itself to be touched by an object and not to fear things that people move about a horse.
- **Introduction to a saddle and bridle or harness**, without actually getting on the horse or hooking up (tying) a cart.
- **Ground driving** (also called long-lining) teaching a young horse to move forward with a person walking behind it, a precursor to both harness driving and having reins used by a mounted rider.

A horse is not ready to be ridden until it is accustomed to all the equipment that it needs to wear and is responsive to basic voice, and usually rein, commands to start, stop, turn and change gaits.

The age that horses are first ridden, or backed varies considerably by breed and discipline:

- Many Thoroughbred race horses have small, light riders on their backs as early as the fall of their yearling (1) year.
- Most stock horse breeds, such as the American Quarter horse, are ridden at the age of 2 years.
- Most horses used in harness have a cart first put behind them at age 3 years, and even some horses not ridden until age 3 years will be trained to pull a light cart at two, in order to learn better discipline and to help develop stronger muscles with less stress.

Horses that have never been taught to be ridden can learn at any age, though it may take somewhat longer to teach an older horse.

- Content/Topic 4: Donkey training purposes

Horses and donkeys are trained for **sports, traction** or **transport**.

A. Basic rules for the training of donkeys

In many places, where donkeys are used, it is noted that **children have most dealings with donkeys**. So it is important, that where donkeys are being trained, **children should participate in the training as well**. The children should know all that is necessary about donkeys.

The main instrument in **training donkeys is the human voice**. When working with donkeys, therefore, a human must **talk as much as possible**.

The earlier the process of training and familiarity starts, the easier for everyone. It can start the day a donkey is born, if the mother is sufficiently trusting. By the time the donkey is ready for full work 3 years later, no particular effort will be required.

The presence of any other well-trained donkey makes it much easier to train a new one. There is no doubt that donkeys learn as much from each other as they do from humans.

B. Training steps for the donkey

The steps for training donkeys are basically the same ones as for training oxen. The donkey differs, however, to some extent, in its reactions to humans and environment and therefore the training approach has to differ as well.

B.1. Handling and confidence

Movement towards an animal will frighten it, and in early training anything that **frightens the donkey must be avoided** and all movements must **be slow and careful**.

At first, the trainer tries:

- using some maize or other food to lure (attraction) the donkey if necessary
- To be allowed to stand next to the donkey and to touch it.

Using some favorite food, the donkey will initially allow the trainer to touch it and after a few days will actually enjoy being stroked and scratched.

After this, it is very easy to get the donkey **to allow itself to be touched all over**, and **to have a rope slipped around its neck.** All this should happen within a few days to a week, and it is time well worth spending.

B.2. Tying and leading a donkey

Put a thick rope or strap which does not cut into the skin around the donkey's neck, as practiced in handling. At first the donkey will resist being pulled by its rope.

Use of its name and calm voice will soon settle it, and in no time it will be walking obediently at the tug of the rope. That is the time to reward it using praising words like: Good! at the same time.

Once the donkey is being led, it must start becoming accustomed to other people. Additional people should be asked to stand still but talking, while the donkey is led up to them and is given time to sniff or try to taste their clothes. After such exercises, leading a donkey into crowds of people will be no problem.

B.3. Lifting feet and washing eyes

Lifting feet and washing eyes are important to maintain these parts of the donkey's body in good health and they have to be done to a donkey throughout its whole life.

The donkey may not allow the whole action to be performed right away, so training should proceed step by step, with each step rewarded when the donkey allows it.

Lifting feet:

- running hand down leg
- brief lifting foot from ground;
- lifting foot right up;
- keeping foot held right up and cleaning out sole of foot; and rasping foot;

Washing eyes:

- touching eye (which will close);
- forcing eye lids open;
- squirting water on eye (which will close);
- squirting water into eye while eye lid held open;

B.4. Crossing water

Donkeys have a natural fear of water because they cannot swim. The relative size of their head to their body does not allow this. However, it can be readily appreciated that a donkey which will not cross water is something of a liability in the rainy season.

The sooner a donkey learns to cross running water, both by bridge and by wading, i.e. walking through water, the better. A baby donkey is still small enough to be pushed if necessary; an older donkey is almost impossible to persuade.

So an effort must be made to find running water somewhere in the neighborhood when the donkey is still very small, and a day or two should be spent persuading it back and forth across the water, and rewarding it accordingly. If the water can be progressively wider and deeper, even better.

B.5. Running

Once the donkey is used to people, a rope and being led, it must be taught a steady, sustained speed at the command of a human. The trainer (running) and the donkey will have to find a comfortable speed which the donkey takes up immediately when the command is given.

Once the donkey is used to speeding up, maintaining a trot or a triple and slowing down again on command, longer and longer distances should be covered so as to build up stamina. For this exercise it is a good idea to accustom the donkey to run alongside a bicycle.

B.6. Carrying

Once the donkey is about six months old, it can start its training for lifetime work by handling very light loads.

A fair rule is **1 kg for every month** of its first just put a sack over its back. The donkey will jump around at first and, if loose, will gallop away trying to shake the load off. As usual, the use of its name, calm words and reward will do the trick, and quite soon the donkey will make no fuss at all.

After that, two sacks tied together can be used, and then a brick put in each. The donkey will quickly allow the brick to be lifted in and out while the sacks are on its back.

A.7. Pulling implements

Once the donkey is 4 years old and ready to pull loads, it has to get used to the harness and pulling work. The method of introducing the use of different implements and the commands are the same as the ones-for oxen.

L O 3.4 – Manage companion animals' reproduction

- Content/Topic 1: Marking techniques

A. Electronic identification: Microship

Companion animal microchips are as small as a grain of rice to be injected under the skin of the animal. Microchips are suitable for any and all companion animals**.**

When scanning dogs and cats, begin in the neck area where the microchip is most likely to be located, but be sure to scan slowly and patiently. Scan repeatedly and over the entire body to ensure whether or not a microchip can be localized.

B. Tattoos

A tattoo is a mark created by puncturing an animal's skin and inserting a pigment (usually ink). This provokes an immune response, following which the pigment is left trapped within fibroblasts in the skin's upper dermis layer.

A tattoo is probably the oldest method of permanently identifying companion animals. It provides a permanent and effective way of individually marking an animal and hence is still widely used in dog population management programs.

However, as tattoos are not easily visible without close examination, they should be used in combination with another method such as ear notching, or collars to allow visible recognition from a distance if catching is required.

C. Ear tips and notchers

Ear tipping or ear notching is the removal of part of the distal pinna of one of an animal's ears, to provide visible identification.

C.1. Ear tipping

Ear tipping (ear clipping) is most commonly used to identify feral cats that have been neutered as part of a population management program. The procedure is carried out while the cat is under anaesthesia for the neutering operation.

C.2. Ear notching

This is similar to ear tipping but a small notch is removed from the side of the ear, rather than the tip, ear notching of cats is not recommended as the mark may not be recognized by all organizations and may be mistaken for natural injury, e.g. from fighting.

Ear notching is, however, commonly used to identify dogs that have been neutered and vaccinated in a population management program, often in addition to a tattoo. This identification method can be very useful in studying stray dog populations, if coupled with tattoos, as it provides an identifying mark visible at a distance.

D. A collar and tag

This is the most common identification method for owned dogs and cats. In many countries it is a legal requirement that companion animals wear collars displaying key information when in public.

The owner's name and contact details, or those of a pet registry, and sometimes medical information, are inscribed either on a tag attached to the collar, or on the collar itself. Owners must ensure the information displayed by collars is accurate and up-to-date.

E. Cage cards

Each cat should have a cage card with all the information necessary to care for the cat and facilitate placement in a quality home. Include the cat's name, approximate age, sex and sterilization status, breed, origin (surrender or stray), health information, and adoption fee. If available, add notes about the cat's personality.

Note: An individual record should be prepared for each animal. Records should include a description of the animal, the date obtained, the source, the length of time held, and any treatment provided together with its final disposition. Individual animals should be identified in a consistent and recordable manner (e.g., tags, cage cards, microchips, tattoos).

Equine species may be marked using microship, tattoos and ear tags.

- Content/ Topic 2: Selection of parents

Selection will be based different breeds and mixes of breeds.

A. Selection of dogs

Finding out which dogs have the qualities one is looking for. Information is the key: Learn about various breeds, visit with animals at the shelter, and speak with an adoption counselor for guidance.

Dogs fall into one of two categories: purebreds or mixed breeds. Most animal shelters have plenty of both. The only significant difference between the two is that purebreds, because their parents and other ancestors are all members of the same breed, are similar to a specific "breed standard." This means that **if you adopt a purebred puppy**, you have a good chance of knowing about **how big he'll get and what general physical and behavioral characteristics he'll have**.

Of course, the size, appearance, and temperament of most mixed breed dogs can be predicted as well. After all, mixed breeds are simply combinations of different breeds. So, if the ancestors are known; a particular mixed-breed puppy or can identify what type of dog it is (e.g., terrier mix).

Mixed breeds offer several advantages over purebreds. **When a mixed breed is adopted**, there is benefit from the **combined traits of two or more breeds**. A dog who's likely to be free of genetic defects common to certain purebred dogs is obtained. Mixed breeds, in fact, are often considered the more natural dog.

B. Selection of cats

The greatest advantage of buying a pedigree kitten or cat is that you know fairly well what you're getting, although breed temperament is far less predictable than in pedigree dogs. Their appearance and personality is likely to fit the profile of that particular breed.

For example, a pure-bred Siamese is more likely to be vocal, mischievous and demanding of the attention. More specifically, buying a pedigree is likely to give an indication of what size the kitten will grow to, how long the coat will be and any breed-specific health problems likely to occur.

C. Selection of Horses and donkeys

Horses and donkeys the most common method is to request model sire and dam lists from people, select suitable parents, and send the required fee and information to the model owner(s). The use pedigrees of real horses (donkeys).

When you find a horse (donkey) you like, make sure it is suitable to be your model's parent and was available in the year your model was "born". Don’t ask the owner of the real horse (donkey) for permission. He or she will probably not understand what you are asking permission for.

