



New Mexico FFA

Veterinarian Science

Career Development Event

VETERINARIAN SCIENCE

3 or 4 Member Team

Revised 12/20/2023

I. PURPOSE

To promote career and post-secondary readiness by providing opportunities to develop knowledge and demonstrate skills in the field of veterinary science.

II. COMMON CORE REFERENCES

7th Grade:

MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.

8th Grade:

MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

9-10th Grade:

CCSS.Math.Content.HSS-MD.B.7 (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

11-12th Grade:

CCSS.ELA-Literacy.RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

III. EVENT FORMAT

1. The event will be a team event consisting of three or four students. The top three scores will count toward the team total.
2. Team members may wear medical scrubs, medical scrubs are not required for this event
3. Time allowed to complete the various event components is contingent on the practicums being conducted. The event provider shall exercise discretion in determining time allowed.

IV. Equipment/Materials

1. Transparent clipboards will be provided at the state event.
2. Contestants must bring his/her own pencil and scan sheet to the contest
 - a. Students will use the Horticulture CDE scantron #105482
 - b. Scantron sheets are provided at state
3. No notes, books, pictures, or other materials are permitted.
4. Non-programmable calculators will be provided at the state event.
5. Blank paper will be provided at the contest site.
6. Section or group leaders will not return scan sheets after a student has turned them in.

V. Classes/Practicums

A. Written Test (100 points)

The test will consist of 50 questions, each question worth two points. The questions on the nmffa.org website will serve as a study guide. The actual test questions will be drawn from the contest references. Participants will have a maximum of 30 minutes to complete the exam. Questions will come from the following areas:

- Behavior
- Disease
(causes and sources, signs and symptoms)
- Medical terminology
- Medical records
- Anatomy/physiology
- Regulations (federal OSHA, MSDS)
- Patient management
- Facility management
- Genetics

Sample Written Exam Questions:

Which of the following is the intermediate host for the dog tapeworm?

- A. Mosquito
- B. Rodent
- C. Flea
- D. Tick

What is the primary body defense against bacteria that may cause disease?

- A. Skin
- B. Antibiotics
- C. Antigens
- D. Lymph nodes

What route of administration deposits a drug into the blood vessel?

- A. Intravenous
- B. Intracardiac
- C. Intraperitoneal
- D. Intradermal

B. IDENTIFICATION (100 points)

The identification portion will consist of equipment/materials, exotic animal breeds and domestic animal breeds. There will be 50 stations with items taken from all applicable identification sheets. (two points each). The breeds and equipment will come from a file on the veterinary science CDE link located nmffa.org. Breeds and equipment may be high quality pictures, real animals or equipment. (Thirty minute time limit.)

C. MATH APPLICATIONS PRACTICUM (100 points)

The number of practicum questions will vary based on the type of activity that is assigned. Participants will have 30 minutes to complete the entire math application practicum. Questions may include conversions, dose calculations, dilutions, cost calculations and invoices.

Example: Sophie, a golden retriever, and her owner have just moved from out-of-state and are reestablishing veterinarian relations at your clinic. Sophie's owner has provided you with her health records from their previous veterinarian. Sophie had been prescribed a diet plan by the previous veterinarian and had been coming into the clinic for weekly weight checks. Sophie's owner would like to continue the weekly checks with you. You weigh Sophie and record her weight as 19 kg. The owner would like you to tell her how much weight Sophie has lost. Sophie's last recorded weight was

43.2 lb. How many pounds did Sophie lose since the last weighing? ANSWER: Sophie has lost 1.4 lb. since the last recorded weighing.

D. Skills Practicums (200 points)

1. Individual- Parasite and Animal Body Part Assessment and Solution (100 points)

The student may correctly position slides, set up a microscope to identify internal and external parasites. The student will also correctly identify internal organs from cats, dogs, swine, cattle, sheep, goats, or horses. Each identification item will be worth four points. Animal body part may be high quality pictures or real body parts. Any online veterinary resource may be used from reference.

2. Individual Skill Practicum (100 points)

Students will have the opportunity to demonstrate multiple veterinary skills. No more than 2 skills will be taken from the list that is located on the veterinary science nmffa.org website

- This practicum is designed to evaluate participant's knowledge of and ability to evaluate common laboratory, radiology and examination procedures performed in a veterinarians' clinic. Some skills may require participants to complete dosage calculations. A practicum may combine more than one skill which is listed for the designated contest year. In some cases, contestants may be provided a written scenario that they must assess to determine correct solutions.

