



# Webinar:

## Starting an Engaging Veterinary Science Pathway Program

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# Who is Realityworks?



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Presented by

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Senior Product Manager

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# Attendees will:

- How Veterinary Science Fits Into the Career Cluster Model and Pathways
- Veterinary Science Pathway Courses
  - Small Animal Management
  - Equine Science
  - Advanced Animal Science
  - Veterinary Medical Applications
  - Practicum in Veterinary Medical Applications
- Soft Skills for Veterinary Careers
- Free Resources
- Q&A



# AGRICULTURE, FOOD & NATURAL RESOURCES

## ANIMAL SCIENCE

— prerequisite    ..... optional

**SURVEY OF AG, FOOD & NATURAL RESOURCES**  
GRADES 9-12 • 1 CREDIT

\*Recommended

**EQUINE SCIENCE**

GRADES 10-12 • 0.5 CREDIT

AND

**SMALL ANIMAL MANAGEMENT**

GRADES 10-12 • 0.5 CREDIT

**ANIMAL SCIENCE**

GRADE 12 • 1 CREDIT  
CTEC  
SCIENCE

Pre-Req: 2 full credits from this Animal Science Program of Study

## Veterinary Science



The Animal Science program of study focuses on the science, research, and business of animals and other living organisms. It teaches learners how to apply biology and life science to real-world life processes of animals and wildlife, either in laboratories or in the field. It could include a veterinary office, a farm or ranch, or any outdoor area harboring animal life. Students may also research and analyze growth and destruction of species and research or diagnose diseases and injuries of animals.

### High School Courses

- Level 1**
- Small Animal Management
  - Equine Science
- Level 2**
- Advanced Animal Science
- Level 3**
- Veterinary Medical Applications
- Level 4**
- Practicum in Agriculture, Food, and Natural Resources

### Postsecondary Opportunities

- Associates Degrees**
- Food Science and Technology
  - Veterinary Studies
  - Biotechnology Laboratory Technician
  - Biology Technician
- Bachelor's Degrees**
- Animal Sciences
  - Agriculture
  - Biology
  - Zoology/ Animal Biology
- Master's, Doctoral, and Professional Degrees**
- Genetics
  - Veterinary Medicine
  - Biological and Physical Sciences
  - Biological and Biomedical Sciences

Pre-Req: 2 full credits from this Animal Science Program of Study

**PRACTICUM IN VETERINARY MED APPS**

GRADE 12 • 2 CREDITS  
CTEC  
INTERNSHIP

Three or more courses for a total of 4 or more credits must be taken to complete a Program of Study.

Veterinary Science Program Information : Courses

| Description                     | College Credit Hours |
|---------------------------------|----------------------|
| Junior Year                     |                      |
| <b>Career Technical Courses</b> |                      |
| Animal Health                   |                      |
| Veterinary Science              |                      |
| Animal Anatomy & Physiology     |                      |
| <b>Academic Courses</b>         |                      |
| Applied Science                 |                      |
| Applied Math                    |                      |
| English                         |                      |
| Social Studies                  |                      |
| Senior Year                     |                      |
| <b>Career Technical Courses</b> |                      |
| Animal Anatomy & Physiology     |                      |
| Comp. Animal Sel., Nutr. & Mgmt |                      |
| <b>Academic Courses</b>         |                      |
| Applied Science                 |                      |
| Applied Math                    |                      |
| English                         |                      |

### Work-Based Learning and Expanded Learning Opportunities

| Exploration Activities                                                     | Work-Based Learning Activities                                                                                                                                                                                |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Participate in Texas FFA</li></ul> | <ul style="list-style-type: none"><li>• Compete in an FFA Science Fair 4H</li><li>• Volunteer at a local farm or with a veterinarian</li><li>• Participate in an supervised agricultural experience</li></ul> |

### Industry-Based Certification

- Certified Veterinary Assistant, Level 1
- Elanco Fundamentals of Animal Science Certification
- Elanco Veterinary Medical Applications Certification
- Licensed Veterinary Technician