There are several factors that should be taken into account when selecting suitable parents.

Most importantly, the parents must be the same breed as the model (needed) horse (donkey) to be a purebred. Carrying out research on the breed the horse or donkey will be. Find out what colors they come in and if there are special types within the breed. Arabians horses, for example, come in many strains (Egyptian, Polish, Crabbet).

- Content/ Topic 3: Rearing parents

Rearing parents of companion animals must take into account all requirement in order to assure the welfare of animals:

- adequate shelter in appropriate area,
- enough and balanced diets,
- watering,
- hygiene and sanitation,
- record keeping,
- respect of prophylactic plan and
- Early treatment of diseases.

- Content/Topic 4: Conduct companion animals' reproduction

  - ✓ **Reproduction in dogs**

Puberty or sexual maturity in the female dog usually occurs **around six months of age**. The smaller breeds tend to go into oestrus or "heat" earlier and some females can have their first "heat" cycle as early as four months of age.

On the other hand, the large and giant breeds can be up to two years old before they come into heat for the first time. A male dog is **mature for mating possibly from 4 months** onwards but generally it is considered at about 6 months.

A.1. Tests to determine when to mate the dog

There are two simple tests that veterinarian can perform.

Vaginal smear test.

A simple microscopic examination of vaginal cells will detect changes in cell appearance and numbers. This has been used for many years and is reasonably reliable. It is non-invasive and does not cause discomfort for the female.

Serum progesterone test.

This measures the progesterone level in the blood. This test is very sensitive and has become popular due to its accuracy. Some pets will require several tests to predict ovulation.

The serum progesterone test gives a very good indication of when mating is most likely to be successful and is useful for females that have a history of unsuccessful mating or for breeding dogs that have to travel considerable distance to the male dog.

On average this occurs **about twice a year or every six months**, although it varies from dog to dog. When cycling first begins, there may be a great deal of variability in the time between cycles. Some females take eighteen months to two years to develop a regular cycle.

There is no evidence that irregular heat cycles predispose the dog to false pregnancies or pyometra (uterine infection). Small breeds tend to cycle more regularly than the larger breeds. **Three and occasionally four heat cycles per year** can be normal in some females.

Very large breeds may only have a "heat" cycle once every 12-18 months.

Heat (estrus) cycles vary, but average **2 to 3 weeks** for most dogs. "Heat" should be considered to begin with the first signs:

- Vulvar discharge.
- When the female begins licking or paying attention to her vulva.
- The vulva will begin to appear swollen.
- It ends when all discharge ceases and the vulva has returned to its normal size.
- The most notable sign is vaginal bleeding.

From the beginning of the heat period it will be attractive to male dogs, but will usually not be receptive, or allow mating, **until about 7-10 days later of heat**. The discharge will usually become less bloodstained at this time.

Some females experience heavy vaginal bleeding during oestrus. One may also find that it is passing small quantities of urine more frequently. The urine contains both **pheromones and hormones which signal** any interested males that it will be receptive soon.

A.2. Successful mating

Surprisingly, male dogs appear to be more stress sensitive than females during mating. **Successful mating are more common when the male dog is in its own environment**. For this reason females are usually taken to the male dog's home for breeding.

For most females, the best time for breeding is between the 10th and 14th day of oestrus.

However, some females **ovulate as early as the 3rd or 4th day or as late as the 18th day**. Blood tests will assist in determining the best period for the dog. It is normal to arrange for **two mating** for the dog, often 24 or 48 hours apart.

The genital anatomy of the male and female is such that during coitus **part of the dog's penis (the bulbis glandis) enlarges** and is held firmly by the contracted muscles of the vagina, thus **preventing the penis from being withdrawn**. This is the "tie" that is considered a desirable feature of a successful mating. It is important to note that pregnancy can occur without a "tie". Once "tied" the male dog will often step over the female or be turned by handlers into a position so that the animals are back to back.

A.3. Gestation

Gestation in a dog is 63 days in length, if measured from the day of ovulation. Since it is difficult to determine the exact date of ovulation, errors are often made in calculating gestation period. Canine sperm can live for 10 to 11 days in the uterine tubes (fallopian tubes) so if a female is bred 10 days before the oocytes (eggs) can be fertilized, it will appear to have a gestation length of 70 days. If it is bred on the day the oocytes can be fertilized, the gestation length will appear to be 60 days long.

A.4. Litter size

An average litter consists of **about 5 to 6 puppies**, though this number may vary widely based on the breed of dog. Size of the breed is correlated with litter size.

Miniature and small breeds average 3 to 4 puppies in each litter, with a maximum litter size of about 5-8. Large and giant breeds average 7 puppies per litter but can have a maximum litter size of about 15 puppies.

- ✓ **Reproduction in cats**

Females generally reach puberty between 3 and 9 months, though sexual maturity may occur later in feral (wild) animals. Female cats are polyestrous, which means that they go into estrus (heat) many times in the course of a year.

Under natural conditions, most queens cycle between January and March, and again from May to June in the northern hemisphere. However, much individual variation exists. Reproductive cycles are affected by length of daylight. Indoor animals exposed to artificial lighting may come into estrus throughout the year if they are not breed.

B.1. Puberty

Males become sexually **mature between 7 and 12 months**. Feral (wild) males may not fully mature until they **are 15 to 18 months old**. Intact males go through a period of springtime sexual excitement, or "rut," that diminishes to a lower level of sexual activity during the fall. During the "rut" period, males spray urine by backing into vertical objects, treading with their hind legs, and twitching the tips of their tails. Outdoor males engage in many more fights during the rut than they typically do at other times of year.

B.2. Signs of estrus

When females are in estrus (heat), they become:

- exceptionally affectionate and
- rub themselves more than usual against people and objects;
- A gradual build-up of estrogen in the bloodstream.

As estrus progresses, the queen will push herself along the floor with her head to one side, roll and rub herself on the floor, deflect her tail to one side and assume a posture of lordosis (a mating posture in which the head and rump are raised and the back is arched downward).

B.3. Mating behavior

Premature attempts to mate on behalf of the male will result in an intensely aggressive response from the female. When both parties are ready, the male grasps the female by the skin over the nape of the neck.

At the moment of ejaculation, the female emits a loud piercing cry, hisses, and aggressively swats at the male. It is presumed that the female's aggression is a response to the pain of withdrawal, since males have a barbed penis. It is also thought that the barbs on the penis help to induce ovulation, the biological climax of the mating sequence.

After mating, the queen rolls on the ground in apparent ecstasy while the male retires to a discrete distance to lick himself clean. The mating process is often repeated many times and females may mate with more than one male over the course of a single heat. As the female comes out of heat, the males depart. Male cats do not normally participate in parental care of their young.

B.4. Pregnancy and gestation in cats

Gestation is the period from conception to birth. From the first day of a successful mating, it **averages 65 days**. Kittens born from day 63 to day 69 fall within the normal range.

Siamese cats may carry their kittens 71 days. However, if the kittens are born before day 60, they usually will be too immature to survive.

The uterus of a cat has two horns that are connected to the central uterine cavity. The cervix is the outlet to the vaginal birth canal. Developing kittens, encircled by their placentas, lie within the uterine horns.

Determining pregnancy

During the first few weeks of gestation, few signs are detectable except for a slight gain in weight. **Abdominal ultrasound** done by an experienced evaluator may detect pregnancy as early as day 15. Fetal heartbeats, detectable at day 20, provide absolute indications of life.

The cat's uterus is Y-shaped with a horn on each side. The kittens grow and develop in the uterine horns. Twenty days after conception, the growing embryos can be felt by abdominal palpation as evenly spaced swellings about the size of unshelled peanuts.

Palpating the queen's abdomen requires experience and gentleness, and should only be done by a veterinarian or an experienced breeder. There are also other structures in the abdomen that may feel lumpy. Excessive palpation can damage the fetal-placental units and cause a miscarriage.

Cats occasionally suffer from morning sickness. This usually happens during the third to fourth week of pregnancy and is due to hormonal changes and the stretching and distention of the uterus. One may notice that the queen appears apathetic. It may be off her food and vomit from time to time. Morning sickness lasts only a few days. Unless the owner is particularly attentive, he may not even notice it.

By 35 days, the nipples become pink and obvious, and the size of belly is increasing. The fetuses are floating in capsules of fluid and can no longer be detected by palpation. As the time of birth approaches, the breasts enlarge and a milky fluid may be expressed from the nipples. However, many queens have breast enlargement after a normal heat, so this alone should not lead to a pregnancy diagnosis.

By day 49, the kittens are sausage-shaped and their heads are large enough to be felt as separate structures. Late signs of pregnancy are an obvious pear-shaped abdomen and fetal movements, easily detectable during the last two weeks. One week before the expected kittening date, make an appointment to have the queen checked again.

B.5. Litter size

Feline litter sizes can be influenced by multiple factors including the **type of cat**, the **age of the mother**, the **health of the mother** and the **genetic history** of both the mother and father.

The average litter size is **3 to 5 kittens**, but a young mother, or a first time mother can expect to have around 2 to 3 kittens. At 3 to 4 years old a cat will be more likely to have around 4 to 5 kittens per litter, although this also depends on how often it is bred. Cats which are bred less regularly tend to have smaller litters as the womb becomes a less hospitable place. Cats can have up to 3 litters per year.

- ✓ **Reproduction in horses**

The male parent of a horse, a stallion, is commonly known as the sire and the female parent, the mare, is called the dam. Both are genetically important, as each parent provides half of the genetic makeup of the ensuing offspring, called a foal.

C.1. Estrous cycle

The estrous cycle (also spelled oestrous) generally occurs during the spring and summer months, although some mares may be sexually receptive into the late fall, and is controlled by the, the cycle first triggered when the days begin to lengthen. The estrous cycle lasts about 19–22 days, with the average being 21 days. As the days shorten, the mare returns to a period when it is not sexually receptive, known as anestrus.