- **2024 Veterinary Science Skills Individual Practicum Rotation**

- Administering Ophthalmic Medication
- Prescription Filling
- Surgical Site preparation
- Restraint of the cat for jugular venipuncture
- Restraint of a rabbit
- Placing a tail tie

VI. TOTAL TEAM SCORE

| | | |
|-------------------------|------------|-----------------------------------|
| Written Exam | 100 points | |
| Math Component | 100 points | TOTAL POINTS |
| Identification | 100 points | |
| Skills practicum part 1 | 100 points | INDIVIDUAL500 points |
| Skills practicum part 2 | 100 points | TEAM.....1500 points |

VII. TIEBREAKER

See General Rules

VIII. REFERENCES

- Veterinary Assistant handbook- First Edition Author: Floron C. Faries, Jr.
- Instructional Materials Service, Texas A&M University
- Cornell Veterinary Curriculum (Vet. Terminology, Clinical exams, Hospital Procedures, Parasitology, Laboratory Techniques, Animal Nutrition, posology, and Principles of Disease).
- Veterinary Instruments and Equipment-A Pocket Guide Author: Teresa F Sonsthagen, BS, LVT
- Elsevier Mosby ISBN-13: 978-0-323-03203-2
- Review Questions and Answers for Veterinary Technicians Author: Thomas P Colville, DVM
- Mosby ISBN-13 978-0-323-01926-2
- American Kennel Club Breed Website - www.akc.org/breeds/
- Cat Fanciers' Association Breed Website - www.cfainc.org/breeds.html
- Oklahoma State University-Animal Science Website - <http://www.ansi.okstate.edu/breeds/>
- Surgical tool resources - www.jorvet.com; www.spectrumsurgical.com; <http://www.SontecInstruments.com>

NOTE:

Agriculture, Food and Natural Resources (AFNR) Career Cluster Content Standards With the recommendation of the National FFA Board of Directors, all national FFA programs have incorporated these standards to guide the direction and content of program materials and activities. Refer to Appendix A in the National FFA handbook for a complete list of the measurable activities that participants will carry out in this event. For details about the incorporation of AFNR standards, refer to the Introduction chapter of the National FFA CDE handbook.

NOTE: All national score sheets are attached. In a normal rotation only 2-3 may be used each year.

Equipment and Materials Identification List

| | | | |
|-----|---------------------------------|-----|----------------------------------|
| 100 | Anesthetic machines | 134 | Forceps — Rochester Carmalt |
| 101 | Autoclave | 135 | Hog snare |
| 102 | Autoclave tape indicator | 136 | Hoof knife |
| 103 | Backhaus towel clamps | 137 | Hoof rasp |
| 104 | Balling gun | 138 | Humane Twitch |
| 105 | Bandaging material — Elasticon | 139 | IV Fluid Bag |
| 106 | Bandaging material — roll gauze | 140 | Large Animal Ear Tagger |
| 107 | Bandaging material — vet wrap | 141 | Muzzle — basket |
| 108 | Bands (castration or docking) | 142 | Muzzle — nylon |
| 109 | Catheter — IV | 143 | Needle holder — Olsen-Hegar |
| 110 | Catheter — Tomcat urinary | 144 | Obstetrical chain and handle |
| 111 | Cautery | 145 | Ophthalmoscope |
| 112 | Centrifuge | 146 | Otoscope |
| 113 | Chemical indicator strips | 147 | Pig tooth nippers |
| 114 | Dehorner — Barnes | 148 | Rumen magnet |
| 115 | Dehorner — electric | 149 | Scalpel blade |
| 116 | Dental/Power Float | 150 | Scalpel handle |
| 117 | Dental scaler | 151 | Scissors — Utility Bandage |
| 118 | | 152 | Scissors — Lister bandage |
| 119 | Ear notcher | 153 | Scissors — Mayo dissecting |
| 120 | Elastrator | 154 | Scissors — Metzenbaum dissecting |
| 121 | Electronic ID Reader | 155 | Silver nitrate sticks |
| 122 | Elizabethan collar | 156 | Snook ovariohysterectomy hook |
| 123 | Emasculators | 157 | Speculum — Equine |
| 124 | Endotracheal tubes | 158 | Speculum — Frick/Bovine |
| 125 | Fecal loop | 159 | Cattle Handling Restraint Device |
| 126 | Fecalyzer | 160 | Staple remover |
| 127 | Fetal extractor — calf | 161 | Stethoscope |
| 128 | Forceps — Allis tissue | 162 | Syringe — Leur Lock |
| 129 | Forceps — Babcock tissue | 163 | Syringe — Slip Tip |
| 130 | Forceps — Brown-Adson thumb | 164 | Syringe — automatic, multi-dose |
| 131 | Forceps — Crile | 165 | Tattooing instruments |
| 132 | Forceps — Kelly | 166 | Thermometer |
| 133 | Forceps — Rat tooth thumb | 167 | Trocar and cannula |