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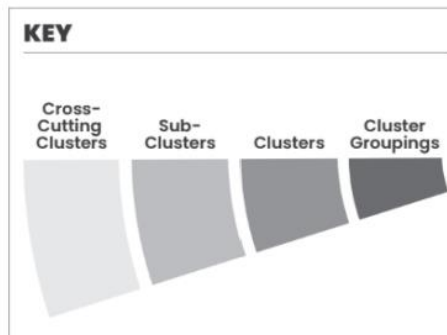
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# How Veterinary Science Fits Into the Career Cluster Model

# Career Clusters Framework



**The Framework: Grid View**



[Guidebook: National Career Clusters Framework](#)



## The Cluster: Agriculture

# The Subcluster: Animal Systems

## Agriculture: Cultivating Sustainability and Nourishing the World

**Cluster Definition:** The Agriculture Career Cluster concentrates on scientific advancement of agriscience, cultivation, processing, and distribution of agricultural products, employing advanced technologies and sustainable practices to optimize global food systems. This Cluster also supports other plant- and animal-based industries including regenerative agriculture, sustainable logging, and fisheries. This Cluster has meaningful connections with the Energy and Natural Resources Cluster, highlighting a symbiotic relationship that emphasizes stewardship and resilient communities.

| Sub-Clusters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Example Programs of Study                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Agribusiness:</b> Careers focused on the economic aspects of agriculture, encompassing farm and rangeland management, agribusiness finance, international relations, supply chain management, and other functions that are essential for agricultural profitability. Professionals in this field manage farms and ranches of various scales and oversee agricultural finances, which are crucial functions for profitable and sustainable agricultural enterprises.                                                                                                                                                                                                       | Agribusiness<br>Agricultural Policy<br>Agricultural Finance                                 |
| <b>Agricultural Technology &amp; Automation:</b> Careers at the intersection of agriculture and technology, focusing on the design and operation of agricultural equipment and systems; repair and maintenance of agricultural equipment; and agricultural engineering, mechanics, and automation processes. This Sub-Cluster includes innovative farming methods such as precision, urban, and vertical farming to increase efficiency, productivity, and sustainability in agriculture.                                                                                                                                                                                    | Agricultural Technology<br>Precision Agriculture<br>Urban Farming<br>Agricultural Mechanics |
| <b>Animal Systems:</b> Careers that both promote the health and well-being of animals, including companion, livestock, and exotic animals, and facilitate the efficient production of animal-related products within the food system. For livestock and poultry, professionals in this field aim to optimize the production of meat, dairy, eggs, and other animal products. Careers in this field also include veterinary and other services to manage the care, breeding, behavior, enrichment, and management of animals. This Sub-Cluster also incorporates genetics, nutrition, biotechnology, and pharmaceuticals to improve animal welfare and production efficiency. | Animal Nutrition<br>Livestock Management<br>Veterinary Science                              |
| <b>Food Science &amp; Processing:</b> Careers centered on applying scientific and technological principles to the development, enhancement, processing, and usability of agricultural food products. Professionals in this field work with fruit, vegetable, grain, and meat processing, ensuring that these products are nutritious and safe for consumption. This Sub-Cluster is crucial in maintaining quality control and nutritional value, enhancing product freshness, and meeting consumer and regulatory standards.                                                                                                                                                 | Food Science<br>Meat Science<br>Sustainable Food & Farming                                  |
| <b>Plant Systems:</b> Careers involving the study and management of plant growth, soil health, and pest management, focusing on sustainable crop production for both food and goods. This Sub-Cluster includes careers in agronomy, horticulture, timber and plant fiber harvesting, and soil science that are aimed at enhancing crop yields, preserving soil resources, and developing advanced production practices.                                                                                                                                                                                                                                                      | Horticulture<br>Forestry<br>Plant Science<br>Floriculture                                   |
| <b>Water Systems:</b> Careers centered on the effective management and use of water resources in agricultural settings, including precision irrigation, aquaculture, and fisheries. Professionals in this field are dedicated to maximizing water efficiency and productivity in farming operations to enhance crop yield and support sustainable fish farming practices.                                                                                                                                                                                                                                                                                                    | Aquaculture<br>Marine Biology                                                               |