This cycle contains 2 phases:

- **Estrus or follicular phase:** 5–7 days in length, when the mare is sexually receptive to a stallion. Estrogen is secreted by the follicle. Ovulation occurs in the final 24–48 hours of estrus.
- **Diestrus or luteal phase:** 14–15 days in length, the mare is not sexually receptive to the stallion. The corpus luteum secretes progesterone.

C.2. Gestation and pregnancy

Once fertilized, the oocyte (egg) remains in the oviduct for approximately 5.5 more days, and then descends into the uterus. The initial single cell combination is already dividing and by the time of entry into the uterus, the egg might have already reached the blastocyst stage.

The gestation period lasts for about eleven months, or about 340 days (normal average range 320–370 days). During the early days of pregnancy, the conception is mobile, moving about in the uterus until about day 16 when "fixation" occurs. Shortly after fixation, the embryo proper (so called up to about 35 days) will become visible on trans-rectal ultrasound (about day 21) and a heartbeat should be visible by about day 23.

After the formation of the endometrial cups and early placentation is initiated (35–40 days of gestation) the terminology changes, and the embryo is referred to as a fetus.

True implantation - invasion into the endometrium of any sort - does not occur until about day 35 of pregnancy with the formation of the endometrial cups, and true placentation (formation of the placenta) is not initiated until about day 40-45 and not completed until about 140 days of pregnancy.

The fetus sex can be determined by day 70 of the gestation using ultrasound. Halfway through gestation the fetus is the size of between a rabbit and a beagle. The most dramatic fetal development occurs in the last 3 months of pregnancy when 60% of fetal growth occurs.

Care of the pregnant mare

Mares can be used for riding or driving during most of their pregnancy. Exercise in excessively high temperatures has been suggested as being detrimental to pregnancy maintenance during the embryonic period; however ambient temperatures encountered during the research were in the region of 100 degrees F and the same results may not be encountered in regions with lower ambient temperatures.

During the first several months of pregnancy, the nutritional requirements do not increase significantly since the rate of growth of the fetus is very slow. However, during this time, the mare may be provided supplemental vitamins and minerals, particularly if forage quality is questionable. During the last 3–4 months of gestation, rapid growth of the fetus increases the mare's nutritional requirements.

Energy requirements during these last few months, and during the first few months of lactation are similar to those of a horse in full training. Trace minerals such as copper are extremely important, particularly during the tenth month of pregnancy, for proper skeletal formation. Many feeds designed for pregnant and lactating mares provide the careful balance required of increased protein, increased calories through extra fat as well as vitamins and minerals. Overfeeding the pregnant mare, particularly during early gestation, should be avoided, as excess weight may contribute to difficulties foaling or fetal/foal related problems.

C.3. Foaling

Mares due to foal are usually separated from other horses, separation allows the mare to be monitored more closely by humans for any problems that may occur while giving birth. Originally, this was due in part to a need for protection from the harsh winter climate present when mares foal early in the year, but even in moderate climates, foaling stalls are still common because they allow closer monitoring of mares.

In the milder climates seen in much of the southern hemisphere, most mares foal outside, often in a paddock built specifically for foaling, especially on the larger stud farms.

Most mares foal at night or early in the morning, and prefer to give birth alone when possible. Labor is rapid, often no more than 30 minutes, and from the time the feet of the foal appear to full delivery is often only about 15 to 20 minutes.

Once the foal is born, the mare will lick the newborn foal to clean it and help blood circulation. In a very short time, the foal will attempt to stand and get milk from its mother. A foal should stand and nurse within the first hour of life. Some mares are aggressive when protecting their foals, and may attack other horses or unfamiliar humans that come near their newborns.

What a horse keeper could do after birth of a foal:

- a foal's navel is dipped in antiseptic to prevent infection,
- the newborn is monitored to ensure that it stands and nurses without difficulty,
- to be sure that it passes the placenta in a timely fashion, and that it is complete with no fragments remaining in the uterus, where retained fetal membranes could cause a serious inflammatory condition (endometritis) or infection,
- While most horse births happen without complications, many owners have first aid supplies prepared and a veterinarian on call in case of a birthing emergency.

C.2. Foal care

Foals develop rapidly, and within a few hours a wild foal can travel with the herd. In domestic breeding, the foal and dam are usually separated from the herd for a while, but within a few weeks are typically pastured with the other horses. A foal will begin to eat hay, grass and grain alongside the mare at about 4 weeks old; by 10–12 weeks the foal requires more nutrition than the mare's milk can supply. Foals are typically weaned at 4–8 months of age, although in the wild a foal may nurse for a year.

- ✓ **Reproduction in donkey**

D.1. Estrus cycle

The estrus cycle length in donkeys is 21-28 days, with the jennet sexually receptive for 5-10 days of this period. The cervical appearance changes with the stage of the estrus cycle, relaxing during estrus, which is accompanied with an increase in vaginal mucous secretions. Jennets may cycle throughout the winter.

D.2. Reproductive behavior

A jennet often shows the first heat at 8-12 months of age. Female receptivity is evidenced by the jennet backing up to the jack and making jawing motions with the mouth. Jennets in estrus will kick a jack in the chest (and face if the jack is not careful) for several minutes when receptive.

This behavior is required for the jack to achieve full erection. Receptive jennets also squat, wink the vulva, and urinate in the presence of the jack. A receptive jennet may also raise her tail when approached by a jack. Jennets mount each other on occasion, with the estrus jennet on the bottom.

Some jennets do not show receptivity when there is no jack present, when nursing a foal, or when another female interferes with the advances of the jack.

A jack pursues a jennet in estrus, sometimes very aggressively, and especially when first introduced. He may bite the neck, back, and hind legs and even draw blood. As a consequence, some jacks have to wear a breeding muzzle to avoid injury to the jennet. Jacks usually calm down after a short time (15-30 minutes) and then the muzzle may be removed. It is easy to teach most jacks to mount without biting the jennet by using a chain lead shank over the nose.

Normally, jacks mount jennets a few times before fully erect, and some jacks are slow to achieve erection (10-15 minutes).The jack responds to a jennet's jawing behavior with vocalization. Some jacks are timid and will not breed when new people are present. It is common for multiple mounts to be required along with some periods of inactivity at a short distance from the jennet before the jack achieves a full erection and completes the breeding.

D.3. Field breeding

Jack owners most commonly use field breeding by turning one jack out with as many as10 jennets. The jack selects the most receptive jennet to breed by checking the herd's manure for pheromones that may be involved in estrus detection. Receptive jennets may also approach a breeding pair to attract the jack.

D.4. Artificial insemination

Artificial insemination (AI) is possible on the farm or with transported fresh, cooled semen.

Jacks are easy to train for collection although this technique is not currently used on a widespread basis.

Donkey semen is very concentrated and in general has good fertility. It can be handled similar to that of the stallion, and skim milk extenders seem to be useful to keep sperm alive during transport in artificial insemination programs.

Jennies have a 12-month gestation period, longer than the 11-month gestation period of the horse mare. The gestation can range from 11 to 14 months. They also have a conception rate that is lower than the approximately 60–65% rate for mares. Twins are rare, but occur more frequently among donkeys than horses. They have a seasonal estrus (heat) cycle, which, in the Northern hemisphere, begins in March and occurs every 21 to 28 days.

Female donkeys have a 21-28 day estrus cycle with obvious behavioral signs of receptivity when a jack is present. Lactation may stop a donkey from cycling while other females (related or not) may interfere with displays of sexual receptivity and breeding.

- Content/Topic 4: Reproduction control

Frequently, owners of companion animals may need reproduction control for keeping these animals in service, reduce bad behavior and regulation of birth.

A. Reproduction control in dogs and cats

There are two methods to prevent estrus or heating a female dog:

A.1. Surgery

Ovario-hysterectomy or spaying involves the surgical removal of the entire female reproductive tract, including the uterus and both ovaries. It is a permanent and irreversible procedure. Although this is a major abdominal surgery involving general anesthesia, there is little risk associated with the procedure when it is performed by a veterinarian.

Tubal ligation is a surgical procedure that involves tying the fallopian tubes of the female without removing the ovaries and the uterus. The tubes may be clamped, stitched or cauterized. The procedure is minor and the recovery is less than 24 hours. The dog will still have heat cycles, but she cannot get pregnant.

A.2. Medical management using hormonal drugs

A.2.1. Dog birth control pill

The dog birth control pill is an alternative to spaying, and is effective if the pills are administrated and taken properly. The pill contains megestrol acetate and is administrated at the beginning of the heat cycle of the female dog. The pill should delay the cycle.

Birth control in females is accomplished by preventing estrous cycles or interrupting pregnancy establishment. Estrous cycles can be prevented in bitches or queens by appropriate administration of commercially available veterinary progestin or testosterone compounds.

A.2.2. Progestin

Progestin compounds work to prevent estrous cycles by keeping the female in a "pregnant-like" condition. Unfortunately, the **administration of progesterone to an intact** (unspayed) bitch or queen can **cause uterine wall disease, leading to the later development of a severe and potentially life-threatening uterine infection called "pyometra" or infertility**.

Progesterone medications can also cause or contribute to the development of **serious diseases (diabetes, growth hormone disorders) and anatomic problems (mammary masses, gallbladder disorders).** Therefore, we do not recommend the use of progestogens to prevent estrous cycles.

A.2.3. Testosterone compounds

Testosterone-like compounds prevent estrous cycles in bitches by keeping the female in an anestrus-like (no ovarian activity) condition.

Behavioral side effects (aggression), **tearing of the eyes, malodorous skin, liver problems, and sub-fertility during subsequent estrous cycles** are common **consequences of the use of testosterone compounds**. Clearly, these are not ideal compounds for use in valuable breeding animals.

A.2.4. Estrogen

Methods for preventing pregnancy by interfering with egg travel in the fallopian tubes or embryo implantation in the uterus **with estrogen compounds** are not recommended because of their potential for **causing life- threatening bone marrow suppression** (the bone marrow is the sole source of red and white blood cells and cells that help clotting, called platelets).