Parasite Identification List

- 201 Cat Warble (Genus Cuterebra)
- 202 Coccidia (Genus Isospora or Eimeria)
- 203 Demodectic Mite (Genus Demodex)
- 204 Ear Mite (Family Psoroptidae; Genus Otodectes)
- 205 Flea Tapeworm Egg (Genus Dipylidium)
- 206 Flea Tapeworm Segment (Genus Dipylidium)
- 207 Giardia (Genus Giardia)
- 208 Heartworm Adult (Genus Dirofilaria)
- 209 Heartworm Microfilaria (Genus Dirofilaria)
- 210 Hookworm Adult (Family Ancylostomatidae; Genus Ancylostoma, Uncinaria, Bunostomum or Globocephalus)
- 211 Hookworm Egg (Family Ancylostomatidae; Genus Ancylostoma, Uncinaria, Bunostomum or Globocephalus)
- 212 Horse Strongyles (Family Strongylidae; Genus Strongylus)
- 213 Liver Fluke (Class Trematoda; Genus Fasciola, Fascioloides or Dicrocoelium)
- 214 Mammalian red blood cell (erythrocyte)
- 215 Mosquito Larva (Family Culicidae; Genus Anopheles, Culex or Aedes)
- 216 Neutrophils
- 217 Platelets
- 218 Roundworm Adult (Family Ascarididae or Toxocaridae; Genus Toxocara, Toxascaris, Ascaris, Parascaris or Neoascaris)
- 219 Roundworm Egg (Family Ascarididae or Toxocaridae; Genus Toxocara, Toxascaris, Ascaris, Parascaris or Neoascaris)
- 220 Sarcoptic Mite (Family Sarcoptidae; Genus Sarcoptes or Notoedres)
- 221 Taenia Tapeworm Egg (Family Taeniidae; Genus Taenia)
- 222 Taenia Tapeworm Segment (Family Taeniidae; Genus Taenia)
- 223 Tick — American Dog (Family Dermacentor; Genus variabilis)
- 224 Tick — Black Legged Deer (Family Ixodes; Genus scapularis)
- 225 Tick — Brown Dog (Family Rhipicephalus; Genus sanguineus)
- 226 Tick — Lonestar (Family Amblyomma; Genus americanum)
- 227 Whipworm Egg (Genus Trichuris)
- 228 Whipworm (Genus Trichuris)

Dogs

| <u>HERDING GROUP</u> | <u>HOUND GROUP</u> | <u>NON-SPORTING GROUP</u> | <u>SPORTING GROUP</u> |
|---------------------------|-------------------------|---------------------------|--------------------------------|
| 300 Australian Cattle Dog | 307 Basset Hound | 313 Bichon Frise | 319 Brittany |
| 301 Australian Shepherd | 308 Beagle | 314 Boston Terrier | 320 Cocker Spaniel |
| 302 Border Collie | 309 Bloodhound | 315 Bulldog | 321 English Setter |
| 303 Collie | 310 Dachshund | 316 Chow Chow | 322 German Shorthaired Pointer |
| 304 German Shepherd Dog | 311 Greyhound | 317 Dalmatian | 323 Golden Retriever |
| 305 Old English Sheepdog | 312 Rhodesian Ridgeback | 318 Poodle | 324 Irish Setter |
| 306 Pembroke corgi | | | 325 Labrador Retriever |
| | | | 326 Weimaraner |