# Planning a Pathway



## Agriculture, Food and Natural Resources: Animal Systems

### Career Pathway Plan of Study for ► Learners ► Parents ► Counselors ► Teachers/Faculty

This Career Pathway Plan of Study (based on the Animal Systems Pathway of the Agriculture, Food and Natural Resources Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. \*This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

SAMPLE

| EDUCATION LEVELS                                                                                                                            | GRADE                                                             | English/<br>Language Arts                       | Math                                    | Science                                 | Social Studies/<br>Sciences   | Other Required Courses<br>Other Electives<br>Recommended<br>Electives<br>Learner Activities                                                                                                                                                                                                                                                                            | *Career and Technical Courses<br>and/or Degree Major Courses for<br>Animal Systems Pathway                                                   | SAMPLE<br>Occupations Relating<br>to This Pathway                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------|-----------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interest Inventory Administered and Plan of Study Initiated for all Learners                                                                |                                                                   |                                                 |                                         |                                         |                               |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                    |
| SECONDARY                                                                                                                                   | 9                                                                 | English/<br>Language Arts I                     | Algebra I                               | Earth or<br>Environmental<br>Science    | State History<br>Civics       | All plans of study<br>should meet local<br>and state high school<br>graduation require-<br>ments and college<br>entrance requirements.<br>Supervised Agricultural<br>Experience (SAE) and<br>participation in ap-<br>propriate FFA activities<br>support and rein-<br>force classroom and<br>laboratory learning and<br>should be a require-<br>ment for all students. | • Introduction to Agriculture, Food and<br>Natural Resources                                                                                 | <b>Occupations Requiring<br/>Postsecondary Education</b><br>▶ Animal Caretaker-Poultry Manager<br>▶ Aquaculturalist<br>▶ Artificial Insemination Technician<br>▶ Dairy Producer<br>▶ Equine Manager<br>▶ Feed Sales Representative<br>▶ Livestock Buyer<br>▶ Livestock Inspector<br>▶ Livestock Producer<br>▶ Veterinary Assistant |
|                                                                                                                                             | 10                                                                | English/<br>Language Arts II                    | Geometry                                | Biology                                 | U.S. History                  |                                                                                                                                                                                                                                                                                                                                                                        | • Introduction to Animal Science                                                                                                             |                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                             | 11                                                                | English/<br>Language Arts III                   | Algebra II or other<br>math course      | Chemistry or<br>other science<br>course | World History                 |                                                                                                                                                                                                                                                                                                                                                                        | • Advanced Animal Science                                                                                                                    |                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                             | College Placement Assessments-Academic/Career Advisement Provided |                                                 |                                         |                                         |                               |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                             | 12                                                                | English/<br>Language Arts IV                    | Trigonometry<br>or other math<br>course | Physics or other<br>science course      |                               |                                                                                                                                                                                                                                                                                                                                                                        | Select a specialized area from:<br>• Small Animal Specialization<br>• Equine Science<br>• Biotechnology and Agricultural Science<br>Research |                                                                                                                                                                                                                                                                                                                                    |
| Articulation/Dual Credit Transcribed-Postsecondary courses may be taken/moved to the secondary level for articulation/dual credit purposes. |                                                                   |                                                 |                                         |                                         |                               |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                    |
| POSTSECONDARY                                                                                                                               | Year<br>13                                                        | English<br>Composition                          | Algebra                                 | Chemistry                               | American<br>Government        | All plans of study need<br>to meet learners' career<br>goals with regard to<br>required degrees, li-<br>censes, certifications or<br>journey worker status.<br>Certain local student<br>organization activities<br>may also be important<br>to include.                                                                                                                | • Orientation to Animal Science<br>• Survey of the Animal Industry                                                                           | <b>Occupations Requiring<br/>Baccalaureate Degree</b><br>▶ Agricultural Educator<br>▶ Animal Nutritionist<br>▶ Livestock Geneticist<br>▶ Meat Science Researcher<br>▶ Physiologist<br>▶ Wildlife Biologist<br>▶ USDA Inspector<br>▶ Veterinarian                                                                                   |
|                                                                                                                                             | Year<br>14                                                        | Speech/<br>Oral<br>Communication                |                                         | Biological<br>Science                   | American History<br>Geography |                                                                                                                                                                                                                                                                                                                                                                        | • Animal Anatomy and Physiology<br>• Working with Animals                                                                                    |                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                             | Year<br>15                                                        | Technical Writing                               | Statistics                              | Organic<br>Chemistry<br>Microbiology    | Political Science             |                                                                                                                                                                                                                                                                                                                                                                        | • Livestock Management<br>• Continue Courses in the Area of<br>Specialization                                                                |                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                             | Year<br>16                                                        | Continue courses in the area of specialization. |                                         |                                         |                               |                                                                                                                                                                                                                                                                                                                                                                        | • Complete Animal Systems Major<br>(4-Year Degree Program)                                                                                   |                                                                                                                                                                                                                                                                                                                                    |