Estrogens may **also promote later development of pyometra, clearly undesirable in an animal intended for breeding**.

Application of newer human birth control agents, such as carbergoline and mifepristone, in pets is limited by availability in the United States, but these agents have the best promise for providing effective birth control with minimal side effects.

A.3. The best method for preventing pregnancy of the bitch or queen

The best current nonpermanent method for preventing pregnancy in the bitch or queen is simply to prevent breeding (copulation) by confining the individual indoors, away from intact (un-neutered) males.

Bitches should be let into an enclosed yard only with direct supervision or on leash for the entire time when copulation could occur. This could be as long as 3 weeks.

Queens must be kept isolated from toms during their entire period of receptivity, as they ovulate after copulation.

B. Reproduction control in horses and donkeys

The control of reproduction can be done by using surgical methods or appropriate products.

B.1. Surgical methods

B.1.1. Spaying

Spaying a mare (ovariectomy) means removing its ovaries so it no longer comes into heat and has a mellower attitude, like a gelding. An ovariectomy can be done standing (under sedation and local anesthesia) through a flank approach or a vaginal approach.

Some veterinarians are now tying off the blood supply to the ovary (controlled ovarian infarction) rather than severing its attachments, which is less risky. This has also proven to be more comfortable for the mare. It was found that ovaries degenerated and became non-functional after the blood supply was tied off. There was no evidence of infection, pain, revascularization (re-establishment of blood supply), or adhesions following the procedure, and the mares' hormone levels no longer fluctuated.

This method is easier, and it causes less complications or discomfort. It eliminates the need to remove ovaries, and thus eliminates the risk of bleeding. Surgical time is shorter, incision size is smaller, and mares recover quickly and can return to work sooner. Unless someone finds a way to go in there and inject the pedicle with something to make it degenerate, this is probably the best way to spay mares.

B.1.2. Castration (gelding)

Removal of testicles rids the horses of unwanted stallion (like behavior including **screening at and fighting with other horses, attempting to mount other horses, erection, masturbation and potentially aggressive behavior toward humans**. However, when castration is performed at a late stage and /or after the horse has been used to breed mares, it is not always successful in abolishing leaned stallion) like behavior.

Even though the horse will not be able to reproduce, the behavior of mounting mares in the pasture in attempt to breed and aggressive behavior with other horses might not cease. Horses can be castrated at any age but castration of horses at a young age, less than one year old is ideal. At that age horses have smaller testicles that are easier to remove and have less of a chance of severe bleeding post-operatively.

For donkeys castration is more risky with donkeys than with horses. Donkeys are known as real bleeders due to the major vasculation of their testicles, which is to a greater degree even than in with stallions. With donkey castration the veterinarian must take special care that the main artery not be cut. Castrated donkeys often experience major swelling around the area of operation and lasts usually two weeks, but frequently lasts longer. Male donkeys are usually very traumatized by this operation and a significant portion of them die from it.

B.2. Use of products

Porcine Zonae Pellucidae

Hand injection of two priming dose 65-100 µg PZP three weeks interval, this is a vaccine injected in IM; it stimulates immune system to produce antibodies against the vaccine. These antibodies attach to the **sperm zone receptors** on the Zonae Pellucidae of its **own eggs** and distort their shape thereby **blocking fertilization**. The action is extended to one year.

Progestins

The use of Norethindrone 2g/animal/year. Progestin compounds work to prevent estrous cycles by keeping the female in a "pregnant-like" condition

GnRH

Administration of 2mg of GnRH blocks ovulation for 4 months. (The GnRH bloks the release of gonadotropin-releasing hormone from the hypothalamus thereby preventing pituitary secretion of follicle stimulating hormone (FSH) and luteinizing hormone(LH) and their subsequent tropic action on ovary or tests).

Testosterone

Repeated intramuscular injections of testosterone cypionate and testosterone proprionate with quinestrol at dose of 1.7g/100kg monthly in 6months results in oligospermia and a significant reduction in sperm motility.

L O 4.1 – Identify specific diseases of companion animals

- Topic 1: specific diseases for dogs and cats

Table 5: Specific diseases for dogs and cats

Disease	Etiology	Clinical signs
Rabies	Rhabdoviridae (Rabies Virus: RB)	Sudden anorexia, sign of nervousness, irritability, hyperexcitability, Ataxia, altered phonation and behavior change, uncharacteristic aggressiveness, anxiety, paralysis of throat and muscle masseters, salivation and inability to swallow, dropping of lower jaw.
Canine distemper	Paramixovirus	Pyrexia, occulo-nasal discharges, coughing, vomiting and diarrhea, hyperkeratosis of the nose and footpad (hard pad).
Diabetes mellitus	Pancreas doesn't produce enough insulin.	The pet passes large amounts of urine and to drink lots of water, the brain becomes sugar deprived and the animal is constantly hungry, yet they may lose weight due to improper use of nutrients from the diet. Untreated diabetic pets are more likely to develop infections and commonly get bladder, kidney, or skin infections. Diabetic dogs, and rarely cats, can develop cataracts in the eyes. Cataracts are caused by the accumulation of water in the lens and can lead to blindness. Fat accumulates in the liver of animals with diabetes. Less common signs of diabetes are weakness or abnormal gait due to nerve or muscle dysfunction. There are two major forms of diabetes in the dog and cat: 1) uncomplicated diabetes and 2) Diabetes with ketoacidosis. Pets with uncomplicated

		diabetes may have the signs just described but are not extremely ill. Diabetic pets with ketoacidosis are very ill and may be vomiting and depressed.
Gout	Nutrition or imbalance in the animal body to assimilate calcium properly and to convert uric acid into allantoin (accumulation of excessive uric acid levels and abnormal calcium deposits usually in the paws and toes, elbows, neck and tongue).	Lumps and bleeding in the paw or toes Chalky white substance oozing out of lesions. Bloody urine, frequent urinating in small amounts, gritty urine, lumps on the neck, lethargy, behavioral changes, mood change.
Otitis	Parasites (otodectes, psoloptes, sarcoptes, demodex), foreign body, hypersensiyivity, microorgansms (yeasts and bacteria).	Erythema,edema,crusts,ulcers,lichnification,hyperpigmentation,exudates, Head shaking, rubbing or scratching of affected ear, rotation of the head toward the affected ear.
Eczema	contact with, ingestion of or inhalation of chemical, plant, dust or other substances; mechanical irritants, inclement weather conditions (extreme heat, cold, dryness or humidity); parasite or insect bites; poor nutrition; and viral, bacterial, fungal or yeast-based infections, among other things. fleas, lice, mites or other external	skin allergies, medically referred to as atopy or atopic dermatitis, can also lead to the classic skin lesions Many times, the superficial sores associated with eczema are caused by self-trauma (licking, biting, chewing, scratching, rubbing), such as in response to fleas, lice, mites or other external parasites.

	parasites. So-called of eczema. highly itchy (pruritic) reaction to environmental stimuli that normally do not cause that reaction in other dogs.	
Mange	*Sarcoptes scabei (dogs); Notoedress cati (cats); Otodectes cynotis (both cats and dogs); Demodex canis (dogs); Demodex cati (cats)*	Skin damage (lesions) in different ways and pruritus are the frequent manifestations of mange.
Prostatic hyperplasia	Androgenin stimulation or altered androgen/estrogen ratio	Clinical signs may be absent, or tenesmus, persistent or intermittent hematuria and bleeding may occur.
Toxoplasmosis	*Toxoplasma gondii*	Usually subclinical illness in adults animals; In young animals (puppies and kitten) the signs include fever, diarrhea, cough, dyspnea, icterus, seizures and deaths.
Leptospirosis	*Leptospira interrogans*	Subclinical infections are common; Vomiting, uveitis, bleeding, hemolytic anemia, abortion, stillbirth, birth of weak neonates, birth of healthy but infected offspring.
Anaplasia		Nasal tumor, lung tumor, oral tumor, mammary carcinoma, cancer of kidney, osteocarcomas,
Hepatitis	Adenovirus	After the virus gains entry to the dog, it localizes in the cervical lymph nodes and tonsils before traveling throughout the body. It takes approximately five days for infection to become apparent to the owners. By that time symptoms relate to virus in the liver, eyes, kidneys brain and lungs. Infected dogs shed the virus in their stool,

		saliva and urine. Over the next two weeks, the dog either dies from the disease or goes on to develop chronic hepatitis and cirrhosis of the liver. A few dogs develop chronic kidney disease (pyelonephritis), glaucoma or circulatory abnormalities (vasculitis, disseminated intravascular coagulation).

- Topic 2: Specific diseases for horses and donkeys

Table 6: The specific diseases for horses and donkeys

Disease	Etiology	Symptoms
Colic in horse	Animal eat a plenty of roughages (straws) or accumulation of worms which cause occlusion of the digestive tract or Bacterial endotoxin	Pawing repeatedly with a front foot, looking back at the flank region; curling the upper lip and arching the neck; repeatedly a rear leg or kicking at the abdomen; laying down; rolling from side to side
Pneumonia	(Hendra virus infection, *Rhodococcus equi* in foals, *Aspergillus sp., Cryptococcus sp*. and *Hisptoplasma sp*., *Pnemoncystis carin ii*, 1 *Parascaris equorum*, and *Dictyocaulus amfiedli*)	Weight loss, recurrent cough, depression anorexia, fever, or respiratory distress Multiple pale, yellowish-white nodules 3-4 cm in diameter may be apparent on the surface of the lung and throughout the lung parenchyma.

