

## Fourth Grade Year-Long Research – Cave Spring Elementary School

*Developed by Dr. Tabatha Tierce, 2017 On the Farm STEM Event – Los Angeles Participant  
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### **Research Partners:**

American Farm Bureau Foundation for Agriculture  
Floyd County Cattlemen's Association  
USDA  
Lyons Bridge Farm  
Cave Spring Animal Hospital

### **Title of Study:** Optimal Land Management for Cattle

**Purpose of Study:** Students will work with the local Lyon's Bridge Farm to analyze the farms' production, goals, and management issues. Students will collect data and work with the farm manager to refine and develop a land management plan addressing sustainability over time.

**Inquiry Question:** How can local cattle farmers provide a better environment for cattle on their farm?

### **Procedures:**

Students will visit Lyon's Bridge Farm at least once a month for data collection and field notes. Pre-arranged mini-lessons will be conducted during each visit with research partners on selected topics. Students will also use class time to analyze data and information collect from each visit. Students will also participate in research pods which will focus on related topics. Students will use methods and materials demonstrated at the Tejon Ranch to determine the appropriate head of cattle for the land. Students will also conduct research in a small section of the farm to test different fertilizers (e.g., synthetic vs. natural) to determine changes in forage. Students will develop a plan for land management that will provide more grass for the cattle focusing on sustainability measures for the future. Students will attend the system Ag Day and present their research and findings.

### **Data Collection:**

Students will collect samplings of forage to determine appropriate animal units for the farm. Measurements and observations will be made monthly regarding fertilizers applied.

### **Options for Group Research Pods:**

Types of Cattle/Animals Ranches  
Terrain  
Water Consumption  
Food Supply  
Herd Management  
Genetics

### **Additional Information:**

Each grade level at CSE conducts a year-long research project as part of our STEM program. Grade levels spend the year digging deep into a topic that allows for extended research and inquiry. Students focus on real world issues that can be experienced in our little town. We have had access to the Lyon's Bridge Farm for years and have never been able to plan a way to use it within a classroom. This is an exciting opportunity for our students and our school.

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The Beef Checkoff Program funded development of this educator resource. The Beef Checkoff Program, [MyBeefCheckoff.com](http://MyBeefCheckoff.com), was established as part of the 1985 farm bill. The checkoff assesses \$1 per head on the sale of live domestic and imported cattle in addition to a comparable assessment on imported beef and beef products. In states with qualified beef councils, states may retain up to 50 cents of the dollar and forward the other 50 cents per head to the Cattlemen's Beef Promotion and Research Board, which administers the national checkoff program, subject to USDA approval.