# Veterinary Science Pathway Samples

## COURSES IN THIS PROGRAM OF STUDY

I. Principles of Agriculture, Food and Natural Resources (1 credit)

II. Equine Science (.5 credit) AND Small Animal Management (.5 credit)

III. Veterinary Medical Applications (1 credit)

IV. Practicum in Veterinary Medical Applications (2 credits)

### VETERINARY AND ANIMAL SCIENCE: GREENBRIER HIGH SCHOOL



#### ABOUT THE PROGRAM OF STUDY

*Veterinary and Animal Science* is designed to prepare students to further their education for rewarding careers related to both companion and farm animals. This program of study provides rigorous technical skills, academic knowledge, higher-order reasoning, problem-solving skills, work attitudes, and employment skills. Course content covers such topics as principles of health and disease, basic animal care and nursing, clinical and laboratory procedures, and the anatomical/physiological systems of a range of small and large animals. Upon completion of this program of study, students will be prepared to pursue further study in the veterinary and animal sciences at the postsecondary level or to seek gainful employment.

#### Industry Certification

- Elanco Fundamentals of Animal Science

#### Dual credit/dual enrollment options include:

- Introduction to Animal Science
- Behavior of Farm and Companion Animals

Veterinary Science Program Information : Courses

| Description                     | College Credit Hours |
|---------------------------------|----------------------|
| <b>Junior Year</b>              |                      |
| <b>Career Technical Courses</b> |                      |
| Animal Health                   |                      |
| Veterinary Science              |                      |
| Animal Anatomy & Physiology     |                      |
| <b>Academic Courses</b>         |                      |
| Applied Science                 |                      |
| Applied Math                    |                      |
| English                         |                      |
| Social Studies                  |                      |
| <b>Senior Year</b>              |                      |
| <b>Career Technical Courses</b> |                      |
| Animal Anatomy & Physiology     |                      |
| Comp. Animal Sel., Nutr. & Mgmt |                      |
| <b>Academic Courses</b>         |                      |
| Applied Science                 |                      |
| Applied Math                    |                      |
| English                         |                      |
| Social Studies                  |                      |

# Good Sources of Information

- The Council – National AFNR Standards  
[AFNR Standards – The National Council for Agricultural Education](#)
- National FFA Organization  
[Career and Leadership Development Events | National FFA Organization](#)
- State Specific Vet Tech Requirements  
[How to Become Certified as a Vet Tech \(State by State\) | Penn Foster](#)

# Industry-Recognized Credentials

- Fundamentals of Animal Science Certification – Elanco [Elanco Fundamentals of Animal Science Certification Brochure.pdf](#)
- Veterinary Medical Application Certification – Elanco [Blueprint\\_ElancoVeterinaryMedicalApplicationsCert.pdf](#)
- Animal CPR and First Aid Certification [Dog, Cat, and Pet Online First Aid Training | Red Cross](#) [Veterinary Professionals - RECOVER Initiative](#)
- Animal Science Specialist Certification [Certifications – AEST – Agriculture Education Services and Technology](#)
- Animal Systems – NOCTI [PWAnimalSys1227](#)
- YouScience – Veterinary Assistant 1 and 2 [Exam Catalog - YouScience](#)