	Intoxication with perilla ketone,	
Bronchitis	Virus or bacteria	Persistent cough; the horse will be producing phlegm; depressed frequently lose their appetite; difficulty in breathing. Breathing may be noisy for example they may wheeze. The horse may have a temperature.
Equine trypanosomiasis (Dourine)	Trypanosoma equiperdum	Swelling of the genitalia, cutaneous plaques and neurological signs. Genital edema and a mucopurulent discharge are often the first signs. Mares develop a mucopurulent vaginal discharge, and the vulva becomes edematous; Abortion can occur with more virulent strains. Stallions develop edema of the prepuce and glans penis, and can have a mucopurulent discharge from the urethra. Paraphimosis may occur. Restlessness, weakness, incoordination and, eventually, paralysis. Facial paralysis, which is generally unilateral, may be seen in some animals. Conjunctivitis and keratitis are common, and in some infected herds, ocular disease may be the first sign of dourine.
African horse sickness	Virus of Orbivirus genus (Reoviridae family).	**Pulmonary form:** high fever, depression and respiratory symptoms. (rouble breathing, coughing frothy fluid from nostril and mouth, and shows signs of pulmonary edema within four days. Serious lung congestion causes respiratory failure and results in death in under 24 hours. This form of the disease has the

		highest mortality rate. **Cardiac form:** High fever is a common symptom. conjunctivitis, with abdominal pain and progressive dyspnea. Edema is presented under the skin of the head and neck, most notably in swelling of the supra-orbital fossae. **Mild or horse sickness fever form:** low grade fever and congested mucous membrane. **Mixed form:** Diagnosis is made at necropsy. Affected horses show signs of both the pulmonary and cardiac forms of AHS.
Arthritis	Traumatic arthritis;	Inflammation of the synovial membrane; Pain ; altered function of the joint; in acute process surrounding tissues are swollen and warm; lameness.
	Septic arthritis(infective arthritis)	Severe lameness ad distention and distention of joints.
Tendinitis	Tendinitis appear after fast exercise and is associated with over extension and poor conditioning, fatigue, poor racetrack conditions and persistent training	Lameness, affected structures are hot and swollen

	when inflammatory problems in the tendon already exist. Poor conformation and poor training.	

L O 4.2 – Treat specific disease of companion animals

- Topic 1: Selection of appropriate treatment

A. Dogs and cats

A.1. Rabies

- Vaccination
- Restriction of dogs and cats movements and elimination of stray animals;
- Dog registration;
- Notification of suspected cases; Reduction of contacts rates between susceptible dogs by leash laws.

A.2. Canine distemper

No specific treatment; immunization of pups

A.3. Diabete mellitus

The treatment is different for patients with uncomplicated diabetes and those with ketoacidosis. Ketoacidotic diabetics are treated with intravenous fluids and rapid acting insulin. This treatment is continued until the pet is no longer vomiting and is eating, then the treatment is the same as for uncomplicated diabetes.

A.4. Gout

Allopurinal for gout, which reduces the amount of uric acid in the blood but includes side effects such as cramping, vomiting and diarrhea.

For a natural, at home remedy, apple cider vinegar is sometimes recommended.

A.5. Otitis

- The treatment depends on the cause;
- Foreign bodies must be removed;
- Ear mites are treated
- Using an appropriate systemic antiparasitic agent.

Topical acaricide may applied after cleaning; steroids or NSAID;

For yeasts ,itraconazole may be used(for systemic mycosis:5mg/kg in dogs and 10mmg/kg in cats); ketoconazole for dogs(10mg/kg);

Use of methcillin topically;

The prevention may be based on regular cleaning of ears and keeping them dry and well ventilated; clipping hair from inside;

A.6. Ezcema

Appropriate steps should be taken to remove fleas from the dog's environment. If immune-mediated allergies are involved, the veterinarian can suggest a diagnostic protocol to identify the source of those allergies. If the dog has contact allergies to chemical substances, it should be kept away from those substances.

A.7. Mange

The treatment depends of the cause and it may be topical or systemic; ivermectin drug is useful for many cases (0.3mg/kg). Amitraz (toxic for cats and horses), fipronil spray and pyrethroids (in dogs) could be used both for prevention and treatment of infested animals. Fighting against ticks (chech the dose on label).

A.8. Prostatic hyperplasia

Medroxyprogesterone acetate may be useful.

A.9. Toxoplasmosis

Sulfadiazine (15-25mg/kg) and pyrimethamine (0.44mg/kg) act synegically;

Clindamycin is the treatment of choice for dogs and cats at 10-40mg/kg and 25-50mg/kg respectively for 14-21 days.

As toxoplasmosis zoonosis; the hands of people handling meat should be washed thoroughly with soap and water because *T.gondii* in meat are killed by contact with soap and water.

Meat may be treated using low temperature(-13^{0}C) or high temperatures(67^{0}C) before consumption;

Pregnant women should avoid contact with cat litter, soil and raw meat;

Pet cats should be fed only dry, canned or cooked food;

The cat litter box should be emptied daily preferably not by pregnant woman;

Vegetables should be washed thoroughly before eating because they may have been contaminated with cat feces.

A.10. Leptospirosis

Systemic antibiotic therapy by penicillin and its derivatives.

Vaccination with polyvalent inactivated vaccines;

Avoidance of exposure to free-ranging wildlife and domestic animals (rodents and rancoon).

A.11. Hepatitis

Once a dog has become infected with CAV-1 there is no treatment that will destroy the virus. The best one can do is to support the dog with good nursing care, intravenous fluids and medicines to lighten the workload on the liver. Antibiotics are also included in treatment to prevent additional infections.

B. Horses and donkeys

B.1. Colic

- The treatment depends on the cause.
- Pain relief using analgesia ex; fluid therapy to prevent dehydration (through nasogastric tube or IV injection);
- Protection against bacteria endotoxin using flunixin; polymyxinB;
- Intestinal lubricants and laxatives mineral oil is the most commonly used;
- Larvicidal deworming using ivermectin, febendazole;
- Surgery

B.2. Pneumonia

- Treatment should be directed toward any cause of the disease that is identified.
- Treatment includes anti-inflammatory
- drugs including dexamethasone
- or prednisolone, antimicrobials,
- supportive care;
- Bronchodilating drugs, such as
- clenbuterol, may be considered. Prevention of exposure to potential infectious,
- Toxic or environmental causes is prudent.

B.3. Bronchitis

The horse should be stabled. The horse temperature should be carefully monitored.

A course of antibiotics is usually given. Bronchodilators are given in some cases to ease the difficulty in breathing.

B.4. Equine Trypanosomiasis (Dourine)

Animals should be quarantined and tested by serology. When dourine is found in an area, quarantines and the cessation of breeding can prevent transmission while infected animals are identified. Dourine can be eradicated from a herd, using serology to identify infected equids.

Infected animals are euthanized. In some cases, stallions have been castrated to prevent disease transmission; however, geldings can still transmit the disease if they display copulatory behavior. T. equiperdum cannot survive outside a living organism, and dies quickly with its host. If necessary, this organism can be destroyed by various disinfectants including 1% sodium hypochlorite, 2% glutaraldehyde and formaldehyde, as well as heat of 50-60°C.

Successful treatment with trypanocidal drugs has been reported in some endemic areas. Good hygiene should be used at assisted matings. No vaccine is available.

B.5. African Horse Sickness

There is currently no treatment for AHS.

Control of an outbreak in an endemic region involves quarantine, vector control and vaccination. To prevent this disease, the affected horses are usually slaughtered, and the uninfected horses are vaccinated against the virus. This disease can also be prevented by destroying the insect vector habitats using insecticides.

B.6. Arthritis

Traumatic arthritis

Physical therapy regiments such as cold water treatment**, NSA**ID (usually phenylbutazone) are used. Joint drainage; Corticosteroids are the most potent ant-inflammatory agents in acute traumatic arthritis;

Septic arthritis

Prompt treatment by broad-spectrum antibiotics. Systemic antibiotic treatment is often combined with NSAID (eg phenylbutazone) and intra-articular antibiotics.

B.7. Tendinitis

Tendinitis is best treated in early, acute stage. Use of anti-inflammatory agents;

- Topic 2: Medicines Prescription

When you are given a prescription for a medication for your pet, it means that your veterinarian has made a decision that the medication is recommended or necessary to treat your pet's health problem. Many prescription drugs are only effective for specific problems, and may be harmful to your pet if used without a veterinary examination and diagnosis. Having these drugs available as prescription-only medications ensures that they are used appropriately.

You have several options when your pet needs a prescription medication:

- You can get it from your veterinarian if they keep it in stock.
- Your veterinarian can write (or call in) a prescription to a local pharmacy that stocks the medication.
- Your veterinarian can provide a prescription so you can get the medication from an online pharmacy.

A. Dogs and cats

A.1. Dogs

Here is a cheat sheet for 10 of the most commonly prescribed drugs for dogs:

1. Metronidazole has not been approved by the FDA for animals, but it is quite often prescribed for Giardia infection. The typical dose is 15 to 20 mg/kg PO q12 hours for 5 to 7 days.

2. Famotidine is frequently prescribed along with metronidazole to help with an upset belly. The usual dose is 0.5 to 1 mg/kg PO q12 to 24 hours.

3. Diphenhydramine is regularly used to treat acute allergy symptoms. It is dosed routinely as 2 to 4 mg/kg PO q8-12 hours.

4. Doxepin is prescribed to help treat anxiety but also to help with chronic allergies. The average dose range is 3 to 5 mg/kg PO q8-12 hours.

5. Tramadol is commonly prescribed for pain in dogs. The typical dose is 2 to 5 mg/kg q6-12 hours.

6. Prednisone is often used for dogs as an anti-inflammatory and as an immunosuppressant. The dose ranges widely but usually starts at 0.5 to 2 mg/kg per day.

7. Ketoconazole is used often in dogs for a variety of fungal infections. The dose most often seen is 5 to 10 mg/kg PO q12-24h.

8. Hydrogen peroxide 3% is used as an emergency emetic. It is best for the animal's guardian to first contact the emergency veterinarian or Animal Poison Control at . If needed, the dose is 2 ml/kg every 10 minutes for 3 doses (maximum, 45 ml). It also helps to gently massage the dog's belly and encourage him or her to walk around.