| <u>TERRIER GROUP</u> | <u>TOY GROUP</u> | <u>WORKING GROUP</u> |
|---------------------------------|-----------------------------------|--------------------------|
| 327 Bull Terrier | 332 Cavalier King Charles Spaniel | 342 Bernese Mountain Dog |
| 328 Cairn Terrier | 333 Chihuahua | 343 Boxer |
| 329 Parson Russell Terrier | 334 Miniature Pinscher | 344 Doberman Pinscher |
| 330 Scottish Terrier | 335 Papillon | 345 Great Dane |
| 331 West Highland White Terrier | 336 Pekingese | 346 Great Pyrenees |
| | 337 Pomeranian | 347 Mastiff |
| | 338 Toy Poodle | 348 Newfoundland |
| | 339 Pug | 349 Rottweiler |
| | 340 Shih Tzu | 350 Saint Bernard |
| | 341 Yorkshire Terrier | 351 Siberian Husky |

| <u>CATS</u> | <u>BIRDS</u> | <u>REPTILES</u> | <u>POULTRY</u> |
|------------------------|-------------------------|--------------------|--------------------------------|
| 352 Abyssinian | 362 African Gray Parrot | 371 Bearded Dragon | 378 Chicken — Cornish |
| 353 American Shorthair | 363 Canary | 372 Chameleon | 379 Chicken — Leghorns |
| 354 Burmese | 364 Cockatiel | 373 Gecko | 380 Chicken — Plymouth Rock |
| 355 Maine Coon | 365 Cockatoos | 374 Iguana | 381 Chicken — Rhode Island Red |
| 356 Manx | 366 Love Birds | 375 Ball Python | 382 Duck |
| 357 Persian | 367 Macaw | 376 Burmese Python | 383 Turkey |
| 358 Ragdoll | 368 Parakeet | 377 Corn Snake | |
| 359 Russian Blue | 369 Sun Conure | | |
| 360 Siamese | 370 Zebra Finch | | |
| 361 Sphynx | | | |

| <u>SMALL MAMMALS</u> | <u>RABBITS</u> | <u>DAIRY CATTLE</u> | <u>BEEF CATTLE</u> |
|----------------------|----------------------|---------------------|--------------------|
| 384 Ferret | 390 Angora | 398 Ayrshire | 403 Angus |
| 385 Guinea Pig | 391 Californian | 399 Brown Swiss | 404 Brahman |
| 386 Hamster | 392 Dutch | 400 Guernsey | 405 Charolais |
| 387 Hedgehog | 393 English Spot | 401 Holstein | 406 Hereford |
| 388 Mouse | 394 Holland Lop | 402 Jersey | 407 Shorthorn |
| 389 Rat | 395 Mini-Rex | | |
| | 396 Netherland Dwarf | | |
| | 397 New Zealand | | |

| <u>HORSE</u> | <u>GOAT</u> | <u>SHEEP</u> | <u>SWINE</u> |
|-----------------------------|--------------|-----------------|-----------------------|
| 408 Appaloosa | 419 Nubian | 423 Columbia | 431 American Landrace |
| 409 Arabian | 420 Angora | 424 Dorper | 432 Berkshire |
| 410 Belgian | 421 Boer | 425 Dorset | 433 Chester White |
| 411 Clydesdale | 422 LaMancha | 426 Hampshire | 434 Duroc |
| 412 Morgan | | 427 Merino | 435 Hampshire |
| 413 Paint | | 428 Rambouillet | 436 Yorkshire |
| 414 Percheron | | 429 Southdown | |
| 415 Quarter Horse | | 430 Suffolk | |
| 416 Saddlebred | | | |
| 417 Tennessee Walking Horse | | | |
| 418 Thoroughbred | | | |

Clinical Procedures Practicum

ADMINISTERING OPHTHALMIC MEDICATION

Participant must talk through practicum steps with judge.

| Criteria | Points Possible | Points Earned |
|--|-----------------|---------------|
| The student wipes any discharge from the patient's eye using a gauze sponge or cotton ball. | 8 | |
| The student opens the end of the ophthalmic medicine | 6 | |
| The student uses the index finger and thumb to pull the upper and lower lids apart to open the eye. The student's thumb pulls the lower lid down and the index finger pulls the upper lid upward. The student's other finger may rest on the head of the animal. | 12 | |
| While resting the hand holding the medication on the head of the patient, the student applies the drops or ointment gently into the eye without touching the eye, counting each drop or applying the proper amount of ointment without contamination. | 12 | |
| The student releases the eyelids. | 6 | |
| The student allows the animal to blink to move the medication throughout the eye. | 6 | |
| TOTAL POINTS | 50 | |

