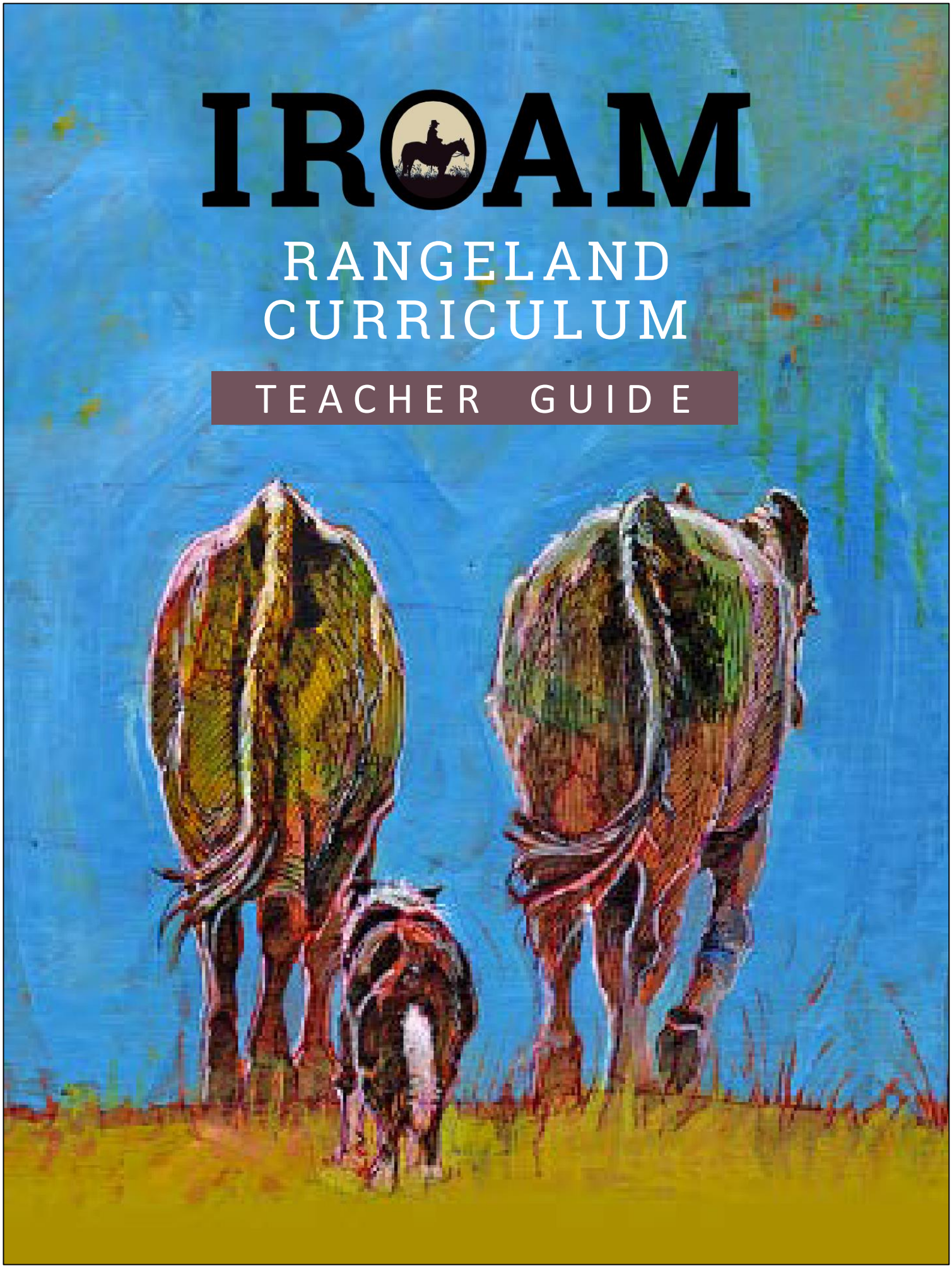
IROAM

RANGELAND CURRICULUM

TEACHER GUIDE



Idaho is a place of rich ecological diversity including forests, cultivated agricultural lands, urban areas, and rangeland. Rangeland is the largest natural resource in Idaho, comprising about 53% of the land cover, and has a legacy of multiple use that has affected where and how people live, work, and recreate. Idaho families have long built their lives on rangeland and act as land stewards to cultivate economic, social, and cultural values for generations to come.

Despite these efforts, ranchers across the west struggle finding suitable successors to maintain and work on their ranches, preserve local knowledge, and care for the lands that support fish and fauna. Additionally, students seeking range degrees is steadily declining despite the high demand for professionals who can manage rangeland.

Knowing these trends, we can ask ourselves, how can we raise young people's awareness of the opportunities and challenges on rangeland? Moreover, how can we increase young people's awareness of the goods and services provided by rangeland including livestock forage, wildlife habitat, outdoor recreation, renewable energy, and open spaces?

To address these questions, the Idaho Rangeland Resources Commission and University of Idaho Extension creates youth education programs and materials designed to increase the public's understanding of rangeland ecology, and the goods and services provided by rangeland. One example is the **I-ROAM Rangeland Curriculum** which provides lessons and activities for K-12 students that can be used for outdoor schools and classroom lessons.