9. Doxycycline has not been approved by the FDA for use in animals, but it is used to treat a plethora of bacterial infections in dogs. Doses range from 3 to 5 mg/kg q12-24 hours. The Lyme disease treatment dose is 10 mg/kg PO q24 hours.

10. Sucralfate is often used for acute gastrointestinal distress, as well as GI ulcers. A flat dose is used 0.5 to 1 gram PO q8 hours. Smaller dogs would start on the lower side of range.

A.2. Cats

It's always important to know what a medication is, what it does, how it works, how to administer it, and what some common side effects are when your pet is taking it.

Frontline Plus for Cats

Frontline Plus is used for the control of fleas and ticks in cats, killing fleas within 24 hours of application and ticks within 48 hours.

The medication is applied topically to the cat's back at the shoulder blades, which then spreads by means of your pet's body oils.

Frontline Plus works by preventing fleas and ticks from maturing and reproducing. Because part of this process involves overstimulation of the insects, increased activity in the pest may be seen before they die.

Only for use with cats 8 weeks and older.

Drontal Feline

Drontal Feline is used to treat parasitic worms in the cat, including roundworms, hookworms, and tapeworms.

The drug is administered orally and comes in a tablet that can be given to your cat whole or broken up and disguised in food.

The drug works by causing spasms and paralysis in the parasites. The worms are then destroyed completely within the cat's body or are passed through the stool.

Rarely, some cats are allergic to Drontal Feline, which can cause salivation, diarrhea, vomiting, and coordination loss and which requires veterinary care. Kittens younger than 1 month should not be treated with Drontal Feline.

Clavamox

Clavamox is used to treat bacterial infections in cats.

It is given orally and comes in both a liquid suspension and tablet form.

Clavamox prevents bacteria from forming outer cell walls, leading to the bacteria's death. The drug also can make amoxicillin-resistant bacteria susceptible to that antibiotic.

Cats allergic to penicillin or beta-lactam antibiotics should not take Clavamox.

Cats that are dehydrated or have heart or kidney problems should also not be treated with the drug.

Onsior

Onsior is a non-steroidal (NSAID) drug administered to cats after orthopedic or soft tissue surgery to relieve pain and reduce inflammation.

The medication comes in a yeast flavored tablet that many cats will readily eat. Onsior is effective for 24 hours.

This drug works by targeting the COX-2 enzyme that causes pain and inflammation in cats. At the same time, the drug spares the COX-1 enzyme to protect your cat's intestinal tract.

Pregnant or lactating cats or cats suffering from ulcers should not receive Onsior.

Prednisone

Prednisone is an anti-inflammatory drug that is used to treat such conditions as irritable bowel disorder or allergies in cats. The medication is also used to treat autoimmune diseases like as cancer.

This drug comes in a variety of forms including tablet, syrup, and liquid formulations for oral use. Prednisone can also be administered by injection when conditions are serious enough to warrant it.

Prednisone works by blocking the production of chemicals in the body that cause inflammation.

Cats should not receive Prednisone for more than a few months because of side effects. However, cats being treated for cancer might need to receive the drug for longer periods of time. Short-term side effects include increased thirst, leading to greater urination, increased appetite and weight gain, diarrhea, and changes in appetite. Cats can also be more susceptible to infections while on the drug.

Cats treated long-term with Prednisone can experience hair loss, liver damage, and hormonal dysfunction.

B. Horses and donkeys

In order to dispense prescription medicine for your horse it requires either an initial examination (in the case of new problems), or to have been examined for the relevant condition within the last 3-6 months in the case of ongoing problems.

This is both a legal requirement on our part, but also to ensure that your horse is fit and well, and not suffering any side effects of the medication, and has not developed any new problems or deterioration which may be being masked by the medication.

B.1. Horses

Medicines prescription in horses is the same as in donkeys and but requires more calculations, many drugs are prescribed to horses such as NSAIDs, Antibiotics, Anti-parasites, etc.

To calculate the amount of drug to give your horse, use the following formula:

$$weight\ of\ horse\ \times Dose\ Rate\ = \frac{Amount\ of\ drug\ to\ give}{Concentration\ (\frac{mg}{ml}\ or\ \frac{mg}{pill})}$$

B.2. Donkeys

Anyone who prescribes the drugs to donkeys (Equus asinus) soon realizes that they are not merely short horses with long ears. Dosage ranges and dosing intervals of commonly used therapeutic drugs differ significantly from the horse and even within the species itself.

- **Antinflammatory drugs**

Table 7: NSAID Drugs for donkeys

Drugs	Recommended doses
Phenlybutazone	2.2-4.4mg/kg bwt q.12h or q.8h
Ketoprophen	1-2.2mg/kg bwt q.24h
Flunixine meglumine	1.1mg/kg bwt q.12h-24h
Meloxican	0.6mg/kg bwt q.24h
Carprofen	0.7mg/kg bwt q.24h

- **Antimicrobial**

Table 8: Antimicrobial drugs for donkey

Antimicrobial	Doses	Route
Gentamicin	2.2 mg/kg bwt q. 8 h [same]	I.V.
Amikacin	6 mg/kgbwt q. 6 h [q. 8 h]	I.V.
Oxytetracycline	10 mg/kg bwt q. 24 h [q. 48 h]	I.V.
Na Penicillin	20000 u/kg bwt q. 4–6 h [q. 6–8 h]	I.V.
Amoxicillin	10–15 mg/kg bwt q. 4–6 h [q. 6–8 h]	I.V. I.M.
Ampicillin	10 mg/kg bwt q. 4–6 h [q. 6–8 h]	I.V.
Sulphamethoxazole/Trimethoprim	12.5 mg/kg bwt: 2.5 mg/kgbwt q. 8–12 h [q. 8–24 h]	I.V.
Danofloxacin	>1.25 mg/kg bwt* [1.25 mg/kg bwt q. 24 h]	I.V.
Marbofloxacin	2 mg/kg bwt q. 24 h	I.M.
Norfloxacin Lavy	10–20 mg/kg bwt q. 12–24 h	I.M.

- **Anti-parasites**

Table 9: anti-parasites for donkey

Class	Example	Indication	Doses
Macrocyclic lactones	Ivermectin	Roundworms, lungworm (*D. arnfieldi*)	0.2mg/kg btw per os
Benzimidazoles	Fenbendazole	Roundworms	30–60 mg/kg bwt *per os* or
	Oxfendazole	Roundworms, lungworm	10 mg/kg bwt *per os*
	Triclabendazole	Flukes (*F. hepatica)*	12 mg/kg bwt *per os*
Tetrahydropyrimidines	Pyrantel pamoate	Roundworms	19 mg/kg bwt *per os*
		Tapeworm (*A. perfoliata*)	38 mg/kg bwt *per os*

- Topic 3: Administration of prescribed medicine

A. Dogs and cats

Different techniques in drug administration can be applied in dogs and cats; some of them are the following:

- Oral medication;
- Mixing the medicine with favourite feeds;
- Mixing the medicine with water;
- Different injection where needle of injection and syringes are required;

B. Horses and donkeys

As in dogs and cats, different techniques in drug administration can be applied in horses and donkeys; some of them are the following:

- Oral medication;
- Mixing the medicine with favourite feeds;
- Mixing the medicine with water;
- Different injection where needle of injection and syringes are required;

Dosage and other important information are given by manufacturer on notice.

- Content/Topic 4: Follow up patient

As the drugs are poisons, they are able to produce several undesirable effects called second effects or side effects (eg: allergy, anaphylactic shock etc); complications can happen in some cases; thus a regular monitoring should be compulsory and management is applied if necessary.

The follow up is obliged until the animal is recovered otherwise other decision may be taken accordingly.

L O 4.3 – Prevent specific disease of companion animals

Companion animals may be affected by different diseases which may be the origin of failure of breeding; thus it is better to prevent them instead of treatment.

- Content/Topic 1: Hygiene and biosecurity measures

A. Hygiene measures

Cleaning and disinfection: Cleaning and disinfection of animal housing facilities is a highly effective way to reduce the pathogens load in buildings, minimize the disease challenge for animals that occupy the space, and promote animal health. Effective cleaning and disinfection involves removal of organic matter from surface with tot water and a high –pressure sprayer.

Waste disposal: Waste must be removed regularly and frequently, and in compliance with all federal, state, and local laws and regulations. Waste cans should be leak-proof and have tight-fitting lids. Waste storage areas should be separate from animal housing areas and be kept free of vermin. Biological wastes must be stored appropriately prior to disposal.

Vermin: A program to control, eliminate, and prevent infestation by vermin is required. Preventing entry is the most effective method, and may be accomplished by screening openings, sealing cracks, and eliminating breeding and refuge sites. When possible, relatively nontoxic compounds (e.g., boric acid) or drying substances (e.g., amorphous silica gel) should be used to control insects.

B. Biosecurity measures

Biosecurity may be defined as any management practice or systematic application that prevent the spread of pathogens from infected animals to susceptible animals and that prevents the introduction of pathogens or infected animal into a herd, region or country where the pathogen or disease is not prevalent. An effective biosecurity program minimizes the risk of pathogen exposure and subsequent disease outbreaks and their negative impact on animal health and profitability.

B.1. Biosecurity practices

Relative to external biosecurity, adding new animal to herds from external sources requires several steps that attempt to ensure that pathogens from the herd of origin will not be introduced into the recipient herd:.

- Determining the health status of the herd of origin;
- Isolation of incoming animals minimizes the threat of disease introduction;
- Vaccination and prophylactic treatment of disease of concern;
- For dogs and cats the certificate of vaccination must be available before purchasing.

Relative to internal biosecurity, the awareness of the health status of the herd remains essential to formulate and implement herd health programs:.

- Diagnostic testing for disease surveillance;
- Use information from post-mortem examination of on-farm mortalities;
- Sufficient knowledge of the health status of the herd provides an objective basis for vaccine selection and application; antibiotic selection; and management of facilities and animal flows.
- Other consideration may include personnel policies related to exposure to other animals, visitors policies, feed sources, and control of possible vectors eg wild animals.
- Proper carcasses disposal (incineration, burying, composting), but composting can present a challenge to biosecurity program when wild animals and scavenging birds invade compost and transport tissues everywhere.