[Back to rubrics lists](#)

Clinical Procedures Practicum

PRESCRIPTION FILLING

Participant must talk through practicum steps with judge.

| Criteria | Points Possible | Points Earned |
|--|-----------------|---------------|
| The student reads and verbally interprets prescription. | 10 | |
| The student selects the correct drug and concentration. | 20 | |
| The student places the pill counting tray on the pharmacy counter with the channel to the left and the open plate in front of him or her. | 1 | |
| The student pours the medication tablets or capsules onto the tray plate. | 1 | |
| The student opens the channel cover. | 1 | |
| The student uses a spatula or tongue depressor to push groups of tablets or capsules into the channel. | 1 | |
| When the student has counted the desired amount of medication, he or she closes the channel cover. The student tilts the tray to return the unused medicine into the stock bottle. | 4 | |
| The student lifts the tray to place the channel spout into the medicine vial and transfers medication. | 4 | |
| The student places the lid on the vial and sets it on the counter. | 1 | |
| The student appropriately fills out label with prescription information. | 7 | |
| TOTAL POINTS | 50 | |

[Back to rubrics lists](#)

Clinical Procedures Practicum

SURGICAL SITE PREPARATION

Participant must talk through practicum steps with judge.

| Criteria | Points Possible | Points Earned |
|--|-----------------|---------------|
| The student applies antiseptic scrub to clipped area. | 8 | |
| The student preps the clipped area with a clean surgical sponge beginning at the incision site moving in a circular motion and works toward the edges. | 8 | |
| The student does not bring the sponge back to the incision site once it is moved away from the incision site. | 8 | |
| The student discards the sponge once it reaches the edge of the clipped area. | 8 | |
| The student wipes the clipped area with a rinse solution using a clean surgical sponge following the same pattern as when scrubbing with the antiseptic. | 8 | |
| The student repeats the scrub and rinse a minimum of three times or until the final rinse sponge was clean. | 10 | |
| TOTAL POINTS | 50 | |

[Back to rubrics lists](#)

Handling and Restraining Practicum

RESTRAINT OF THE CAT FOR JUGULAR VENIPUNCTURE

Participant must talk through practicum steps with judge.

| Criteria | Points Possible | Points Earned |
|--|-----------------|---------------|
| The student places the cat in sternal recumbency with its chest close to the edge of the table. | 6 | |
| The student controls and lifts the head up by placing thumb and forefingers over top of head, fingers firm on zygomatic arches (below eyes). | 7 | |
| The student's other hand grasps the front legs and extends them down off the edge of the table. | 7 | |
| The student uses arm and elbow to restrain the cat's body close to the student's body. | 6 | |
| The student speaks to the patient in a calm and affectionate manner during the procedure. | 4 | |
| TOTAL POINTS | 30 | |

[Back to rubrics lists](#)

Handling and Restraining Practicum

RESTRAINT OF A RABBIT

Participant must talk through practicum steps with judge.

| Criteria | Points Possible | Points Earned |
|---|-----------------|---------------|
| The student approaches the rabbit calmly and quietly. | 4 | |
| The student scruffs the rabbit with one hand while gently lifting the front end. | 6 | |
| The student's other hand immediately reaches under the hind limbs and holds them (not allowing the hind limbs to dangle). | 7 | |
| The student rests the rabbit's body on the arm with the hand holding the hind limbs. | 6 | |
| The scruffing hold is released, and the hand is moved to hold the rabbit's outside front leg. | 7 | |
| TOTAL POINTS | 30 | |

[Back to rubrics lists](#)

Handling and Restraining Practicum

PLACING A TAIL TIE

Participant must talk through practicum steps with judge.

| Criteria | Points Possible | Points Earned |
|--|-----------------|---------------|
| The student lays the rope over the tail at the tip of the tail bone. | 6 | |
| The student folds all the tail hairs up over the rope. | 6 | |
| The student passes the short end of the rope behind the tail, and makes a fold or bight in it. | 6 | |
| The student passes the fold or bight over the folded tail and under the rope, which is looped around the tail. | 6 | |
| The student pulls tight. | 6 | |
| TOTAL POINTS | 30 | |

[Back to rubrics lists](#)