Introduction to Animal & Plant Science
Grades 9-12

Units of Credit: One Year (Elective)

Prerequisites: None

Course Description:
This course consists of classroom and lab exercises emphasizing academics and hands-on learning in animal and plant science, as well as leadership development through the FFA, and Supervised Agricultural Experience (SAE). Instruction and assessment include lecture, assignment, performance and written testing, and results employing scientific method. Students will gain experience with veterinary tools, electronic scales, computerized records, and a wide range of tools that will help in career path selection and implementation.

Topics:
- Livestock evaluation
- Livestock I.D.
- Meats Evaluation
- Animal Anatomy
- Digestion & Reproduction
- Feeds & Feeding + Health Care
- Intro to Plant & Soil Science
- Plant Propagation
- O.H Industry
- Plant Health
- Power & Hand Tool ID + Operation
- FFA Leadership-CDE & the S.A.E.

NOTE: Throughout this document, learning target types are identified as knowledge ("K"), reasoning ("R"), skill ("S"), or product ("P").

STANDARD 1: Students experience various career opportunities and assess personal career pathways.
Benchmark 1:
Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
Learning Targets (*Type*):
1. I can use Montana Career Information Systems (MCIS) and/or other systems or web resources to investigate and evaluate my personal interests, aptitudes and abilities. *(S)*
2. I can formulate tentative career goals. *(R)*
3. I can evaluate approaches for meeting my goals. *(R)*
Benchmark 2:
Utilize local resources to research career plans.
Learning Targets (*Type*):

1. I can identify local resources to develop career plans. *(K)*
2. I can contact my school career counselor or teacher to pursue career pathways. *(S)*

Benchmark 3:
Recognize the interrelationships of family, community, career, and leisure roles.
Learning Targets (*Type*):
1. I can describe the importance of balance between family and community in regards to career and leisure activities. *(K)*
2. I can compare and contrast the needs of career and leisure activities and how they relate to and/or affect family and community. *(R)*

STANDARD 2: Students demonstrate an understanding and apply principles of Resource Management (i.e., financial, time, personal management)
Benchmark 1:
Prepare a budget and keep financial records.
Learning Targets (*Type*):
1. I can research and report cost of materials and time. *(R,S)*
2. I can document financial inputs and outputs. *(S)*
3. I can identify the necessity to maintain accurate financial records. *(K)*
4. I can stay within a fixed budget. *(S,P)*

Benchmark 2:
Prioritize, allocate time, prepare and follow schedules to complete a project.
Learning Targets (*Type*):
1. I can estimate the required time to complete a project. *(R)*
2. I can prioritize resources, equipment and tasks. *(R)*
3. I can reflect upon completion. *(K)*

Benchmark 3:
Apply appropriate time to task.
Learning Targets (*Type*):
1. I can implement a time schedule for task completion. *(S)*

Benchmark 4:
Use physical resources wisely to accomplish a goal.
Learning Targets (*Type*):
1. I can identify the resources necessary to accomplish the task. *(K)*
2. I can maintain the tools of the trade. *(S)*
3. I can maximize the use of my resources. *(S)*

STANDARD 3: Students acquire and utilize personal and leadership skills to become successful, productive citizens.
Benchmark 1:
Demonstrate active leadership skills by participation in group activities and projects.
Learning Targets (*Type*):
1. I can investigate various leadership styles. *(R)*
2. I can apply leadership styles in group activities and projects. *(R)*

Benchmark 2:
Demonstrate positive personal and work ethics.
Learning Targets (*Type*):

1. I can show up for class and work on time. *(S)*
2. I can develop personal and work related goals. *(K,P)*
3. I can describe ethical behavior in the workplace. *(K)*

Benchmark 3:
Demonstrate skills to be a productive citizen.
Learning Targets (*Type*):
1. I can develop professional relationships with community members. *(S)*
2. I can contribute to my community in a positive manner. *(S,P)*

Benchmark 4:
Apply self-esteem building practices.
Learning Targets (*Type*):
1. I can define and provide evidence of my strengths in my career interest areas. *(K,S)*
2. I can persevere through set backs and stay focused on my goals. *(S)*

Benchmark 5:
Demonstrate appreciation for diverse perspective needs and characteristics.
Learning Targets (*Type*):
1. I can develop a working relationship with diverse populations. *(K,S)*
2. I can demonstrate communication skills that contribute to positive relationships. *(S)*
3. I can work to understand diverse points of view. *(R)*

Benchmark 6:
Practice several methods of effective communication.
Learning Targets (*Type*):
1. I can demonstrate good listening skills. *(S)*
2. I can effectively communicate verbally through collaborative projects. *(S,P)*
3. I can develop quality written professional communications. *(P)*

STANDARD 4: Students acquire and demonstrate current technical skills leading to an occupation.
Benchmark 1:
Practice technical skills and procedures required for an occupation.
Learning Targets (*Type*):
1. I can evaluate the genetic quality of livestock. *(K,S,R)*
2. I can recognize reproduction tracks and fundamentals of reproduction. *(K)*
3. I can select and utilize appropriate feed programs. *(K,S)*
4. I can describe livestock digestive systems. *(K)*
5. I can identify plant parts. *(K)*
6. I can identify and select soil media. *(K)*
7. I can practice plant reproduction using seed and vegetative propagation. *(K,S)*
8. I can promote good plant health - (pruning). *(K,S,R)*
9. I can select and maintain turf grass. *(K)*

Benchmark 2:
Practice safe and appropriate use of technology.
Learning Targets (*Type*):
1. I can use veterinary tools for basic care. *(K,S)*

Benchmark 3:
Select the appropriate tools, equipment, and procedures for the task.

Learning Targets (*Type*):
1. I can learn and identify the proper use of hand & small power tools. *(K)*
Benchmark 4:
Manage and maintain technological tools and follow troubleshooting protocol.
Learning Targets (*Type*):
1. I can run a small business (SAE). *(K,S,R,P)*
Benchmark 5:
Apply technical information to a variety of sources.
Learning Targets (*Type*):
1. I can identify contemporary breeds of beef, swine, and sheep. *(K)*
2. I can recognize basic retail cuts of meat. *(K)*
3. I can test and select correct fertilizers (NPK). *(K,S)*

STANDARD 5: Students know and demonstrate the requirements of the workplace through authentic application.
Benchmark 1:
Practice and demonstrate academic and technical skills to a workplace setting.
Learning Targets (*Type*):
1. I can practice, and demonstrate my technical workplace skills in my school lab. *(S)*
2.. I can research, write and present on the technical content utilizing academic skills found. in workplace settings. *(R,S,P)*
Benchmark 2:
Apply the concepts of entrepreneurship.
Learning Targets (*Type*):
1. I can explain the concepts of entrepreneurship. *(KS)*
2. I can demonstrate the concepts of entrepreneurship through a unique project. *(R,S)*
3. I can present my unique project to an authentic audience. *(S,P)*
Benchmark 3:
Identify possible outcomes and consequences of decisions.
Learning Targets (*Type*):
1. I can identify possible consequences of carelessness and horseplay. *(K)*
2. I can explain potential outcomes of not following directions, (i.e. safety, guidelines, rubrics). *(R)*
Benchmark 4:
Use acceptable industry standard equipment in a school setting.
Learning Targets (*Type*):
1. I can successfully use acceptable industry standard equipment to produce an authentic product within budget constraints. *(S,R,P)*