

Science & Social Studies in the Sagebrush Steppe Grades 6-9

Curriculum Connections & background information/resources for teachers:

<p>General information or addresses multiple topics:</p>	<p>Background Information:</p> <ul style="list-style-type: none"> - Nevada Rangeland Resources Commission - USDA Natural Resources Conservation Service Plants Database - University of Nevada, Reno College of Agriculture, Biotechnology, and Natural Resources - Nevada Section of the Society for Range Management - Nevada Rangelands - Society for Range Management - BLM Hot topics on Hands of the Land - State Water Supply Outlook Reports - 2018 Envirothon Rangeland Study Guide - World Rangeland Learning Experience website - Global Rangelands website – Access thousands of rangeland resources - Nevada Rangeland Monitoring Handbook 3rd Edition - Silver State Rangelands – Historical Perspective journal article <p>Lessons & Educational Resources:</p> <ul style="list-style-type: none"> - Inquiry, Exploration & Service Learning in the Sagebrush Ecosystem – 10 lesson plans and supporting resources - University of Wyoming’s 5th Grade Ecology Unit: A Sagebrush Expedition - USA Federal Lands Map - Nevada Federal Lands Map - Idaho Rangeland Resources Commission high school curriculum (Rangelands overview, rangeland plants, rangeland animals, describing and monitoring rangelands, rangeland ecology and forces of change, integrated rangeland management – managing human activities) - Rangeland Careers website - Career Spotlight blogs on Nevada STEM Hub – Using math, science, and technology to protect Nevada’s rangelands & STEM and the future of food and agriculture - National Agriculture in the Classroom Curriculum Matrix - Global Rangelands teaching and education resources for K-12 - Hands on the Land – educator resource directory - <i>Stewards of the Rangeland</i> video documentary series on PBS: Rangeland Under Fire, The Endangered West, Rangeland Water, Stewards of the Rangeland.
--	--

	<ul style="list-style-type: none"> - Nevada Youth Range Camp for High Schoolers - 4-H youth development program in animal science - High school agricultural education courses like environmental management, animal science, natural resources & wildlife management and associated FFA activities. - University of Nevada, Reno Range Club - Purple Plow: Uncovering STEM Solutions – Challenges students to research scenarios related to food, hunger, and sustainability and build their own prototypes to solve the defined problem. - Nature Journaling, Birdsleuth - iNaturalist, technology tool bringing nature to your fingertips.
Sagebrush ecosystem	<p>Background Information:</p> <ul style="list-style-type: none"> - Nevada Sagebrush Ecosystem Program <p>Lessons & Educational Resources:</p> <ul style="list-style-type: none"> - Natural Resources Conservation Service “Healthy Sagebrush Communities” poster - Natural Resources Conservation Service “Healthy Sagebrush Communities multimedia story - U.S. Fish & Wildlife Service’s Greater Sage-Grouse-Sagebrush Ecosystem Curriculum - Science in the BLM – citizen science initiative - Sagebrush Rangelands in Nevada information and worksheet by Dr. Sherm Swanson. - “Hope on the Range – A Frontier Legacy Finds its Place in the New West.” Documentary - National Agriculture in the Classroom Curriculum Matrix – rangeland lessons - Pocket Guide to Sagebrush – features Sagebrush Chemistry activity using black light to help distinguish species and subspecies of sagebrush. - Sage Grouse Initiative’s Conserve Our Western Roots poster, postcard, and native plant drawings. Order free print copies of Western Roots poster - Sagebrush Steppe Cards from BLM
Soil Health	<p>Background Information:</p> <ul style="list-style-type: none"> - Natural Resource Conservation Service Soil Education <p>Lessons & Educational Resources:</p> <ul style="list-style-type: none"> - Natural Resource Conservation Service Soils lesson plans - NRCS “Unlock the Secrets in Soil” infographics - NRCS – Are you a “Soil Health Scholar?” online quiz - Nutrients for Life lessons and materials

	<ul style="list-style-type: none"> - Dr. Dirt K-12 Teaching Resources - Soil Investigation, Nevada Youth Range Camp - The Role of Microorganisms in the Ecosystem lesson plan - Keeping Soil in its place lesson plan
Fire ecology	<p>Background Information:</p> <ul style="list-style-type: none"> - Great Basin Fire Science Exchange - “Fire In-Depth.” National Park Service <p>Lessons & Educational Resources:</p> <ul style="list-style-type: none"> - University of Nevada Cooperative Extension “Living with Fire in the Big Sagebrush/Grass Environment” video - U.S. Fish & Wildlife Service’s Greater Sage-Grouse-Sagebrush Ecosystem Curriculum - FireWorks Curriculum Featuring the Sagebrush Ecosystem - FireWorks Sierra Nevada Curriculum - National Interagency Fire Center videos related to fire and sage-grouse: <ul style="list-style-type: none"> “Help This Habitat” (30 seconds) “Wildfires and Sage-grouse” (1:03) “Standing Up for Sage-grouse” (2:29) “Ripples” (1:32)
Livestock Grazing	<p>Background Information:</p> <ul style="list-style-type: none"> - Bureau of Land Management - Nevada Cattlemen’s Association - Basque Shepherders of Northern Nevada – UNR Multimedia exhibit - Sheep in Nevada: A History <p>Lessons & Educational Resources:</p> <ul style="list-style-type: none"> - National Agriculture in the Classroom Curriculum Matrix – grazing lessons - Graze Like a Cow lesson plan (Grades 6-12) from Kansas Foundation for Agriculture in the Classroom - Rockin' TD Ranch Champions Conservation Practices in Nevada - video - “Cattle Ranchers Join Conservationists To Save Endangered Species And Rangelands”. Forbes - Grazing Management in Perspective: A Compatible Tool for Sage Grouse Conservation.

<p>Sage Grouse Habitat</p>	<p>Background Information:</p> <ul style="list-style-type: none"> - https://www.sagegrouseinitiative.com/ - Sagebrush Ecosystem Program <p>Lessons & Educational Resources:</p> <ul style="list-style-type: none"> - Stewards of the Rangeland: The Endangered West lesson plan and condensed video clip - Lek Cam - U.S. Fish & Wildlife Service’s Greater Sage-Grouse-Sagebrush Ecosystem Curriculum - Bureau of Land Management Classroom Investigation Series: Habitats and Wildlife (features Sage Grouse) - Greater Sage Grouse worksheet - @chamiltonjames captured shots of sagebrush ecosystem and sage grouse on assignment for National Geographic: male sage grouse, rear view, side view. - Agriculture and the Environment, 3rd Edition, Chapter 6: Endangered Species from American Farm Bureau Foundation for Agriculture - Sage Grouse: A Life Cycle in Photos
<p>Encroachments & Invasions</p>	<p>Background Information:</p> <ul style="list-style-type: none"> - Cheatgrass research in Northern Nevada news report - Nevada Noxious Weeds Quick Reference Guide <p>Lessons & Educational Resources:</p> <ul style="list-style-type: none"> - Hungry Pests Middle School Curriculum - Nevada Weed Warriors Curriculum and resource box - Ecologically-Based Invasive Plant Management high school curriculum - Noxious weeds lesson - kNOweeds K-12 Montana Invasive Plant Curriculum Guide - “Plant Immigrants.” Invasive species lesson from Earth Partnership for Schools - “Reducing Cheatgrass Fuel Loads Using Fall Cattle Grazing” publication by UNCE - Cheatgrass and Wildfire Fact Sheet by CSUE - A Homeowner’s Guide to Cheatgrass Fact Sheet by UNCE - Cheatgrass and wildfire photos