B.2. Principles of biosecurity

An efficient biosecurity program identifies risks and addresses those risks through effective management to minimize potential threats to animal health and welfare.

Management practices that promote animal health and minimize the threat of pathogen introduction and transmission start with maintaining a closed herd when possible:

- When closed herd is not possible; animal destined for addition should be tested, isolated, vaccinated or treated accordingly.
- Access of foreign individuals and personnel should be regulated by a particular policy;
- Contact of herd animals with wild animal should be prevented;
- Feed and water should be free of contamination when possible;
- The health status of animals should be determined and monitored regularly;
- Preventing the entry of pathogens and suppressing the activity of existing pathogens.

C. Sanitization of companion animal's house

Houses must be sanitized, using proper agents followed by thorough rinsing, before animals are placed in them.

C.1. Dogs and Cats

Dogs are susceptible to a range of easily transmittable diseases which they pick up in kennels, from dog to dog encounters and from dog urine and faeces found in the environment.

Cats are very susceptible to virus diseases, especially when kept in catteries or allowed to roam in areas frequented by feral cats.

Following basic rules of hygiene is still the best way to prevent most pests, germs, bacteria and infections. Anybody working in a kennel, dog breeding facility or cattery should understand the general principles of cleaning and sanitizing. By keeping a constantly clean and disinfected kennel, you will build an unbeatable protective barrier against a wide range of enemies that threaten dogs and cat's food, drinking water and buildings.

Omnicide is a tested and proven disinfectant for the control of diseases in dogs and cats including parvovirus, distemper, kennel cough, rabies Feline calicivirus, Feline viral rhinotracheitis, Feline Distemper. It can be used in kennels, catteries, cages, veterinary clinics and many other areas.

NOTE: Do not use phenolic based disinfectants in the areas for cats.

C.2. Horses and Donkeys

Before you get started, relocate horses from the area you're about to clean and disinfect. You might also need to remove all bedding and the top layer (6 to 12 inches) of stall surface dirt to clean and disinfect stalls adequately. Basically, this cleaning requires a lot of elbow grease–scraping, brushing, and scrubbing away organic debris splattered on walls and floors.

For the initial cleaning, start from the back of the barn and work your way forward, trying not to retrace your steps. Start at the top of walls and work down, directing wash and rinse water toward drains. Scrub all firm surfaces and/or use a low-pressure (less than 120 psi) power washer. Many barns have hard surface floors but in the case of dirt, remove the top layer as best as possible.

Regular cleaning with detergents to prevent bacteria from forming their persistent, self-preserving "biofilms" on moist surfaces. "Scrubbing and (careful) rinsing are the most important parts of the process, removing up to 90% of microorganisms as well as decreasing biofilm formation

Once you are confident that you have cleaned and rinsed all surfaces thoroughly, allow them to air dry, or remove excess water from walls and floors with a squeegee. Opening windows and doors in the barn also helps hasten drying.

After surfaces are dry, you can move on to the disinfection stage. While thorough cleaning might eliminate all but 10% of bacteria, disinfectants attack 6-7% of the bacteria and viruses that remain. The only way to remove all pathogens is sterilization, which is not applicable to a farm environment.

D. Offensive measures

One critical element in animal biosecurity is bio-containment which aims to ensure the control and confinement of disease in a particular area so that further spread is prevented.

In animal biosecurity, the epidemiological triad for the occurrence of disease needs to be considered, which includes the roles of the following in contributing to the development of disease:

- The disease itself: Identification of causal agent.
- The individual host animal: Treatment of affected animals
- The environment: Cleaning and sanitation.

In this context, the measures taken will keep pathogens from infecting populations, herds, or groups of animals where they do not yet exist. The herd owner is usually responsible for protecting against the introduction of any new pathogens among the herd as well as limiting the spread of any existing disease.

E. Defensives measures

E.1. Isolation of new animals

New animals brought to the farm should be isolated from existing groups of animals to prevent the spread of new, external infections. These animals should be isolated form the herd for a minimum of two weeks and preferably one month. The isolation facility should be at least several hundred yards from the herd and be positioned so that any drainage or wind does not carry contaminants back towards the herd. If complete isolation is impossible, a separate pen should be used to prevent nose-to-nose contact and the sharing of food or water supplies with existing animals. All new animals must be tested before being mixed with existing ones.

E.2. Managing risk posed by visitors

Disease can also be introduced to the herd by people travelling between groups of animals and visitors are an important consideration.

Low risk visitors: would be people from urban areas who have had no contact with livestock and are very unlikely to carry disease. Visitors should be asked to wear freshly laundered clothes and clean footwear but disposable plastic boots and coveralls may be provided for added protection.

Moderate-risk visitors: would include those who visit farms regularly but have little or no contact with animals such as delivery personnel or mechanics. These individuals are also advised to wear clean clothes and disposable coveralls and boots. They should also clean and disinfect any equipment used.

High-risk visitors: include veterinarians, livestock haulers, livestock owners and others who are in close contact with livestock. Disposable sleeves, boots, coveralls, gloves and other disposable or disinfectable clothing is a must.

- Topic 2: Establishment of prophylactic plan

A. Preventive care for dogs and cats

Preventive care is directed at making recommendations prior to the onset of disease in order to prevent or temper the effects of disease or adverse health conditions. This task force recommends to establish baseline values and to insure that there are no clinically silent health abnormalities. Routine health care visits, including a minimum laboratory database are recommended.

Other elements to be taken into consideration include:

- Increased veterinary attention to dental/oral care and to home dental prophylaxis
- Diet and nutrition: Digestibility, caloric content, quality of ingredients, Discussion of any new developments in the use of stage-of-life diets, food supplements, or food additives (e.g., omega-3 fatty acids, nutraceuticals)
- Weight control: monitoring of weight gain (especially in the dog) or loss (especially in the cat)
- Parasite control: following published guidelines for fecal examination and parasite prevention;
- Maintaining mobility via exercise or therapeutic intervention
- Vaccination only as appropriate for lifestyle, management factors, geographic region, and local jurisdiction
- Mental health: importance of routine and predictable environment; environmental enrichment; companion pets and social interaction; discussion of brain aging; monitoring signs of cognitive decline
- Environmental considerations: housing; indoor/outdoor lifestyle; accommodation of disabilities; avoidance of smoke and toxin exposure
- Potential reproductive disease in non-neutered pets: pyometra, mammary or testicular neoplasia, prostatic disease.

B. Prevention of disease transmission for equine species

Preventing equine disease is essential for the health and well-being of all equine species. The following information will assist you in initiating a disease prevention program for the horses, ponies, mules, or donkeys. Regardless of the size of your equine, whether it is a draft breed or a miniature, vaccines are administered in the same dosages.

For minimal cost, equine owners can vaccinate for common diseases, thereby preventing expensive treatment and possible death of their animal(s).Whether you have a “backyard” horse that never leaves the farm, or you compete in equine events, a vaccination program is highly recommended. You also should become familiar with the vital signs of a healthy equine (temperature, heart and respiratory rates).

They are suggestions for minimizing the risk of disease transmission:

- Aerosol transmission of disease can be lessened by increasing the distance between animals. Barns should be well ventilated.
- Have multiple water sources and feeding locations to decrease the number of horses in one area.
- Oral transmission can be decreased through proper pasture maintenance. Do not allow hay to be contaminated by feces. Check water sources frequently for contaminants that might accumulate from runoff. When traveling with horses, bring grain, hay and water from home, if possible, to lessen the possibility of oral disease.
- Manage direct transmission by quarantining new arrivals to the farm.
- Reduce the risk of reproductive disease by making sure the stallion and the mare have had thorough breeding soundness examinations. Mares’ examinations should include a uterine culture to identify potential pathogens.
- To prevent vehicle transmission from an inanimate object, workers should change or thoroughly clean clothing, shoes and equipment after working with new, quarantined or sick horses.
- Fomite transmission be reduced if workers do not move items (such as tractors, manure spreaders, wheelbarrows and manure forks), from one area of the farm into another without making sure that all organic material has been removed.
- To help prevent insect infestation, remove all standing water from around the barn and water tanks. Make sure that wash racks drain properly. Manure or compost piles should be as far from the barn as possible and removed often.
- Complete vector eradication is extremely difficult. Different types of sprays and baits have varying results.
- Placing birdhouses in the barn area will help with insect control. Releasing wasps that eat fly larvae may help, but insect sprays will kill these wasps.

Vaccines can prevent some infectious diseases in horses, but only if administered before a horse is exposed to a disease. Vaccines are prepared from killed microorganisms; living, attenuated organisms; or living, fully virulent organisms.

For most vaccines, a primary and booster vaccination are required. When an animal is exposed to a vaccine, its body makes antibodies to combat the foreign material in the vaccine. If the animal is later exposed to the disease, the body recognizes it and rapidly produces more antibodies.

- Topic 3: Selection and administration of chemical prevention products

The choice of chemical product to be used in diseases prevention is very important in companion animals breeding. It must take into account:

- Type of animal: one drug may be used for a given animal but unuseful for another.
- Causal agent of diseases :vaccines are used particularly for microbial diseases, antiparasitics are used in parasitic diseases prevention ;
- Prevalence of the disease in the area :some diseases may be found in region while there not found in other
- Localisation of the disease :some medicines can be used in internal area of the body (products used for deworming),while others are used in external area to fight against for example external parasites;
- Efficiency and specificity of the drugs (some drugs are more indicated more than others);
- Price of drug (the choice is more oriented to cheaper drugs);
- Side effects: more the drug has no or less side effects more is likely to be more chosen;
- Period of action: more the drug has short period of action more is likely to be more chosen.

Note that, before use of any drug, the information given by manufacturers must read and strictly respected.