# Small Animal Management

# Recommended Hands-On Learning Aids

Cat Kit



Dog Kit



Feline Vet Trainer



Canine Vet Trainer



# Activity #1

- Veterinary Charades
- [Canine Vet Trainer Career Exploration Lesson.pdf](#)
- Bladder Lecture and Slide Presentation
- [Bladder-Issues-Palpation-and-Urinary-Catheterization.pdf](#)



# Equine Science

# Recommended Hands-On Learning Aids

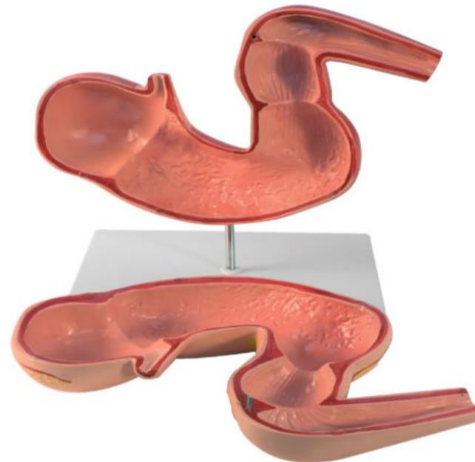
Horse Kit



Horse Model



Horse Stomach



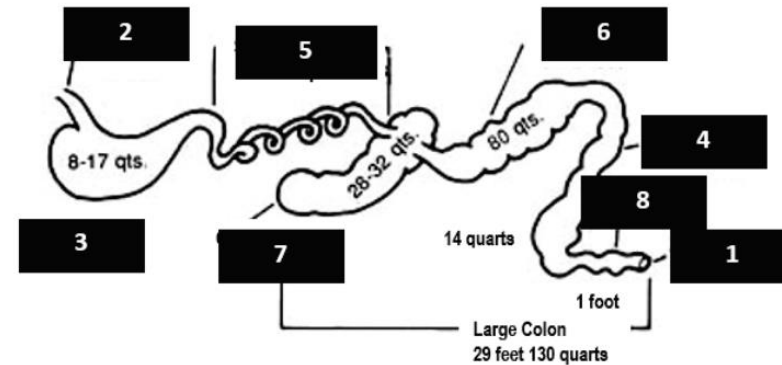
# Activity #2

- Horse Digestive System Quiz
- [Horse-Stomach-Model-Curriculum-Sample.pdf](#)
- The Equine Digestive System
- [Nutrition Nuggets - The Equine Digestive System](#) (2:00)

## Horse Digestive System Quiz – Answer Key

Name KEY

1. Accurately label the parts of the horse digestive system by choosing the correct number and matching it with the description.



The Digestive System of the Horse

- 5 Small intestine
- 4 Small colon
- 2 Esophagus
- 6 Large colon
- 7 Cecum
- 3 Stomach
- 1 Anus
- 8 Rectum

# Advanced Animal Science

# Recommended Hands-On Learning Aids

- Bovine Breeder AI Simulator
- Swine Breeder AI Simulator
- Calf Simulator



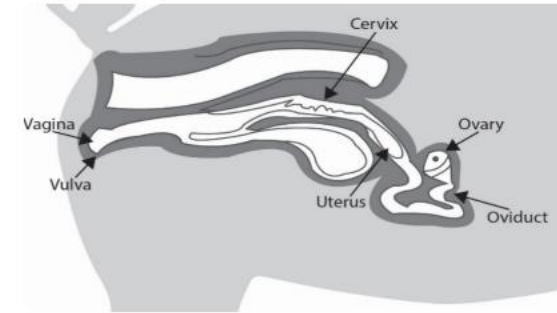
# Activity #3

- Swine Reproductive Systems Assessment
- [Swine-Breeder-Curriculum-Sample.pdf](#)
- Swine Artificial Insemination
- [Swine Artificial Insemination \(5:22\)](#)