To further enhance educational opportunities for youth, the Idaho Rangeland Resources Commission and its partners built the **I-ROAM Traveling Educational Trailer** which focuses on teaching 5-8th grade students about rangeland ecology and management throughout Idaho. The educational trailer compliments the curriculum and can be easily integrated when teaching the various sections of the curriculum. Research shows that this age is the critical time to influence student's career trajectory, especially when experiential learning occurs. Thus, the educational trailer has interactive, hands-on learning activities inside, and is fully wrapped with an artful design on the outside that serves to raise awareness and understanding of the ecological and social implications of proper rangeland management.

See you on the range,

Gretchen Hyde and April Hulet

ACKNOWLEDGMENTS

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SPONSORS

The **Idaho Rangeland Resources Commission** (IRRC) is an Idaho state agency with the mission to provide educational materials and programs about rangeland to the public. Rangeland is more than half of Idaho and supports wildlife, local economies, and people. Understanding how rangeland ecosystems function, are managed, and change over time is important to all Idaho citizens. The IRRC and the University of Idaho created this curriculum to provide a foundation of knowledge to both youth and adults.

University of Idaho Extension strives to improve people's lives by engaging the University, professionals, and our communities through research-based education and outreach. Extension Specialists and Educators bring vital, practical information to producers, consumers, families, and youth to address public needs.

The **David Little Range-Livestock Endowment** was established in 1981 to organize research, extension and educational programs dedicated to the study of more efficient uses of Idaho's rangeland for livestock forage production. The endowment is managed by the University of Idaho Rangeland Center and provided startup funds to support the I-ROAM rangeland curriculum.

The **Laura Moore Cunningham Foundation** (LMCF) is dedicated to advancing the great State of Idaho through education. They believe Idaho is a wonderful place to live, work, and raise a family. The LMCF honors the Moore and Bettis families' legacy by providing support for educational materials such as the I-ROAM rangeland curriculum.

The **Adams Soil and Water Conservation District** and the **Idaho Soil and Water Conservation Commission** provided support funds for the development of the I-ROAM rangeland curriculum.

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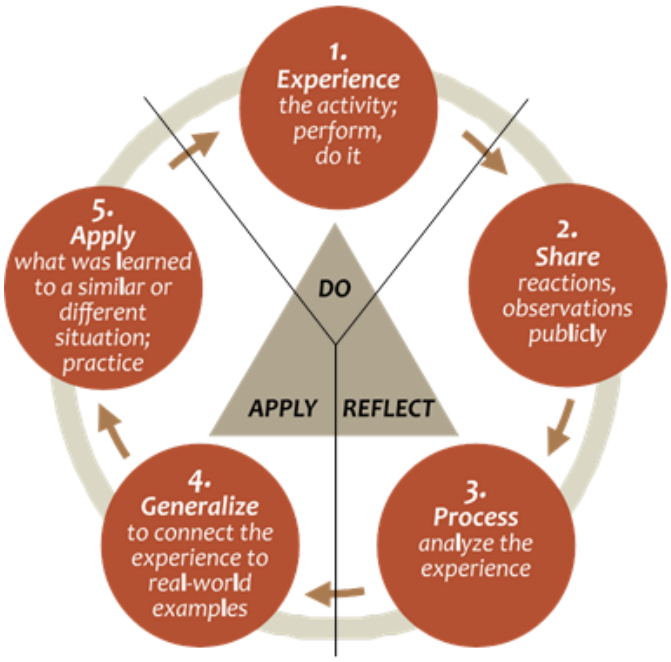
I-ROAM Rangeland Curriculum—Introduction and Guidelines

The **I-ROAM Rangeland Curriculum Teacher Guide** is designed to guide educators through various rangeland principles including an introduction to rangeland, rangeland soils, rangeland plants, water on the range, wildlife habitat, wildfire, and plant and animal interactions. This guide includes background information, activities, words to explore that are in **bold** print within the sections, and reference materials necessary for outdoor and classroom lessons.

All participating students and teachers will have the opportunity to "*learn by doing*" through application; sections are broken into multiple learning activities and rangeland skill challenges. We recommend using the materials in the order presented in the guide.

Curriculum Format

This curriculum incorporates many ideas from the 4-H program, which is one of the largest youth development organizations in the United States. 4-H promotes youth and adults working together as partners to learn and master project-specific skills and essential life skills through experiential learning. The experiential learning model[1] has three phases, **do**, **reflect**, and **apply**.



The **do** phases includes learning about a challenge and experiencing an activity (*perform or do it*).

During the **reflect** phase, students *share* their experience (*what happened?*) and *process* what they learned. By sharing their experience, students learn there are different interpretations of reality. By *processing* the experience, students will determine what was most important and identify common themes.

The final phase, or the **apply** phase, allows the students to connect the discussion and experience to the larger world (*so what?*) and *apply* what they learned to a new situation and/or other part of life (*now what?*).

Additionally learning materials can be found at:

idrange.org

[1]National 4-H Learning Working Group. 2016. Experiential Learning Model.