- Topic 4: Record keeping and interpretation of zoo sanitary data

The reasons for keeping and retaining veterinary medicine records may be:

- to provide a record that livestock and other creatures have been treated in a timely and appropriate manner to prevent them being subjected to unnecessary suffering
- To record that veterinary medicines have been obtained from a legitimate source, that they have been used correctly in accordance with the product license provisions.

A. Record keeping for dogs

A.1. Identification

Tags: every dog should have a collar tag that states her name, your name, phone number and city. The address also is recommended.

Microchips and tattoos: Have a microchip implanted in your dog of the brand most widely used in your area. Tattoo identifications are also used, but microchips are considered more reliable. If you choose a tattoo, have the ID placed on the leg and keep a picture of the tattoo and records of all ID procedures.

Photos: Keep recent print and digital photos of your dog in your emergency files. Include photos from various angles that clearly show coat type and coloring, close-ups of the face and any exceptional physical characteristics.

A.2. Proof of ownership

Your dog can be lost, injured through someone else's fault, or even stolen: Ownership records can back up your claim if you go to court.

Adoption papers: If you choose your dog from a shelter, its adoption papers will carry a record of it estimated age, up-to-date vaccinations, sterilization, personality evaluation and all other information known about the patient.

Breeding contract: If you get a purebred dog from a responsible breeder, of course you'll want a record of the sire and dam, as well as inoculation and medical records. If you find a dog through a breed rescue group, their policies may prevent you from tracing its parentage, but you'll still get adoption papers and a certification that she's been spayed. If you own a true show dog, of course, you will keep extensive records on many aspects of your dog's life.

Bill of sale: the bill of sale and its accompanying papers are crucial to the pet's future. If the pet becomes ill after you bring it home, you may have legal recourse under state or local consumer protection laws that require the pet store to pay for necessary medical care. In the saddest scenario, some states have pet "lemon laws" that allow you to return a wretchedly sick, ill-bred animal to the store for a refund.

If there is a natural disaster, if your pet is missing or if something should happen to you, your dog's records are invaluable. You need to provide them to pet sitters, boarding kennels or a new veterinarian. If you take your dog on a trip out of the country, you'll need them, too. Many foreign countries have strict policies that require an extensive history of your pet's background and health.

A.3. Medical records

Routine medical information: Record your veterinarian's name and emergency number and a history of your dog's inoculations against distemper and rabies, as well as results of her medical check-ups and blood profiles.

Medications: What heartworm medication dog takes, and the schedule. Any other medicines taken regularly. Keep a copy of labels from pill bottles or boxes in the file to ensure uniformity in manufacturer and dosage.

Special needs: dog allergic to medications or any other substances. Serious medical problems that require constant monitoring or treatment. If it's diabetic, how often does she receive insulin? Is she on a special diet? Does she take herbal remedies or anything to prevent motion sickness?

A.4. Legal papers

Rabies certificate: In regions where rabies is endemic, government health departments can require immunization against this fatal disease. You usually need proof of rabies inoculation when you license your dog or travel by air.

Spay/neuter proof: In response to pet overpopulation, some local governments ask for proof that your dog has been spayed or neutered before they will issue you a dog license. Unchecked pet reproduction burdens taxpayers and threatens the public health when unwanted animals roam the streets.

Dog license: Localities require proof that your dog is licensed. A paper record that matches the number on your dog's license helps you reclaim your dog if she is found by animal control personnel.

Veterinary insurance policy: Presence of medical insurance, you'll want to keep the policy close at hand.

Recording keeping for cats

B.1. Identification

Some of the most important information is records of identification.

If your cats are micro-chipped have that information where you can lay hands on it quickly. Regularly take updated photos of each cat. This allows you to physically see changes as your management decisions change but it also provides photos if your cat were to get out and disappear.

Although no one likes to think about this many people as well as ‘experts’ do not know cat breeds. Many know Siamese and anything with other-than-short hair is Persian but beyond that it’s a black hole of knowledge with many people. A photo can make the difference sometimes between finding your cat or not.

A record system need not be expensive. Folders and an expandable file or notebook can keep things in order. If you keep records on your computer be sure to back them up regularly. Good record keeping help produce good cats!

People who use animals must keep clear and accurate records of:

- The number of cats owned or kept at the home
- Identification of individual cats (microchip number and name)
- The dates and sources of acquisition of each cat
- Disposal details and dates for each animal
- The names, dosage and dates of any chemicals administered
- Any accident, illness or injury involving home animals and the veterinary treatment provided (if required)
- Any significant occurrences that adversely affect the welfare of home animals, such as vandalism, dog attack, outbreak of disease
- The dates on which visits involving cats were made, e.g. news items, special programs.

The type and format of the records maintained will vary from home to home and be dependent on the number of animals kept, number of staff involved in maintaining the records and the layout and location of the farm.

A. Records keeping for equine species

Equine record keeping features include:

- Adding (horse, donkey) pictures, detailed health and maintenance records, recording income and expenses, picture pedigree, recording animal traits and more.
- Track heat cycles, parturition dates, and other breeding data.
- Manager tracks animal identification and important events such as breeding, show and training records, veterinary care, worming, hoof trimming, dental checkups, and feedings.

- Topic 5: Euthanasia of companion animals

Euthanasia is defined as an easy, painless death. In regard to animals, euthanasia is the act of killing an animal in a human manner.

The primary objectives of animal euthanasia are:

- Relieving pain and suffering of the animal to be euthanized;
- Minimizing the pain ,anxiety, distress and the fear the animal experiences before consciousness is lost;
- Inducing a painless and distress-free death.

In particular cases, dogs affected by rabies disease must be euthanized.

Table 10: Agents to be used in euthanasia by species

Species	Agents	Conditionally acceptable
Cats	Barbiturates, inhalant anesthetics, CO_2, CO, potassium chloride in conjunction with general anesthesia.	N_2,argon
Dogs	Barbiturates, inhalant anesthetics, CO_2, CO, potassium chloride in conjunction with general anesthesia.	N_2,argon,penetrating captive bolt, electocution
Horses	Barbiturates, potassium chloride in conjunction with general anesthesia, penetrating captive bolt;	Chloral hydrate (IV, after sedation) gunshot, electrocution.

References

- ✓ Sheldon C, et al, (2006), *Animal restraint for veterinary professionals*, Elsevier, p230.
- ✓ Dean Hendrickson, A, (2007), *Techniques in large animal surgery*, third edition,
- ✓ D.M.Broom, AM (2010), *Domestic animal behavior and welfare*, 4th edition, Cambridge, p438.
- ✓ Cynthia, M.K., (2011). *The Merck Veterinary Manual*, 10thEditon, Merck&CO.INC, Washington.
- ✓ https://animalscience.unl.edu/Extension/Horse/Producer/EquineBiosecurityPrinciplesABVMA2011web.pdf (Retrieved on 1st June, 2020).
- ✓ https://thehorse.com/17176/how-to-disinfect-your-farm/ (Retrieved on 1st June, 2020).
- ✓ https://www.avma.org/resources-tools/avma-policies/companion-animal-care-guidelines (Retrieved on 1st June, 2020).
- ✓ https://www.mirius.com/healthcare/companion-animals/ (Retrieved on 1st June, 2020).
- ✓ https://www.news-medical.net/health/Animal-Biosecurity.aspx (Retrieved on 1st June, 2020).
- ✓ https://www.inspection.gc.ca/animal-health/terrestrial-animals/biosecurity/standards-and-principles/planning-guide/eng/1529933780338/1529933780826?chap=5 (Retrieved on 1st June, 2020).
- ✓ www.adelaidevet.com.aupet-express.com (Retrieved on 6th May, 2020)
- ✓ www.cfsph.iastate.edu (Retrieved on 5th May, 2020)
- ✓ www.dpi.nsp.gov.au (Retrieved on 6th May, 2020)

- ✓ www.petplace.com (Retrieved on 6th May, 2020)
- ✓ www.naturapetz.com (Retrieved on 7th May, 2020)
- ✓ www.yourcat.co.uk(Retrieved on 7th May, 2020)

APPANDICES

Table 11: Appendix1: Physiologic parameters for different companion animal species

Species / Physiologic values	Dogs	Cats	Horses	Donkeys
Body temperature(average)	120^0F (38^0C)	101.5^0F (38.6^0C)	Mare:100^0F (37.8^{0C}) Stallion:99.7^0F (37.6^0C)	37^0C
Heart rates(beats/minute)	70 to 120	120 to 140	28 to 40	35 to 55
Respiratory rates(breaths /minute at rest)	18 t0 34	16 to 40	10 to 14	15 to 35
Average life span	8-16 years (depends on breed)	12-20 years(depends on health care, behavior, diet, genetic and other factors	25-30 years (depending on breed, level of care and other factors)	12-15 years in the poorest countries and 25-50 in prosperous countries

Table 12: Appendix 2: Dental formula for some companion animals

Teeth / Animals	Incisors	Canines	Premolars	Molars	Total
Adults dogs (Puppy)	3/3 (3/3)	1/1 (1/1)	4/4 (3/3)	2/3 (0/0)	21*2=42 (28)
Adult cats (Kitten	3/3 (3/3)	1/1 (1/1)	3/2 (3/2)	1/1 (1/1)	15*2=30 (26)
Equines {Horses and donkeys} (young stage)	3/3 (3/3)	1/1 (0/0)	3 or 4/3 (3/3)	3/3 (0/0)	20 or 21*2=40 or 42 (24)

Table 13: Appendix 3: Reproduction parameters

	Age at Puberty	**Estrous cycle**	**Gestation period**	**Estrus types**	**Litter size**	**Weaning period**
Dogs	4- 20 months	2-3 weeks	63 days	Diestrous	5-6 puppies	4-8 weeks
Cats	3-9 months	1-6 weeks	65 days	Polyestrous	3-5 kittens	4-6 weeks
Horses	12-16 moths	19-22 days	340 days (11 months)	Polyestrous	1 foal	4-8 months
Donkeys	1-2 years	21-28 days	365 days (12 months)	Polyestrous	1 foal	4-6 months