## Swine Reproductive Systems Worksheet – Answer Key

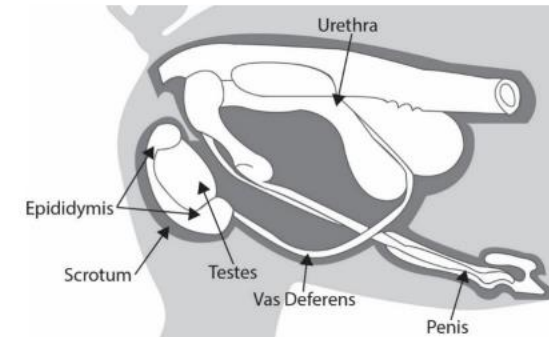
Match the female reproductive part with its corresponding name:

Ovary  
Oviduct  
Uterus  
Cervix  
Vagina  
Vulva



Match the male reproductive part with its corresponding name:

Testes  
Epididymis  
Scrotum  
Vas deferens  
Urethra  
Penis



Fill in the blanks:

1. Connects the vagina and uterus: **Cervix**
2. Source of both reproductive hormones and eggs: **Ovary**
3. Birth canal of the pig: **Uterus**
4. Passageway from the uterus to the outside of the reproductive tract: **Vagina**
5. Produce sperm and hormones: **Testes**
6. Pouch where testes are located: **Scrotum**
7. Passageway in the center of the penis: **Urethra**
8. Final structure of transfer of sperm into female: **Penis**