I-ROAM Rangeland Certificate—Rangeland Skills Checklist

As students and teachers work through the activities and lessons, they will gain rangeland management skills, as well as many life skills. Once the activities and skills have been completed, students will be qualified for the I-ROAM Rangeland certificate and pin that will be issued by the Idaho Rangeland Resources Commission.

Required Activities and Skills

Rangeland Activities and Skills	Teachers Initials
1. Define rangeland.	
2. Hand texture at least 2 soil types.	
3. Identify by sight at least 20 rangeland plants. (*this includes the common name, growth-form, life span, and origin*)	
4. Build your watershed.	
5. Identify by sight at least 20 rangeland animals. (*animal identification may be based on sight, pelts/feathers, skulls, scat, tracks, and calls*)	
6. Draw and describe the fire triangle.	
7. Calculate stocking rates.	
8. Complete the "Rangeland Toolbox" activity.	
Life Skills *(may be complete with a group or individually)*	**Teachers Initials**
1. Research the special topic and work with a group to create a solution.	
2. Create a 3-D diorama of rangeland that is related to the special topic.	
3. Participate in an oral presentation.	
4. With the guidance of your teacher, plan and organize one of the learning sections.	
5. Teach someone about rangeland.	
6. Explore rangeland careers.	

Rangeland Special Topic

Because of the wide-array of rangeland challenges across the West, a special topic that addresses a particular rangeland challenge should be selected prior to working through the I-ROAM rangeland curriculum by the teacher, or as a class. This topic will serve as a "theme" for lessons and activities, for the oral presentations, and for the 3-D dioramas. Suggested topics include (but are not limited to):

- Grazing livestock near wolves
- Protecting sage-grouse habitat from wildfire
- Protecting endangered fish species in streams and rivers that are used for irrigation and water for
- ranches
- Invasive annual grasses and wildfire frequency
- Managing rangelands for recreational purposes and livestock grazing
- Pinyon-Juniper encroachment and sage-grouse habitat

Oral Presentation and 3-D Diorama (guidelines and scoring rubric)

Oral presentations and speaking are important life skills to master. After completing the I-ROAM rangeland curriculum, each group should give an oral presentation that describes the rangeland challenge associated with the special topic, and propose a solution to the challenge (may be completed individually).

Oral presentation guidelines:

- Presentations should be between 6-8 minutes, with 2 minutes for questions.
- Each presentation should use a 3-D diorama to aid in the presentation.
- Each member of the group must speak during the oral presentation.

3-D diorama guidelines:

- Groups should create a 3-D diorama using the special topic and key concepts from the various learning sections. The diorama should include animals and plants that are found within the habitat they are learning about and should demonstrate an understanding of key rangeland characteristics (may be completed individually).

Examples of 3-D dioramas created by youth with the special topic "protecting endangered fish species in streams and rivers that were used for irrigation and water for a ranch."

Suggested Grading Rubric for Oral Presentation/3-D Diorama (sample on page 8)

Groups will be scored on a scale of 1-5 (5—Excellent, 4—Good, 3--Average, 2—Fair, 1—Poor) in four areas:

1. Content: knowledge and understanding of the special topic.
2. Organization: overall organization and flow of the presentation.
3. Delivery: eye contact, speaks clearly.
4. 3-D Diorama: visually eye appealing, readable, neat.

	EXCELLENT	GOOD	AVERAGE	FAIR	POOR
CONTENT					
Group demonstrated a solid understanding of the special topic.	5	4	3	2	1
Group identified different players/interest groups affected by the special topic.	5	4	3	2	1
Group addressed the relationship between the environment, livestock, wildlife, and natural resource management strategies.	5	4	3	2	1
Group referenced resources used in the presentation.	5	4	3	2	1
Group presented one viable solution to the challenge/special topic.	5	4	3	2	1
			Content Total Points_____/25		
ORGANIZATION					
The presentation was well organized with a clear introduction and strong conclusion.	5	4	3	2	1
The main points were clearly stated and supported.	5	4	3	2	1
The presentation had smooth transitions between main points.	5	4	3	2	1
			Organization Total Points_____/15		
DELIVERY					
Presenters maintained good eye contact.	5	4	3	2	1
Presenters were appropriately animated (e.g., gestures, moving around, etc.).	5	4	3	2	1
Presenters used clear, audible voices.	5	4	3	2	1
Good language skills and pronunciation were used.	5	4	3	2	1
Visual aids (3-D diorama) were used to make major points and were not distracting.	5	4	3	2	1
All group members participated in the presentation.	5	4	3	2	1
Questions were answered logically and concisely.	5	4	3	2	1
Presentation was the appropriate length of time.	5	4	3	2	1
Information was well communicated.	5	4	3	2	1
			Delivery Total Points_____/45		
3-D DIORAMA					
The 3-D diorama showed a solution to the special topic.	5	4	3	2	1
The group adequately explained the model during the presentation.	5	4	3	2	1
The 3-D diorama was visually appealing.	5	4	3	2	1
			3-D Diorama Total Points _____/15		

NOTES:

FINAL SCORE:_____/100