# **Veterinary Medical Applications**

# Recommended Hands-On Learning Aids

Canine Auscultation Trainer



Canine CPR Trainer



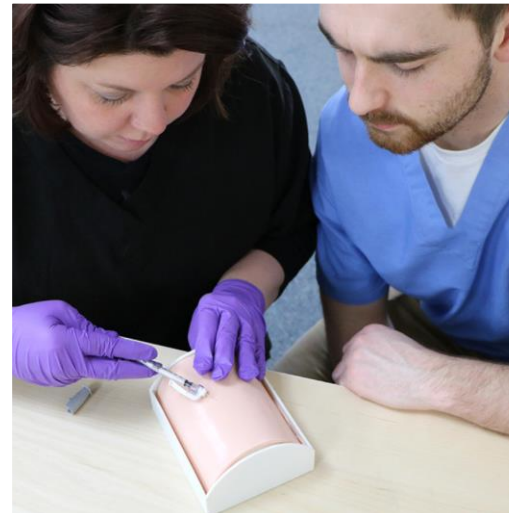
Bovine Injection Simulator



Suture Kit- 5 Pack

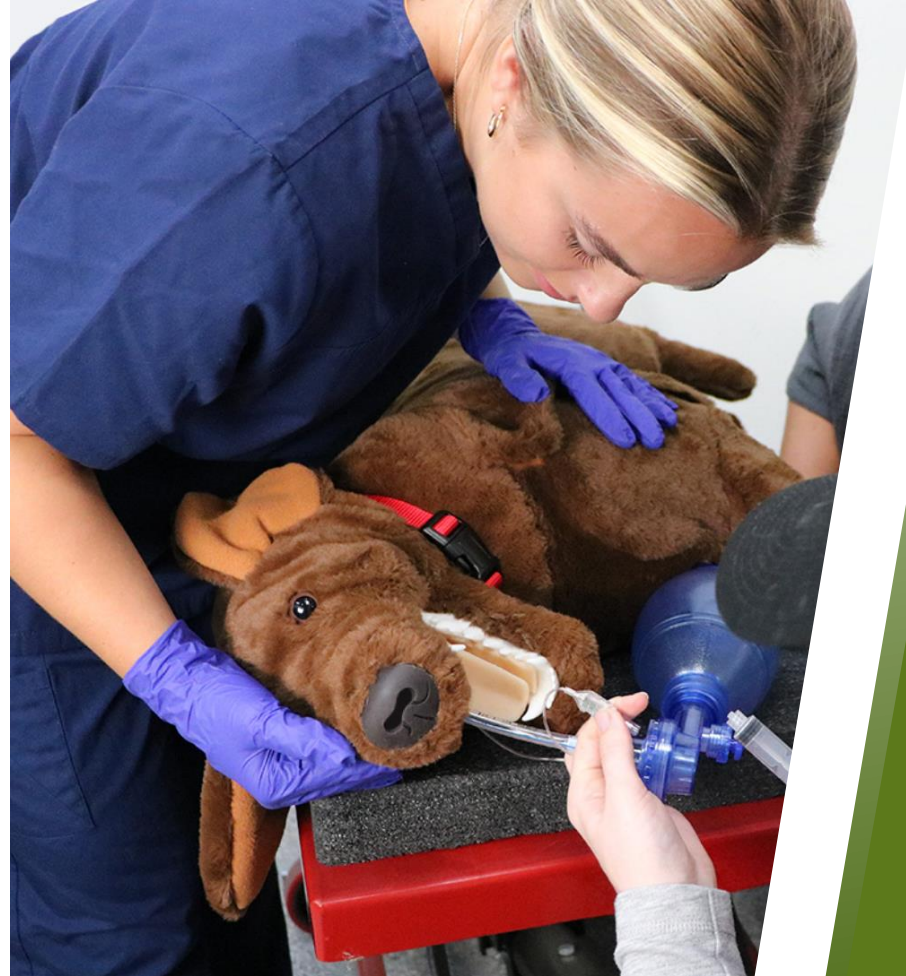


Large Injection Pad



# Activity #4

- Canine CPR Scenarios
- [Canine-CPR-Trainer-Curriculum-SAMPLE.pdf](#)
- [Emergency Vet Instructs: Learn to Perform CPR on a Dog in 5 minutes](#)



# **Practicum in Veterinary Medical Applications**

# Recommended Hands-On Learning Aids

Animal Clinic Design Kit



Canine Spay Simulation Kit



Canine Venipuncture Legs



Canine Intubation Simulator



Bovine Birthing and Ultrasound



# Activity #5

- Animal Clinic Design- Best Practices and Design Options
- [Career-Exploration-Pack-Station-Activity-Sheet\\_Animal-Clinic-Design-Kit.pdf](#)
- <https://print-graph-paper.com/details/1-4-inch>



# Soft Skills for Veterinary Science Careers

# Soft Skills Every Veterinary Professional Needs

- [The 5 Vet Soft Skills for Success in Clinical Practice | Our Blog | Animal Emergency Australia](#)
- [Most Important Soft Skill for Your Veterinary Career](#)
- [How to Grow Your Veterinary Career Using Soft Skills | BluePearl](#)

Perserverance  
Self-Managment  
Responsibility  
Positive  
Adaptability  
Unders  
Time-Keeping  
Pro-activity  
Determination  
Honesty  
Resilience  
Communic

# Recommended Soft Skill Resources

- [RealCareer™ Employability Skills Program – Realityworks](#)
- [Leadership Soft Skills Program – Realityworks](#)
- [Middle School Employability Skills Program - Realityworks](#)



## Negotiating

**Scenario:** A client calls and says that their dog has a urinary tract infection, just like the dog had two years ago. That was the last time the dog was in the clinic for an exam. The client wants the doctor to prescribe medication without examining the dog, since that medication seemed to help last time.

## Points of view to consider

- The dog
- The owner
- The veterinarian

## Key questions

- Should the client get medication without an exam?
- How can the veterinarian explain to the client why the dog needs to be seen before a prescription is given out?
- What would happen if the dog did not have a urinary tract infection and had something else wrong?
- Who would be responsible if the dog was misdiagnosed?



# Now what?

- Download our many Ag Program Implementation Guide: [Agriculture-Program-Implementation-Sheet-WEB.pdf](#)
- Download Posters: [Click Here](#)
- Request a consultation by completing this free form (or scanning the code) [Click Here](#)
- Check out Career Exploration Lessons: [Click Here](#)
- Check out all the free webinars we offer: [Click Here](#)
- Contact us with questions!





## Let's connect!

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- Ask questions and more

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through email at [information@realityworks.com](mailto:information@realityworks.com)  
or call toll free at 800.830.1416



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